



Application Type
Facility Type
Major / Minor

Renewal
Industrial
Minor

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

Application No. PA0088960
APS ID 354435
Authorization ID 1501637

Applicant and Facility Information

Applicant Name	<u>West St Clair Township Pleasantville Borough Municipal Authority</u>	Facility Name	<u>West St Clair Pleasantville Water System</u>
Applicant Address	<u>PO Box 43</u>	Facility Address	<u>Chestnut Ridge & Dunning Ck Road</u>
	<u>Alum Bank, PA 15521-0043</u>		<u>Alum Bank, PA 15521</u>
Applicant Contact	<u>Allan Stombaugh</u>	Facility Contact	<u>James Ratchford</u>
Applicant Phone	<u>(814) 696-4244</u>	Facility Phone	<u>(814) 839-2965</u>
Client ID	<u>43897</u>	Site ID	<u>239368</u>
SIC Code	<u>4941</u>	Municipality	<u>West Saint Clair Township</u>
SIC Description	<u>Trans. & Utilities - Water Supply</u>	County	<u>Bedford</u>
Date Application Received	<u>October 2, 2024</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>November 1, 2024</u>	If No, Reason	
Purpose of Application	<u>This is an application request for NPDES renewal.</u>		

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / Environmental Engineer Nick Hong (via electronic signature)	April 7, 2025
X		Daniel W. Martin, P.E. / Environmental Engineer Manager Maria D. Bebenek for	May 22, 2025
X		Maria D. Bebenek, P.E. / Environmental Program Manager Maria D. Bebenek	May 22, 2025

Summary of Review

The application submitted by the applicant requests a NPDES renewal permit for the West St. Clair Pleasantville Water located at Dunning Creek Road, Pleasantville, PA 15521 in Bedford County, municipality of West St. Clair Township. The existing permit became effective on April 1, 2020 and expired on March 31, 2025. The application for renewal was received by DEP Southcentral Regional Office (SCRO) on October 2, 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 0.0032 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 Bedford County Planning Commission and Pleasantville Borough Council, and West St. Clair Township Supervisors and the notice was received by the parties on September 20, 2024 and September 23, 2024.

Utilizing the DEP's web-based Emap-PA information system, the receiving waters has been determined to be Dunning Creek. The sequence of receiving streams that the Dunning Creek discharges into are Raystown Branch Juniata River, Juniata River, Susquehanna River which eventually drains into the Chesapeake Bay. The subject site is subject to the Chesapeake Bay implementation requirements. The receiving water has protected water usage for 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 Dunning 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:

- **Monitoring for TDS, Calcium, Chloride, Magnesium, and Sodium shall be 1x/quarter.**
- **Monitoring for bromide and sulfate have been eliminated.**

Sludge use and disposal description and location(s): The facility did not report disposal of sewage sludge/biosolids from 2023 to October 2024.

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: West St. Clair Pleasantville Water System
NPDES Permit #: PA0088960
Physical Address: PO Box 43
Alum Bank, PA 15521
Mailing Address: Dunning Creek Road
Pleasantville, PA
Contact: Bud Ratchford
Operator
bratchford@mhakinc.com
(814) 935-0393
Consultant: Mike Basaran
Project Engineer
225 Grandview Avenue
Camp Hill, PA 17011
(717) 585-6366
Mike.basaran@ghd.com

1.2 Permit History

Permit submittal included the following information.

- NPDES application
- Flow Diagrams
- Effluent Sample Data

2.0 Treatment Facility Summary

2.1.1 Site location

The physical address for the facility is Chestnut Ridge & Dunning Creek Road, Pleasantville, PA. A topographical and an aerial photograph of the facility are depicted as Figure 1 and Figure 2.

