pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0261106**
Facility Type	**Industrial**	APS ID	**639034**
Major / Minor	**Minor**	Authorization ID	**1274441**

NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

Applicant and Facility Information

Applicant Name	**Voith Hydro Inc.**	Facility Name	**Voith Siemens Hydro**
Applicant Address	PO Box 15002	Facility Address	716 East Berlin Road
	York, PA 17405		York, PA 17405
Applicant Contact	Amy Smith	Facility Contact	Amy Smith
Applicant Phone	(717) 792-7533	Facility Phone	(717) 792-7533
Client ID	78515	Site ID	510374
SIC Code	3339	Municipality	West Manchester Township
SIC Description	Manufacturing - Primary Nonferrous Metals, Nec	County	York
Date Application Received	May 6, 2019	EPA Waived?	Yes
Date Application Accepted	October 7, 2019	If No, Reason	

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

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / Environmental Engineer Nick Hong (via electronic signature)	February 11, 2022
x		Daniel W. Martin, P.E. / Environmental Engineer Manager Maria D. Bebenek for	March 1, 2022
x		Maria D. Bebenek, P.E. / Environmental Program Manager Maria D. Bebenek	March 1, 2022

Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the Voith Hydro, Inc. located at 716 East Berlin Road, York, PA 17405 in York County, municipality of West Manchester. The existing permit became effective on November 1, 2014 and expired on October 31, 2019. The application for renewal was received by DEP Southcentral Regional Office (SCRO) on October 7, 2019. An amended application was submitted on December 8, 2021.

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

The subject facility is a 0.15 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 an Industrial Wastewater due to the type of wastewater and the design flow rate for the facility. The applicant disclosed the Act 14 requirement to York County Commissioners and West Manchester Township and the notice was received by the parties on April 23, 2019.

Utilizing the DEP's web-based Emap-PA information system, the receiving waters has been determined to be Tributary 0805 to Codorus Creek. The sequence of receiving streams that Tributary 0805 to Codorus Creek discharges into are the Codorus Creek and the Susquehanna River which eventually drains into the Chesapeake Bay. Since the facility is not suspected of discharging significant nitrogen species or phosphorus, the subject site is not subject to the Chesapeake Bay implementation requirements. The receiving water has protected water usage for warm water fishes (WWF) 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 Tributary 0805 to Codorus Creek is a Category 2 and 5 stream listed in the 2020 Integrated List of All Waters (formerly 303d Listed Streams). This stream is an attaining stream that supports aquatic life and fish consumption. The stream is also impaired for recreational uses. 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:

- For Outfall 001, addition of metals for monitoring.
- For Outfalls 002 and 005, addition of metals for monitoring.
- For Outfalls 003 and 004, monitoring for pH, TSS, and metals.

Sludge use and disposal description and location(s): Based upon the facility's treatment process, biosolids is not suspected.

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:	Voith Hydro, Inc.
NPDES Permit #	PA0261106
Physical Address:	716 East Berlin Road York, PA 17405
Mailing Address:	PO Box 15002 York, PA 17405
Contact:	Amy Smith Senior Safety Specialist Amy.smith@voith.com
Consultant:	Janel Simmers Senior Program Manager RETTEW Associates, Inc. (717) 205-2235 Janel.simmers@rettew.com

1.2 Permit History

Description of Facility

Voith manufactures components for large and small hydropower plants as well as for pumped storage power plants - from generators, turbines, pumps and automation systems to spare parts, maintenance and training services as well as digital solutions for the entire life cycle of the plants.

Voith Hydro is a hydropower turbine equipment manufacturer located at 716 and 760 East Berlin Road, York, PA. The 716 East Berlin Road site contains Voith's Hydraulic Laboratory. The 760 East Berlin Road site is approximately forty acres. The site consists of three main buildings- Office, Warehouse (shipping/receiving), and Manufacturing operations. There are small buildings/sheds for material/waste storage and field operations support.

Sources of Water

Water is supplied via the municipal water system (York Water). Water used during each test is returned to the water storage tank. Water is discharged one or two times a year.

Permit submittal included the following information.

- NPDES Application
- Material Storage Areas diagram
- Stormwater Flow diagram
- Flow Diagrams
- Effluent Sample Data

- Module 1- Stormwater 002, 003, 004, and 005

2.0 Treatment Facility Summary

2.1.1 Site location

The physical address for the facility is 716 East Berlin Road, York, PA 17405. A topographical and an aerial photograph of the facility are depicted as Figure 1 and Figure 2.

Figure 1: Topographical map of the subject facility

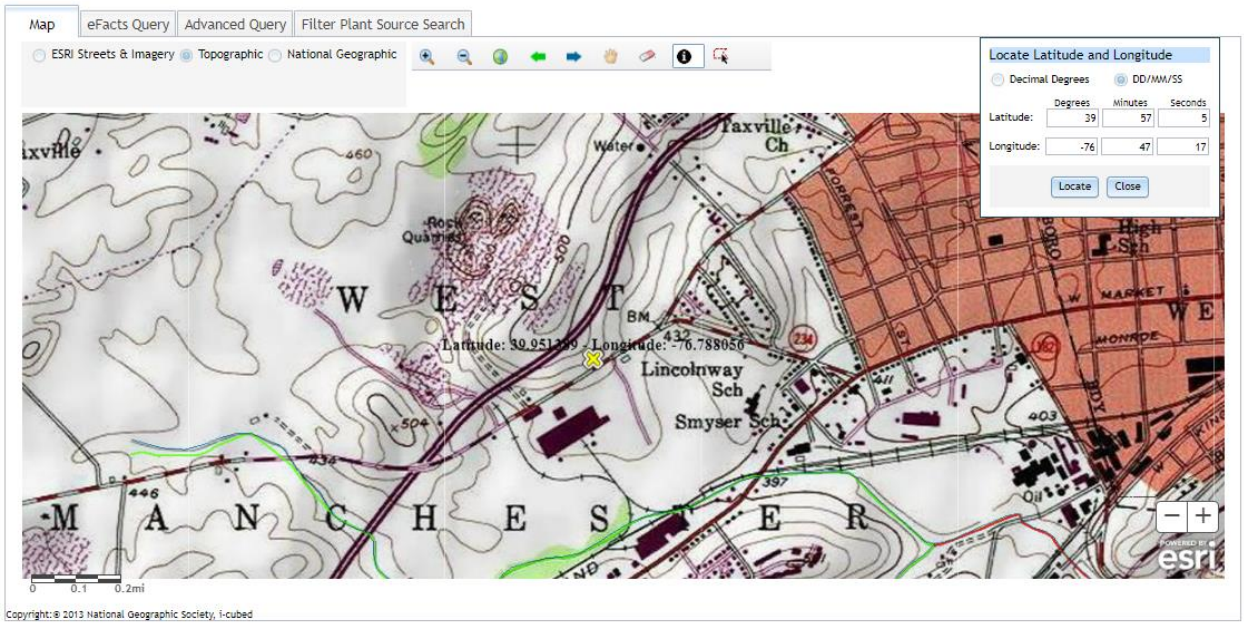
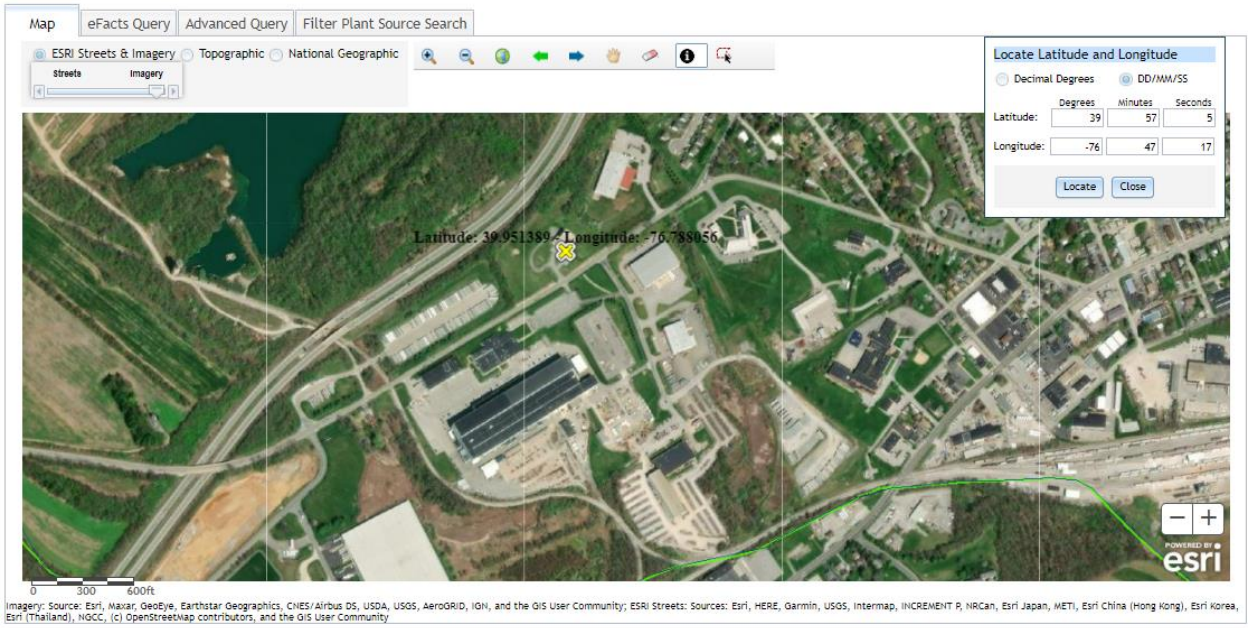


Figure 2: Aerial Photograph of the subject facility



2.1.2 Sources of Wastewater/Stormwater

The facility has the following outfall information for stormwater.

