pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0020851**
Facility Type	**Municipal**	APS ID	**274821**
Major / Minor	**Minor**	Authorization ID	**1489211**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Hyndman Borough Municipal Authority Bedford County**	Facility Name	**Hyndman Borough STP**
Applicant Address	PO Box 445	Facility Address	120 Shaffer Road
	Hyndman, PA 15545-0445		Hyndman, PA 15545-0445
Applicant Contact	Sharon Shaffer	Facility Contact	Tyler Smith
Applicant Phone	(814) 842-9392	Facility Phone	(814) 842-6546
Client ID	77877	Site ID	249348
Ch 94 Load Status	Not Overloaded	Municipality	Hyndman Borough
Connection Status	No Limitations	County	Bedford
Date Application Received	June 17, 2024	EPA Waived?	Yes
Date Application Accepted	June 20, 2024	If No, Reason	

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

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / Environmental Engineer Nick Hong (via electronic signature)	August 5, 2024
x		Daniel W. Martin, P.E. / Environmental Engineer Manager Maria D. Bebenek for	August 28, 2024
x		Maria D. Bebenek, P.E. / Environmental Program Manager Maria D. Bebenek	August 28, 2024

Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the Hyndman Borough MA located at 120 Shaffer Road, Hyndman, PA 15545 in Bedford County, municipality of Hyndman Township. The existing permit became effective on February 1, 2020 and expires(d) on January 31, 2025. The application for renewal was received by DEP Southcentral Regional Office (SCRO) on June 17, 2024.

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

The subject facility is a 0.365 MGD 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 Hyndman Borough Council, and Londonderry Township Supervisors and the notice was received by the parties in the middle of April 2024. A planning approval letter was not necessary as the facility is neither new or expanding.

Utilizing the DEP's web-based Emap-PA information system, the receiving waters has been determined to be Willis Creek. Willis Creek travels past the Maryland Border. The subject site is subject to the Chesapeake Bay implementation requirements. The receiving water has protected water usage for cold water fishes (CWF) and migratory fishes (MF). No Class A Wild Trout fisheries are impacted by this discharge. The absence of high quality and/or exceptional value surface waters removes the need for an additional evaluation of anti-degradation requirements.

The Willis Creek is a Category 2 stream listed in the 2024 Integrated List of All Waters (formerly 303d Listed Streams). This stream is an attaining stream that supports aquatic life. The receiving waters is not subject to a total maximum daily load (TMDL) plan to improve water quality in the subject facility's watershed.

The existing permit and proposed permit differ as follows:

- **Due to the EPA triennial review, monitoring for E. coli is required.**

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

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

Based on the review in this report, it is recommended that the permit be drafted. DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

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

1.0 Applicant

1.1 General Information

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

Facility Name:	Hyndman Borough MA
NPDES Permit #	PA0020851
Physical Address:	120 Schaffer Road Hyndman, PA 15545
Mailing Address:	PO Box 445 Hyndman, PA 15545
Contact:	Sharon Shaffer (814) 842-9392 hbma155@embarqmail.com
Consultant:	Amy Sipes Environmental Scientist Stiffler, McGraw, and Associates (814) 696-6280 asipes@stiffler-mcgraw.com

1.2 Permit History

Permit submittal included the following information.

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

2.0 Treatment Facility Summary

2.1.1 Site location

The physical address for the facility is 120 Schaffer Road, Hyndman, PA 15545. 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

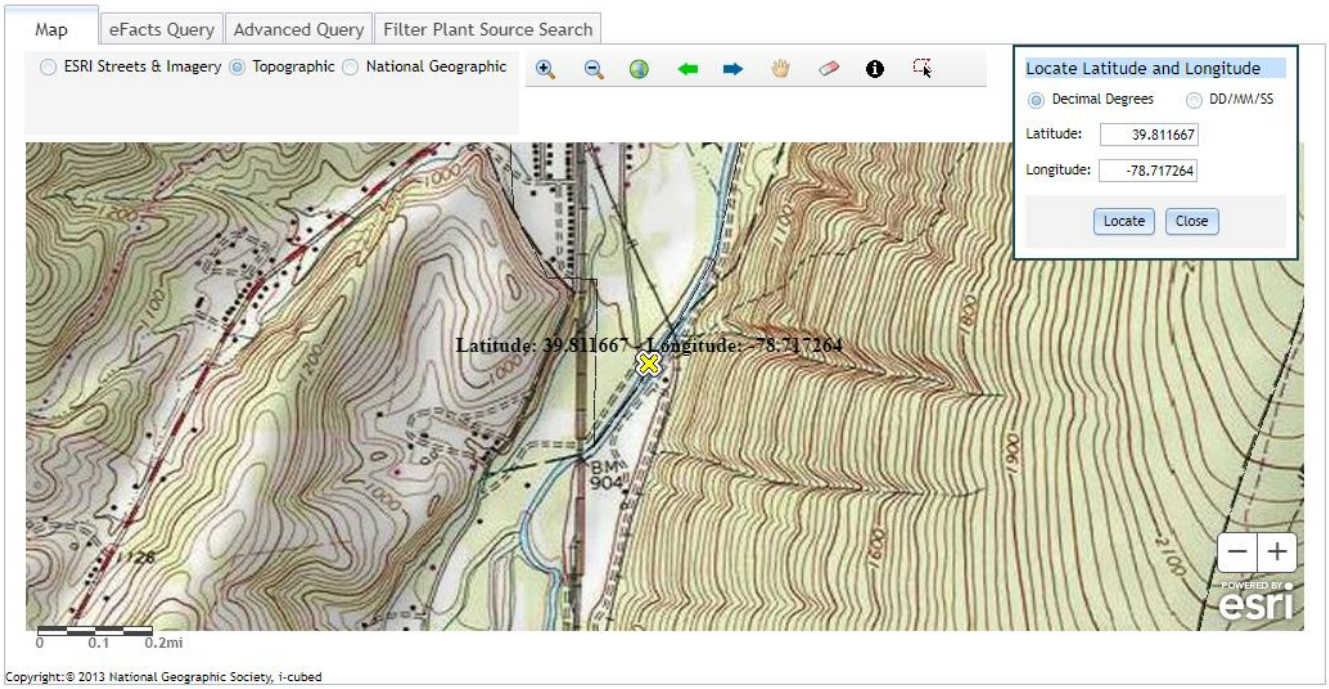
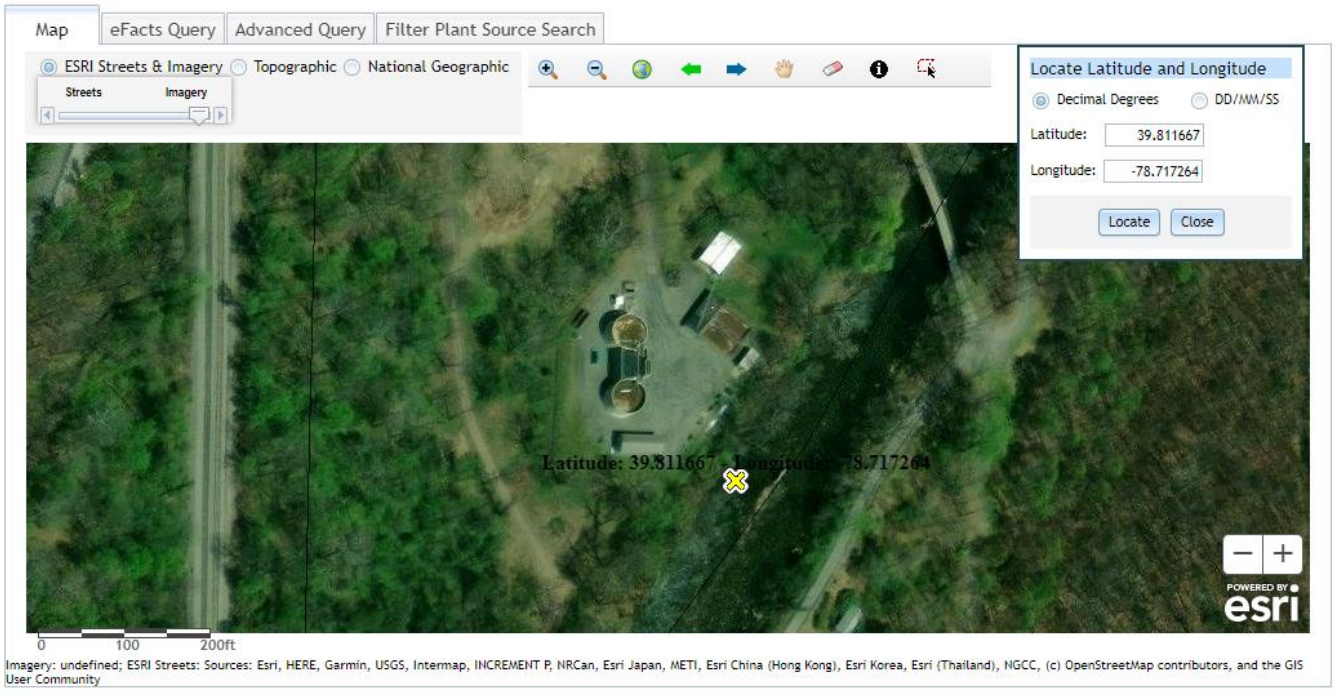


Figure 2: Aerial Photograph of the subject facility



2.1.2 Sources of Wastewater/Stormwater

The treatment plant receives wastewater from two municipalities. Refer to the table for flow contribution from each municipality.

