pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0266469**
Facility Type	**Municipal**	APS ID	**932343**
Major / Minor	**Minor**	Authorization ID	**1458384**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Weaverland Valley Authority**	Facility Name	**Weaverland Valley Authority Regional WWTP**
Applicant Address	4610 Division Highway	Facility Address	280 Conestoga Creek Road
	East Earl, PA 17519		East Earl, PA 17519
Applicant Contact	Kenneth Witmer	Facility Contact	Bruce Crabb
Applicant Phone	(717) 354-5593	Facility Phone	(717) 354-5593
Client ID	333097	Site ID	820498
Ch 94 Load Status	Not Overloaded	Municipality	East Earl Township
Connection Status	No Limitations	County	Lancaster
Date Application Received	October 16, 2023	EPA Waived?	Yes
Date Application Accepted	October 23, 2023	If No, Reason	

Purpose of Application: NPDES Renewal.

Summary of Review

Weaverland Valley Authority (WVA) has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit. The existing permit was issued on April 29, 2019 and became effective on May 1, 2019, authorizing discharge of treated sewage from the facility into the Conestoga River. The existing permit expiration date was April 30, 2024, and the permit has been administratively extended since that time. An amendment to the NPDES permit was issued on September 21, 2021, to modify the construction schedule in Part C of the permit.

Per the previous fact sheet, the WVA was formed to construct, own and operate this WWTP. The regional WWTP will serve the Borough of Terre Hill, areas of East Earl Township currently served by the existing Terre Hill WWTP, the Village of Goodville needs area, and needs areas along Route 625 in East Earl Township. The WVA WWTP will receive sewage from the existing Terre Hill Borough's WWTP (PA0020222), the existing Conestoga Wood Specialties package WWTP (PA0083909), and the existing Goodville Industrial Center's package WWTP (PA0085448). WVA will own and maintain the new WWTP, as well as the existing collection systems. The facilities for Conestoga Wood Specialties, Terre Hill Borough, and the Village of Goodville are decommissioned, and the NPDES permits will be terminated. Construction certification of the new WVA WWTP was received by DEP on December 1, 2023.

Changes in this renewal: Net Total Nitrogen and Net Total Phosphorus total monthly reporting requirements have been removed from the permit. E.Coli monitoring has been added to the permit. The UV transmittance monitoring requirement has been changed to UV dosage.

Sludge use and disposal description and location(s): Aerobic digesters with offsite disposal.

Supplemental information for this facility is provided at the end of this fact sheet.

Approve	Deny	Signatures	Date
X		Benjamin R. Lockwood Benjamin R. Lockwood / Environmental Engineering Specialist	May 22, 2024
X		Maria D. Bebenek for Daniel W. Martin, P.E. / Environmental Engineer Manager	June 11, 2024

Summary of Review
Public Participation 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.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.41
Latitude	40º 8' 24"	Longitude	76º 2' 8"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Conestoga River (WWF, MF)	Stream Code	7548
NHD Com ID	57462411	RMI	48.9
Drainage Area	43.6 mi^2	Yield (cfs/mi^2)	0.142
Q_{7-10} Flow (cfs)	6.2	Q_{7-10} Basis	USGS PA StreamStats
Elevation (ft)	366	Slope (ft/ft)	
Watershed No.	7-J	Chapter 93 Class.	WWF, MF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	Pathogens, Pathogens, Habitat Alterations, Nutrients, Siltation		
Source(s) of Impairment	Agriculture, Urban Runoff/Storm Sewers, Habitat Modification – Other Than Hydromodification, Agriculture, Agriculture		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake	Lancaster City Water Bureau		
PWS Waters	Conestoga River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	25.3

Changes Since Last Permit Issuance: USGS PA StreamStats provided a drainage area of 43.6 mi^2 and a Q_{7-10} flow of 6.2 ft^3/s at the point of discharge.

Other Comments: None

Treatment Facility Summary				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Tertiary	Sequencing Batch Reactor W/Sol Removal	Ultraviolet	0.41
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.561	1,871	Not Overloaded	Aerobic Digesters	Hauled offsite for processing

Changes Since Last Permit Issuance: The construction schedule in Part C of the NPDES permit was modified on September 21, 2021. No other changes were made.