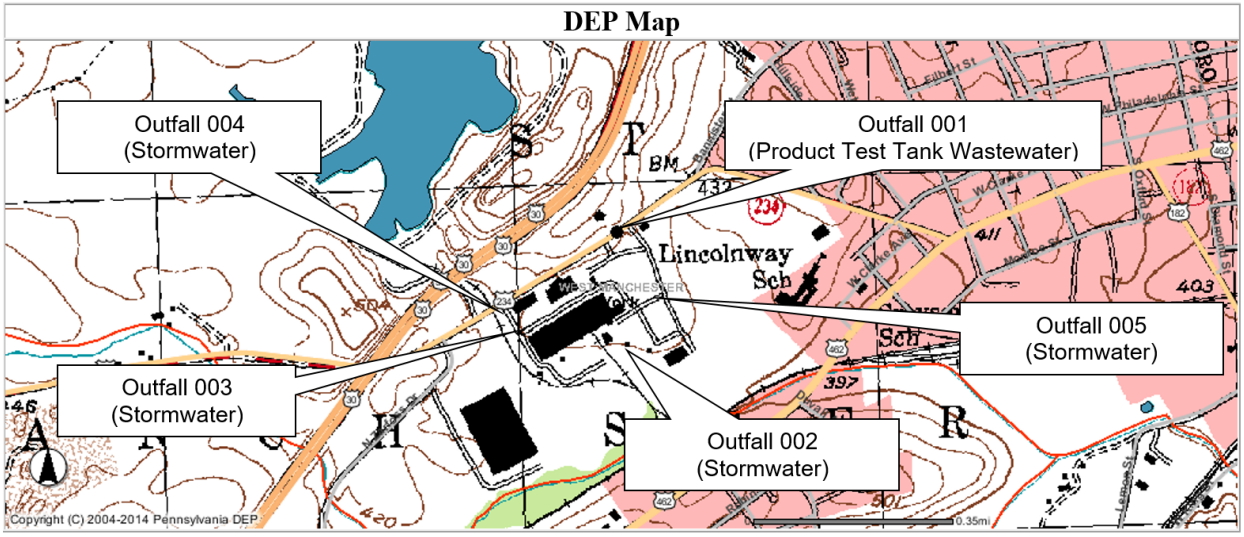
Outfall No.	002	**Design Flow (MGD)**	0
Latitude	39º 56' 52.00"	**Longitude**	-76º 47' 16.00"
Wastewater Description:	Stormwater; approximate drainage area- Paved 170, 625 ft^2 and Gravel/Grass 165,000 ft^2		

Outfall No.	003	**Design Flow (MGD)**	0
Latitude	39º 56' 55.00"	**Longitude**	-76º 47' 29.00"
Wastewater Description:	Stormwater; Stormwater; approximate drainage area- Paved 130, 625 ft^2 and Gravel/Grass 36,875 ft^2		

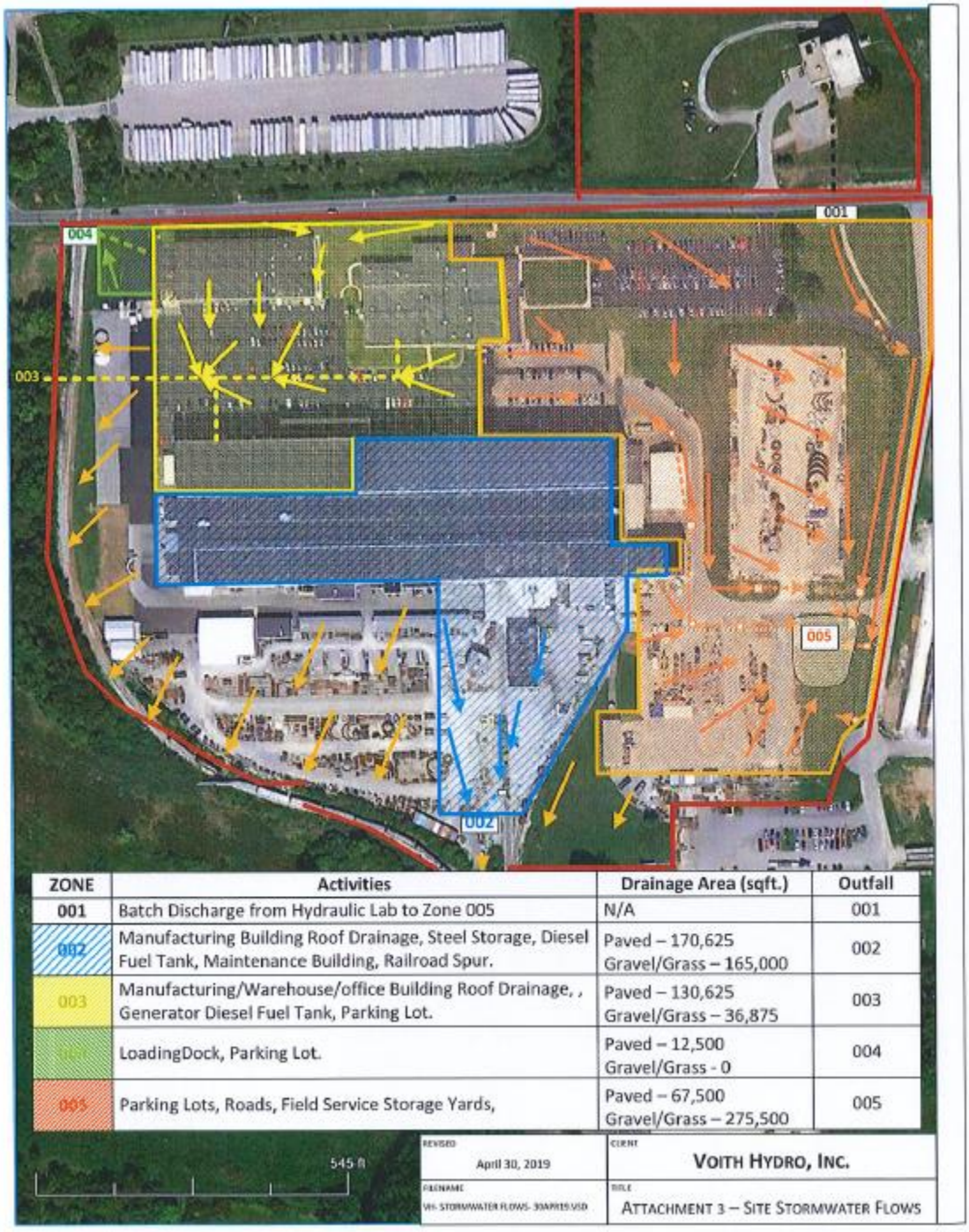
Outfall No.	004	**Design Flow (MGD)**	0
Latitude	39º 56' 57.00"	**Longitude**	-76º 47' 29.00"
Wastewater Description:	Stormwater; Stormwater; approximate drainage area- Paved 12,000 ft^2 and Gravel/Grass 0 ft^2		

Outfall No.	005	**Design Flow (MGD)**	0
Latitude	39º 56' 58.00"	**Longitude**	-76º 47' 11.00"
Wastewater Description:	Stormwater; Stormwater; approximate drainage area- Paved 67,500 ft^2 and Gravel/Grass 275,500 ft^2		

A site map showing the locations of the sewage and stormwater outfalls is shown. This map was compliments of the Fact Sheet dated for July 2014.