Municipalities Served	Flow Contribution
Hyndman Borough	72%
Londonderry Township	28%
Total	100%

The facility has the following industrial/commercial users.

Hyndman Borough Municipal Authority
Non-Residential Customer List 2024

Business Name	Use	EDU	Flow MGD)
CSX	Railroad	1	0.000335
T.G.Motor Sales	Mechanic	1	0.000335
B&B Market	Grocery	3	0.001005
Will's Mountain Citgo	Gas/Car Wash	1	0.000335
Hornet's Nest	Restaurant	2	0.000670
USPS	Post Office	1	0.000335
Potomac Valley Pharmacy	Pharmacy	1	0.000335
Dollar Bank	Bank	1	0.000335
Hyndman Area Rescue Squad	Rescue Squad	0	0
Hyndman Volunteer Fire Dept.	Fire Dept.	0	0
Hyndman-Londonderry Library	Library	0	0
Zeigler's Funeral Home	Funeral Home	1	0.000335
Coughenour Engineering	Engineeering	1	0.000335
Scissors	Beauty Shop	1	0.000335
Hope for Hyndman Charter School	School	11.7	0.003920
Hy-Lo Elementary School	School		Inactive
Dollar General Store	Retail Store	1	0.000335
Hyndman Family Health Center	Medical/Dental	2	0.000670
Wing and a Prayer	Restaurant		Inactive
Terry's Soft Serve	Ice Cream	1	0.000335
Maddison's Place	Ice Cream		Inactive
Brightspeed	Telephone Office	1	0.000335

One EDU = 335 gpd Flow as per 2023 Chapter 94 report

The facility received hauled in wastes in the last three years. The facility anticipates receiving hauled in wastes in the next five years.

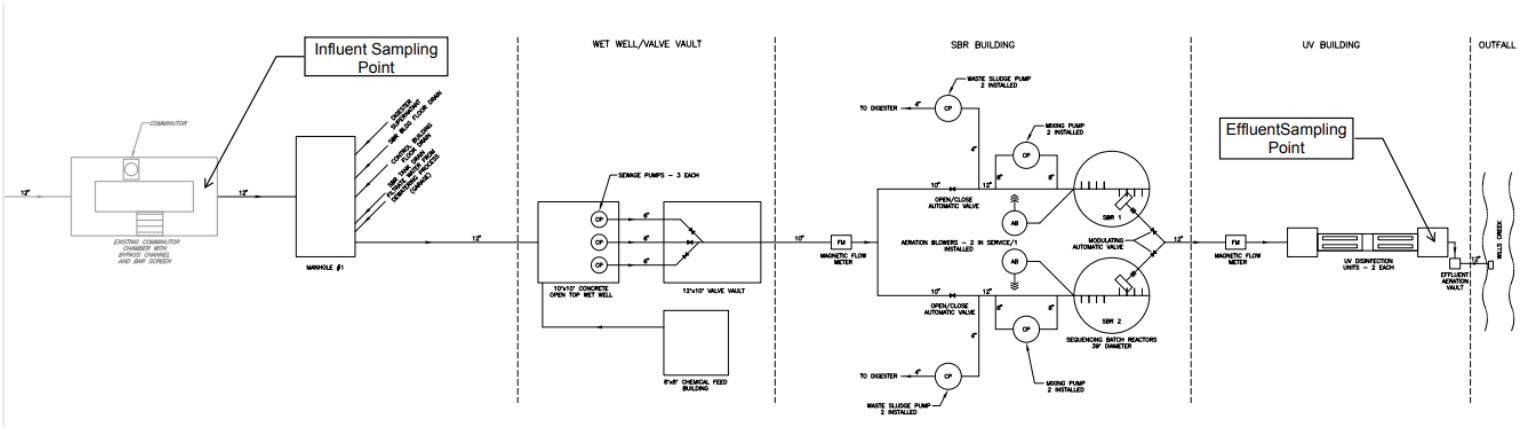
2.2 Description of Wastewater Treatment Process

The subject facility is a 0.365 MGD hydraulic design flow facility. The subject facility treats wastewater using a SBR and a UV disinfection prior to discharge through the outfall. At scheduled intervals waste activated sludge (WAS) is pumped from each of the SBR units during the settling and decant cycle, to the two (2), 73,450 gallon (each) aerobic digester tanks. The facility is being evaluated for flow, pH, dissolved oxygen, CBOD5, TSS, fecal coliform, nitrogen species, phosphorus, and UV light dosage. 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: Hyndman STP				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary	Sequencing Batch Reactor	Ultraviolet	0.18
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.365	457	Not Overloaded	Aerobic Digestion	Combination of methods

A schematic of the process is depicted.



2.3 Facility Outfall Information

The facility has the following outfall information for wastewater.

Outfall No.	001	**Design Flow (MGD)**	.18
Latitude	39º 48' 42.00"	**Longitude**	-78º 43' 2.00"
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.

- Aluminum sulfate for precipitation of phosphorus

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** 39° 48' 42.00" , **Longitude** 78° 43' 2.00" , **River Mile Index** _____ , **Stream Code** _____

Receiving Waters: Wills Creek (CWF)

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **February 1, 2020** through **January 31, 2025**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	76	122	XXX	25	40	50	1/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids	91	137	XXX	30	45	60	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite

Outfall 001 , Continued (from February 1, 2020 through January 31, 2025)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ultraviolet light dosage (mWsec/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded

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** 39º 48' 42.00" , **Longitude** 78º 43' 2.00" , **River Mile Index** _____ , **Stream Code** _____

Receiving Waters: Wills Creek (CWF)

Type of Effluent: Sewage Effluent

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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	1/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Net Total Nitrogen	Report	7306	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	974	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

3.0 Facility NPDES Compliance History

3.1 Summary of Inspections

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

The DEP inspector noted the following during the inspection.

02/22/2021:

The Department received a 2019-2020 Annual DMR and Chesapeake Bay Supplemental Spreadsheet on November 28, 2019. The authority submitted an older version of the supplemental spreadsheet. Future reports should include the newest version of the Chesapeake Bay supplemental form, which can downloaded from the Department's website. A review of the annual DMR showed a reporting error for the net total nitrogen. It appears that the loading for NO2-NO3 was reported by mistake. The facility did not generate or purchase any nutrient credits. Based on the data submitted, the facility has achieved compliance with its nitrogen and phosphorus annual loading limits for the 2019- 2020 compliance year.

11/30/2021:

Both SBR effluent decanters needed to be replaced due to a structural defect. A reporting error on the August 2021 DMR was identified. The operator recorded a dissolved oxygen test result of 4.7 mg/L on August 27, but the DMR supplemental form shows a result of 5.7 mg/L. A corrected supplemental form needs to be submitted for August and the DMR needs to be revised. The operator should also add a comment to the DMR explaining the cause of the low DO result. While discussing the September 1, 2021 tropical storm, Dale mentioned that he failed to report a manhole overflow that occurred that day on Clarence street. Dale said the overflow was minor and the area was cleaned up. DEP reminded the operators of the NPDES permit reporting requirements for sanitary sewer overflows. A mobile press operation will be on site in the next week or two to dewater and haul away sludge. The Borough has recently rehabbed several leaking manholes and plans to make more repairs in 2022.

12/27/2022:

The facility was advised to (A) investigate the sources of Inflow and Infiltration that caused the manhole overflow in May 2022 (B) keep a dedicated log book to record all maintenance and repair work conducted at the treatment plant and on the collection system

01/03/2023:

The facility was advised to (A) remove as much petroleum product from the treatment system as possible (B) take the necessary steps to put the SBRs back in normal operation. (C) test effluent for TPH weekly for at least the next 4 weeks. (D) submit a non-compliance report form through eDMR within 5 days detailing the contamination event and the discharge of partially treated sewage. Incidents involving a plant upset need to be reported to the DEP immediately or with four hours

01/05/2023:

An unknown amount of home heating oil entered the plant on Sunday January 1, 2023. Since January 6, 2023, aeration and mixing was reintroduced in both SBR tanks. Dale reported that 5000 gallons of seed sludge was hauled in from the McConnellsburg STP and added to SBR #1. Recent microscopic examinations of sludge from both tanks shows some living bugs, but they are not in abundance. Phil said a field test ammonia had a result of 0.8 mg/L. Dale received one recent test result for fecal coliform. It showed a numerical result of greater than 2000 and a comment of "Too numerous to count". DEP recommended contacting the contract laboratory and asking for larger range test results. Dale has also arranged for Enviroserve to haul out approximately 25,000 gallons of sludge from SBR #2 and replace it with 10,000 gallons of seed sludge from the McConnellsburg STP.