NPDES Permit Fact Sheet
West St Clair Pleasantville Water System

NPDES Permit No. PA0088960

Figure 1: Topographical map of the subject facility

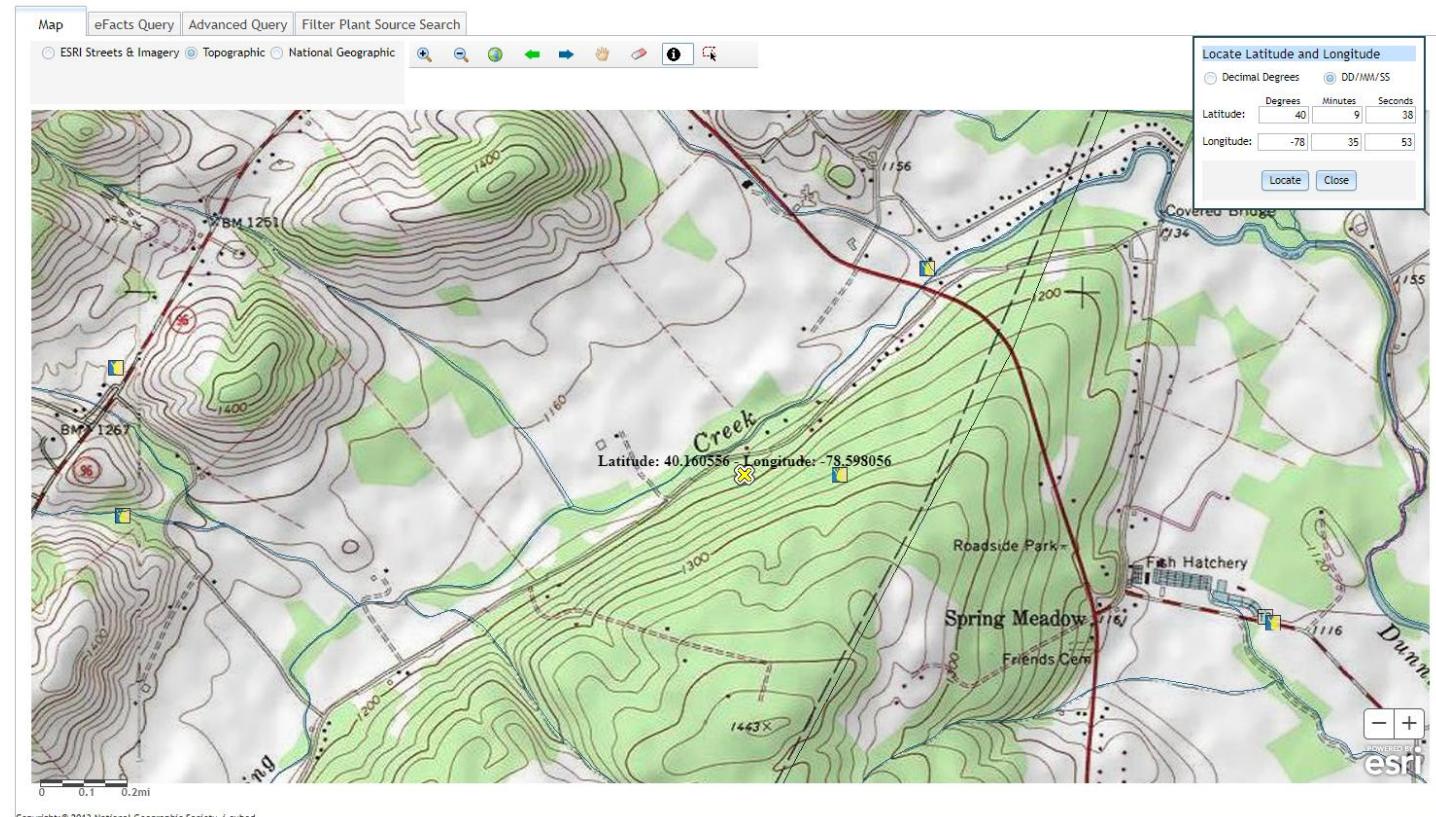
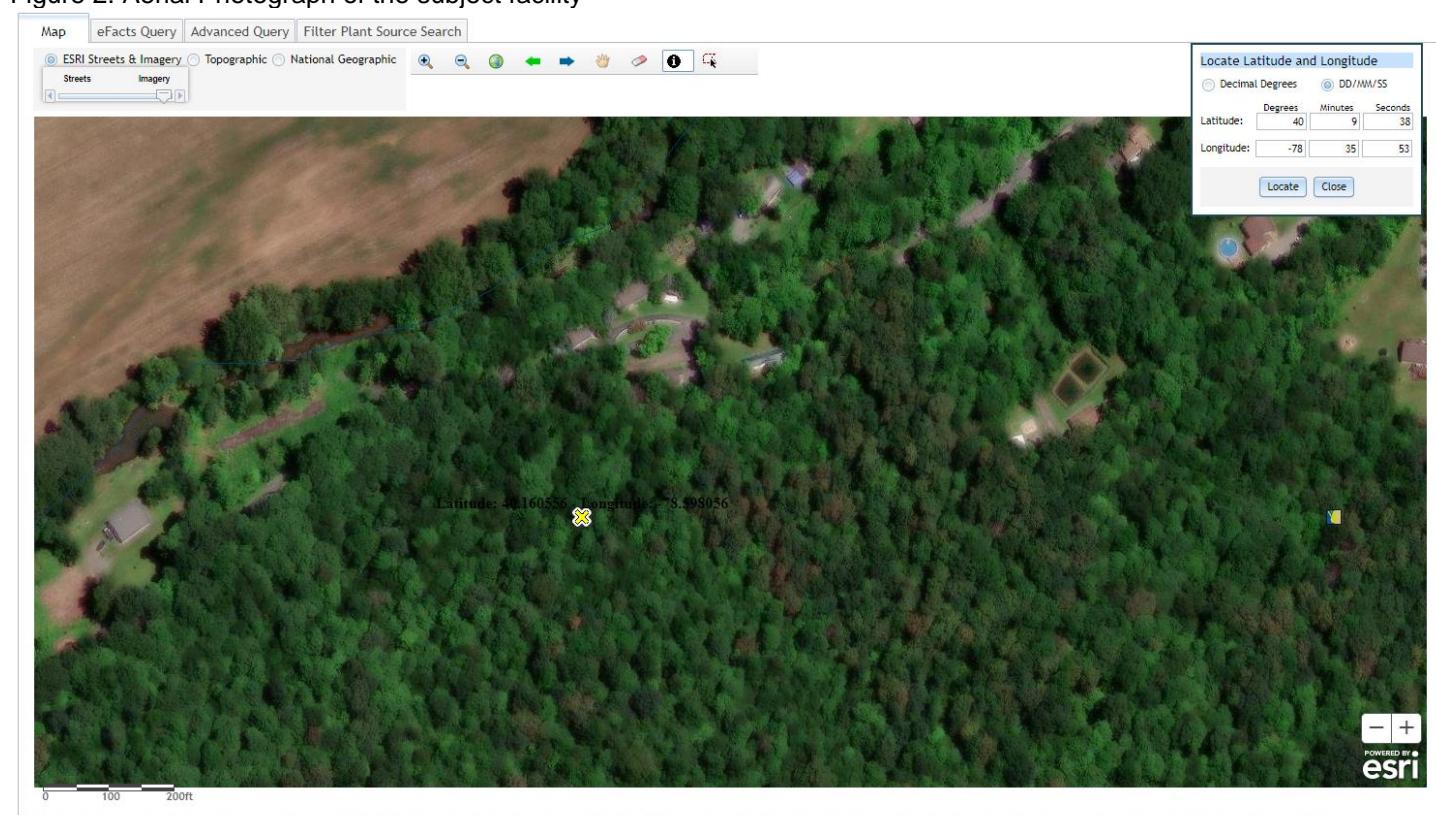


