pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0081451**
Facility Type	**Non-Municipal**	APS ID	**277051**
Major / Minor	**Minor**	Authorization ID	**1335716**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Red Lion Area School District**	Facility Name	**Clearview Elementary School**
Applicant Address	696 Delta Road	Facility Address	2650 Delta Road
	Red Lion, PA 17356-9185		Brogue, PA 17309-9174
Applicant Contact	Jessica Runkle	Facility Contact	Jessica Runkle
Applicant Phone	(717) 244-4518	Facility Phone	(717) 244-4518
Client ID	83349	Site ID	262655
Ch 94 Load Status	Not Overloaded	Municipality	Chanceford Township
Connection Status		County	York
Date Application Received	December 8, 2020	EPA Waived?	Yes
Date Application Accepted	December 22, 2020	If No, Reason	
Purpose of Application	NPDES Renewal		

Summary of Review

The Red Lion Area School District has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit for the Clearview Elementary School STP. The permit was last reissued to the Red Lion Area School District on May 23, 2016 and became effective on June 1, 2016. The permit expired on May 31, 2021 but the terms and conditions of the permit have been administratively extended since that time.

Based on the review outlined in this fact sheet, it is recommended that the permit be drafted, and a notice of the draft permit be published in the *Pennsylvania Bulletin* for public comments for 30 days. A file review of documents associated with the discharge or permittee may be available at the PA DEP southcentral regional office (SCRO), 909 Elmerton Avenue, Harrisburg, PA 17110. To make an appointment for file reviews, contact the SCRO file review coordinator at 717.705.4700.

Sludge use and disposal description and location(s): The facility contracts with Smith's Sanitary Septic Service to haul solids to other treatment plants.

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.

Approve	Deny	Signatures	Date
x		*Aaron Baar* Aaron Baar / Permits Section	December 12, 2021
x		*Maria D. Bebenek for* Daniel W. Martin, P.E. / Environmental Engineer Manager	December 14, 2021

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.005
Latitude	39º 51' 21.52"	Longitude	-76º 28' 28.10"
Quad Name	Airville	Quad Code	2034
Wastewater Description:	Sewage Effluent		
Receiving Waters	West Branch Toms Run (TSF)	Stream Code	07332
NHD Com ID	57470765	RMI	1.58
Drainage Area	0.23 mi^2	Yield (cfs/mi^2)	0.132
Q_{7-10} Flow (cfs)	0.0304	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	666.36	Slope (ft/ft)	
Watershed No.	7-I	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Chester Water Authority		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	24.5

Changes Since Last Permit Issuance

The Stream Code (07331) used in the last renewal has been determined to be incorrect. This Fact Sheet lists the correct Stream Code (07332). No change to the limits is necessary as a result of the change.

Discharge Point

The discharge is to the West Branch of Toms Run, which is a tributary of Muddy Creek (0768). Under 25 Pa Code §93.9o, Muddy Creek (basin, all sections of PA; confluence of North and South Branches to Mouth) is designated as a Trout Stock and Migratory Fishes waterway. The PA Fish and Boat Commission does not consider the receiving stream nor Toms Run as a Class A Trout water; therefore, no Class A Trout Fishery is impacted by this discharge. No High-Quality/Exceptional Value is impacted by this discharge.

Drainage Area

The drainage area upstream of the outfall is determined to be 0.23 mi^2 according to the USGS StreamStats application. This is consistent with Q7-10 determined for the last permit renewal.

Stream Flow

The Q_{7-10} of the receiving stream at the outfall is determined to be 0.0304 cfs according to the USGS StreamStats application. This is a slight decrease from the last permit renewal (0.034 cfs), which can be attributed to the change in identification of the receiving water. As before, no change to the limits is necessary as a result of the change.

Public Water Supply Intake

The nearest downstream public water supply intake is the Chester Water Authority intake on the Susquehanna River, located approximately 24.5 miles from the outfall. Considering the distance and dilution, the discharge is not expected to impact the water supply intake.