01/06/2023:

Tobias reported that an analysis of the sludge in both SBR tanks was conducted from three levels within the tanks. Both tanks showed some active bug life at the middle and upper levels, but no active bugs from the bottom level. Based on the microbe analysis, Dale has decided to restart aeration and mixing in SBR #2 but will operate it in manual mode and there will be no discharge. He will be monitoring the condition of the sludge and bug life over the next few days. A decision will be made later concerning hauling sludge from the tanks and reseeding with new sludge. Enviroserve was contacted to provide help with the clean up effort. The wet well currently still had a petroleum odor. A degreasing product will also be added to the collection system prior to the wet well cleaning. DEP recommended having the oil sheen on the surface of SBR #2 and the digester tank sucked out when the wet well is cleaned. The facility received one effluent sample test result since the fuel contamination. The TSS result for a composite sample taken on January 2 had a result of 38 mg/L. A settleablility test for the sludge in the contaminated digester tank showed poor settling. Until the treatment plant is back in proper operating condition, the DEP requests that the Authority conduct daily composite sampling for all permit parameters and TPH. Nitrite/Nitrate, TKN, and phosphorus can be omitted from the sampling.

03/07/2023:

On Sunday January 1, 2023 the plant was contaminated with an unknown amount of home heating oil. As a result, sludge was removed from one of the SBR tanks and reseeded with mixed liquor from a nearby sewage plant. There were no significant effluent violations as a result of the heating oil contamination. Sludge from the two aerated digesters was recently pressed and sent to the landfill.

01/11/2024:

Since last inspection the pump motor and transducers were replaced in SBR#2. One UV ballast needs to be replaced. The borough performed smoke testing of the collection system last year. Some connected downspouts and broken clean outs were detected. Borough will also be inspecting for manhole leaks.

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 exceeded the design capacity of the treatment system. The maximum average flow data for the DMR reviewed was 0.419 MGD in January 2024. The design capacity of the treatment system is 0.365 MGD. The facility did not exceed the design capacity three consecutive months. However, the months from January 2024 to April 2024 nearly tripped the threshold for three consecutive months exceeding the hydraulic design capacity.

The off-site laboratory used for the analysis of the parameters was Pace Analytical located at 2019 9th Avenue, Altoona, PA 16603.

DMR Data for Outfall 001 (from June 1, 2023 to May 31, 2024)

Parameter	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23
Flow (MGD) Average Monthly	0.186	0.419	0.355	0.324	0.417	0.229	0.159	0.138	0.161	0.167	0.216	0.19
Flow (MGD) Daily Maximum	0.244	0.999	0.852	0.605	0.898	0.44	0.401	0.247	0.328	0.207	0.326	0.263
pH (S.U.) Instantaneous Minimum	6.8	6.8	6.8	6.8	6.8	6.7	6.7	6.9	6.7	6.7	6.7	6.6
pH (S.U.) Instantaneous Maximum	6.8	7.0	6.9	6.9	6.9	6.8	6.9	7.0	7.0	6.9	6.9	6.8
DO (mg/L) Instantaneous Minimum	6.4	3.6	7.8	8.6	6.9	7.8	6.8	6.9	7.3	7.2	7.1	7.5
CBOD5 (lbs/day) Average Monthly	< 5	< 12	< 11	< 9	< 12	< 6	< 5	< 3	< 4.0	< 4	< 8	< 5
CBOD5 (lbs/day) Weekly Average	8	< 25	18	< 12	27	< 9	< 10	< 4	< 4.0	< 5	17	< 6
CBOD5 (mg/L) Average Monthly	< 3.5	< 3.3	< 3.9	< 3	< 3.2	< 3	< 3	< 3.0	< 3.0	< 3	< 4.4	< 3
CBOD5 (mg/L) Weekly Average	5.6	4.1	6.6	< 3	3.9	< 3	< 3	< 3.0	< 3.0	< 3	8.5	< 3
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	114	121	100	150	158	218	225	94	111	109	108	85
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	180	215	135	194	266	303	426	175	184	161	154	100
BOD5 (mg/L) Raw Sewage Influent Average Monthly	81	38	42	63	55	141	159	92	103	93	78	63
TSS (lbs/day) Average Monthly	< 4	< 18	< 9	< 5	< 7	< 5	9	< 2	< 5	< 4	< 3	6
TSS (lbs/day) Raw Sewage Influent Average Monthly	141	87	73	91	164	167	201	125	140	83	71	64
TSS (lbs/day) Raw Sewage Influent Daily Maximum	172	197	117	199	369	379	344	191	180	145	83	95

TSS (lbs/day) Weekly Average	11	30	16	< 7	< 11	7	32	< 2	14	6	5	7
TSS (mg/L) Average Monthly	< 2.5	< 4.8	< 3.3	< 1.6	< 2.6	< 2.4	4.6	< 1.6	< 4.7	< 2.3	< 2	3.5
TSS (mg/L) Raw Sewage Influent Average Monthly	99	38	30	44	57	125	152	124	138	69	50	48
TSS (mg/L) Weekly Average	4.8	10.8	5.6	1.6	5.6	3.6	9.6	< 1.6	13.6	3.6	3	4.4
Fecal Coliform (No./100 ml) Geometric Mean	< 1	< 1	< 1	< 2	< 2	< 1	< 3	3	< 1	< 1	< 3	< 7
Fecal Coliform (No./100 ml) Instantaneous Maximum	1	< 4	4.1	7.4	3.1	2	16	8.6	< 4	4.1	12.1	474.8
Nitrate-Nitrite (mg/L) Average Monthly	8.537	6.209	6.118	6.83	6.403	7.061	9.017	6.028	6.494	6.222	3.468	3.53
Nitrate-Nitrite (lbs) Total Monthly	388	564	487	534	635	444	403	200	232	288	183	170
Total Nitrogen (mg/L) Average Monthly	9.073	6.8028	6.618	7.3596	6.9872	7.561	9.729	6.5384	7.227	6.8421	4.479	4.238
Total Nitrogen (lbs) Effluent Net Total Monthly	411	636	529	579	694	474	448	218	257	317	235	205
Total Nitrogen (lbs) Total Monthly	411	636	529	579	694	474	448	218	257	317	235	205
Total Nitrogen (lbs) Effluent Net Total Annual									< 4942			
Total Nitrogen (lbs) Total Annual									< 4942			
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1295	< 0.1452	< 0.2665	< 0.1584	< 0.1614	< 0.2751	< 0.1	< 0.1	< 0.1	0.1184	< 0.104
Ammonia (lbs) Total Monthly	< 5	< 19	< 12	< 27	< 23	< 12	< 22	< 3	< 4	< 5	< 6	< 5
Ammonia (lbs) Total Annual									< 1822			
TKN (mg/L) Average Monthly	< 0.5	< 0.5943	< 0.5	< 0.5296	< 0.584	< 0.5	< 0.71	< 0.5102	< 0.733	< 0.6205	< 0.936	< 0.709
TKN (lbs) Total Monthly	< 23	< 72	< 42	< 45	< 59	< 31	< 45	< 17	< 25	< 29	< 49	< 35

Total Phosphorus (mg/L) Average Monthly	1.019	0.563	0.528	0.588	0.61	1.15	1.451	1.139	1.22	1.273	1.111	1.5
Total Phosphorus (lbs) Effluent Net Total Monthly	46	65	41	49	65	71	69	39	44	58	56	74
Total Phosphorus (lbs) Total Monthly	46	65	41	49	65	71	69	39	44	58	56	74
Total Phosphorus (lbs) Effluent Net Total Annual									618			
Total Phosphorus (lbs) Total Annual									618			
UV Dosage ($mWsec/cm^2$) Instantaneous Minimum	54.63	24.47	24.47	24.49	24.52	24.55	24.58	24.61	24.64	24.2	24.23	24.26

3.2.1 Chesapeake Bay Truing

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

The Chesapeake Bay Annual Nutrient summaries included offsets in years 2021 to 2023. The consultant was unable to furnish a DEP letter approving the offsets. The offsets were removed.

The facility is able to meet the nitrogen and phosphorus cap loads.