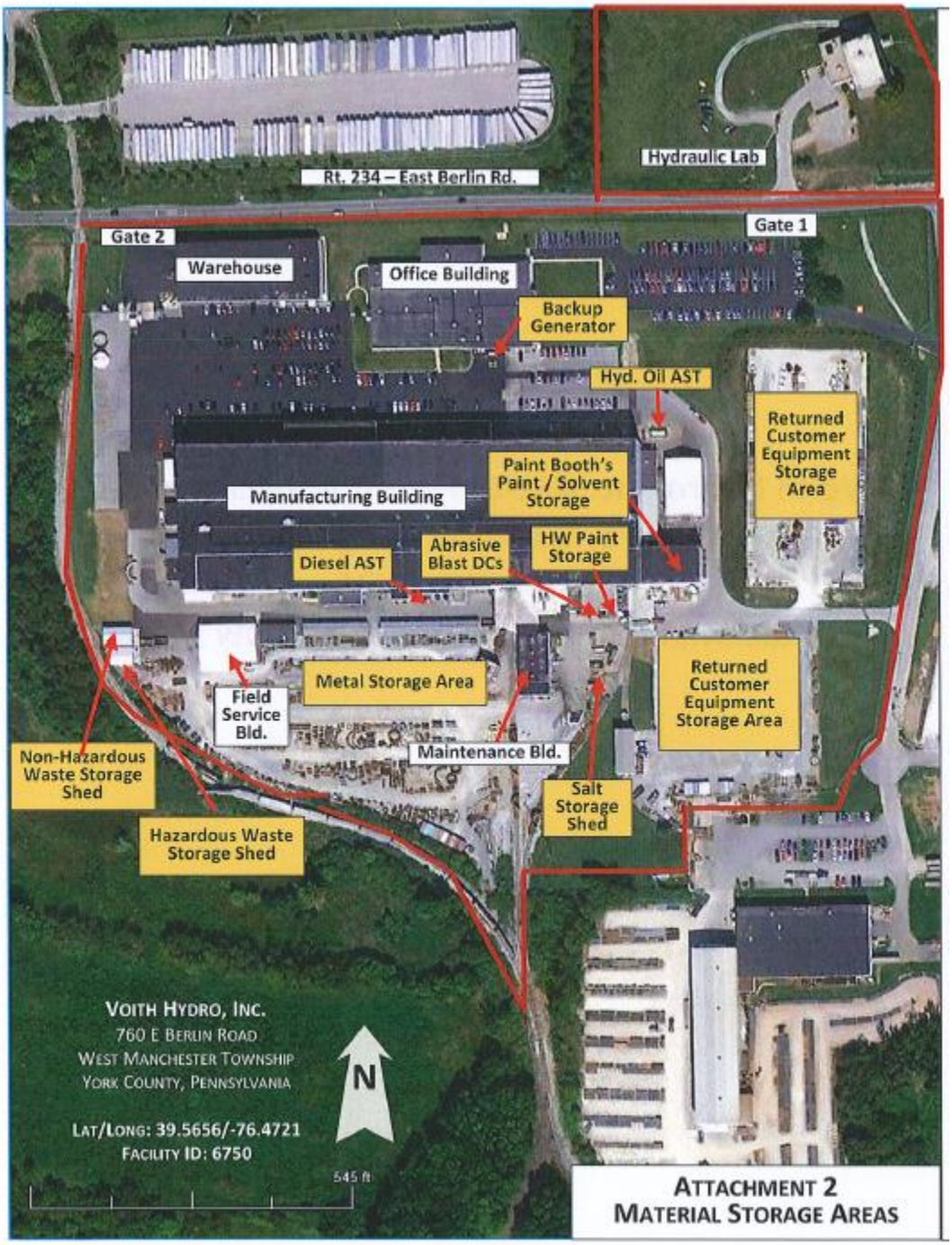


The diagram shows stormwater flow direction. The table in the figure provides a description of the activities. The drainage areas for pervious and impervious are also itemized.



ZONE	Activities	Drainage Area (sqft.)	Outfall
001	Batch Discharge from Hydraulic Lab to Zone 005	N/A	001
002	Manufacturing Building Roof Drainage, Steel Storage, Diesel Fuel Tank, Maintenance Building, Railroad Spur.	Paved – 170,625 Gravel/Grass – 165,000	002
003	Manufacturing/Warehouse/office Building Roof Drainage, , Generator Diesel Fuel Tank, Parking Lot.	Paved – 130,625 Gravel/Grass – 36,875	003
004	LoadingDock, Parking Lot.	Paved – 12,500 Gravel/Grass - 0	004
005	Parking Lots, Roads, Field Service Storage Yards,	Paved – 67,500 Gravel/Grass – 275,500	005

A plot map with labelled areas for material storage areas is shown. The hydraulic lab is located in the northeast corner of the property.



2.2 Description of Wastewater Treatment Process

The laboratory at 716 East Berlin Road supports hydraulic testing of scale turbine parts and components. The facility includes a 150,000 gallon water storage tank and configurable water flumes to be able to simulate design parameters. The water used during each test is returned to the water storage tank.

The scale model parts tested are metal or plastic model parts that are clean and free of any manufacturing process related chemicals. The water is supplied from York Water. No water chemicals are added to the water. The batch discharge of the water storage tank is determined by visual observation of the tank's water cloudiness. Typically, the tank is discharged one or two times a year.

There is no clear direct discharge to UNT Codorus Creek. The discharge goes to a stone channel on the plant property and does not leave the manufacturing site (Fact Sheet dated July 2014).

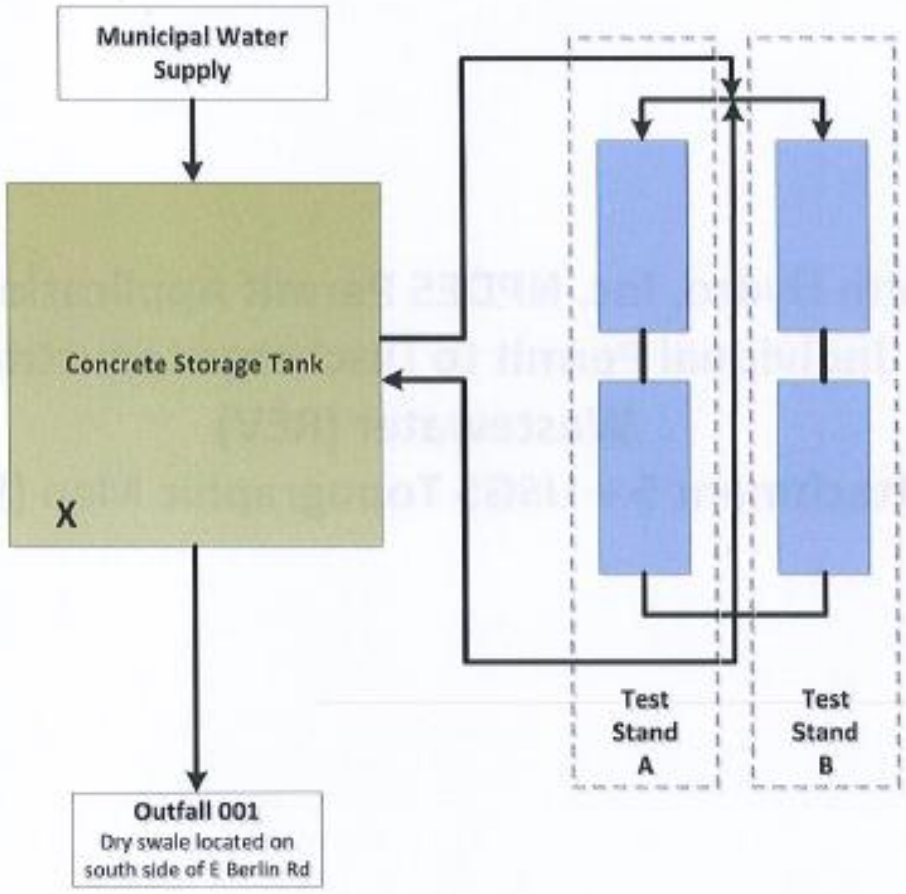
The subject facility is a 0.15 MGD design flow facility. The subject facility does not treat wastewater prior to discharge. The facility's wastewater discharge is being evaluated for flow, pH, copper, lead, and mercury. The facility's stormwater discharge is being evaluated for pH, TSS, arsenic, cadmium, chromium, copper, iron, and lead. The existing permits limits for the facility is summarized in Section 2.4.

A schematic of the process is shown in the figure.

A schematic of the process is shown in the figure.

Hydraulic Laboratory Operation:

1. A clean scale model component/assembly is placed in the test stand.
2. The test stand is filled with water from the concrete storage tank.
3. A series of pumps and valves is used to circulate the water through the test stand and model.
4. At the conclusion of the testing the water is drained from the test stand and returned to the storage tank.



Sampling:
A grab sample is taken from the tank prior to discharge.

Storage Tank Batch Discharge:
Frequency -- 6 to 24 months. Frequency is a function of testing use.
Volume -- 150,000 gallons (approximate)
Flow Rate -- 6,250 GPH

2.3 Facility Outfall Information

The facility has the following outfall information for wastewater.

Outfall No.	001	**Design Flow (MGD)**	.15
Latitude	39º 57' 4.00"	**Longitude**	-76º 47' 16.00"
Wastewater Description:	IW Process Effluent without ELG		

The subject facility outfall is within the vicinity of another sewage/wastewater outfall. The downstream outfall is Lehigh White Cement (PA0010375) which is about 1.0 miles from the subject facility. As no interactions with discharge is suspected, modeling with Lehigh White Cement was not conducted.

2.3.1 Operational Considerations- Chemical Additives

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

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

- The treatment process does not utilize any chemicals.

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° 57' 04" , **Longitude** 76° 47' 16" , **River Mile Index** 1.63 , **Stream Code** 08085

Receiving Waters: Unnamed Tributary of Codorus Creek

Type of Effluent: Non-contact product test tank water

1. The permittee is authorized to discharge during the period from November 1, 2014 through October 31, 2019.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2)	Required
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Measurement Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/discharge	Grab
Total Copper	XXX	XXX	XXX	XXX	Report	XXX	1/discharge	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/discharge	Grab
Total Mercury	XXX	XXX	XXX	XXX	Report	XXX	1/discharge	Grab

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

at discharge from facility

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

I. B. For Outfall 002 , **Latitude** 39° 56' 52" , **Longitude** 76° 47' 16" , **River Mile Index** 1.63 , **Stream Code** 08085

Receiving Waters: Unnamed Tributary of Codorus Creek

Type of Effluent: Stormwater

1. The permittee is authorized to discharge during the period from November 1, 2014 through October 31, 2019.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2)	Required
	Average Monthly		Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Measurement Frequency	Sample Type
pH (S.U.)	XXX	XXX	XXX	XXX	XXX	Report	2/year	Grab
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Total Arsenic	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Total Cadmium	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Total Chromium	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Total Copper	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab

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

at discharge from facility

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

I. C. **For Outfall** 005 , **Latitude** 39° 56' 58" , **Longitude** 76° 47' 11" , **River Mile Index** 1.63 , **Stream Code** 08085

Receiving Waters: Unnamed Tributary of Codorus Creek

Type of Effluent: Stormwater

1. The permittee is authorized to discharge during the period from November 1, 2014 through October 31, 2019.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2]	Required
	Average Monthly		Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Measurement Frequency	Sample Type
pH (S.U.)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
Total Arsenic	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
Total Cadmium	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
Total Chromium	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
Total Copper	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab

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

at discharge from facility

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.