Class A Wild Trout Streams

The receiving stream is not a Class A Wild Trout stream.

Treatment Facility Summary

Treatment Facility Name: Clearview Elementary

WQM Permit No.	Issuance Date

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Extended Aeration With Solids Removal	Hypochlorite	0.005

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.005		Not Overloaded		

Other Comments: This is an extended aeration treatment system consisting of a comminutor/bar screen, aeration tank, clarifier, chlorine contact tank, finishing pond (aeration) and outfall structure. This system only serves Clearview Elementary School and has a design capacity of 0.005 GPD.

Alum is added for phosphorous removal, Sodium Hypochlorite is used for disinfection, Copper Sulfate is irregularly used for algae control in the pond, and soda ash is used for pH control.

Compliance History

Summary of DMRs:	A summary of past DMR data is presented on the next page.
Summary of Inspections:	The permit writer was able to locate one record that the facility was inspected during the last permit cycle. The inspection was conducted on February 7, 2017 by the Department's Sheena Ripple. During the inspection, the facility was found to be in good working order. No concerns were noted in the inspection report.

Other Comments: As of December 12, 2021, there are no open violations associated with this client.

Compliance History

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

Parameter	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20
Flow (MGD) Average Monthly	0.0094	0.01218			0.000724	0.0008	0.000941	0.0011	0.000953	0.000711	0.000492	0.000480
Flow (MGD) Daily Maximum	0.0142	0.0463			0.000572	0.0013	0.001297	0.0032	0.001255	0.001125	0.000644	0.00694
pH (S.U.) Minimum	6.94	6.84			6.51	7.90	7.69	7.02	7.80	7.63	7.66	7.54
pH (S.U.) Maximum	7.7	7.8			7.12	8.83	8.24	8.66	8.14	7.99	8.06	7.96
DO (mg/L) Minimum	8.5	7.7			9.06	6.99	7.62	10.11	14.7	13.19	11.6	8.97
TRC (mg/L) Average Monthly	< 0.3	0.3			0.43	0.39	0.31	0.35	0.49	0.40	0.45	0.382
TRC (mg/L) Instantaneous Maximum	0.63	0.53			0.50	0.58	0.64	0.60	0.94	0.78	0.61	0.51
CBOD5 (mg/L) Average Monthly	< 2.0	< 2.0			< 2.4	2.45	2.45	3.2	< 2.7	< 3.0	< 3.0	3.0
TSS (mg/L) Average Monthly	1.0	4.0			27.0	13.0	7.0	9.0	12.5	3.0	16.5	25.0
Fecal Coliform (CFU/100 ml) Geometric Mean	< 1	< 2			2.0	17.5	159	326	2.5	48.5	13	1210
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	1	3			2.0	31	308	167.5	4	96	13	2420
Nitrate-Nitrite (mg/L) Daily Maximum	40	< 17.4			56.54	61.60	42.50	29.4	< 32.40	< 23.40	21.43	18.54
Nitrate-Nitrite (lbs) Total Monthly	147	< 47			0.334	0.342	0.356	0.79	0.230	0.184	0.086	0.0632
Total Nitrogen (mg/L) Daily Maximum	< 40.5	< 17.9			< 57.04	62.1	43	30.16	< 32.9	23.9	21.93	19.04
Total Nitrogen (lbs) Total Monthly	< 149	< 48			0.337	0.341	0.360	0.812	0.233	0.188	0.0881	0.0649
Ammonia (mg/L) Average Monthly	0.3	0.2			< 0.10	0.7	2.65	13.7	< 0.10	0.185	0.98	0.995