Chesapeake Bay Annual Nutrient Summary
Hyndman Borough
PA0020851

Year for Truing Period (Oct 1 - Sept 30)	Nitrogen (lbs)			Phosphorus (lbs)			Compliant with Permit Limits (Yes/No)	
	Annual Total Mass Load	Lbs Offsets Generated	Annual Net Mass Load	Annual Total Mass Load	Lbs Offsets Generated	Annual Net Mass Load	Nitrogen	Phosphorus
2020	5425		5425	813		813	Yes	Yes
2021	4089		4089	774		774	Yes	Yes
2022	3353		3353	545		545	Yes	Yes
2023	4942		4942	618		618	Yes	Yes

Notes:

Nitrogen Annual Net Mass CAP Load =	7306	lbs
Phosphorus Annual Net Mass CAP Load =	974	lbs

3.3 Non-Compliance

3.3.1 Non-Compliance- NPDES Effluent

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

From the DMR data beginning in February 1, 2020 to July 29, 2024, 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	DISCHARGE_COMMENTS	FACILITY_COMMENTS
6/29/2020	Late DMR Submission	Other Violations								
8/30/2020	Late DMR Submission	Other Violations								
10/27/2020	Violation of permit condition	Effluent	Fecal Coliform	2419	>	1000	No./100 m	Instantaneous Maximum		This lab result is an outlier, possibly due to SBR tank 1 equipment failure. SBR tank 1 has been repaired and placed back in service. FECAL have been in compliance since.....
10/27/2020	Violation of permit condition	Effluent	Total Suspended Solids	140	>	91	lbs/day	Average Monthly		SBR Tank 1 not performing properly. Removed tank from service, drained, found broken end cap on manifold-repaired. Tank cleaned and put back in service. Performing as designed now.
10/27/2020	Violation of permit condition	Effluent	Total Suspended Solids	264	>	45	mg/L	Weekly Average		SBR Tank 1 not performing properly. Removed tank from service, drained, found broken end cap on manifold-repaired. Tank cleaned and put back in service. Performing as designed now
10/27/2020	Violation of permit condition	Effluent	Total Suspended Solids	564	>	137	lbs/day	Weekly Average		SBR Tank 1 not performing properly. Removed tank from service, drained, found broken end cap on manifold-repaired. Tank cleaned and put back in service. Performing as designed now
10/27/2020	Violation of permit condition	Effluent	Total Suspended Solids	74	>	30	mg/L	Average Monthly		SBR Tank 1 not performing properly. Removed tank from service, drained, found broken end cap on manifold-repaired. Tank cleaned and put back in service. Performing as designed now
12/1/2021	Violation of permit condition	Effluent	Dissolved Oxygen	4.7	<	5.0	mg/L	Instantaneous		
12/2/2021		Unauthorized Discharges							This incident was caused from hurricane IDA. The manhole that spilled was on a vacant lot. The water that spilled percolated through the ground around the manhole, covering roughly 400 square ft. The spill did not have any impact on water streams. Once the manhole was done spilling I cleaned up the debris from the area and applied 100lb of hydrated lime to the affected area. Any further questions can be directed to me at 814-842-6883. Thanks, Dale Diehl	

10/27/2021	Violation of permit condition	Effluent	Dissolved Oxygen	3.6	<	5.0	mg/L	Instantaneous		
1/24/2022	Violation of permit condition	Effluent	Dissolved Oxygen	3.6	<	5.0	mg/L	Instantaneous		
6/27/2022		Unauthorized Discharges							Due to excessive rainfall, manhole 401 surcharged from 1400 on May 7th to 1400 on May 8th. Approximately 2000 gallons of diluted raw sewage was spilled around the manhole lid. After the spilling was done we started cleaning around the manhole lid. This consisted of raking about 20 square feet of cleanup around the lid. All the debris was raked up and we applied roughly 10 pounds of lime to the affected area. Any other questions or concerns can be directed to Dale Diehl at 814-842-6883.	
5/9/2022	Other	Other Violations								
8/25/2022	Violation of permit condition	Effluent	Dissolved Oxygen	4.6	<	5.0	mg/L	Instantaneous		
9/28/2022	Violation of permit condition	Effluent	Total Suspended Solids	150	>	45	mg/L	Weekly Average		
9/28/2022	Violation of permit condition	Effluent	Total Suspended Solids	259	>	137	lbs/day	Weekly Average		
9/28/2022	Violation of permit condition	Effluent	Total Suspended Solids	37.8	>	30	mg/L	Average Monthly		
1/5/2023		Unauthorized Discharges							On January 1st 2023 at 1100, during a routine plant visit the operator at Hyndman WWTP noticed what appeared to be heating fuel oil in the comminutor at the treatment plant. After further investigation the fuel oil had been found to have been pumped into SBR Tank #2, which was in fill mode, SBR#1 having been in decant at the time. SBR Tank #2 was then taken offline when it was filled up to isolate the spill, and SBR Tank #1 was put into storm mode. At 1145 the comminutor was receiving a milky, foaming appearance which was assumed to be degreaser. The operator and responsible operator then traced the spill upstream and found we had fuel oil odor through manhole 124, which is an interceptor manhole from Londonderry Township Authority coming from SR. 96 south of town. Due to not having legal access to Londonderry Township's collection system, that is where the operators stopped. No further investigation was done at this time, with only SBR Tank #2 being isolated with the contamination. On January 2nd, 2023 at 0600 the operator reported to work at the WWTP and found an additional amount of oil had been discharged to the treatment plant and now appeared to be in SBR Tank #1 also. The U.V tank was put on constant at 100% and the blower was turned off at this time to allow the contaminates to rise to the surface to limit discharge. at this time Sharon Shaffer of HBMA was contacted. Pig mats were placed on tanks to soak up the oil. Tobias Nagle of Stiffler-McGraw was contacted at 1130 for consulting. Dale Diehl, lead operator, called to report to DEP at approx. 0630 and talked to Lynn Sheets who referred him to Sarah Wigglesworth. At this time further investigation by the borough and Steve Stouffer of Londonderry Township was being conducted. There were no further traced of the spill, but still odor, this being at 1000. The influent wet well was cleaned out with a bucket and secured while placing absorbent pads to soak up the residual fuel. // Tuesday January 3rd, 2023 Bedford County was notified at 1000 to obtain more absorbent pads. Fred Clark of DEP arrived at 1130 to assess and monitor the situation. Tyler McGraw of Stiffler-McGraw and Bedford County Control also arrived to 1200. Bedford County Control arrived with absorbent pads for the WWTP. More absorbent pads were then placed on SBR Tank #1, the tank still in service. Fred was doing sampling while Dale Diehl was making contacts for removal and cleanup of the contamination. 2 companies, Clear Creek and Northridge agreed that they could handle the cleanup, but could not get anyone onsite to take a look until January 4th 2023. Tobias Nagle was in constant contact by phone, not being able to get onsite until Jan. 4th 2023. Wednesday Jan. 4th 2023 0500, weekly plant sampling was done along with TPH in the effluent and delivered to Fairway Labs of Altoona for analysis. 0900 Enviroserv and Tobias Nagle of Stiffler-McGraw arrived to assess the situation and gather information on how and how soon cleanup could begin. Enviroserv stated they could pump, clean, and haul the contaminated material to a treatment plant designated for the treatment. They are to get back to us this afternoon, pending being able to secure "frac" boxes to haul in. The operators, Dale and Tyler, have been monitoring discharges for clarity and pH. PH range has maintained steady at 7.2. Tobias Nagle is bringing lab equipment to establish a profile on both SBR tanks and 1 contaminated	