09/24/2018: The facility was advised to collect samples at outfall headwall for Outfall 001 to obtain representative sample.

3.2 Summary of DMR Data

A review of approximately 1-year of DMR data shows that the monthly average flow data for the facility below the design capacity of the treatment system. The maximum average flow data for the DMR reviewed was 0.15 MGD on January 2021. The facility discharges wastewater once or twice a year. The design capacity of the treatment system is 0.15 MGD.

The off-site laboratory used for the analysis of the parameters was ALS Environmental Labs located at 301 Fulling Mill Road, Middletown, PA 17057.

DMR Data for Outfall 001 (from November 1, 2020 to October 31, 2021)

Parameter	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20
Flow (MGD) Average Monthly										0.15		
Flow (MGD) Daily Maximum										00		
pH (S.U.) Minimum										7.80		
pH (S.U.) Maximum										7.80		
Total Copper (mg/L) Daily Maximum										< 0.37		
Total Lead (mg/L) Daily Maximum										< 0.015		
Total Mercury (mg/L) Daily Maximum										< 0.0045		

DMR Data for Outfall 002 (from November 1, 2020 to October 31, 2021)

Parameter	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20
pH (S.U.) Maximum					7.01						6.99	
TSS (mg/L) Daily Maximum					< 5						< 5	
Total Arsenic (mg/L) Daily Maximum					< 0.0050						< 0.0050	
Total Cadmium (mg/L) Daily Maximum					< 0.0010						< 0.0010	
Total Chromium (mg/L) Daily Maximum					< 0.0025						< 0.0025	
Total Copper (mg/L) Daily Maximum					< 0.0050						< 0.0050	
Total Iron (mg/L) Daily Maximum					< 0.049						< 0.030	
Total Lead (mg/L) Daily Maximum					< 0.0030						< 0.0030	

DMR Data for Outfall 005 (from November 1, 2020 to October 31, 2021)

Parameter	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20
pH (S.U.) Maximum											7.46	
TSS (mg/L) Daily Maximum											48	
Total Arsenic (mg/L) Daily Maximum											< 0.00089	
Total Cadmium (mg/L) Daily Maximum											< 0.00016	
Total Chromium (mg/L) Daily Maximum											< 0.0043	
Total Copper (mg/L) Daily Maximum											< 0.010	
Total Iron (mg/L) Daily Maximum											< 0.78	
Total Lead (mg/L) Daily Maximum											< 0.023	

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 November 1, 2014 to January 7, 2022, the following table summarizes non-compliances with NPDES permit limits.

MONITORING_PERIOD_BEGIN_DATE	MONITORING_PERIOD_END_DATE	SUBMISSION_DATE	REPORT_FREQUENCY_DESC	OUTFALL_NUMBER	STAGE_DESC	NON_COMPLIANCE_DATE	NON_COMPL_TYPE_DESC	PARAMETER
10/1/2016	10/31/2016	11/10/2016	Monthly	001	Final Effluent	11/10/2016	Sample collection less frequent than required	Flow
10/1/2016	10/31/2016	11/10/2016	Monthly	001	Final Effluent	11/10/2016	Sample type not in accordance with permit	Flow
11/1/2016	11/30/2016	1/3/2017	Monthly	001	Final Effluent	1/3/2017	Sample collection less frequent than required	Flow
11/1/2016	11/30/2016	1/3/2017	Monthly	001	Final Effluent	1/3/2017	Sample type not in accordance with permit	Flow
6/1/2017	6/30/2017	7/26/2017	Monthly	001	Final Effluent	7/26/2017	Sample collection less frequent than required	Flow
6/1/2017	6/30/2017	7/26/2017	Monthly	001	Final Effluent	7/26/2017	Sample type not in accordance with permit	Flow
9/1/2018	9/30/2018	10/30/2018	Monthly	001	Final Effluent	10/30/2018	Sample collection less frequent than required	Flow
9/1/2018	9/30/2018	10/30/2018	Monthly	001	Final Effluent	10/30/2018	Sample type not in accordance with permit	Flow
7/1/2020	12/31/2020	9/14/2020	Semi-Annually	002	Final Effluent	9/14/2020	Sample collection less frequent than required	Arsenic, Total
7/1/2020	12/31/2020	9/14/2020	Semi-Annually	002	Final Effluent	9/14/2020	Sample collection less frequent than required	Cadmium, Total
7/1/2020	12/31/2020	9/14/2020	Semi-Annually	002	Final Effluent	9/14/2020	Sample collection less frequent than required	Chromium, Total
7/1/2020	12/31/2020	9/14/2020	Semi-Annually	002	Final Effluent	9/14/2020	Sample collection less frequent than required	Copper, Total
7/1/2020	12/31/2020	9/14/2020	Semi-Annually	002	Final Effluent	9/14/2020	Sample collection less frequent than required	Iron, Total
7/1/2020	12/31/2020	9/14/2020	Semi-Annually	002	Final Effluent	9/14/2020	Sample collection less frequent than required	Total Suspended Solids
1/1/2021	1/31/2021	3/16/2021	Monthly	001	Final Effluent	3/16/2021	Sample type not in accordance with permit	Flow

Other non-compliance issues include late DMR submissions January 2015 through April 2021.

3.3.2 Non-Compliance- Enforcement Actions

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

Beginning on November 1, 2014 to January 7, 2022, 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.

Based upon the facility's treatment process, biosolids is not suspected.

3.5 Open Violations

No open violations existed as of January 2022.

4.0 Receiving Waters and Water Supply Information Detail Summary

4.1 Receiving Waters

The receiving waters has been determined to be Tributary 0805 to Codorus Creek. The sequence of receiving streams that Tributary 0805 to Codorus Creek discharges into are the Codorus Creek and the Susquehanna River which eventually drains into the Chesapeake Bay.

4.2 Public Water Supply (PWS) Intake

The closest PWS to the subject facility is Wrightsville Borough MA (PWS ID #7670097) located approximately 23 miles downstream of the subject facility on the Susquehanna River. Based upon the distance and the flow rate of the facility, the PWS should not be impacted.

4.3 Class A Wild Trout Streams

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

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

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

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

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

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

The receiving waters is listed in the 2020 Pennsylvania Integrated Water Quality Monitoring and Assessment Report as a Category 2 and 5 waterbody. The surface waters is an attaining stream that supports aquatic life and fish consumption. The receiving stream is also impaired for recreational uses. The designated use has been classified as protected waters for warm water fishes (WWF) and migratory fishes (MF).

4.5 Low Flow Stream Conditions

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

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

The closest WQN station to the subject facility is the Codorus Creek station (WQN286). This WQN station is located approximately 14 miles downstream of the subject facility.

The closest gauge station to the subject facility is the Codorus Creek station at York, PA (USGS station number 1575500). This gauge station is located approximately 2 miles downstream of the subject facility.

The low flow yield and the Q710 for the subject facility was estimated using Stream Stats.

The low flow yield is 0.051 ft^3/mi^2 and the Q710 is 0.115 ft^3/s.

4.6.1 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.15
Latitude	39º 57' 04"	Longitude	-76º 47' 16"
Quad Name		Quad Code	
Wastewater Description:	Non-contact product test water		

Receiving Waters	Unnamed Tributary of Codorus Creek (WWF)	Stream Code	8085
NHD Com ID	57469177	RMI	1.66
Drainage Area	2.22	Yield (cfs/mi^2)	0.051
Q_{7-10} Flow (cfs)	0.115	Q_{7-10} Basis	StreamStats
Elevation (ft)	402	Slope (ft/ft)	
Watershed No.	7-H	Chapter 93 Class.	WWF, MF
Existing Use	Same as Chapter 93 class.	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s) supports aquatic life and fish consumption. Impaired for recreational uses due to pathogens from an unknown source.		
Cause(s) of Impairment	Unknown Source		
Source(s) of Impairment	Pathogens		
TMDL Status	Not applicable	Name	

Background/Ambient Data		Data Source
pH (SU)	8.2	Median July to Sept; WQN286
Temperature (°C)	22.8	Median July to Sept; WQN286
Hardness (mg/L)	123	Historical Median; WQN286
Other:		

Nearest Downstream Public Water Supply Intake		Wrightsville Borough MA	
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	43	Distance from Outfall (mi)	23

4.6.2 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	0
Latitude	39º 56' 28.76"	Longitude	-76º 46' 36.19"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary of Codorus Creek (WWF)	Stream Code	

4.6.3 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	0
Latitude	39º 56' 28.76"	Longitude	-76º 46' 36.19"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary of Codorus Creek (WWF)	Stream Code	

4.6.4 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	004	Design Flow (MGD)	0
Latitude	39º 56' 41.11"	Longitude	-76º 47' 25.95"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary of Codorus Creek (WWF, MF)	Stream Code	

4.6.5 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	005	Design Flow (MGD)	0
Latitude	39º 56' 46.42"	Longitude	-76º 47' 8.61"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary of Codorus Creek (WWF, MF)	Stream Code	

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
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)

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 node utilized for this facility are summarized below.

General Data 1 (Modeling Point #1)	***Input Value***	***Units***
Stream Code	8085	
River Mile Index	1.66	miles
Elevation	402	feet
Latitude	39.946419	
Longitude	-76.785356	
Drainage Area	2.22	sq miles
Reach Slope	Default	ft/ft
Low Flow Yield	0.051	cfs/sq mile

5.3.1 Water Quality Modeling 7.0

The facility is not subject to water quality modeling. Modeling for dissolved oxygen (CBOD) and ammonia was not deemed necessary for the facility. The process involves non-contact process water.