Other Comments: The WWTP consists of: influent screening, influent pump station, two sequencing batch reactors (SBRs), post equalization, cloth media filtration, UV disinfection and cascade aeration, aerobic digesters, and Outfall 001 to the Conestoga River.

The WWTP uses alum for coagulation in the SBR and aerobic digester tanks, caustic soda in the SBR and aerobic digester tanks to adjust pH and alkalinity, supplemental carbon in the SBR basins for denitrification, and anionic polymer as a coagulant aid.

Compliance History	
Summary of DMRs:	A summary of past DMR effluent data is present on the next page of this fact sheet.
Summary of Inspections:	1/24/2023: A routine inspection was conducted. The WWTP was still undergoing construction. No issues were noted.

Other Comments: There are currently no open violations associated with the Applicant.

Compliance History

DMR Data for Outfall 001 (from April 1, 2023 to March 31, 2024)

Parameter	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23
Flow (MGD) Average Monthly	0.208001	0.155176	0.215632	0.138364								
Flow (MGD) Daily Maximum	0.433353	0.23502	0.479102	0.449772								
pH (S.U.) Instantaneous Minimum	7.10	7.05	7.67	7.3								
pH (S.U.) Instantaneous Maximum	7.73	7.56	8.53	8.25								
DO (mg/L) Instantaneous Minimum	9.40	9.54	9.45	9.47								
CBOD5 (lbs/day) Average Monthly	4.0	4.0	4.0	3.0								
CBOD5 (lbs/day) Weekly Average	5.0	7.0	8.0	3.0								
CBOD5 (mg/L) Average Monthly	2.0	3.0	2.0	2.0								
CBOD5 (mg/L) Weekly Average	2.0	5.0	2.0	2.4								
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	153	140	168	171								
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	179	189	217	208								
BOD5 (mg/L) Raw Sewage Influent Average Monthly	94	104	93	122								
TSS (lbs/day) Average Monthly	4.0	3.0	3.0	2.0								
TSS (lbs/day) Raw Sewage Influent Average Monthly	166	153	117	166								

TSS (lbs/day) Raw Sewage Influent Daily Maximum	251	219	206	233								
TSS (lbs/day) Weekly Average	7.0	4.0	5.0	3.0								
TSS (mg/L) Average Monthly	2.0	2.0	2.0	2.0								
TSS (mg/L) Raw Sewage Influent Average Monthly	104	114	70	115								
TSS (mg/L) Weekly Average	5.0	3.0	3.0	3.0								
Fecal Coliform (No./100 ml) Average Monthly	209	94	38	12.0								
Fecal Coliform (No./100 ml) Instantaneous Maximum	365	276	275	411								
UV Transmittance (%) Average Monthly	55	49	62	28.0								
Nitrate-Nitrite (mg/L) Average Monthly	10.76	15.9	12.42	18.4								
Nitrate-Nitrite (lbs) Total Monthly	540	561	623	890								
Total Nitrogen (mg/L) Average Monthly	11.29	16.6	12.96	18.94								
Total Nitrogen (lbs) Effluent Net Total Monthly	568	586	651.0	917								
Total Nitrogen (lbs) Total Monthly	568	586	651.0	917								
Ammonia (lbs/day) Average Monthly	5.0	0.1	0.20	0.20								
Ammonia (mg/L) Average Monthly	0.10	0.1	0.10	0.10								
Ammonia (lbs) Total Monthly	5.0	4.0	5.0	5.0								
TKN (mg/L) Average Monthly	0.50	0.5	0.55	0.57								
TKN (lbs) Total Monthly	27.0	18.0	29.0	27								

Total Phosphorus (lbs/day) Average Monthly	3.5	2.6	2.8	3.0								
Total Phosphorus (mg/L) Average Monthly	2.1	2.2	1.7	1.9								
Total Phosphorus (lbs) Effluent Net Total Monthly	108	75.7	86.2	94.2								
Total Phosphorus (lbs) Total Monthly	108.0	75.7	86.2	94.2								