TKN (mg/L) Daily Maximum	< 0.5	< 0.5			< 0.50	< 0.50	< 0.50	13.7	< 0.50	< 0.50	< 0.50	< 0.50
TKN (lbs) Total Monthly	< 2	< 1			0.0029	0.002	0.00437	0.020	0.0035	0.003	0.0039	0.017
Total Phosphorus (mg/L) Average Monthly	2.7	1.2			< 0.10	< 0.10	0.1	0.11	< 0.11	0.15	0.2	0.12
Total Phosphorus (lbs) Total Monthly	7	3			0.0029	0.207	0.0008	0.005	0.0078	0.0016	0.0008	0.0009

Compliance History

Effluent Violations for Outfall 001, from: December 1, 2020 To: October 31, 2021

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Total Phosphorus	10/31/21	Avg Mo	2.7	mg/L	2.0	mg/L

Other Comments: The operator noted in the October 2021 DMR that, “Upon investigation we discovered the system changed soap mfgrs and dispensers. We believe this to be the issue. We have increased wasting and added alum to help lower the TP.” This issue appears to be an isolated event and not indicative of the treatment plant’s ability to mitigate TP in the effluent.

Since the last renewal, there was also an excursion in May 2019 for Fecal Coliform. A reason for the excursion is not listed, but given the singular nature of the excursion, this issue also appears to be an isolated event and not indicative of the treatment plant’s ability to disinfect the effluent.

Existing Effluent Limits

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/week	Estimate
pH (S.U.)	XXX	XXX	6.0	XXX	9.0	XXX	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.5	1/day	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50	2/month	Grab
TSS	XXX	XXX	XXX	30.0	XXX	60	2/month	Grab
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Nitrate-Nitrite	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/month	8-Hr Composite
Nitrate-Nitrite (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/month	Calculation
Total Nitrogen (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	21.0	XXX	42	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	7.0	XXX	14	2/month	8-Hr Composite
TKN	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/month	8-Hr Composite
TKN (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus	XXX	XXX	XXX	2.0	XXX	4	2/month	8-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .005
Latitude 39º 51' 25.42" **Longitude** -76º 27' 52.96"
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)

Comments: These standards apply, subject to water quality analysis and BPJ where applicable.

Water Quality-Based Limitations

CBOD5, NH3-N and Dissolved Oxygen (DO)

WQM 7.0 version 1.0b is a water quality model designed to assist DEP to determine appropriate permit requirements for CBOD5, NH3-N and DO. DEP's guidance 391-2000-007 provides the technical methods contained in WQM 7.0 for conducting wasteload allocation and for determining recommended NPDES effluent limits for point source discharges. The model output showed that existing limits are still adequate to protect water quality standards in the receiving stream.

The monitoring frequency and sample type for CBOD5, DO and ammonia are proposed to remain unchanged.

Toxics

There are no industrial contributions to this facility. DEP's NPDES permit application for minor sewages (less than 1.0 MGD) does not require sampling for heavy metals including Total Copper, Total Lead, and Total Zinc.

Considering the nature and strength of discharge, no toxic pollutants except for Total Residual Chlorine are expected to be present in the effluent. Since the facility utilizes sodium hypochlorite for disinfection, TRC effluent levels must be regulated. DEP's TRC_CALC spreadsheet was utilized to determine if existing TRC effluent limits are still adequate to protect water quality standards. The spreadsheet indicated that existing limits are still protective of water quality.

Best Professional Judgment (BPJ) Limitations

Total Phosphorus & Total Nitrogen

The reviewer notes that the existing permit limits and monitoring requirements for Total Phosphorus and Total Nitrogen are consistent with Department guidance and in conformity with other Chesapeake Bay Phase 5 permits issued in the region.

Additional Considerations

Annual Fee

The following clause has been added to Part A of the proposed permit in conformity with 25 Pa. Code § 92a.62.

D. Annual Fee (25 Pa. Code § 92a.62)

Permittees shall pay an annual fee in accordance with 25 Pa. Code § 92a.62. As of the effective date of this permit, the facility covered by the permit is classified in the **Minor Sewage Facility <0.05 MGD** fee category, which has an annual fee of **$500.**

Invoices for annual fees will be mailed to permittees approximately three months prior to the due date. In the event that an invoice is not received, the permittee is nonetheless responsible for payment. Permittees may contact the DEP at 717-787-6744 with questions related to annual fees. The fee identified above is subject to change if DEP publishes changes to 25 Pa. Code § 92a.62.