Figure 2: Aerial Photograph of the subject facility



Imagery: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community; ESRI Streets: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

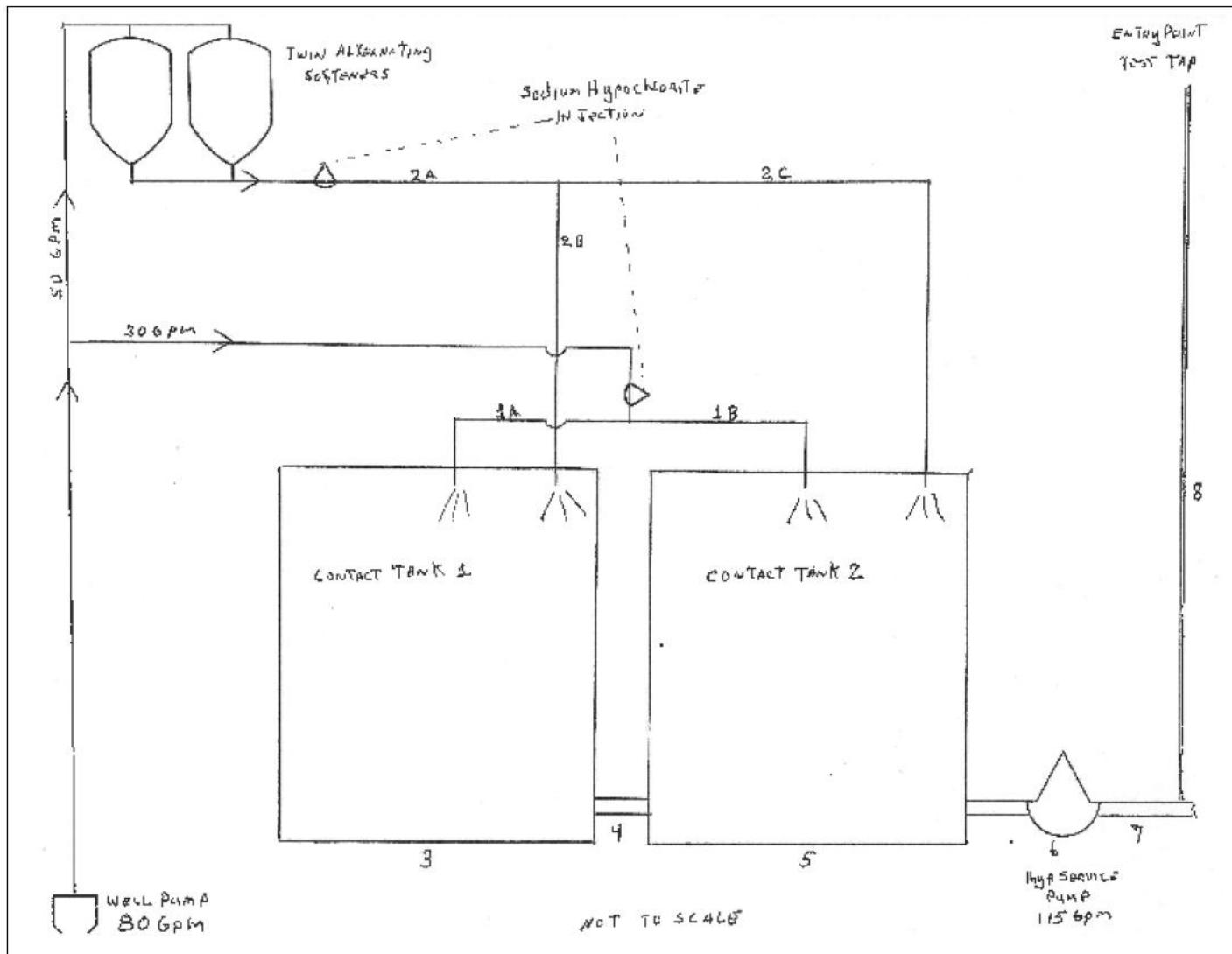
2.2 Description of Wastewater Treatment Process

The subject facility is a 0.0032 MGD design flow facility. The subject facility discharges water softener backwash into two detention ponds. The detention ponds has a detention time of approximately 7 days and a capacity of 22,440 gallons (Fact Sheet from March 20, 2002). The facility is being evaluated for flow, pH, TRC, TDS, sulfate, chloride, bromide, nitrogen, and phosphorus. 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: W St Clair Pleasantville Ws				
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Industrial	Chemical (Industrial Waste)	Ion Exchange	No Disinfection	0.0032
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.0032		Not Overloaded		

A schematic of the treatment process is depicted.