Existing Effluent Limitations and Monitoring Requirements

Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	85	136	XXX	25	40	50	1/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids	102	153	XXX	30	45	60	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000	XXX	10,000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200	XXX	1,000	1/week	Grab
Ultraviolet light transmittance (%)	XXX	XXX	XXX	Report	XXX	XXX	1/day	Measured
Ammonia-Nitrogen Nov 1 - Apr 30	71	XXX	XXX	21	XXX	42	2/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	23	XXX	XXX	7.0	XXX	14	2/week	24-Hr Composite
Total Phosphorus	6.0	XXX	XXX	2.0	XXX	4.0	2/week	24-Hr Composite

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

at Outfall 001

Parameter	Effluent Limitations					Monitoring Requirements	
	Mass Units (lbs) [1]		Concentrations (mg/L)			Minimum [2] Measurement Frequency	Required Sample Type
	Monthly	Annual	Minimum	Monthly Average	Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	2/week	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	2/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	2/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	2/week	24-Hr Composite
Net Total Nitrogen	Report	13,064	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	1,531	XXX	XXX	XXX	1/month	Calculation

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

at Outfall 001

Footnotes:
(1) See Part C for Chesapeake Bay Requirements.
(2) This is the minimum number of sampling events required. Permittees are encouraged, and it may be advantageous in demonstrating compliance, to perform more than the minimum number of sampling events required.
(3) On-lot offsets for TN are 5,600 lbs/yr based on 224 OLDS. Any additional offsets claimed during the permit term must be reported as outlined in Part C of this permit. Offsets can only be applied for compliance with the Cap Loads for Onlot Disposal Systems which have been connected to the Weaverland Valley Authority WWTP.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .41
Latitude 40º 8' 24" **Longitude** 76º 2' 8"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Water Quality-Based Limitations

$CBOD_5$, NH_3-N

Pursuant to 40 CFR § 122.44(d)(1)(i), more stringent requirements should be considered when pollutants are discharged at the levels which have the reasonable potential to cause or contribute to excursions above water quality standards.

WQM 7.0 ver. 1.1b is a water quality model designed to assist DEP in determining appropriate water quality based effluent limits (WQBELs) for carbonaceous biochemical oxygen demand ($CBOD_5$), ammonia (NH_3-N) and dissolved oxygen (D.O.). DEP's Technical Guidance No. 391-2000-007 provides the technical methods contained in WQM 7.0 for determining wasteload allocations and for determining recommended NPDES effluent limits for point source discharges. The model was utilized for this permit renewal. The model output indicated a $CBOD_5$ average monthly limit of 25 mg/l, an NH_3-N average monthly limit of 8.88 mg/l, and a D.O. minimum limit of 5.0 mg/l were protective of water quality. The flow data used to run the model was acquired from USGS PA StreamStats and is included as an attachment. The existing $CBOD_5$ limit of 25 mg/l is the same as the existing permit limit, and will remain. The existing permit limit for NH_3-N of 7.0 mg/l is more stringent, and will remain in the permit.

Toxics

DEP's NPDES permit application for minor sewage facilities (< 1.0 MGD) requires sampling of heavy metals including Total Copper, Total Lead and Total Zinc. These metals are typically found in sewage and are therefore potentially considered pollutants of concern for certain facilities. As this is a new facility which was not in operation at the time of application submittal, WVA has not provided effluent testing information for these parameters. When the renewal application for this facility is submitted, WVA will be required to submit sampling results for these metals. The need for any permit requirements will be re-evaluated at that time.