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 pollutants in Groups 1 and 2.

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.

Summary table for the metals were erroneously tabulated in the NPDES application. Appropriate tabulation consists of sampling at least three (3) samples with the maximum of each parameter recorded in the table. The laboratory data was available with the NPDES application and tabulated by DEP. The summary table can be found in Attachment B.

On Outfall 001, DMR data for copper, mercury, and lead were also summarized beginning January 2015 and ending March 2021. The DMR data for mercury and lead are suspect. The maximum concentration for these parameters was 1 mg/l (1000 ug/l). DEP questions if the data was input into DMR correctly. Due to the suspect data, DMR data for mercury and lead were not utilized with the toxics management spreadsheet.

Data reporting into Greenport for copper was erroneous. For data collected on January 12, 2021, the lab result for copper was 0.37 mg/l. The data in Greenport was reported as a non-detect at <0.37 mg/l. The maximum concentration for copper was 0.37 mg/l (370 ug/l) was used for modeling.

Using the Toxics Management Spreadsheet the below summarizes monitoring or permit limits for the parameters.

- **The following parameters were flagged for monitoring: Aluminum, Chromium (III), Dissolved Iron, Silver.**
- **The following parameters were flagged for permit limits: Cadmium, Copper, Iron, Lead, Mercury, Nickel, and Zinc.**

The facility does not treat the wastewater prior to discharge. Wastewater is recycled for multiple uses for testing. The facility discharges the wastewater at least 1 to 2 times per year. Monitoring for the above mentioned parameters was recommended during discharge for the proposed permit. Pending favorable sampling results, future renewals may reduce the parameters necessary for monitoring or not require permit limits.

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 non-significant IW facilities, monitoring and reporting of TN and TP will be required throughout the permit term in renewed or amended permits anytime the facility has the potential to introduce a net TN or TP increase to the load contained within the intake water used in processing. In general, facilities that discharge groundwater and cooling water with no addition of chemicals containing N or P do not require monitoring.

Non-significant IW facilities that propose expansion or production increases and as a result will discharge at least 75 lbs/day TN or 25 lbs/day TP (on an annual average basis), will be classified as Significant IW dischargers and receive Cap Loads in their permits based on existing performance (existing TN/TP concentrations at current average annual flow).

In general, for new non-significant IW discharges (including existing facilities discharging without a permit), DEP will issue permits containing Cap Loads of "0" and these facilities will be expected to purchase credits and/or apply offsets to achieve compliance.

Since the facility is not suspected of discharging significant nitrogen species or phosphorus, the subject site is not subject to the Sector C Chesapeake Bay implementation requirements.

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 (b) Toxics.

6.1.1 Conventional Pollutants Disinfection- Outfall 001

Summary of Proposed NPDES Parameter Details for Conventional Pollutants and Disinfection			
Voith Hydro; PA0261106; Outfall 001			
Parameter	**Permit Limitation Required by[1]:**	**Recommendation**	
pH (S.U.)	TBEL	Monitoring:	The monitoring frequency shall be 1x/discharge as a grab sample
		Effluent Limit:	Effluent limits may range from pH = 6.0 to 9.0
		Rationale:	The monitoring frequency has been assigned in accordance with Table 6-4 and the effluent limits assigned by Chapter 95.2(1).
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 0.15 MGD.			
3 Table 6-4 (Self Monitoring Requirements for Industrial 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 Toxics- Outfall 001

Summary of Proposed NPDES Parameter Details for Toxics

Voith Hydro; PA0261106; Outfall 001

Parameter	Permit Limitation Required by[1]:	Recommendation	
Total Aluminum	WQBEL	Monitoring:	The monitoring frequency shall be 1x/discharge as a grab sample
		Effluent Limit:	No effluent requirement
		Rationale:	Toxics Management Spreadsheet recommends monitoring based on water quality modeling to collect additional data. Future renewals mad reduce or eliminate monitoring.
Total Cadmium	WQBEL	Monitoring:	The monitoring frequency shall be 1x/discharge as a grab sample
		Effluent Limit:	No effluent requirement
		Rationale:	While Toxics Managememt Spreadsheet recommends limits based on water quality modeling, monitoring to collect additional data is recommended. Future renewals may reduce or eliminate monitoring.
Total Chromium (III)	WQBEL	Monitoring:	The monitoring frequency shall be 1x/discharge as a grab sample
		Effluent Limit:	No effluent requirement
		Rationale:	Toxics Management Spreadsheet recommends monitoring based on water quality modeling to collect additional data. Future renewals may reduce or eliminate monitoring.
Total Copper	WQBEL	Monitoring:	The monitoring frequency shall be 1x/discharge as a grab sample
		Effluent Limit:	No effluent requirement
		Rationale:	While Toxics Managememt Spreadsheet recommends limits based on water quality modeling, monitoring to collect additional data is recommended. Future renewals may reduce or eliminate monitoring.
Dissolved Iron	WQBEL	Monitoring:	The monitoring frequency shall be 1x/discharge as a grab sample
		Effluent Limit:	No effluent requirement
		Rationale:	Toxics Management Spreadsheet recommends monitoring based on water quality modeling to collect additional data. Future renewals may reduce or eliminate monitoring.
Total Iron	WQBEL	Monitoring:	The monitoring frequency shall be 1x/discharge as a grab sample
		Effluent Limit:	No effluent requirement
		Rationale:	While Toxics Management Spreadsheet recommends limits based on water quality modeling, monitoring to collect additional data is recommended. Future renewals may reduce or eliminate monitoring.
Total Lead	WQBEL	Monitoring:	The monitoring frequency shall be 1x/discharge as a grab sample
		Effluent Limit:	No effluent requirement
		Rationale:	While Toxics Managememt Spreadsheet recommends limits based on water quality modeling, monitoring to collect additional data is recommended. Future renewals may reduce or eliminate monitoring.
Total Mercury	WQBEL	Monitoring:	The monitoring frequency shall be 1x/discharge as a grab sample
		Effluent Limit:	No effluent requirement
		Rationale:	While Toxics Managememt Spreadsheet recommends limits based on water quality modeling, monitoring to collect additional data is recommended. Future renewals may reduce or eliminate monitoring.
Total Nickel	WQBEL	Monitoring:	The monitoring frequency shall be 1x/discharge as a grab sample
		Effluent Limit:	No effluent requirement
		Rationale:	While Toxics Managememt Spreadsheet recommends limits based on water quality modeling, monitoring to collect additional data is recommended. Future renewals may reduce or eliminate monitoring.
Total Silver	WQBEL	Monitoring:	The monitoring frequency shall be 1x/discharge as a grab sample
		Effluent Limit:	No effluent requirement
		Rationale:	Toxics Management Spreadsheet recommends monitoring based on water quality modeling to collect additional data. Future renewals may reduce or eliminate monitoring.
Total Zinc	WQBEL	Monitoring:	The monitoring frequency shall be 1x/discharge as a grab sample
		Effluent Limit:	No effluent requirement
		Rationale:	While Toxics Managememt Spreadsheet recommends limits based on water quality modeling, monitoring to collect additional data is recommended. Future renewals may reduce or eliminate monitoring.

Notes:

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

2 Monitoring frequency based on flow rate of 0.15 MGD.

3 Table 6-4 (Self Monitoring Requirements for Industrial 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 Conventional Pollutants- Outfall 002 to 005

Summary of Proposed NPDES Parameter Details for Conventional Pollutants and Disinfection			
Voith Hydro; PA0261106; Outfall 002 to 005			
Parameter	**Permit Limitation Required by[1]:**	**Recommendation**	
pH (S.U.)	TBEL	Monitoring:	The monitoring frequency shall be 2x/yr as a grab sample
		Effluent Limit:	No effluent requirements
		Rationale:	The appropriate stormwater monitoring parameters are itemized by the PAG-03 Appendix B- Primary Metals.
TSS	PAG-03 Appendix B- Primary Metals.	Monitoring:	The monitoring frequency shall be 2x/yr as a grab sample
		Effluent Limit:	No effluent requirements
		Rationale:	The appropriate stormwater monitoring parameters are itemized by the PAG-03 Appendix B- Primary Metals.
Notes:			

6.1.4 Toxics- Stormwater Outfalls 002 to 005

Consistent with the Fact Sheet from August 5, 2008 and July 2, 2014, the appropriate stormwater monitoring parameters are itemized by the PAG-03 Appendix B- Primary Metals.

For Stormwater, monitoring shall be required 2x/yr for both Outfalls 002 and 005. Parameters TSS, aluminum, zinc, copper, iron, and lead all had a positive result during sampling. Aluminum and zinc have been added for monitoring. Monitoring for arsenic, cadmium, and chromium shall continue.

For Outfalls 003 and 004, monitoring shall be required for the same parameters as Outfalls 002 and 005. Upon collection of favorable results, future renewals may reduce target specific parameters.

The table summarizes the parameters required for monitoring for Outfalls 002 to 005.