2.3 Facility Outfall Information

The facility has the following outfall information for wastewater.

Outfall No. 001
Latitude 40° 9' 38.00"

Design Flow (MGD) .0032
Longitude -78° 35' 38.00"

Wastewater Description: Water Treatment Effluent

2.3.1 Operational Considerations- Chemical Additives

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

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

- The facility did not report any chemical additives in their NPDES application.

2.4 Existing NPDES Permits Limits

The existing NPDES permit limits are summarized in the table.

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

I. A. For Outfall 001, Latitude 40° 9' 38.00", Longitude 78° 35' 38.00", River Mile Index 17.23, Stream Code 14586

Receiving Waters: Dunning Creek (WWF)

Type of Effluent: Water Treatment Effluent

1. The permittee is authorized to discharge during the period from April 1, 2020 through March 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	Average Weekly	Minimum	Semi-Annual Average	Maximum			
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	Continuous	Measured	
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab
Total Dissolved Solids	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab
Total Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Calculation
Total Nitrogen (Total Load, lbs) (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Grab
Total Phosphorus (Total Load, lbs) (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Sulfate, Total	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab
Chloride	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab
Bromide	XXX	XXX	XXX	Report	XXX	XXX	1/6 months	Grab

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.

12/04/2019: Seven valves associated with the treatment plant piping were replaced in 2019. The facility plans to replace the other 4 valves.

03/08/2022: There was nothing significant to report.

03/29/2024: There was nothing significant to report.

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 0.003 MGD. The design capacity of the treatment system is 0.0032 MGD.

The off-site laboratory used for the analysis of the parameters was Pace Analytical Services, LLC located at 2019 Ninth Avenue, Altoona, PA 16602.

DMR Data for Outfall 001 (from March 1, 2024 to February 28, 2025)

Parameter	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24
Flow (MGD) Average Monthly	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.003	0.003	0.003	0.003	0.003
Flow (MGD) Daily Maximum	0.005	0.005	0.004	0.004	0.005	0.006	0.004	0.004	0.004	0.005	0.004	0.005
pH (S.U.) Instantaneous Minimum	7.41	7.45	7.54	7.73	7.77	7.98	8.04	8.1	7.45	7.5	7.06	6.67
pH (S.U.) Instantaneous Maximum	8.24	8.08	8.64	8.40	8.98	8.99	8.98	8.98	8.79	8.88	8.82	8.39
TRC (mg/L) Semi-Annual Average			0.04						0.02			
Total Dissolved Solids (mg/L) Semi-Annual Average			9980						16500			
Total Nitrogen (mg/L) Annual Average			< 22.50									
Total Nitrogen (lbs) Total Annual			< 11									
Total Phosphorus (mg/L) Annual Average			0.0480									
Total Phosphorus (lbs) Total Annual			0.02									
Sulfate (mg/L) Semi-Annual Average			344						531			
Chloride (mg/L) Semi-Annual Average			6510						11900			
Bromide (mg/L) Semi-Annual Average			< 2.00						< 4.00			

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 April 1, 2020 to April 3, 2025, there were no observed effluent non-compliances.

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 April 1, 2020 to April 3, 2025, 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.

The facility did not report disposal of sewage sludge/biosolids from 2023 to October 2024.

3.5 Open Violations

No open violations existed as of April 2025.

4.0 Receiving Waters and Water Supply Information Detail Summary

4.1 Receiving Waters

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

4.2 Public Water Supply (PWS) Intake

The closest PWS to the subject facility is Saxton Municipal Water Authority (PWS ID #4050021) located approximately 68 miles downstream of the subject facility on the Juniata River. Based upon the distance and the flow rate of the facility, the PWS should not be impacted.

4.3 Class A Wild Trout Streams

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

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

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

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

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

non-point sources that will prevent a violation of water quality standards. A TMDL also includes a margin of safety to ensure protection of the water.

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

The receiving waters is listed in the 2024 Pennsylvania Integrated Water Quality Monitoring and Assessment Report as a Category 2 waterbody. The surface waters is an attaining stream that supports aquatic life. 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 Raystown Branch Juniata station (WQN223). This WQN station is located approximately 69 miles downstream of the subject facility.

The closest gauge station to the subject facility is the Dunning Creek at Belden, PA station (USGS station number 1560000). This gauge station is located approximately 13 miles downstream of the subject facility.

For WQM modeling, pH and stream water temperature data from the water quality network station was used. pH was estimated to be 23.3 and the stream water temperature was estimated to be 8.0 C.

The hardness of the stream was estimated by collecting a sample upstream of the facility. The sampling result was 108.6 mg/l CaCO₃.