Additional Considerations

Chesapeake Bay Total Maximum Daily Load (TMDL)

DEP developed a strategy to comply with the EPA and Chesapeake Bay Foundation requirements by reducing point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP). This strategy can be located in the *Pennsylvania Chesapeake Watershed Implementation Plan* (WIP), dated January 11, 2011. Subsequently, an update to the WIP was published as the Phase 2 WIP. As part of the Phase 2 WIP, a *Phase 2 Watershed Implementation Plan Wastewater Supplement* (Phase 2 Supplement) was developed, providing an update on TMDL implementation for point sources and DEP's current implementation strategy for wastewater. A new update to the WIP was published as the Phase 3 WIP in August 2019. As part of the Phase 3 WIP, a *Phase 3 Watershed Implementation Plan Wastewater Supplement* (Phase 3 Supplement) was developed, and was most recently revised on July 29, 2022, and is the basis for the development of any Chesapeake Bay related permit parameters. Sewage discharges have been prioritized based on their design flow to the Bay. The highest priority (Phases 1, 2, and 3) dischargers will receive annual Cap Loads based on their design flow on August 29, 2005 and concentrations of 6 mg/l TN and 0.8 mg/l TP. These limits may be achieved through a combination of treatment technology, credits, or offsets. For Phase 4 and 5 facilities, Cap Loads are not currently being implemented for renewed or amended permits for facilities that do not increase design flow.

The WVA WWTP is a Phase 3 new discharger (Design Annual Average Flow ≥ 0.4 mgd). The Cap Loads were based off of the flow from the three (3) existing WWTPs with NPDES permit discharges which have been connected to the WVA WWTP. This amounted to 7,306 lbs/yr TN and 974 lbs/yr TP from the Terre Hill Borough WWTP PA0020222, 5,303 lbs/yr TN and 508 lbs/yr TP from the Conestoga Wood Specialties WWTP PA0083909, and 455 lbs/yr TN 49 lbs/yr TP from the Goodville Industrial Center WWTP PA0085448. This resulted in a TN Cap Load of 13,064 lbs/yr and a TP Cap Load of 1,531 lbs/yr.

The Cap Loads are unchanged from the previous renewal. The Phase 3 Supplement states that "the minimum monitoring frequency for TN species and TP in new or renewed NPDES permits for significant sewage dischargers will be 2/week." This is consistent with the monitoring frequency in the existing permit. DEP no longer offers any tools to calculate monthly loads for Net TN and Net TP, and it is no longer needed since offsets and credits are applied annually. Therefore, this reporting requirement is no longer needed and will be removed from the permit. WVA also connected 229 on-lot disposal systems (OLDs) to the new WWTP. Based on the Phase 3 Supplement, an offset of 25 lbs/yr TN per dwelling may be approved if the OLDs were in existence prior to January 1, 2003. 5 of the OLDs were constructed after 2003, so 224 OLDs are eligible to be used as an offset. An offset amount of 5,600 lbs/yr TN is included in the NPDES permit.

Dissolved Oxygen

A minimum D.O. limit of 5.0 mg/L is a D.O. water quality criterion found in 25 Pa. Code § 93.7(a). This limit is included in the existing NPDES permit based BPJ. It is still recommended to include this limit in the draft permit to ensure that the facility continues to achieve compliance with DEP water quality standards.

Total Phosphorus
For Total Phosphorus (TP), the current NPDES permit requires the permittee to comply with average monthly and IMAX limits of 2.0 mg/L and 4 mg/L, respectively. These existing limits will remain unchanged in the permit to protect the local watershed.

Fecal Coliform

PA Code § 92a.47.(a)(4) requires a monthly average limit of 200/100 mL as a geometric mean and an instantaneous maximum limit not greater than 1,000/100 mL from May through September for fecal coliform. PA Code § 92a.47.(a)(5) requires a monthly average limit of 2,000/100 mL as a geometric mean and an instantaneous maximum limit not greater than 10,000/100 mL from October through April for fecal coliform. These limits are consistent with the existing permit.

E. Coli

PA Code § 92a.61 requires IMAX reporting of E. Coli. Per DEP's SOP No. BCW-PMT-033, sewage dischargers with a design flow of >= 0.05 mgd and < 1 mgd will include E. Coli monitoring with a frequency of 1/quarter. This parameter has been added to the renewal permit.