Summary of Proposed NPDES Parameter Details for Toxics			
Voith Hydro; PA0261106; Outfall 002 to 005			
Parameter	**Permit Limitation Required by[1]:**	**Recommendation**	
Aluminum, Arsenic, Cadmium Chromium, Copper, Iron, Lead, Zinc	PAG-03 Appendix B- Primary Metals.	Monitoring:	The monitoring frequency shall be 2x/yr as a grab sample
		Effluent Limit:	No effluent requirements
		Rationale:	The appropriate stormwater monitoring parameters are itemized by the PAG-03 Appendix B- Primary Metals. Monitoring for arsenic, cadmium, and chromium shall continue to the proposed permit.
Notes:			

6.2 Summary of Changes From Existing Permit to Proposed Permit

Changes in Permit Monitoring or Effluent Quality for Outfall 001

Parameter	Existing Permit	Draft Permit
Aluminum, Cadmium, Chromium (III), Iron (Dissolved), Iron (Total), Nickel, Silver, Zinc	No monitoring or efluent limits	Monitoring shall be 1x/discharge

Changes in Permit Monitoring or Effluent Quality for Outfall 002 and 005

Parameter	Existing Permit	Draft Permit
Aluminum and Zinc	No monitoring or efluent limits	Monitoring shall be 2x/yr

Changes in Permit Monitoring or Effluent Quality for Outfall 003 and 004

Parameter	Existing Permit	Draft Permit
pH, TSS, Aluminum, Arsenic, Cadmium, Chromium, Copper, Iron, Lead, Zinc	No monitoring or efluent limits	Monitoring shall be 2x/yr

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.

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

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

I. A. **For Outfall** 001, **Latitude** 39° 57' 4.00", **Longitude** 76° 47' 16.00", **River Mile Index** _____, **Stream Code** _____

Receiving Waters: Unnamed Tributary of Codorus Creek (WWF)

Type of Effluent: IW Process Effluent without ELG

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]	Required
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Measurement Frequency	Sample Type
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	9.0	XXX	1/discharge	Grab
Aluminum, Total	XXX	XXX	XXX	XXX	Report	XXX	1/discharge	Grab
Cadmium, Total	XXX	XXX	XXX	XXX	Report	XXX	1/discharge	Grab
Chromium III, Total	XXX	XXX	XXX	XXX	Report	XXX	1/discharge	Grab
Copper, Total	XXX	XXX	XXX	XXX	Report	XXX	1/discharge	Grab
Iron, Dissolved	XXX	XXX	XXX	XXX	Report	XXX	1/discharge	Grab
Iron, Total	XXX	XXX	XXX	XXX	Report	XXX	1/discharge	Grab
Lead, Total	XXX	XXX	XXX	XXX	Report	XXX	1/discharge	Grab
Mercury, Total	XXX	XXX	XXX	XXX	Report	XXX	1/discharge	Grab
Nickel, Total	XXX	XXX	XXX	XXX	Report	XXX	1/discharge	Grab
Silver, Total	XXX	XXX	XXX	XXX	Report	XXX	1/discharge	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]	Required
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Measurement Frequency	Sample Type
Zinc, Total	XXX	XXX	XXX	XXX	Report	XXX	1/discharge	Grab

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 002 , **Latitude** 39° 56' 52.00" , **Longitude** 76° 47' 16.00" , **River Mile Index** _____ , **Stream Code** _____

Receiving Waters: Unnamed Tributary of Codorus Creek (WWF)

Type of Effluent: Stormwater

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	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	9.0	XXX	2/year	Grab
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Aluminum, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Arsenic, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Cadmium, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Chromium, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Copper, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Iron, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Lead, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Zinc, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab

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

I. C. For Outfall 003 , **Latitude** 39° 56' 55.00" , **Longitude** 76° 47' 29.00" , **River Mile Index** _____ , **Stream Code** _____

Receiving Waters: Unnamed Tributary of Codorus Creek (WWF)

Type of Effluent: Stormwater

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	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	9.0	XXX	2/year	Grab
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Aluminum, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Arsenic, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Cadmium, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Chromium, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Copper, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Iron, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Lead, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Zinc, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab

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

I. D. For Outfall 004 , **Latitude** 39° 56' 57.00" , **Longitude** 76° 47' 29.00" , **River Mile Index** 2.0300 , **Stream Code** _____

Receiving Waters: Unnamed Tributary of Codorus Creek (WWF, MF)

Type of Effluent: Stormwater

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	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	9.0	XXX	2/year	Grab
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Aluminum, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Arsenic, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Cadmium, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Chromium, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Copper, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Iron, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Lead, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Zinc, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab

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

I. E. For Outfall 005 , **Latitude** 39° 56' 58.00" , **Longitude** 76° 47' 11.00" , **River Mile Index** 1.7500 , **Stream Code** _____

Receiving Waters: Unnamed Tributary of Codorus Creek (WWF, MF)

Type of Effluent: Stormwater

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	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	9.0	XXX	2/year	Grab
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Aluminum, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Arsenic, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Cadmium, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Chromium, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Copper, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Iron, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Lead, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Zinc, Total	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab

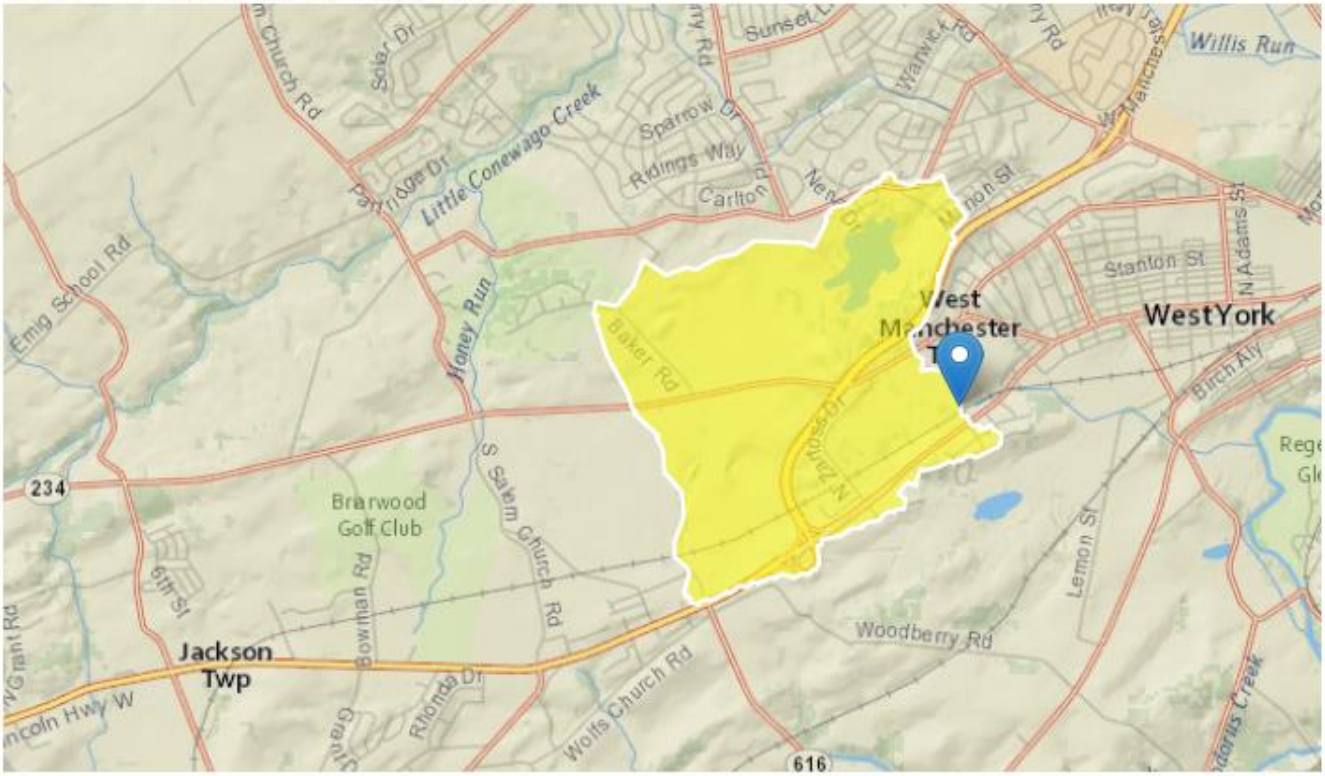
Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: New and Reissuance Industrial Waste and Industrial Stormwater, rev October 11, 2013
☐	Other:

Attachment A

Stream Stats/Gauge Data

StreamStats Report

Region ID: PA
Workspace ID: PA20220205104330320000
Clicked Point (Latitude, Longitude): 39.94627, -76.78527
Time: 2022-02-05 05:43:50 -0500



Voith Hydro, Inc. PA0261106 Modeling Point #1 February 2022

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	2.22	square miles
BSLOPD	Mean basin slope measured in degrees	2.1929	degrees
ROCKDEP	Depth to rock	5.2	feet
URBAN	Percentage of basin with urban development	10.735	percent

Low-Flow Statistics Parameters [Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.22	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	2.1929	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5.2	feet	4.13	5.21
URBAN	Percent Urban	10.735	percent	0	89

Low-Flow Statistics Disclaimers [Low Flow Region 1]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report [Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.303	ft^3/s
30 Day 2 Year Low Flow	0.445	ft^3/s
7 Day 10 Year Low Flow	0.115	ft^3/s
30 Day 10 Year Low Flow	0.175	ft^3/s
90 Day 10 Year Low Flow	0.372	ft^3/s