1/10/2023		Unauthorized Discharges							Thursday January 5th 2023 0500- Dale arrives at WWTP. SBR #1 is still operating in storm mode with flow of .400 MGD. 0700 Dale called Fred Clark to inform him of where we are with operating in storm mode and where we are in regards to having a contractor to come take care of the cleanup. Fred recommended that Dale get in touch with Jeremy Miller from PA DEP Outreach, which he did. At 0800 Tobias Nagle arrived with Amy Sipes and did profiling with a sludge judge in both SBR tanks and the digester. He also took samples during a decant cycle at 1230 for immediate analysis. Dale also called Fairway Labs. To set up more sampling events, each Monday, Wednesday, and Friday until further notice. By 1400 Dale had not heard back from Enviroserve. Dale reached out to them, but he had to leave a message. Friday January 6th 2023 0500 Dale arrives at WWTP and checks pH at outfall, result was 7.18. 0700 Dale makes up TPH samples from digester #2, SBR #2, which were both put under aeration for 20 minutes prior to sampling. The air was then turned off to both the digester and SBR tank. At 0900 the influent wet well pumps were turned off to raise the tank level to allow us to remove more grease, and then more absorbent pads were placed on the wet well and the pumps were turned back on. At the same time a TPH sample was also taken from the influent, just after the comminutor, and another TPH sample was taken from the plant effluent at our U.V tank. At 1030 an additional fecal sample was also taken at the discharge end of our U.V tank, then all samples were sent to Fairway Labs. For analysis. 1250 we received an email from Scott Slodysco of Enviroserve confirming the date of our influent wet well to be serviced on Thursday, January 12th 2023. PH is sampled at U.V tank hourly and is maintaining 7.1 – 7.2. Influent pH was also sampled at 7.2. At 1400 Fred Clark from DEP and Tobias Nagle arrives from Stiffler McGraw for an update on our situation. After considerable discussion, and with the knowledge that the biological activity at our plant could be brough back, we brought our blower + mixing pump back online. Doing this we are now required to do daily sampling for TSS, BOD, and TPH in the influent. Along with daily samples on the plant effluent for TSS, cBOD, phosphorus, ammonia, fecal coliform, and TPH. The HBMA has developed a strategy to address the cleanup process that we strongly believe will bring the treatment plant back to acceptable operation. Saturday January 7th 2023 At 0700 samples for influent TSS, BOD, and TPH, as well as effluent TSS, cBOD, ammonia, phosphorus, fecal coliform and TPH were made and sent to Fairway Labs. At 0930 manhole 124 was treated with bacteria specifically for FOG (Fats, Oils, and Grease). Sunday January 8th 2023 At 0500 Dale preformed a settle test on SBR #1. Results were 56-38-29 at 5-10-15 minute intervals. Biological activity sparse but still showing activity. At 0700 samples for influent TSS, BOD, and TPH, as well as effluent TSS, cBOD, ammonia, phosphorus, fecal coliform and TPH were made. Monday January 9th 2023 At 0300 settle tests and microscope examination	
2/27/2023	Violation of permit condition	Effluent	Fecal Coliform	14136	>	10000	No./100 m	Instantaneous		
3/1/2023	Violation of permit condition	Other Violations								
3/1/2023	Violation of permit condition	Other Violations								
3/1/2023	Violation of permit condition	Other Violations								
5/21/2024	Violation of permit condition	Effluent	Dissolved Oxygen	3.6	<	5.0	mg/L	Instantaneous		
4/8/2024		Unauthorized Discharges							Manhole 401 was hydraulically overloaded from excessive rainfall. Operator Tyler Smith was notified that the manhole was spilling around 9 am on 4/3/24. Manhole 401 continued spilling throughout the rest of the day on 4/4/24. Operator was notified that the spill had stopped around 12am on 4/5/24 by a resident that lives near manhole 401. On 4/5/24 at 2 pm all debris from the overflow was cleaned up and roughly 25lb of hydrated lime was applied to the area surrounding the previously overflowing manhole.	

4/8/2024		Unauthorized Discharges							Manhole 402 was hydraulically overloaded from excessive rainfall. Operator Tyler Smith noticed the manhole spilling around 1000 am on 4/3/24. Tyler was told by a resident that lives near manhole 402 that the spill had stopped around 12am on 4/4/24. On 4/4/24 at 2 pm all debris from the overflow was cleaned up and roughly 10lb of hydrated lime was applied to the area surrounding the previously overflowing manhole.	
4/8/2024		Unauthorized Discharges							Manhole 404 was hydraulically overloaded from excessive rainfall. Operator Tyler Smith noticed the manhole spilling around 1000 am on 4/3/24. Tyler last observed manhole 404 around 11 pm on 4/3/24 and the overflow had stopped by then. On 4/4/24 at 1 pm all debris from the overflow was cleaned up and roughly 10lb of hydrated lime was applied to the area surrounding the previously overflowing manhole.	
4/8/2024		Unauthorized Discharges							Manhole 406 was hydraulically overloaded from excessive rainfall. Operator Tyler Smith noticed the manhole spilling around 10 am on 4/3/24. Tyler last observed manhole 406 around 10 pm on 4/3/24 and the overflow had stopped by then. On 4/4/24 at 12 pm all debris from the overflow was cleaned up and roughly 10lb of hydrated lime was applied to the area surrounding the previously overflowing manhole.	

3.3.2 Non-Compliance- Enforcement Actions

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

Beginning in February 1, 2020 to July 29, 2024, there were no observed enforcement actions.

3.4 Summary of Biosolids Disposal

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

2023
Sewage Sludge / Biosolids Production Information

Hauled Off-Site			
2023	Tons Dewatered	% Solids	Dry Tons
January	38.04	13	4.95
February	0		
March	0		
April	0		
May	0		
June	0		
July	0		
August	0		
September	0		
October	0		
November	0		
December	45.75	14.1	6.45

Notes:
Biosolids/sewage sludge disposed at Mostoller Landfill in Somerset County

3.5 Open Violations

No open violations existed as of August 2024.

4.0 Receiving Waters and Water Supply Information Detail Summary

4.1 Receiving Waters

The receiving waters has been determined to be Willis Creek. Willis Creek travels past the Maryland Border.

4.2 Public Water Supply (PWS) Intake

The closest PWS to the subject facility is Wilson Water Treatment located approximately 90 miles downstream of the subject facility on the Potomac River (abstracted from October 2019 fact sheet). Based upon the distance and the flow rate of the facility, the PWS should not be impacted.

4.3 Class A Wild Trout Streams

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

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

4.4 2024 Integrated List of All Waters (303d Listed Streams)

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

States or the U.S. Environmental Protection Agency (EPA) must determine the conditions that would return the water to a condition that meets water quality standards. As a follow-up to listing, the state or EPA must develop a Total Maximum Daily Load (TMDL) for each waterbody on the list. A TMDL identifies allowable pollutant loads to a waterbody from both point and non-point sources that will prevent a violation of water quality standards. A TMDL also includes a margin of safety to ensure protection of the water.

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

The receiving waters is listed in the 2024 Pennsylvania Integrated Water Quality Monitoring and Assessment Report as a Category 2 waterbody. The surface waters is an attaining stream that supports aquatic life. The designated use has been classified as protected waters for 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.

Previous Fact Sheets utilized the Evitts Creek near Centerville, PA stream gauge to estimate Q710 flows. The stream gauge at Willis Creek below Hyndman, PA is within the general facility of the outfall. However, the stream gauge has data from 1951 to 1967. This gauge station was not utilized for estimating flows since monitoring was stopped in 1967.

This Fact Sheet utilized StreamStats to estimate Q710.

The low flow yield is 0.0313 $ft^3/s/mi^2$ and the Q710 is 4.57 ft^3/s.

The hardness of the stream was estimated by collecting a sample upstream of the facility. The sampling result was 34.5 mg/l $CaCO_3$.

4.6 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.18
Latitude	39º 48' 43.29"	Longitude	-78º 43' 1.16"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		

Receiving Waters	Wills Creek (CWF)	Stream Code	61864
NHD Com ID	45642991	RMI	14.4
Drainage Area	146	Yield (cfs/mi^2)	0.0313
Q_{7-10} Flow (cfs)	4.57	Q_{7-10} Basis	StreamStats
Elevation (ft)	897	Slope (ft/ft)	
Watershed No.	13-A	Chapter 93 Class.	CWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s) for aquatic life		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status	Not applicable	Name	

Background/Ambient Data		Data Source
pH (SU)	7.0	Default
Temperature (°C)	20	Default
Hardness (mg/L)	34.5	NPDES application
Other:		

Nearest Downstream Public Water Supply Intake		Wilson Water Treatment Plant	
PWS Waters	Potomac River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	90

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)***	***(Modeling Point #2)***	***Units***
Stream Code	61864	61864	
River Mile Index	14.4	12.32	miles
Elevation	897	823	feet
Latitude	39.811667	39.786081	
Longitude	-78.717264	-78.725667	
Drainage Area	146	150	sq miles
Low Flow Yield	0.0313	0.0313	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 does not discharge into a local TMDL.

5.4.1.2 Chesapeake Bay TMDL Requirement

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

Most of the Chesapeake Bay and many of its tidal tributaries have been listed as impaired under Section 303(d) of the federal Water Pollution Control Act ("Clean Water Act"), 33 U.S.C. § 1313(d). While the Chesapeake Bay is outside the boundaries of Pennsylvania, more than half of the State lies within the watershed. Two major rivers in Pennsylvania are part of the Chesapeake Bay Watershed. They are (a) the Susquehanna River and (b) the Potomac River. These two rivers total 40 percent of the entire Chesapeake Bay watershed.

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

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

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

Phase 3 WIP provides an update on Chesapeake Bay TMDL implementation activities for point sources and DEP's current implementation strategy for wastewater. The latest revision of the supplement was September 13, 2021.

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

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

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

Cap Loads will be established in permits as Net Annual TN and TP loads (lbs/yr) that apply during the period of October 1 – September 30. For facilities that have received Cap Loads in any other form, the Cap Loads will be modified accordingly when the permits are renewed.