UV Monitoring

DEP's SOP No. BPNPSM-PMT-033 recommends at a minimum, routine monitoring of UV transmittance, dosage, or intensity when the facility is utilizing a UV disinfection system. The monitoring should occur at the same frequency as would be used for TRC. Presumably, this recommendation was implemented as a part of the proper operation and maintenance requirement specified in Part B of the NPDES permit, requesting permittees to demonstrate the effectiveness of UV disinfection system. This is a reasonable approach and has been assigned to other facilities equipped with similar technology. A parameter for UV intensity is included in the existing permit. WVA has requested that the parameter be changed to UV dosage, as this is how they have been reporting on their DMRs. The permit will be revised to require UV monitoring be reported as a dosage.

TDS & Constituents

The existing permit has monitoring requirements for TDS, Chloride, Bromide, and Sulfate. The SOP for Individual Sewage Permits no longer requires monitoring for special parameters. It also states that a monitoring requirement for TDS should be established for TDS if the discharge exceeds 1,000 mg/l. As this facility was not discharging at the time of application, WVA has not provided effluent testing information for these parameters. WVA will be required to submit sampling results for the next renewal, and the need for any TDS monitoring will be re-evaluated at that time.

Influent BOD_5 and Total Suspended Solids (TSS) Monitoring

As a result of negotiation with US EPA, influent monitoring of TSS and BOD_5 are required for any publicly owned treatment works (POTWs); therefore, influent sampling of BOD_5 and TSS will be included in the permit. A 24-hr composite sample type will be required to be consistent with the proposed sampling frequency for effluent TSS and $CBOD_5$.

Sampling Frequency & Sample Type

The monitoring requirements were established based on BPJ and/or Table 6-3 of DEP's Technical Guidance No. 362-0400-001.

Anti-Degradation

The effluent limits for this discharge have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

303(d) Listed Streams

The discharge is located on a stream segment that is designated on the 303(d) list as impaired. There is an aquatic life impairment due to habitat alterations from habitat modification – other than hydromodification and siltation from agriculture. There is a recreational impairment due to pathogens from agriculture, and pathogens from urban runoff/storm sewers. The proposed effluent limits include a limit for fecal coliform and Cap Loads for nutrients.

Class A Wild Trout Fisheries

No Class A Wild Trout Fisheries are impacted by this discharge.

Anti-Backsliding

Pursuant to 40 CFR § 122.44(l)(1), all proposed permit requirements addressed in this fact sheet are at least as stringent as the requirements implemented in the existing NPDES permit unless any exceptions are addressed by DEP in this fact sheet.

Proposed Effluent Limitations and Monitoring Requirements

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" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
CBOD5	85	136	XXX	25.0	40.0	50	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS	102	153	XXX	30.0	45.0	60	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
UV Dosage (mWsec/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Ammonia Nov 1 - Apr 30	71	XXX	XXX	21.0	XXX	42	2/week	24-Hr Composite
Ammonia May 1 - Oct 31	23	XXX	XXX	7.0	XXX	14	2/week	24-Hr Composite
Total Phosphorus	6.0	XXX	XXX	2.0	XXX	4.0	2/week	24-Hr Composite

Compliance Sampling Location: Outfall 001

Other Comments: None

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, to comply with Pennsylvania's Chesapeake Bay Tributary Strategy.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