Payment for annual fees shall be remitted to DEP at the address below or through DEP's electronic payment system (www.depgreenport.state.pa.us/NPDESpay) by the due date specified on the invoice. Checks, if used for payment, should be made payable to the Commonwealth of Pennsylvania.

PA Department of Environmental Protection
Bureau of Clean Water
Re: Chapter 92a Annual Fee
P.O. Box 8466
Harrisburg, PA 17105-8466

Flow Monitoring

The requirement to monitor the volumetric flow of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii).

Chesapeake Bay TMDL

The Department formulated a strategy in April 2007, to comply with the EPA's and Chesapeake Bay Foundation's requirements to reduce point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP) to the Bay. In the Strategy, sewage dischargers have been prioritized by Central Office based on their delivered TN loadings to the Bay. The highest priority (Phases 1, 2, and 3) dischargers received annual loading caps based on their design flow on August 29, 2005 and concentrations of 6 mg/l TN and 0.8 mg/l TP. Phase 4 (0.2 -0.4mgd) and Phase 5 (below 0.2mdg) facilities were required to monitor and report TN and TP during permit renewal at a monitoring frequency following Table 6-3 of DEP's Technical Guidance for Development and Specification of effluent Limitations (No. 362-0400-001).

EPA published the Chesapeake Bay Total Maximum Daily Load (TMDL) in December of 2010. Despite extensive restoration efforts during the past 25 years, the TMDL was prompted by insufficient progress and continued poor water quality in the Chesapeake Bay and its tidal tributaries.

In order to address the TMDL, Pennsylvania developed, in addition to the Bay Strategy, a Chesapeake Watershed Implementation Plan (WIP) Phase 1 in January 2011, Phase 2 in March 2012 and Phase 3 in December 2019. In accordance with the Phase 3 WIP, re-issuing permits for significant dischargers follow the same phased approach formulated in the original Bay strategy, whilst Phase 4 and Phase 5 will be required to monitor and report TN and TP during permit renewal.

The Phase 3 WIP categorizes this facility as a Phase 5, non-significant sewage facility that has a design flow less than 0.2 MGD but greater than 0.002 MGD. The WIP recommends monitoring and reporting for Total Nitrogen and Total Phosphorus throughout the permit term at a frequency no less than annual. The monitoring of NOx, TKN and TN twice monthly will be continued from the previous renewal.

Monitoring Frequency and Sample Type

The facility currently is required to collect weekly grab effluent samples for CBOD5, TSS, and fecal parameters and twice monthly samples for all TN and TP related parameters. This monitoring frequency is consistent with Table 6-3 of DEP's technical guidance no. 362-0400-001 and will remain unchanged in this permit.

Antidegradation Requirements

All effluent limitations and monitoring requirements 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.

Anti-backsliding Requirement

All effluent limits proposed in this fact sheet are as stringent as effluent limits specified in the existing permit renewal. This approach is in accordance with 40 CFR §122.44(l(1).

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" (362-0400-001), 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	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/week	Estimate
pH (S.U.)	XXX	XXX	6.0	XXX	9.0	XXX	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.5	1/day	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50	2/month	Grab
TSS	XXX	XXX	XXX	30.0	XXX	60	2/month	Grab
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Nitrate-Nitrite	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/month	8-Hr Composite
Nitrate-Nitrite (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/month	Calculation
Total Nitrogen (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	21.0	XXX	42	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	7.0	XXX	14	2/month	8-Hr Composite

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
TKN	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/month	8-Hr Composite
TKN (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus	XXX	XXX	XXX	2.0	XXX	4	2/month	8-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation

Compliance Sampling Location: Outfall 001

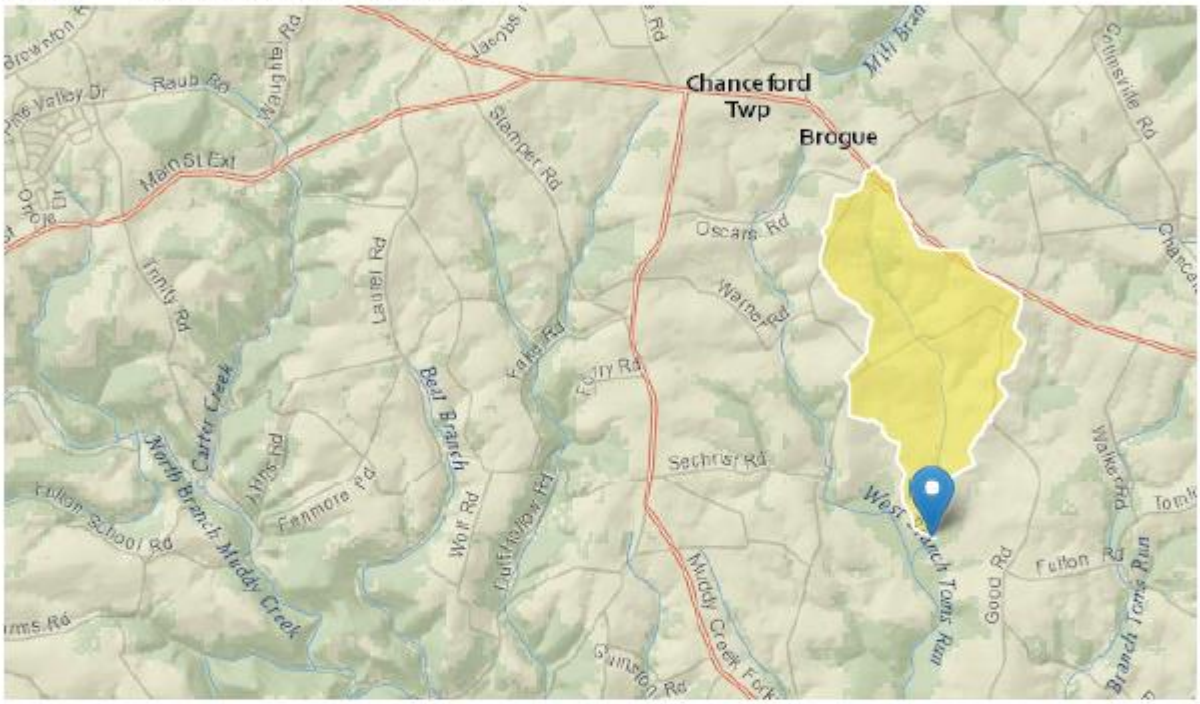
Permit No. PA0081451

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

Permit No. PA0081451

StreamStats Report

Region ID: PA
Workspace ID: PA20211211182222691000
Clicked Point (Latitude, Longitude): 39.83818, -76.46060
Time: 2021-12-11 13:22:42 -0500



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1.06	square miles
BSLOPD	Mean basin slope measured in degrees	4.6424	degrees
ROCKDEP	Depth to rock	5	feet
URBAN	Percentage of basin with urban development	1.0568	percent

Low-Flow Statistics Parameters [Low Flow Region 1]

Permit No. PA0081451

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.06	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	4.6424	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5	feet	4.13	5.21
URBAN	Percent Urban	1.0568	percent	0	89

Low-Flow Statistics Disclaimers [Low Flow Region 1]

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

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.262	ft^3/s
30 Day 2 Year Low Flow	0.335	ft^3/s
7 Day 10 Year Low Flow	0.116	ft^3/s
30 Day 10 Year Low Flow	0.154	ft^3/s
90 Day 10 Year Low Flow	0.24	ft^3/s