NPDES Permit Fact Sheet
West St Clair Pleasantville Water System

NPDES Permit No. PA0088960

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

Gauge Station Data		
USGS Station Number	1560000	
Station Name	Dunning Creek at Belden, PA	
Q710	9.4 ft ³ /sec	
Drainage Area (DA)	172 mi ²	

Calculations

The low flow yield of the gauge station is:

Low Flow Yield (LFY) = Q710 / DA

$$LFY = (9.4 \text{ ft}^3/\text{sec} / 172 \text{ mi}^2)$$

LFY =	0.0547	ft ³ /sec/mi ²
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The low flow at the subject site is based upon the DA of 32.3 mi²

Q710 = (LFY@gauge station)(DA@Subject Site)

$$Q710 = (0.0547 \text{ ft}^3/\text{sec}/\text{mi}^2)(32.3 \text{ mi}^2)$$

Q710 =	1.765	ft ³ /sec
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4.6 Summary of Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.0032
Latitude	40° 9' 47.05"	Longitude	-78° 35' 43.02"
Quad Name		Quad Code	
Wastewater Description:	Water Treatment Effluent		
Receiving Waters	Dunning Creek (WWF)	Stream Code	14586
NHD Com ID	65844617	RMI	18
Drainage Area	32.3	Yield (cfs/mi ²)	0.0547
Q ₇₋₁₀ Flow (cfs)	1.765	Q ₇₋₁₀ Basis	StreamStats/streamgauge
Elevation (ft)	1145	Slope (ft/ft)	
Watershed No.	11-C	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s) supports aquatic life		
Cause(s) of Impairment	Not applicable		
Source(s) of Impairment	Not applicable		
TMDL Status	Not applicable	Name	
Background/Ambient Data		Data Source	
pH (SU)	8.00	Median July to Sept	
Temperature (°C)	23.3	Median July to Sept	
Hardness (mg/L)	108.6	NPDES application	
Other:			
Nearest Downstream Public Water Supply Intake	Saxton Municipal Water Authority		
PWS Waters	Juniata River	Flow at Intake (cfs)	
PWS RMI	41	Distance from Outfall (mi)	68

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). Permit limits for water treatment plant wastes are subject to handling and disposal of water treatment plant (WTP) using Best Practicable Control Technology (BPCT) currently available. Waste water from regeneration/backwash of ion-exchange softening units produce elevated concentrations of TDS, calcium, magnesium, sodium, and chloride ions (Technology-Based Control Requirements for Water Treatment Plant Wastes 34).

The proposed permit shall include monitoring for TDS, calcium, magnesium, sodium, and chloride.

5.3 Water Quality-Based Limitations

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

Determination of WQBEL is calculated by spreadsheet analysis or by a computer modeling program developed by DEP. DEP permit engineers utilize the following computing programs for WQBEL permit limitations: (1) MS Excel worksheet for Total Residual Chlorine (TRC); (2) WQM 7.0 for Windows Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen Version 1.1 (WQM Model) and (3) Toxics using DEP Toxics Management Spreadsheet for Toxics pollutants.

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

<i>General Data 1</i>	<i>(Modeling Point #1)</i>	<i>(Modeling Point #2)</i>	<i>(Modeling Point #3)</i>	<i>(Modeling Point #4)</i>	<i>Units</i>
Stream Code	14586	14586	14586	14586	
River Mile Index	18	14.18	14.06	10.87	miles
Elevation	1145	1098	1096	1086	feet
Latitude	40.160556	40.146484	40.144713	40.128046	
Longitude	-78.598056	-78.562372	-78.562544	-78.556621	
Drainage Area	Stream stats	Stream stats	Stream stats	Stream stats	sq miles
Low Flow Yield	0.0547	0.0547	0.0547	0.0547	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.

The facility discharges water backwash. No known concerns for CBOD, ammonia nitrogen, and dissolved oxygen are suspected. The facility is not subject to WQM modeling.

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 through 2.

The NPDES application collected three samples.

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:

$$\text{TMDL} = \sum \text{WLAs} + \sum \text{LAs} + \text{MOS}$$

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. Monitoring for facilities with other discharges will generally conform to minimum sampling frequencies with the permit writer having final discretion.

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.

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

5.5 Anti-Degradation Requirement

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

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

For a new, additional, or increased point source discharge to an HQ or EV water, the person proposing the discharge is required to utilize a nondischarge alternative that is cost-effective and environmentally sound when compared with the cost of the proposed discharge. If a nondischarge alternative is not cost-effective and environmentally sound, the person must use the best available combination of treatment, pollution prevention, and wastewater reuse technologies and assure that

any discharge is nondegrading. In the case of HQ waters, DEP may find that after satisfaction of intergovernmental coordination and public participation requirements lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In addition, DEP will assure that cost-effective and reasonable best management practices for nonpoint source control in HQ and EV waters are achieved.

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

5.6 Anti-Backsliding

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

6.0 NPDES Parameter Details

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

The reader will find in this section:

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

6.1 Recommended Monitoring Requirements and Effluent Limitations

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

6.1.1 Conventional Pollutants and Disinfection

Summary of Proposed NPDES Parameter Details for Conventional Pollutants and Disinfection West St Clair Pleasantville Water System; PA0088960		
Parameter	Permit Limitation Required by ¹ :	Recommendation
pH (S.U.)	TBEL	Monitoring: The monitoring frequency shall be daily as a grab sample (Table 6-4).
		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).
TRC	TBEL	Monitoring: The monitoring frequency shall be 2x/yr as a grab sample (Table 6-4).
		Effluent Limit: The average monthly limit should not exceed 0.5 mg/l and/or 1.6 mg/l as an instantaneous maximum.
		Rationale: Chlorine in both combined (chloramine) and free form is extremely toxic to freshwater fish and other forms of aquatic life (Implementation Guidance Total Residual Chlorine 1). The TRC effluent limitations to be imposed on a discharger shall be the more stringent of either the WQBEL or TBEL requirements and shall be expressed in the NPDES permit as an average monthly and instantaneous maximum effluent concentration (Implementation Guidance Total Residual Chlorine 4). Based on the stream flow rate (lowest 7-day flow rate in 10 years) and the design flow rate of the subject facility calculated by the TRC Evaluation worksheet, the TBEL is more stringent than the WQBEL. The monitoring frequency has been assigned in accordance with Table 6-3 and the effluent limits assigned by Chapter 92a.48(b)(2)