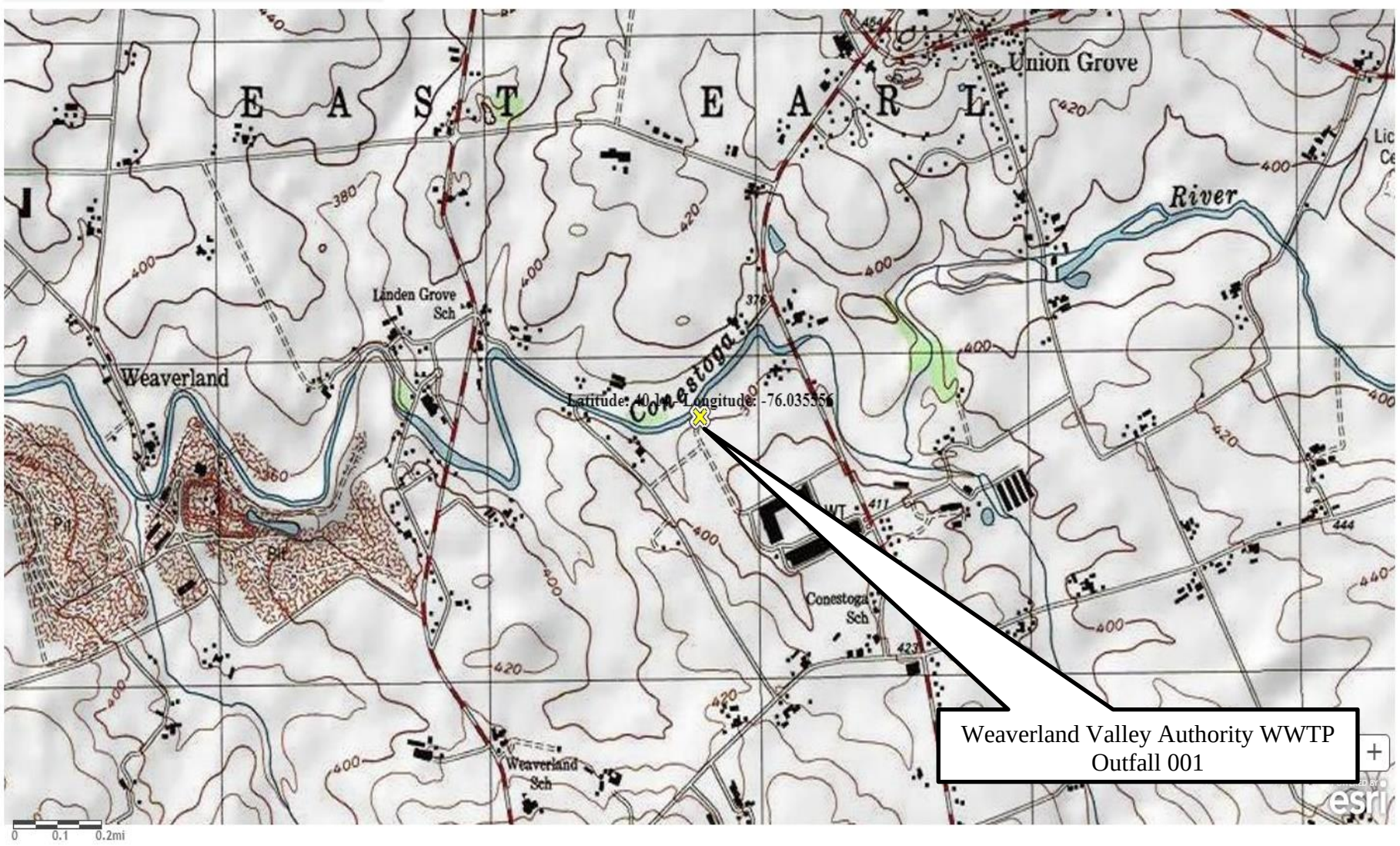
Parameter	Effluent Limitations					Monitoring Requirements	
	Mass Units (lbs) (1)		Concentrations (mg/L)			Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Minimum	Monthly Average	Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	2/week	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	2/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	2/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	2/week	24-Hr Composite
Net Total Nitrogen	XXX	13,064	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	XXX	1,531	XXX	XXX	XXX	1/month	Calculation

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

at Outfall 001

Footnotes:
(1) See Part C for Chesapeake Bay Requirements.
(2) This is the minimum number of sampling events required. Permittees are encouraged, and it may be advantageous in demonstrating compliance, to perform more than the minimum number of sampling events required.
(3) On-lot offsets for TN are 5,600 lbs/yr based on 224 OLDS. Any additional offsets claimed during the permit term must be reported as outlined in Part C of this permit. Offsets can only be applied for compliance with the Cap Loads for Onlot Disposal Systems which have been connected to the Weaverland Valley Authority WWTP.