Low-Flow Statistics Citations

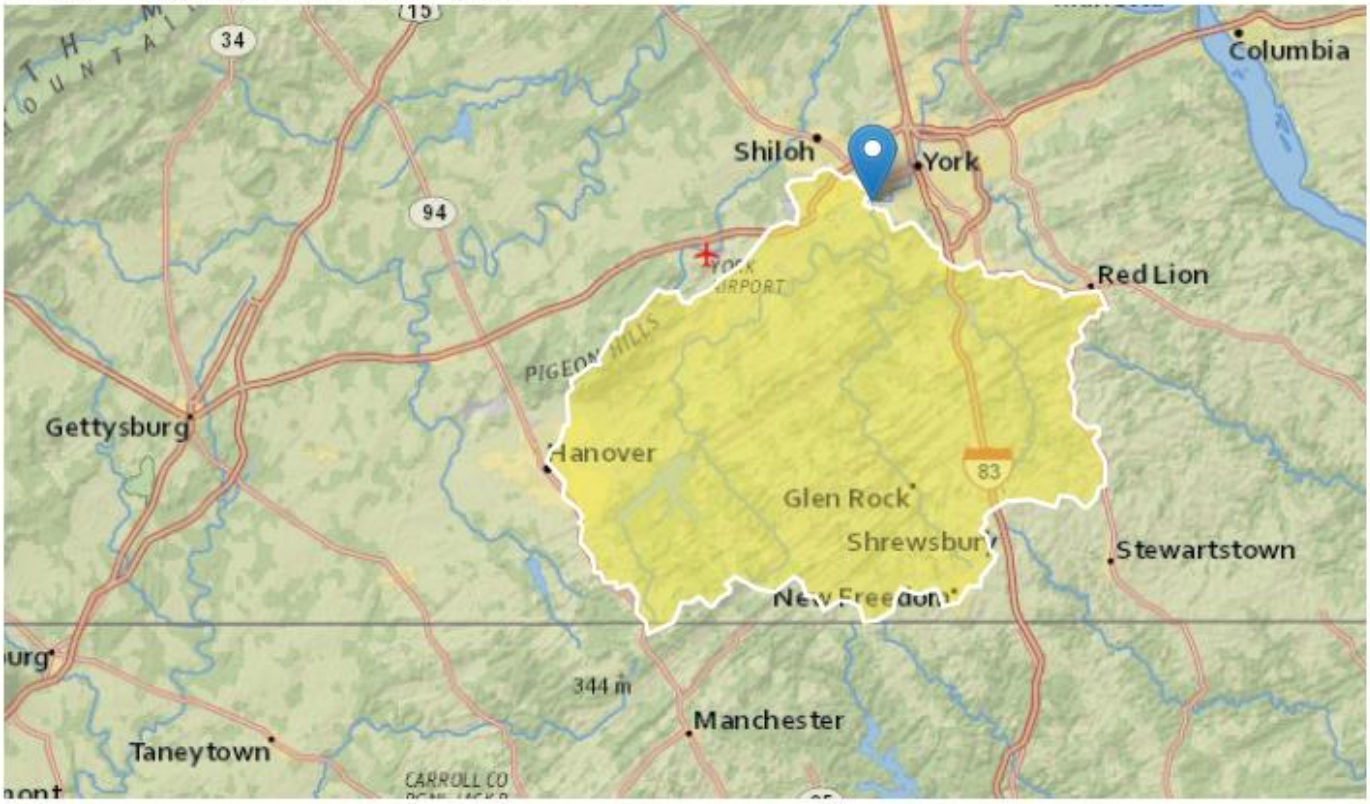
Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

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

Application Version: 4.6.2
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

StreamStats Report

Region ID: PA
Workspace ID: PA20220205104724249000
Clicked Point (Latitude, Longitude): 39.94388, -76.75845
Time: 2022-02-05 05:47:44 -0500



Voith Hydro, Inc. PA0261106 Modeling Point #2 February 2022

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	221	square miles
BSLOPD	Mean basin slope measured in degrees	6.0542	degrees
ROCKDEP	Depth to rock	4.3	feet
URBAN	Percentage of basin with urban development	3.928	percent

Low-Flow Statistics Parameters [Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	221	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	6.0542	degrees	1.7	6.4
ROCKDEP	Depth to Rock	4.3	feet	4.13	5.21
URBAN	Percent Urban	3.928	percent	0	89

Low-Flow Statistics Flow Report [Low Flow Region 1]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	44.1	ft^3/s	46	46
30 Day 2 Year Low Flow	55.7	ft^3/s	38	38
7 Day 10 Year Low Flow	24	ft^3/s	51	51
30 Day 10 Year Low Flow	30.5	ft^3/s	46	46
90 Day 10 Year Low Flow	42.1	ft^3/s	41	41

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

Toxics Input Summary Sheet
Toxics Management Spreadsheet Output Values

Sampling Results

Outfall 001

Pollutant / Date	8/20/2019		10/30/2020		1/12/2021		Max Concentration		Max Concentration	
	mg/l		mg/l		mg/l		mg/l		ug/l	
Total Aluminum		0.0205		0.02		0.16		0.16		160
Total Antimony	<	0.001	<	0.001	<	0.001	<	0.001	<	1
Total Arsenic	<	0.0015	<	0.0015	<	0.0015	<	0.0015	<	1.5
Total Barium		0.054		0.041		0.025		0.054		54
Total Beryllium	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.5
Total Boron	<	0.05	<	0.05	<	0.05	<	0.05	<	50
Total Cadmium	<	0.0002	<	0.0002		0.00031		0.00031		0.31
Total Chromium	<	0.001		0.02	<	0.001		0.02		20
Hexavalent Chromium		0.000066		0.00002				0.000066		0.066
Total Cobalt	<	0.0025	<	0.0025	<	0.0025	<	0.0025	<	2.5
Total Copper		0.12		0.043		0.37		0.37		370
Free Cyanide										
Total Cyanide	<	0.002		0.0028	<	0.002		0.0028		2.8
Dissolved Iron	<	0.06	<	0.06	<	0.06	<	0.06	<	60
Total Iron	<	0.03		0.11		5.2		5.2		5200
Total Lead		0.00072	<	0.001		0.015		0.015		15
Total Manganese		0.026		0.016		0.088		0.088		88
Total Mercury		0.00037	<	0.0002		0.0045		0.0045		4.5
Total Nickel		0.0021		0.0092		0.045		0.045		45
Total Phenols (Phenolics)								0		
Total Selenium	<	0.002	<	0.002	<	0.002	<	0.002	<	2
Total Silver	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.5
Total Thallium	<	0.0005	<	0.0005	<	0.0005	<	0.0005	<	0.5
Total Zinc		0.11		0.058		0.44		0.44		440
Total Molybdenum	<	0.001	<	0.001	<	0.001	<	0.001	<	1

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Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: Voith Hdro, Inc. NPDES Permit No.: PA0261106 Outfall No.: 001

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: Lab Test 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
0.15	102	7.8						

					0 if left blank		0.6 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											
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		160									
	Total Antimony	µg/L	<	1									
	Total Arsenic	µg/L	<	1.5									
	Total Barium	µg/L		54									
	Total Beryllium	µg/L	<	0.5									
	Total Boron	µg/L	<	50									
	Total Cadmium	µg/L		0.31									
	Total Chromium (III)	µg/L		20									
	Hexavalent Chromium	µg/L		0.066									
	Total Cobalt	µg/L	<	2.5									
	Total Copper	µg/L		370									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L		2.8									
	Dissolved Iron	µg/L	<	60									
	Total Iron	µg/L		5200									
	Total Lead	µg/L		15									
	Total Manganese	µg/L		88									
	Total Mercury	µg/L		4.5									
	Total Nickel	µg/L		45									
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L	<	2									
	Total Silver	µg/L	<	0.5									
	Total Thallium	µg/L	<	0.5									
	Total Zinc	µg/L		440									
	Total Molybdenum	µg/L	<	1									
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

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Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Voith Hdro, Inc., NPDES Permit No. PA0261106, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name: Tributary 08085 to Codorus 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	008085	1.66	402	2.22			Yes
End of Reach 1	008085	0	359	221			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	1.66	0.051										123	8.2		
End of Reach 1	0	0.11										123	8.2		

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	1.66														
End of Reach 1	0														

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Aluminum	Report	Report	Report	Report	Report	µg/L	750	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Cadmium	0.0005	0.0008	0.43	0.67	1.07	µg/L	0.43	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Chromium (III)	Report	Report	Report	Report	Report	µg/L	137	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	0.019	0.028	14.9	22.6	22.6	µg/L	14.9	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Dissolved Iron	Report	Report	Report	Report	Report	µg/L	446	THH	Discharge Conc > 10% WQBEL (no RP)
Total Iron	2.79	4.36	2,232	3,482	5,580	µg/L	2,232	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Lead	0.007	0.01	5.28	8.23	13.2	µg/L	5.28	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Mercury	0.00009	0.0001	0.074	0.12	0.19	µg/L	0.074	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Nickel	0.1	0.16	83.4	130	209	µg/L	83.4	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Silver	Report	Report	Report	Report	Report	µg/L	4.38	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	0.16	0.24	129	192	192	µg/L	129	AFC	Discharge Conc ≥ 50% WQBEL (RP)

DMR Sampling Results for Outfall 001

Outfall 001

Monitoring Period Begin Date	Monitoring Period End Date	DMR Received Date	Parameter Name		DMR Value	Units	Statistical Base Code
12/01/2014	12/31/2014	01/28/2015	Copper, Total		0.038	mg/L	Daily Maximum
02/01/2015	02/28/2015	03/02/2015	Copper, Total		0.037	mg/L	Daily Maximum
03/01/2015	03/31/2015	04/28/2015	Copper, Total		0.065	mg/L	Daily Maximum
05/01/2015	05/31/2015	06/29/2015	Copper, Total		0.02	mg/L	Daily Maximum
06/01/2015	06/30/2015	07/20/2015	Copper, Total		0.024	mg/L	Daily Maximum
09/01/2015	09/30/2015	10/29/2015	Copper, Total		0.036	mg/L	Daily Maximum
10/01/2016	10/31/2016	11/10/2016	Copper, Total	<	0.06	mg/L	Daily Maximum
11/01/2016	11/30/2016	01/03/2017	Copper, Total		0.069	mg/L	Daily Maximum
06/01/2017	06/30/2017	07/26/2017	Copper, Total		0.058	mg/L	Daily Maximum
09/01/2018	09/30/2018	10/30/2018	Copper, Total	<	0.19	mg/L	Daily Maximum
08/01/2019	08/31/2019	09/26/2019	Copper, Total	<	0.12	mg/L	Daily Maximum
02/01/2020	02/29/2020	03/16/2020	Copper, Total	<	0.06	mg/L	Daily Maximum
10/01/2020	10/31/2020	11/30/2020	Copper, Total	<	0.04	mg/L	Daily Maximum
01/01/2021	01/31/2021	03/16/2021	Copper, Total	<	0.37	mg/L	Daily Maximum
			Max Concentration	<	0.37	mg/L	