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 0.0032 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 Implementation 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 West St Clair Pleasantville Water System; PA0088960		
Parameter	Permit Limitation Required by ¹ :	Recommendation
Total Nitrogen	Chesapeake Bay TMDL	Monitoring: The monitoring frequency shall be 1x/yr as a calculation
		Effluent Limit: No effluent requirements.
		Rationale: Due to the Chesapeake Bay Implementation Plan, the facility is required to be monitored on a frequency at least 1x/yr.
Total Phosphorus	Chesapeake Bay TMDL	Monitoring: The monitoring frequency shall be 1x/yr as a 24-hr grab 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/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 0.0032 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 Implementation Guidance (Document # 391-0300-002)
- 5 Chesapeake Bay Phase 3 Watershed Implementation Plan Wastewater Supplement, Revised September 13, 2021

6.1.3 Toxics

Summary of Proposed NPDES Parameter Details for Toxics			
West St Clair Pleasantville Water System; PA0088960			
Parameter	Permit Limitation Required by ¹ :	Recommendation	
TDS	TBCRWTPW guidance document	Monitoring: The monitoring frequency shall be 1x/quarter as a grab sample	
		Effluent Limit: No effluent requirements	
		Rationale: The basis for the monitoring is the Technology-Based Control Requirements for Water Treatment Plant Wastes (TBCRWTPW) guidance document	
Calcium	TBCRWTPW guidance document	Monitoring: The monitoring frequency shall be 1x/quarter as a grab sample	
		Effluent Limit: No effluent requirements	
		Rationale: The basis for the monitoring is the Technology-Based Control Requirements for Water Treatment Plant Wastes (TBCRWTPW) guidance document	
Chloride	TBCRWTPW guidance document	Monitoring: The monitoring frequency shall be 1x/quarter as a grab sample	
		Effluent Limit: No effluent requirements	
		Rationale: The basis for the monitoring is the Technology-Based Control Requirements for Water Treatment Plant Wastes (TBCRWTPW) guidance document	
Magnesium	TBCRWTPW guidance document	Monitoring: The monitoring frequency shall be 1x/quarter as a grab sample	
		Effluent Limit: No effluent requirements	
		Rationale: The basis for the monitoring is the Technology-Based Control Requirements for Water Treatment Plant Wastes (TBCRWTPW) guidance document	
Sodium	TBCRWTPW guidance document	Monitoring: The monitoring frequency shall be 1x/quarter as a grab sample	
		Effluent Limit: No effluent requirements	
		Rationale: The basis for the monitoring is the Technology-Based Control Requirements for Water Treatment Plant Wastes (TBCRWTPW) guidance document	
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 0.0032 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			

6.1.4 Pollutants Regulated by Chapter 92a.61

The NPDES renewal application included monitoring data for PFOS parameters. The parameters were sampled three times. The maximum concentrations for the four PFOS parameters did not exceed the quantitation limits listed below.

Quantitation Limits

4.0 ng/L for PFOA
3.7 ng/L for PFOS
3.5 ng/L for PFBS
6.4 ng/L for HFPO-DA

At Central Office direction, monitoring for PFOS parameters for water treatment plants shall be regulated by Safe Drinking Water. No PFOS parameters shall be recommended for the wastewater NPDES permit.

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.

- **Monitoring for TDS, Calcium, Chloride, Magnesium, and Sodium shall be 1x/quarter.**
- **Monitoring for bromide and sulfate have been eliminated.**

6.3.1 Summary of Proposed NPDES Effluent Limits

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

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

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

I. A. For Outfall 001, Latitude 40° 9' 38.00", Longitude 78° 35' 38.00", River Mile Index 18, Stream Code 14586

Receiving Waters: Dunning Creek (WWF)

Type of Effluent: Water Treatment 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	Average Weekly	Minimum	Average Quarterly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.5 SEMI AVG	XXX	1.6	1/6 months	Grab
Total Dissolved Solids	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	Grab
Total Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Calculation
Total Nitrogen (Total Load, lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Grab
Total Phosphorus (Total Load, lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Magnesium, Total	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	Grab
Calcium, Total	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	Grab
Sodium, Total	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	Grab

6.3.2 Summary of Proposed Permit Part C Conditions

The subject facility has the following Part C conditions.