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☒	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: BCW-PMT-033, BCW-PMT-002
☐	Other: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Union Grove
River
Linden Grove Sch
Weaverland
Conestoga
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Conestoga Sch
Weaverland Sch
Weaverland Valley Authority WWTP
Outfall 001
0 0.1 0.2mi
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Weaverland Valley Authority PA0266469 Outfall 001

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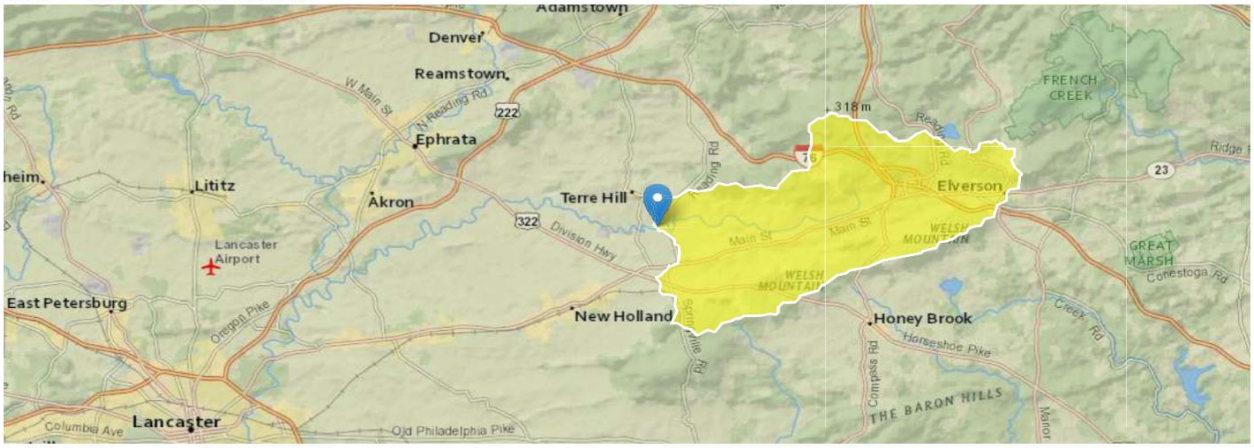

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	4.1345	degrees
DRNAREA	Area that drains to a point on a stream	43.6	square miles
ROCKDEP	Depth to rock	5.2	feet
URBAN	Percentage of basin with urban development	3.1963	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	43.6	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	4.1345	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5.2	feet	4.13	5.21
URBAN	Percent Urban	3.1963	percent	0	89

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

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

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	11.8	ft^3/s	46	46
30 Day 2 Year Low Flow	14.7	ft^3/s	38	38
7 Day 10 Year Low Flow	6.2	ft^3/s	51	51
30 Day 10 Year Low Flow	7.73	ft^3/s	46	46

Statistic	Value	Unit	SE	ASEp
90 Day 10 Year Low Flow	11.6	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/)

Application Version: 4.20.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Weaverland Valley Authority PA0266469 RMI = 46.7