Outfall 001

Monitoring Period Begin Date	Monitoring Period End Date	DMR Received Date	Parameter Name		DMR Value	Units	Statistical Base Code
12/01/2014	12/31/2014	01/28/2015	Lead, Total		00	mg/L	Daily Maximum
02/01/2015	02/28/2015	03/02/2015	Lead, Total		0.0056	mg/L	Daily Maximum
03/01/2015	03/31/2015	04/28/2015	Lead, Total		00	mg/L	Daily Maximum
05/01/2015	05/31/2015	06/29/2015	Lead, Total		00	mg/L	Daily Maximum
06/01/2015	06/30/2015	07/20/2015	Lead, Total		00	mg/L	Daily Maximum
09/01/2015	09/30/2015	10/29/2015	Lead, Total		00	mg/L	Daily Maximum
10/01/2016	10/31/2016	11/10/2016	Lead, Total	<	< 00	mg/L	Daily Maximum
11/01/2016	11/30/2016	01/03/2017	Lead, Total		00	mg/L	Daily Maximum
06/01/2017	06/30/2017	07/26/2017	Lead, Total		0.00	mg/L	Daily Maximum
09/01/2018	09/30/2018	10/30/2018	Lead, Total	<	1.00000	mg/L	Daily Maximum
08/01/2019	08/31/2019	09/26/2019	Lead, Total	<	0.00072	mg/L	Daily Maximum
02/01/2020	02/29/2020	03/16/2020	Lead, Total	<	1.00000	mg/L	Daily Maximum
10/01/2020	10/31/2020	11/30/2020	Lead, Total	<	0.10000	mg/L	Daily Maximum
01/01/2021	01/31/2021	03/16/2021	Lead, Total	<	0.01500	mg/L	Daily Maximum
			Max Concentration	<	1.00	mg/l	

Outfall 001

Monitoring Period Begin Date	Monitoring Period End Date	DMR Received Date	Parameter Name		DMR Value	Units	Statistical Base Code
12/01/2014	12/31/2014	01/28/2015	Mercury, Total		0.0029	mg/L	Daily Maximum
02/01/2015	02/28/2015	03/02/2015	Mercury, Total		0.0021	mg/L	Daily Maximum
03/01/2015	03/31/2015	04/28/2015	Mercury, Total		0.0052	mg/L	Daily Maximum
05/01/2015	05/31/2015	06/29/2015	Mercury, Total		0.0037	mg/L	Daily Maximum
06/01/2015	06/30/2015	07/20/2015	Mercury, Total		0.0016	mg/L	Daily Maximum
09/01/2015	09/30/2015	10/29/2015	Mercury, Total		0.001	mg/L	Daily Maximum
10/01/2016	10/31/2016	11/10/2016	Mercury, Total	<	0.0015	mg/L	Daily Maximum
11/01/2016	11/30/2016	01/03/2017	Mercury, Total		0.0054	mg/L	Daily Maximum
06/01/2017	06/30/2017	07/26/2017	Mercury, Total		0.00090	mg/L	Daily Maximum
09/01/2018	09/30/2018	10/30/2018	Mercury, Total	<	1.0000	mg/L	Daily Maximum
08/01/2019	08/31/2019	09/26/2019	Mercury, Total		0.00037	mg/L	Daily Maximum
02/01/2020	02/29/2020	03/16/2020	Mercury, Total	<	1.0000	mg/L	Daily Maximum
10/01/2020	10/31/2020	11/30/2020	Mercury, Total	<	0.1000	mg/L	Daily Maximum
01/01/2021	01/31/2021	03/16/2021	Mercury, Total	<	0.0045	mg/L	Daily Maximum
			Max Concentration	<	1.00	mg/l	

Stormwater Outfall Sampling Results

Sampling Results for Outfall 002

Pollutant / Date	4/26/2019		6/13/2019		8/28/2019		3/28/2020		8/28/2020		6/3/2021		9/16/2021		Max Conc	
Units	S.U. or mg/l		S.U. or mg/l		S.U. or mg/l		S.U. or mg/l		S.U. or mg/l		S.U. or mg/l		S.U. or mg/l		S.U. or mg/l	
pH		7.06		7.2		6.92		6.34		6.99		7.01		6.75		7.2
TSS	<	5		1		50		3	<	5	<	5	<	10		50
Aluminum				0.0103												0.0103
Arsenic	<	0.005	<	0.0015	<	0.005		0.00071	<	0.005	<	0.005	<	0.005	<	0.005
Cadmium	<	0.001	<	0.0002	<	0.001	<	0.0002	<	0.001	<	0.001	<	0.001	<	0.001
Chromium	<	0.0025		0.00079		0.0034		0.00085	<	0.0025	<	0.0025	<	0.0025		0.0034
Copper		0.0056	<	0.0025		0.011	<	0.0025	<	0.005	<	0.005	<	0.005		0.011
Iron		0.04		0.037		0.74		0.059	<	0.03		0.049		0.07		0.74
Lead		0.0052		0.00076		0.038		0.0013	<	0.003	<	0.003	<	0.003		0.038

Sampling Results
Outfall 002

Pollutant / Date	8/13/2019	
	mg/l	
Total Antimony	<	0.001
Total Arsenic	<	0.0015
Total Barium	<	0.0025
Total Beryllium	<	0.0005
Total Boron	<	0.05
Total Cadmium	<	0.0002
Total Chromium		0.00079
Hexavalent Chromium		NS
Total Cobalt	<	0.0025
Total Copper	<	0.0025
Free Cyanide		NS
Total Cyanide		0.0072
Dissolved Iron	<	0.06
Total Iron		0.037
Total Lead		0.00076
Total Manganese		0.0011
Total Mercury	<	0.0002
Total Nickel	<	0.0025
Total Phenols (Phenolics)		NS
Total Selenium	<	0.002
Total Silver	<	0.0005
Total Thallium	<	0.0005
Total Zinc		0.045
Total Molybdenum	<	0.001

Notes:
NS - No Sample

Sampling Results for Outfall 003		
Pollutant / Date	**11/11/2020**	
Units	**S.U. or mg/l**	
pH		7.73
TSS		7
Arsenic	<	0.005
Cadmium	<	0.001
Chromium	<	0.0025
Copper	<	0.005
Iron		0.15
Lead	<	0.003

Sampling Results for Outfall 004		
Pollutant / Date	**11/11/2020**	
Units	**S.U. or mg/l**	
pH		7.6
TSS	<	5
Arsenic	<	0.005
Cadmium	<	0.001
Chromium	<	0.0025
Copper	<	0.005
Iron		0.041
Lead	<	0.003

Sampling Results for Outfall 005

Pollutant / Date	4/26/2019		6/13/2019		8/28/2019		3/28/2020		8/28/2020		6/3/2021		9/15/2021		Max Conc	
Units	S.U. or mg/l		S.U. or mg/l		S.U. or mg/l		S.U. or mg/l		S.U. or mg/l		S.U. or mg/l		S.U. or mg/l		S.U. or mg/l	
pH		7.52		7.74		7.48		7.46		7.54		7.32		7.66		7.74
TSS	<	5	<	1		61		48		5		19		80		80
Aluminum				0.0649												0.0649
Arsenic	<	0.005	<	0.0015	<	0.005		0.00089	<	0.005	<	0.005	<	0.005	<	0.005
Cadmium	<	0.001	<	0.0002	<	0.001	<	0.0002	<	0.001	<	0.001	<	0.001	<	0.001
Chromium	<	0.0025		0.0011		0.0056		0.0043	<	0.0025	<	0.0025		0.0034		0.0056
Copper		0.023		0.003		0.017		0.01	<	0.005		0.00097		0.012		0.023
Iron		0.19		0.091		1.1		0.78		0.15		0.27		0.76		1.1
Lead		0.0078		0.0032		0.073		0.023		0.005				0.021		0.073

Sampling Results
Outfall 005

Pollutant / Date	8/13/2019	
	mg/l	
Total Antimony	<	0.001
Total Arsenic	<	0.0015
Total Barium		0.0078
Total Beryllium	<	0.0005
Total Boron	<	0.05
Total Cadmium	<	0.0002
Total Chromium		0.0011
Hexavalent Chromium		NS
Total Cobalt	<	0.0025
Total Copper		0.003
Free Cyanide		NS
Total Cyanide		0.0047
Dissolved Iron	<	0.06
Total Iron		0.091
Total Lead		0.0032
Total Manganese		0.0065
Total Mercury	<	0.0002
Total Nickel	<	0.0025
Total Phenols (Phenolics)		NS
Total Selenium	<	0.002
Total Silver	<	0.0005
Total Thallium	<	0.0005
Total Zinc		0.025
Total Molybdenum		0.00045

Notes:
NS - No Sample