- Chlorine Minimization
- Chesapeake Bay Nutrient Definitions
- Basin Cleaning

Tools and References Used to Develop Permit	
<input type="checkbox"/>	WQM for Windows Model (see Attachment [REDACTED])
<input checked="" type="checkbox"/>	Toxics Management Spreadsheet (see Attachment [REDACTED])
<input type="checkbox"/>	TRC Model Spreadsheet (see Attachment [REDACTED])
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment [REDACTED])
<input type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input type="checkbox"/>	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
<input type="checkbox"/>	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
<input type="checkbox"/>	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
<input type="checkbox"/>	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
<input type="checkbox"/>	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
<input type="checkbox"/>	Pennsylvania CSO Policy, 386-2000-002, 9/08.
<input type="checkbox"/>	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
<input type="checkbox"/>	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
<input type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
<input type="checkbox"/>	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
<input type="checkbox"/>	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
<input type="checkbox"/>	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
<input type="checkbox"/>	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
<input type="checkbox"/>	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
<input type="checkbox"/>	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
<input type="checkbox"/>	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
<input type="checkbox"/>	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
<input type="checkbox"/>	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
<input type="checkbox"/>	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
<input type="checkbox"/>	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
<input type="checkbox"/>	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
<input type="checkbox"/>	Design Stream Flows, 386-2000-003, 9/98.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
<input type="checkbox"/>	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
<input type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input checked="" type="checkbox"/>	SOP: [REDACTED]
<input type="checkbox"/>	Other: [REDACTED]

Attachment A

Stream Stats/Gauge Data

26 Selected Streamflow Statistics for Streamgage Locations in and near Pennsylvania

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

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

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

Table 1 13

Table 1. List of U.S. Geological Survey streamgage locations in and near Pennsylvania with updated streamflow statistics.—Continued
[Latitude and Longitude in decimal degrees; mi², square miles]

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

Attachment B

Toxics Management Spreadsheet Output Values



Discharge Information

Instructions Discharge Stream

Facility: West St. Clair Pleasantville Water System NPDES Permit No.: PA0088960 Outfall No.: 001

Evaluation Type Major Sewage / Industrial Waste Wastewater Description: Water softening backwash

Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Discharge Characteristics					
			Partial Mix Factors (PMFs)			Complete Mix Times (min)		
			AFC	CFC	THH	CRL	Q ₇₋₁₀	Q _h
0.0032	5310	7.74						

Group 1	Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank		1 if left blank		
				Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteri a Mod	Chem Transl
	Total Dissolved Solids (PWS)	mg/L	17400									
	Chloride (PWS)	mg/L	13900									
	Bromide	mg/L	< 2									
	Sulfate (PWS)	mg/L	431									
	Fluoride (PWS)	mg/L	< 10									
Group 2	Total Aluminum	µg/L	< 174									
	Total Antimony	µg/L	< 0.86									
	Total Arsenic	µg/L	< 1									
	Total Barium	µg/L	402									
	Total Beryllium	µg/L	< 0.676									
	Total Boron	µg/L	< 57.6									
	Total Cadmium	µg/L	< 0.57									
	Total Chromium (III)	µg/L	< 1.99									
	Hexavalent Chromium	µg/L	< 1									
	Total Cobalt	µg/L	3.12									
	Total Copper	µg/L	65.3									
	Free Cyanide	µg/L										
	Total Cyanide	µg/L	< 0.01									
	Dissolved Iron	µg/L	< 22.6									
	Total Iron	µg/L	70.1									
	Total Lead	µg/L	< 1.94									
	Total Manganese	µg/L	25									
	Total Mercury	µg/L	< 0.0002									
	Total Nickel	µg/L	54.7									
	Total Phenols (Phenolics) (PWS)	µg/L	< 0.063									
	Total Selenium	µg/L	< 2.5									
	Total Silver	µg/L	< 1.37									
	Total Thallium	µg/L	< 0.598									
	Total Zinc	µg/L	< 40.4									
	Total Molybdenum	µg/L	< 0.798									
	Acrolein	µg/L	<									
	Acrylamide	µg/L	<									
	Acrylonitrile	µg/L	<									
	Benzene	µg/L	<									
	Bromoform	µg/L	<									
	Carbon Tetrachloride	µg/L	<									
	Chlorobenzene	µg/L										
	Chlorodibromomethane	µg/L	<									
	Chloroethane	µg/L	<									
	2-Chloroethyl Vinyl Ether	µg/L	<									



Stream / Surface Water Information

West St. Clair Pleasantville Water System, NPDES Permit No. PA0088960, Outfall 001

Instructions **Discharge** Stream

Receiving Surface Water Name: **Dunning 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	014586	18	1145	32.3			Yes
End of Reach 1	014586	14.18	1098	59.4			Yes

Q₇₋₁₀

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	18	0.0547										109	8		
End of Reach 1	14.18	0.0547										109	8		

Q_h

Location	RMI	LFY (cfs/mi ²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	18														
End of Reach 1	14.18														



Model Results

West St. Clair Pleasantville Water System, NPDES Permit No. PA0088960, Outfall 001

All Inputs Results Limits

Hydrodynamics

Wasteload Allocations

AFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	178,134	
Total Antimony	0	0		0	1,100	1,100	261,263	
Total Arsenic	0	0		0	340	340	80,754	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	4,987,740	
Total Boron	0	0		0	8,100	8,100	1,923,842	
Total Cadmium	0	0		0	2.616	2.8	666	Chem Translator of 0.933 applied
Total Chromium (III)	0	0		0	710.334	2,248	533,900	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	3,870	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	22,564	
Total Copper	0	0		0	17.320	18.0	4,285	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	86.471	115	27,319	Chem Translator of 0.752 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1,400	1.65	391	Chem Translator of 0.85 applied
Total Nickel	0	0		0	588.017	589	139,941	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	5.111	6.01	1,428	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	15,438	
Total Zinc	0	0		0	147.208	151	35,750	Chem Translator of 0.978 applied

CFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

NPDES Permit Fact Sheet
West St Clair Pleasantville Water System

NPDES Permit No. PA0088960

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	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	78,739	
Total Arsenic	0	0		0	150	150	53,685	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	1,467,400	
Total Boron	0	0		0	1,600	1,600	572,644	
Total Cadmium	0	0		0	0.285	0.32	113	Chem Translator of 0.9 applied
Total Chromium (III)	0	0		0	88.119	102	36,672	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	3,720	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	6,800	
Total Copper	0	0		0	10.728	11.2	4,000	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	536,854	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	3.165	4.16	1,490	Chem Translator of 0.76 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	324	Chem Translator of 0.85 applied
Total Nickel	0	0		0	62.187	62.4	22,324	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	1,786	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	4,653	
Total Zinc	0	0		0	141.305	143	51,292	Chem Translator of 0.986 applied

THH

CCT (min): 34.158

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	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	2,004	
Total Arsenic	0	0		0	10	10.0	3,579	
Total Barium	0	0		0	2,400	2,400	858,966	
Total Boron	0	0		0	3,100	3,100	1,109,498	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	107,371	
Total Iron	0	0		0	N/A	N/A	N/A	

NPDES Permit Fact Sheet
West St Clair Pleasantville Water System

NPDES Permit No. PA0088960

Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	357,902	
Total Mercury	0	0		0	0.050	0.05	17.9	
Total Nickel	0	0		0	610	610	218,321	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	85.9	
Total Zinc	0	0		0	N/A	N/A	N/A	

CRL

CCT (min): 9.593

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	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

Recommended WQBELs & Monitoring Requirements

No. Samples/Month: 4

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

NPDES Permit Fact Sheet
West St Clair Pleasantville Water System

NPDES Permit No. PA0088960

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
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	114,176	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	858,966	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	572,644	µg/L	Discharge Conc < TQL
Total Cadmium	113	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	36,672	µg/L	Discharge Conc < TQL
Hexavalent Chromium	2,480	µg/L	Discharge Conc < TQL
Total Cobalt	6,800	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	2,747	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	107,371	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	536,854	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	1,490	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	357,902	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	17.9	µg/L	Discharge Conc < TQL
Total Nickel	22,324	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	1,786	µg/L	Discharge Conc < TQL
Total Silver	915	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	85.9	µg/L	Discharge Conc < TQL
Total Zinc	22,914	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS

Model Results

4/3/2025

Page 8

Attachment C

TRC Evaluation

West St. Clair Pleasantville Water
PA0088960

April 2025

1A	B	C	D	E	F	G
2 TRC EVALUATION						
3 Input appropriate values in B4:B8 and E4:E7						
4	1.765	= Q stream (cfs)		0.5	= CV Daily	
5	0.0032	= Q discharge (MGD)		0.5	= CV Hourly	
6	30	= no. samples		1	= AFC_Partial Mix Factor	
7	0.3	= Chlorine Demand of Stream		1	= CFC_Partial Mix Factor	
8	0	= Chlorine Demand of Discharge		15	= AFC_Criteria Compliance Time (min)	
9	0.5	= BAT/BPJ Value		720	= CFC_Criteria Compliance Time (min)	
	0	= % Factor of Safety (FOS)		0	= Decay Coefficient (K)	
10	Source	Reference	AFC Calculations	Reference	CFC Calculations	
11	TRC	1.3.2.iii	WLA_afc = 113.754	1.3.2.iii	WLA_cfc = 110.894	
12	PENTOXSD TRG	5.1a	LTAMULT_afc = 0.373	5.1c	LTAMULT_cfc = 0.581	
13	PENTOXSD TRG	5.1b	LTA_afc= 42.388	5.1d	LTA_cfc = 64.469	
14						
15	Source	Effluent Limit Calculations				
16	PENTOXSD TRG	5.1f	AML MULT = 1.231			
17	PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500		BAT/BPJ	
18			INST MAX LIMIT (mg/l) = 1.635			
	WLA_afc	$(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...\\ ...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)$				
	LTAMULT_afc	$\text{EXP}((0.5*\text{LN}(cvh^2+1))-2.326*\text{LN}(cvh^2+1)^{0.5})$				
	LTA_afc	$wla_afc*LTAMULT_afc$				
	WLA_cfc	$(.011/e(-k*CFC_tc)) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...\\ ...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)$				
	LTAMULT_cfc	$\text{EXP}((0.5*\text{LN}(cvd^2/no_samples+1))-2.326*\text{LN}(cvd^2/no_samples+1)^{0.5})$				
	LTA_cfc	$wla_cfc*LTAMULT_cfc$				
	AML MULT	$\text{EXP}(2.326*\text{LN}((cvd^2/no_samples+1)^{0.5})-0.5*\text{LN}(cvd^2/no_samples+1))$				
	AVG MON LIMIT	$\text{MIN}(\text{BAT_BPJ},\text{MIN}(\text{LTA_afc},\text{LTA_cfc})*\text{AML_MULT})$				
	INST MAX LIMIT	$1.5*((\text{av_mon_limit}/\text{AML_MULT})/\text{LTAMULT_afc})$				