Low-Flow Statistics Citations

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

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StreamStats Report

Region ID: PA
Workspace ID: PA20211211170654566000
Clicked Point (Latitude, Longitude): 39.85744, -76.46525
Time: 2021-12-11 12:07:14 -0500

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.23	square miles
BSLOPD	Mean basin slope measured in degrees	5.2275	degrees
ROCKDEP	Depth to rock	5	feet
URBAN	Percentage of basin with urban development	4.3544	percent

Low-Flow Statistics Parameters [Low Flow Region 1]

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Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.23	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	5.2275	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5	feet	4.13	5.21
URBAN	Percent Urban	4.3544	percent	0	89

Low-Flow Statistics Disclaimers [Low Flow Region 1]

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

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0697	ft^3/s
30 Day 2 Year Low Flow	0.0877	ft^3/s
7 Day 10 Year Low Flow	0.0304	ft^3/s
30 Day 10 Year Low Flow	0.0404	ft^3/s
90 Day 10 Year Low Flow	0.0607	ft^3/s

Low-Flow Statistics Citations

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

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TRC EVALUATION

Input appropriate values in B4:B8 and E4:E7

0.0304	= Q stream (cfs)	0.5	= CV Daily
0.005	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discha	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

#	Source	Reference	AFC Calculations	Reference	CFC Calculations
#	TRC	1.3.2.iii	WLA afc = 1.273	1.3.2.iii	WLA cfc = 1.233
#	PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
#	PENTOXSD TRG	5.1b	LTA_afc= 0.474	5.1d	LTA_cfc = 0.717
#					

#	Source		Effluent Limit Calculations	
#	PENTOXSD TRG	5.1f	AML MULT = 1.231	
#	PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
#			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	EXP((0.5*LN(cvh^2+1))-2.326*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	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**

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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
07I	7332	Trib 07332 of West Branch Toms Run	1.580	666.36	0.23	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	0.03	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
RLSD - Clearvie	PA0081451	0.0050	0.0050	0.0050	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
07I	7332	Trib 07332 of West Branch Toms Run

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												
1.580	0.03	0.00	0.03	.0077	0.01489	.307	2.44	7.94	0.05	1.891	21.01	7.00
Q1-10 Flow												
1.580	0.02	0.00	0.02	.0077	0.01489	NA	NA	NA	0.04	2.286	21.42	7.00
Q30-10 Flow												
1.580	0.04	0.00	0.04	.0077	0.01489	NA	NA	NA	0.06	1.642	20.79	7.00

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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	6		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07I	7332	Trib 07332 of West Branch Toms Run

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
1.580	RLSD - Clearvie	14.9	50	14.9	50	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
1.580	RLSD - Clearvie	1.79	11.38	1.79	11.38	0	0

Dissolved Oxygen Allocations

		CBOD5		NH3-N		Dissolved Oxygen			
RMI	Discharge Name	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Critical Reach	Percent Reduction
1.58	RLSD - Clearvie	25	25	11.38	11.38	5	5	0	0

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WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07I	7332	Trib 07332 of West Branch Toms Run

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.580	0.005	21.014	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
2.436	0.307	7.938	0.051
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
6.67	0.607	2.31	0.757
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.585	26.930	Owens	6
Reach Travel Time (days)			
1.891			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.189	5.91	2.00	8.09
0.378	5.24	1.73	8.09
0.567	4.64	1.50	8.09
0.757	4.12	1.30	8.09
0.946	3.65	1.13	8.09
1.135	3.24	0.98	8.09
1.324	2.87	0.85	8.09
1.513	2.54	0.73	8.09
1.702	2.26	0.64	8.09
1.891	2.00	0.55	8.09

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07I	7332	Trib 07332 of West Branch Toms Run

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)
1.580	RLSD - Clearvie	PA0081451	0.005	CBOD5	25		
				NH3-N	11.38	22.76	
				Dissolved Oxygen			5