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

Based upon the supplement the subject facility has been categorized as a Sector 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.

Due to the Chesapeake Bay WIP, this facility is subject to Sector C monitoring requirements. Monitoring for nitrogen species and phosphorus shall be at least 1x/week.

Reporting

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

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

5.5 Anti-Degradation Requirement

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

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

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

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

5.6 Anti-Backsliding

Anti-backsliding is a federal regulation which prohibits a permit from being renewed, reissued, or modified containing effluent limitations which are less stringent than the comparable effluent limitations in the previous permit (40 CFR 122.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, (c) Toxics, and (d) Chapter 92a.61 targeted parameters

6.1.1 Conventional Pollutants and Disinfection

Summary of Proposed NPDES Parameter Details for Conventional Pollutants and Disinfection
Hyndman WWTP; PA0020851

Parameter	Permit Limitation Required by[1]:	Recommendation	
pH (S.U.)	TBEL	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits may range from pH = 6.0 to 9.0
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 95.2(1).
Dissolved Oxygen	BPJ	Monitoring:	The monitoring frequency shall be daily as a grab sample (Table 6-3).
		Effluent Limit:	Effluent limits shall be greater than 5.0 mg/l.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by best professional judgement.
CBOD	TBEL	Monitoring:	The monitoring frequency shall be 1x/wk as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 76 lbs/day and 25 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(1). WQM modeling indicates that the TBEL is more stringent than the WQBEL. Thus, the permit limit is confined to TBEL.
TSS	TBEL	Monitoring:	The monitoring frequency shall be 1/wk as a 24-hr composite sample (Table 6-3).
		Effluent Limit:	Effluent limits shall not exceed 91 lbs/day and 30 mg/l as an average monthly.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(1). While there is no WQM modeling for this parameter, the permit limit for TSS is generally assigned similar effluent limits as CBOD or BOD.
UV disinfection	SOP	Monitoring:	The monitoring frequency is 1/day. The facility will be required to record the UV dosage.
		Effluent Limit:	No effluent requirements.
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised January 10, 2019), the facility will be required to have routine monitoring for UV transmittance, UV dosage, or UV intensity.
Fecal Coliform	TBEL	Monitoring:	The monitoring frequency shall be 1x/wk as a grab sample (Table 6-3).
		Effluent Limit:	Summer effluent limits shall not exceed 200 No./100 mL as a geometric mean. Winter effluent limits shall not exceed 2000 No./100 mL as a geometric mean.
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.47(a)(4) and 92a.47(a)(5).
E. Coli	SOP; Chapter 92a.61	Monitoring:	The monitoring frequency shall be 1x/quarter as a grab sample (SOP).
		Effluent Limit:	No effluent requirements.
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised March 22, 2019) and under the authority of Chapter 92a.61, the facility will be required to monitor for E.Coli.

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 0.365 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

Hyndman WWTP; PA0020851

Parameter	Permit Limitation Required by[1]:	Recommendation	
Ammonia-Nitrogen	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.
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 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/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	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.
Net Total Nitrogen	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/wk as a calculation
		Effluent Limit:	Effluent limits shall not exceed 7,306 lbs/yr
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/yr.
Net Total Phosphorus	Chesapeake Bay TMDL	Monitoring:	The monitoring frequency shall be 1x/wk as a calculation
		Effluent Limit:	Effluent limits shall not exceed 974 lbs/yr
		Rationale:	Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/yr.

Notes:

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

2 Monitoring frequency based on flow rate of 0.365 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 Management Spreadsheet was conducted to evaluate reasonable potential. No reasonable potential was present.

6.1.3.1 Implementation of Regulation- Chapter 92a.61

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

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

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

Summary of Proposed NPDES Parameter Details for polluants monitored under Chapter 92a.61			
Hyndman WWTP; PA0020851			
Parameter	**Permit Limitation Required by[1]:**	**Recommendation**	
E. Coli	SOP; Chapter 92a.61	Monitoring:	The monitoring frequency shall be 1x/month as a grab sample (SOP).
		Effluent Limit:	No effluent requirements.
		Rationale:	Consistent with the SOP- Establishing Effluent Limitations for Individual Sewage Permits (Revised Febraury 5, 2024) 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 0.365 MGD.			
3 Table 6-3 (Self Monitoring Requirements for Sewage Discharges) in Technical Guidance for the Development and Specification of Effluent			
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.

- **Due to the EPA triennial review, monitoring for E. coli is required.**

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** 39° 48' 42.00" , **Longitude** 78° 43' 2.00" , **River Mile Index** 14.4 , **Stream Code** 61864

Receiving Waters: Wills Creek (CWF)

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	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	76	122	XXX	25	40	50	1/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids	91	137	XXX	30	45	60	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	Grab

Outfall 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	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Ultraviolet light dosage (mWsec/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded

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** 39° 48' 42.00" , **Longitude** 78° 43' 2.00" , **River Mile Index** 14.4 , **Stream Code** 61864

Receiving Waters: Wills Creek (CWF)

Type of Effluent: Sewage Effluent

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Net Total Nitrogen	XXX	7306	XXX	XXX	XXX	XXX	1/year	Calculation
Net Total Phosphorus	XXX	974	XXX	XXX	XXX	XXX	1/year	Calculation

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

at Outfall 001

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

6.3.2 Summary of Proposed Permit Part C Conditions

The subject facility has the following Part C conditions.

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

Tools and References Used to Develop Permit	
☒	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, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 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, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 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, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP:
☐	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]
01583500	Western Run at Western Run, Md.	39.511	-76.677	59.8	N
01583600	Beaverdam Run at Cockeysville, Md.	39.486	-76.646	20.9	N
01584050	Long Green Creek at Glen Arm, Md.	39.455	-76.479	9.40	N
01584500	Little Gunpowder Falls at Laurel Brook, Md.	39.505	-76.432	36.1	N
01585095	North Fork Whitemarsh Run near White Marsh, Md.	39.386	-76.469	1.34	N
01585100	Whitemarsh Run at White Marsh, Md.	39.371	-76.446	7.61	N
01585200	West Branch Herring Run at Idlewylde, Md.	39.374	-76.584	2.13	N
01585300	Stemmers Run at Rossville, Md.	39.341	-76.488	4.46	N
01585400	Brien Run at Stemmers Run, Md.	39.334	-76.473	1.97	N
01585500	Cranberry Branch near Westminster, Md.	39.593	-76.968	3.29	LF
01586000	North Branch Patapsco River at Cedarhurst, Md.	39.504	-76.885	56.6	LF
01586210	Beaver Run near Finksburg, Md.	39.489	-76.903	14.0	N
01586610	Morgan Run near Louisville, Md.	39.452	-76.955	28.0	N
01587500	South Branch Patapsco River at Henryton, Md.	39.351	-76.914	64.4	N
01589000	Patapsco River at Hollofield, Md.	39.310	-76.792	285	Y
01589100	East Branch Herbert Run at Arbutus, Md.	39.24	-76.692	2.47	N
01589300	Gwynns Falls at Villa Nova, Md.	39.346	-76.733	32.5	N
01589330	Dead Run at Franklintown, Md.	39.311	-76.717	5.52	N
01589440	Jones Falls at Sorrento, Md.	39.392	-76.661	25.2	N
01589500	Sawmill Creek at Glen Burnie, Md.	39.17	-76.631	4.97	LF
01594930	Laurel Run at Dobbin Road near Wilson, Md.	39.244	-79.428	8.23	N
01594936	North Fork Sand Run near Wilson, Md.	39.260	-79.410	1.91	N
01594950	McMillan F near Fort Pendleton, Md.	39.277	-79.390	2.30	N
01595000	North Branch Potomac River at Steyer, Md.	39.302	-79.307	73.1	N
01595200	Stony River near Mount Storm, W.Va.	39.270	-79.262	48.7	Y
01595300	Abram Creek at Oakmont, W.Va.	39.367	-79.179	42.6	N
01595500	North Branch Potomac River at Kitzmiller, Md.	39.394	-79.182	225	N
01595800	North Branch Potomac River at Barnum, W.Va.	39.445	-79.111	266	Y
01596500	Savage River near Barton, Md.	39.570	-79.102	49.1	N
01597000	Crabtree Creek near Swanton, Md.	39.500	-79.159	16.7	N
01597500	Savage River below Savage River Dam near Bloomington, Md.	39.503	-79.124	106	Y
01598500	North Branch Potomac River at Luke, Md.	39.479	-79.064	406	Y
01599000	Georges Creek at Franklin, Md.	39.494	-79.045	72.4	N
01600000	North Branch Potomac River at Pinto, Md.	39.567	-78.840	607	Y
01601000	Wills Creek below Hyndman, Pa.	39.812	-78.716	146	N
01601500	Wills Creek near Cumberland, Md.	39.670	-78.788	247	N
01603000	North Branch Potomac River near Cumberland, Md.	39.622	-78.773	877	Y
01603500	Evitts Creek near Centerville, Pa.	39.790	-78.646	30.2	N
01604500	Patterson Creek near Headsville, W.Va.	39.443	-78.822	221	N
01609000	Town Creek near Oldtown, Md.	39.553	-78.555	148	N
01610000	Potomac River at Paw Paw, W.Va.	39.539	-78.456	3,129	N
01610155	Sideling Hill Creek near Bellegrove, Md.	39.650	-78.344	102	N
01611500	Cacapon River near Great Cacapon, W.Va.	39.582	-78.310	675	N
01613000	Potomac River at Hancock, Md.	39.698	-78.178	4,064	N
01613050	Tonoloway Creek near Needmore, Pa.	39.898	-78.132	10.7	N