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Workspace ID: PA20240522123040566000
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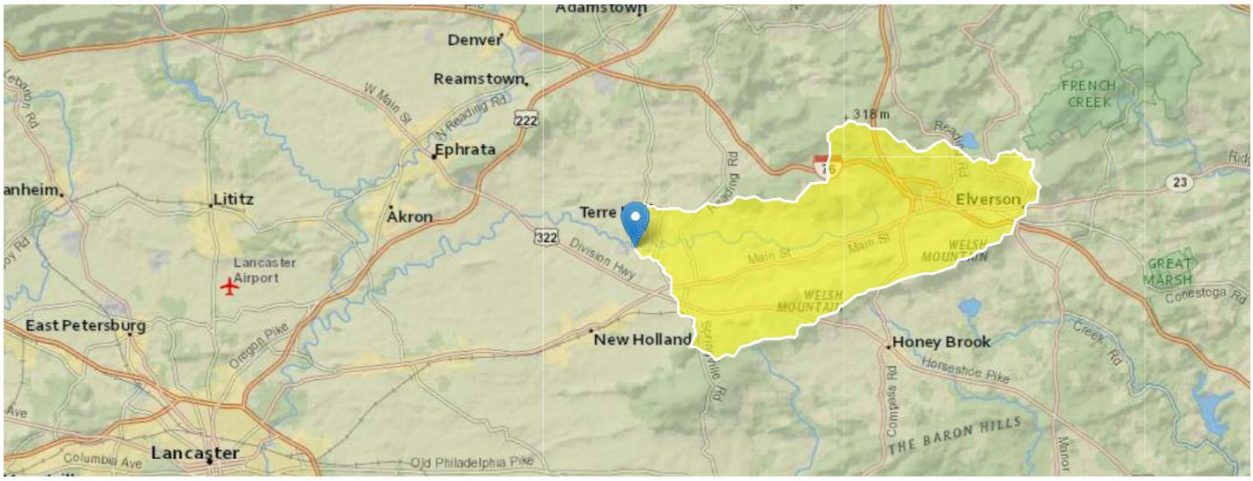
Time: 2024-05-22 08:31:03 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	4.0155	degrees
DRNAREA	Area that drains to a point on a stream	46.3	square miles
ROCKDEP	Depth to rock	5.2	feet
URBAN	Percentage of basin with urban development	3.3031	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	46.3	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	4.0155	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5.2	feet	4.13	5.21
URBAN	Percent Urban	3.3031	percent	0	89

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

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

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	12.1	ft^3/s	46	46
30 Day 2 Year Low Flow	15.2	ft^3/s	38	38
7 Day 10 Year Low Flow	6.31	ft^3/s	51	51
30 Day 10 Year Low Flow	7.92	ft^3/s	46	46

Statistic	Value	Unit	SE	ASEp
90 Day 10 Year Low Flow	12	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/)

Application Version: 4.20.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07J	7548	CONESTOGA RIVER (formerly CREE	**48.900**	366.00	43.60	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	6.20	0.000	0.000	0.0	0.00	0.00	20.00	7.00	24.05	8.40
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Weaverland	PA0266469	0.4100	0.4100	0.4100	0.000	25.00	7.00

Parameter Data

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

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07J	7548	CONESTOGA RIVER (formerly CREE	**48.900**	366.00	43.60	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	6.20	0.000	0.000	0.0	0.00	0.00	20.00	7.00	24.05	8.40
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Weaverland	PA0266469	0.4100	0.4100	0.4100	0.000	25.00	7.00

Parameter Data

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

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07J	7548	CONESTOGA RIVER (formerly CREEK)

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
48.900	6.20	0.00	6.20	.6343	0.00121	.721	39.7	55.04	0.24	0.563	24.14	7.89
Q1-10 Flow												
48.900	3.97	0.00	3.97	.6343	0.00121	NA	NA	NA	0.19	0.703	24.18	7.76
Q30-10 Flow												
48.900	8.43	0.00	8.43	.6343	0.00121	NA	NA	NA	0.28	0.481	24.12	7.97

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07J	7548	CONESTOGA RIVER (formerly CREEK)

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
48.900	Weaverland	4.25	30.81	4.25	30.81	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
48.900	Weaverland	.62	8.88	.62	8.88	1	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
48.90	Weaverland	25	25	8.88	8.88	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07J	7548	CONESTOGA RIVER (formerly CREEK)

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
48.900	0.410	24.138	7.890
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
39.696	0.721	55.040	0.239
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
4.13	0.653	0.82	0.963
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.942	3.016	Tsivoglou	5
Reach Travel Time (days)			
0.563			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.056	3.95	0.78	7.60
0.113	3.78	0.74	7.33
0.169	3.62	0.70	7.12
0.225	3.46	0.66	6.96
0.282	3.31	0.63	6.85
0.338	3.17	0.60	6.77
0.394	3.03	0.56	6.72
0.451	2.90	0.53	6.69
0.507	2.77	0.51	6.68
0.563	2.65	0.48	6.69

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07J	7548	CONESTOGA RIVER (formerly CREEK)

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
48.900	Weaverland	PA0266469	0.410	CBOD5	25		
				NH3-N	8.88	17.76	
				Dissolved Oxygen			5