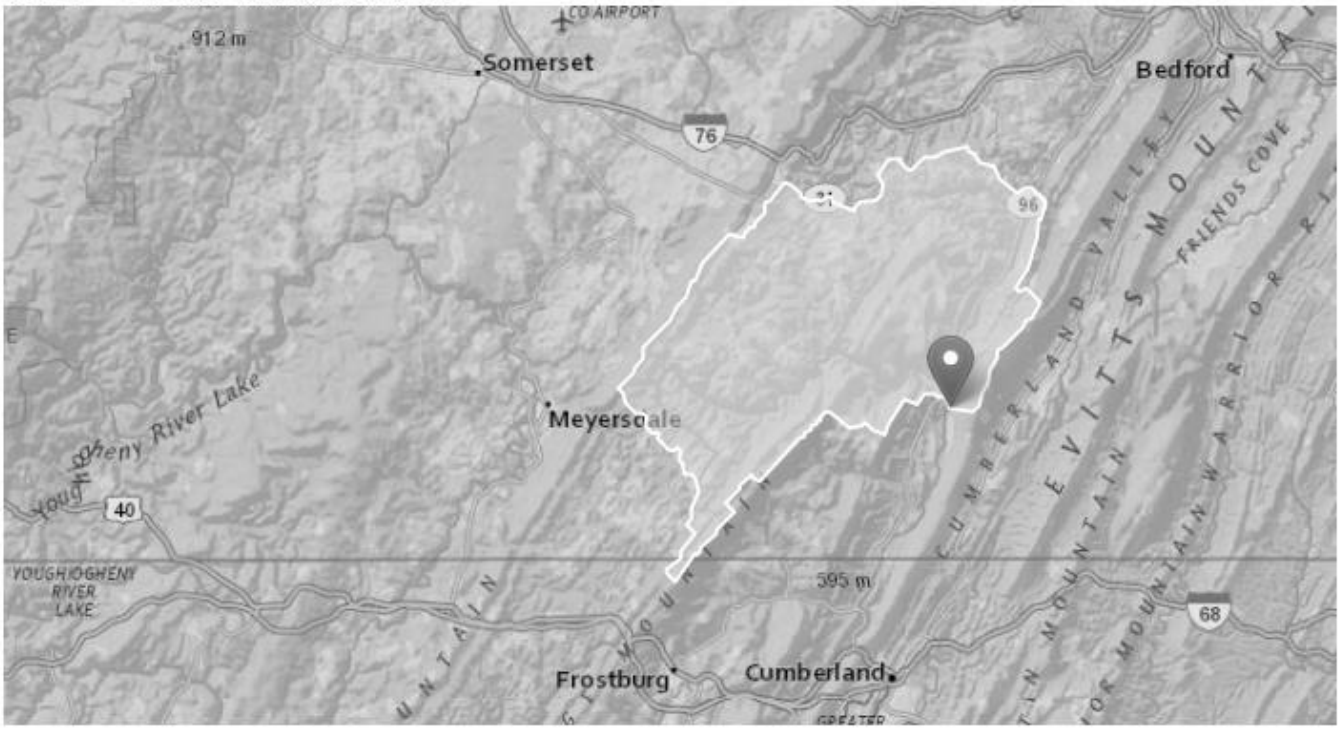
Table 2. Selected low-flow statistics for streamgage locations in and near Pennsylvania.—Continued

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

Streamgage number	Period of record used in analysis[1]	Number of years used in analysis	1-day, 10-year (ft³/s)	7-day, 10-year (ft³/s)	7-day, 2-year (ft³/s)	30-day, 10-year (ft³/s)	30-day, 2-year (ft³/s)	90-day, 10-year (ft³/s)
[4]01583500	1946–2008	63	9.6	10.7	24.0	13.4	26.9	17.5
[4]01583600	1984–2008	25	4.9	5.6	9.6	7.3	11.6	9.6
[4]01584050	1977–2008	32	1.5	1.6	3.3	1.9	3.7	2.5
[4]01584500	1928–2008	52	5.9	6.5	16.2	8.2	17.8	10.9
[4]01585095	1994–2008	15	0	0	.1	.1	.2	.4
[4]01585100	1960–2008	45	.3	.5	1.0	.9	1.7	2.3
[4]01585200	1959–2008	39	.1	—	—	.3	.6	.7
[4]01585300	1960–1989	28	.1	.1	.3	.3	.7	1.0
[4]01585400	1960–1987	28	.2	.2	.4	.2	.5	.6
[4]01585500	1951–2008	58	.1	.2	.7	.3	1.0	.5
[4]01586000	1947–2008	61	7.1	8.2	18.8	11.0	21.0	15.8
[4]01586210	1984–2008	25	1.3	1.5	4.5	2.5	5.0	3.7
[4]01586610	1984–2008	25	2.6	2.9	8.2	4.1	9.2	6.2
[4]01587500	1950–1980	31	4.3	5.3	19.8	8.9	20.9	14.4
[4]01589000	[2]1956–2004	41	12.6	14.6	34.1	19.6	40.1	27.5
[4]01589000	[3]1946–1954	9	57.0	70.8	108	84.7	130	117
[4]01589100	1959–2008	40	0.3	0.4	0.6	0.5	0.9	1.0
[4]01589300	1958–2008	42	3.3	3.8	8.1	5.7	10.8	9.1
[4]01589330	1961–2008	36	.2	.3	.6	.5	1.0	1.2
[4]01589440	1967–2008	33	3.3	3.5	8.4	4.6	9.8	6.6
[4]01589500	1946–2008	31	.1	.1	2.1	.2	2.5	.4
[4]01594930	1982–2004	23	1.2	1.6	3.0	2.1	3.9	2.9
[4]01594936	1982–2007	26	.1	.1	.3	.2	.4	.3
[4]01594950	1988–2008	21	<.1	<.1	.1	<.1	.2	.1
[4]01595000	1958–2008	51	4.8	6.4	14.7	9.8	21.8	17.4
[5]01595200	1963–2008	46	2.0	2.9	5.9	3.8	8.4	6.8
01595300	1958–1982	25	.4	.5	2.5	1.0	4.2	2.6
[4]01595500	1951–2008	39	11.7	14.2	32.4	22.0	47.7	37.1
01595800	[3]1968–1981	14	18.6	21.1	43.4	30.0	63.0	57.9
[4]01596500	1950–2008	59	.8	1.0	2.4	1.6	3.7	3.0
[4]01597000	1950–1981	32	1.0	1.1	1.7	1.3	2.0	1.7
[4]01597500	1952–2008	57	5.4	7.3	24.9	13.0	37.8	28.1
[4]01598500	[2]1952–2008	57	71.4	78.3	143	90.8	164	109
[4]01599000	1907–2008	78	2.9	3.2	6.1	4.0	7.7	5.6
[4]01600000	[2]1952–2008	38	76.6	83.4	133	95.6	160	115
[4]01600000	[3]1940–1950	11	38.2	43.4	70.7	49.7	91.6	87.4
01601000	1953–2008	20	.9	1.0	3.0	2.1	6.2	4.6
[4]01601500	1907–2008	78	13.1	13.9	23.4	16.5	29.0	23.2
[4]01603000	[2]1983–2008	26	202	212	304	235	352	266
[4]01603000	[3]1931–1981	51	57.4	64.7	143	79.2	168	119
01603500	1934–1982	49	1.7	1.8	3.0	2.2	3.7	2.8
[5]01604500	1940–2008	69	2.2	2.7	6.9	4.4	9.7	7.1
[4]01609000	1930–2008	22	1.5	1.9	6.6	3.0	10.0	6.2
01610000	1940–2008	69	226	239	381	278	459	369
[4]01610155	1969–2008	18	0	0	.2	.1	1.0	1.0

StreamStats Report

Region ID: PA
Workspace ID: PA20240726135605449000
Clicked Point (Latitude, Longitude): 39.81127, -78.71756
Time: 2024-07-26 09:56:28 -0400



Hyndman WWTP PA0020851 Modeling Point #1 July 2024

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0.87	percent
DRNAREA	Area that drains to a point on a stream	146	square miles
PRECIP	Mean Annual Precipitation	39	inches
ROCKDEP	Depth to rock	3.8	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.01	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	146	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	39	inches	35	50.4
STRDEN	Stream Density	2.01	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	3.8	feet	3.32	5.65
CARBON	Percent Carbonate	0.87	percent	0	99

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

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

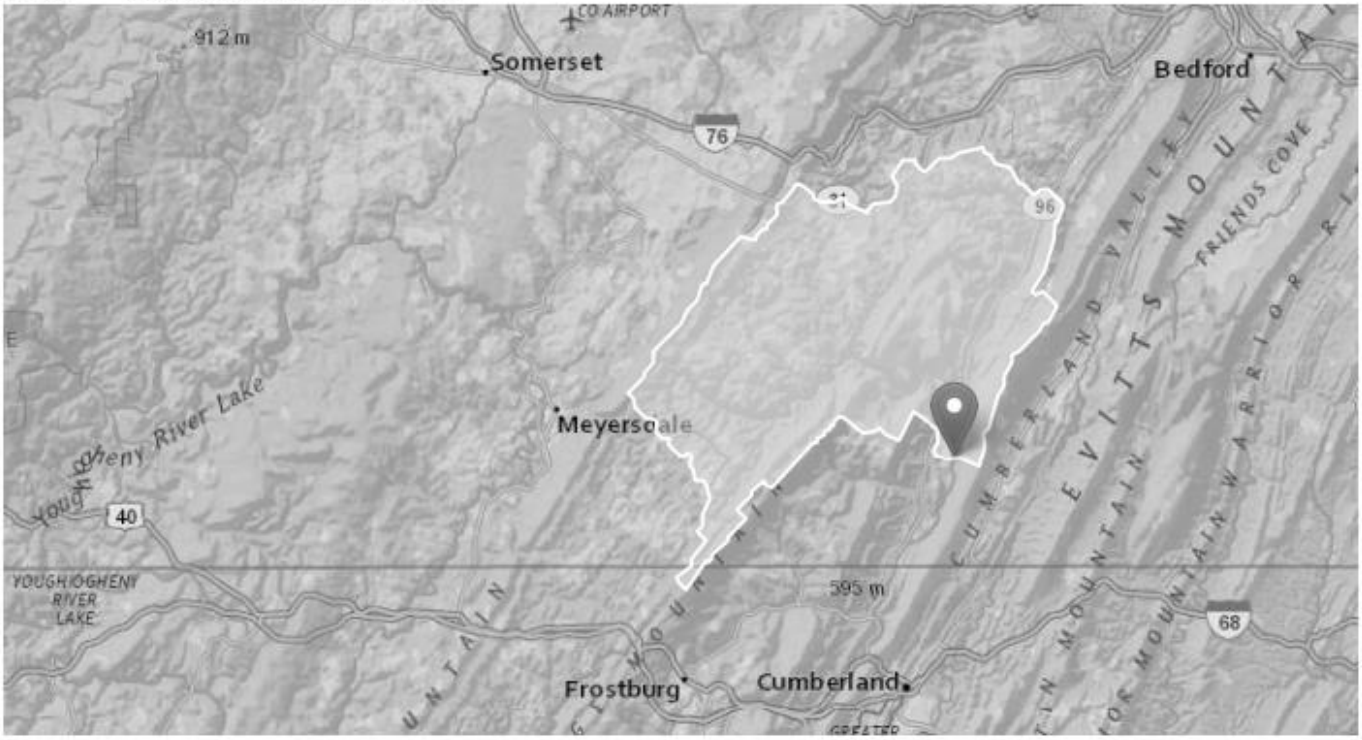
Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	10.7	ft^3/s	38	38
30 Day 2 Year Low Flow	15.3	ft^3/s	33	33
7 Day 10 Year Low Flow	4.57	ft^3/s	51	51
30 Day 10 Year Low Flow	6.72	ft^3/s	46	46
90 Day 10 Year Low Flow	11.4	ft^3/s	36	36

Low-Flow Statistics Citations

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

StreamStats Report

Region ID: PA
Workspace ID: PA20240726135956652000
Clicked Point (Latitude, Longitude): 39.78593, -78.72575
Time: 2024-07-26 10:00:19 -0400



Hyndman WWTP PA0020851 Modeling Point #2 July 2024

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	1.14	percent
DRNAREA	Area that drains to a point on a stream	150	square miles
PRECIP	Mean Annual Precipitation	39	inches
ROCKDEP	Depth to rock	3.8	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.01	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	150	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	39	inches	35	50.4
STRDEN	Stream Density	2.01	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	3.8	feet	3.32	5.65
CARBON	Percent Carbonate	1.14	percent	0	99

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

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

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	11.1	ft^3/s	38	38
30 Day 2 Year Low Flow	15.8	ft^3/s	33	33
7 Day 10 Year Low Flow	4.74	ft^3/s	51	51
30 Day 10 Year Low Flow	6.96	ft^3/s	46	46
90 Day 10 Year Low Flow	11.8	ft^3/s	36	36

Low-Flow Statistics Citations

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

Attachment B

WQM 7.0 Modeling Output Values
Toxics Management Spreadsheet Output Values

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
13A	61864	WILLS 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)
14.400	Hyndman WWTP	PA0020851	0.365	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			5

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
13A	61864	WILLS 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
14.400	Hyndman WWTP	15.67	50	15.67	50	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
14.400	Hyndman WWTP	1.84	25	1.84	25	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
14.40	Hyndman WWTP	25	25	25	25	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
13A	61864	WILLS CREEK	**14.400**	897.00	146.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.031	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Hyndman WWTP	PA0020851	0.3650	0.3650	0.3650	0.000	25.00	7.00

Parameter Data

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

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
13A	61864	WILLS CREEK	**12.320**	823.00	150.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.031	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	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
13A	61864	WILLS CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
14.400	0.365	20.550	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
38.742	0.737	52.572	0.180
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
4.53	0.710	2.75	0.730
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.886	11.665	Tsivoglou	5
Reach Travel Time (days)			
0.707			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.071	4.30	2.61	7.89
0.141	4.09	2.48	7.92
0.212	3.88	2.35	7.97
0.283	3.69	2.24	8.02
0.353	3.50	2.12	8.07
0.424	3.33	2.02	8.12
0.495	3.16	1.92	8.16
0.565	3.00	1.82	8.16
0.636	2.85	1.73	8.16
0.707	2.71	1.64	8.16

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
13A	61864	WILLS 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												
14.400	4.57	0.00	4.57	.5647	0.00674	.737	38.74	52.57	0.18	0.707	20.55	7.00
Q1-10 Flow												
14.400	2.92	0.00	2.92	.5647	0.00674	NA	NA	NA	0.14	0.877	20.81	7.00
Q30-10 Flow												
14.400	7.31	0.00	7.31	.5647	0.00674	NA	NA	NA	0.23	0.556	20.36	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☐
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.6	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Hyndman Borough MA** NPDES Permit No.: **PA0020851** 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
0.365	34.5	6.825						

					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		252									
	Chloride (PWS)	mg/L		42.8									
	Bromide	mg/L	<	0.011									
	Sulfate (PWS)	mg/L		40.8									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	mg/L		0.00292									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	mg/L	<	0.000172									
	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	mg/L		0.0184									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Hyndman Borough MA, NPDES Permit No. PA0020851, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Willis 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	061864	14.4	897	146			Yes
End of Reach 1	061864	12.32	823	150			Yes

$Q_{7\text{-}10}$

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	14.4	0.0313										100	7		
End of Reach 1	12.32	0.0313										100	7		

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	14.4														
End of Reach 1	12.32														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Hyndman Borough MA, NPDES Permit No. PA0020851, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.691 Analysis Hardness (mg/l): 90.069 Analysis pH: 6.97

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	12.178	12.7	83.7	Chem Translator of 0.96 applied
Total Lead	0	0		0	57.619	71.5	471	Chem Translator of 0.806 applied
Total Zinc	0	0		0	107.242	110	723	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 31.382 PMF: 1 Analysis Hardness (mg/l): 92.797 Analysis pH: 6.98

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	8.402	8.75	79.6	Chem Translator of 0.96 applied
Total Lead	0	0		0	2.320	2.89	26.3	Chem Translator of 0.802 applied
Total Zinc	0	0		0	110.888	112	1,023	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 31.382 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): 12.254 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

☑ ***Other Pollutants without Limits or Monitoring***

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Copper	0.054	mg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	N/A	N/A	Discharge Conc < TQL
Total Zinc	0.46	mg/L	Discharge Conc ≤ 10% WQBEL