pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0040843**
Facility Type	**Non-Municipal**	APS ID	**1054725**
Major / Minor	**Minor**	Authorization ID	**1381573**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Lutheran Camp Assoc Inc.**	Facility Name	**Sequanota Lutheran Conference Center & Camp**
Applicant Address	PO Box 245	Facility Address	368 Sequanota Road
	Jennerstown, PA 15547-0245		Boswell, PA 15531-2561
Applicant Contact	Rev Nathan Pile	Facility Contact	Rev Nathan Pile
Applicant Phone	(814) 629-6627	Facility Phone	(814) 629-6627
Client ID	44896	Site ID	245122
Ch 94 Load Status	Not Overloaded	Municipality	Jenner Township
Connection Status		County	Somerset
Date Application Received	January 3, 2022	EPA Waived?	Yes
Date Application Accepted	April 24, 2022	If No, Reason	
Purpose of Application	NPDES permit renewal.		

Summary of Review

The PA Department of Environmental Protection (PADEP/Department) received an NPDES permit renewal application from Lutheran Camp Association Inc. (permittee) for permittee's Sequanota Lutheran Conference Center & Camp STP (facility) on January 3, 2022. The facility is a minor non-municipal WWTP with an average design flow of 0.015 MGD. The treated effluent is discharged into an UNT to Pickings Run in state watershed 18-E, classified as HQ/CWF. The current permit will expire on June 30, 2022. The terms and conditions are automatically extended since the renewal application was received at least 180 days prior to the expiration date. Renewal NPDES permit applications under Clean Water program are not covered by PADEP's PDG per 021-2100-001.

This fact sheet is developed in accordance with 40 CFR §124.56.

Changes in this renewal: E. Coli monitoring requirement added, ammonia and TRC limits are more stringent.

Sludge use and disposal description and location(s): Liquid sludge is pumped off by licensed hauler.

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
√		Reza H. Chowdhury, E.I.T. / Project Manager	May 1, 2022
X		Pravin Patel Pravin C. Patel, P.E. / Environmental Engineer Manager	05/02/2022

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Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	.015
Latitude	40º 10' 38"	Longitude	-79º 6' 9.10"
Quad Name	Boswell	Quad Code	1713
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Pickings Run (HQ-CWF)	Stream Code	45471
NHD Com ID	123715798	RMI	0.1
Drainage Area	0.42 mi^2	Yield (cfs/mi^2)	0.06
Q_{7-10} Flow (cfs)	0.0252	Q_{7-10} Basis	Please see below
Elevation (ft)	1993.99	Slope (ft/ft)	
Watershed No.	18-E	Chapter 93 Class.	HQ-CWF
Existing Use	**HQ-CWF**	Existing Use Qualifier	Ch 93
Exceptions to Use	None	Exceptions to Criteria	N/A
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status	Final January 29, 2010	Name	Kiskiminetas-Conemaugh River Watersheds TMDL

Background/Ambient Data		Data Source
pH (SU)	7.0	Default per 391-2000-013
Temperature (°C)	20	Default per 391-2000-007 for CWF
Hardness (mg/L)	100	Default
Other:		

Nearest Downstream Public Water Supply Intake		Greater Johnstown WA Riverside	
PWS Waters	Quemahoning Reservoir	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	12.56

Changes Since Last Permit Issuance: None

Other Comments:

Streamflow:

There is no nearby WQN Station or Streamgage from the discharge point. Therefore, USGS's web based watershed delineation tool StreamStats (accessible at https://streamstats.usgs.gov/ss/, accessed on April 24, 2022) was utilized to determine the drainage area and low flow statistics of the receiving stream at discharge point. The StreamStats delineation report shows a drainage area at the Outfall 001 to be 0.42 mi^2, Q_{7-10} of 0.0252 cfs, and Q_{30-10} of 0.0347 cfs.

Q_{7-10} runoff rate (low flow yield): 0.0252 cfs/0.42 mi^2 or 0.06 cfs/mi^2
Q_{30-10}:Q_{7-10}: 0.0347/0.0252 or 1.377
Default Q_{1-10}:Q_{7-10} of 0.64 will be used for modeling, if needed.

PWS Intake:

The nearby downstream PWS intake is Greater Johnstown WA Riverside in Johnstown City, Cambria County, in Quemahoning Reservoir. The PWS intake is approximately 12.56 miles downstream of discharge point. Due to the distance, dilution, and effluent limitations, it is expected that the discharge will not adversely impact the PWS intake.

Wastewater Characteristics:

A pH of 7.3 (median July- September 2021), default temperature of 20^0C (Default per 391-2000-007), and default Hardness value of 100 mg/l will be used for modeling, if needed.

Background data:
There is no nearby WQN station from the discharge point. In absence of site-specific data, a default pH of 7.0 S.U., default stream temperature of 20°C, and default hardness of 100 mg/l will be used, as appropriate.

Kiskiminetas-Conemaugh River Watersheds TMDL:
The receiving stream, UNT to Pickings Run is located in Kiskiminetas-Conemaugh River watershed TMDL. The TMDL was finalized on January 29, 2010. The watershed is impaired for metals from AMDs. No WLA is allocated for this facility.

Treatment Facility Summary

Treatment Facility Name: Sequanota Lutheran Conference Center & Camp

WQM Permit No.	Issuance Date

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage			No Disinfection	

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.015	30	Not Overloaded		Other WWTP

Changes Since Last Permit Issuance: None. Next 5 years planned changes include replacement of bell siphons and possibly all four dosing tanks.

Other Comments:

Treatment Plant Description

Sequanota Conference Center and Camp facility is a minor, non-municipal WWTP that is owned by Lutheran Camp Association, Inc. It is located in Jenner Township, Somerset County. The treated effluent is discharged into an UNT to Pickings Run through Outfall 001. It is a Christian camp and retreat facility consisting 40 buildings. The camp is open year-round, but the greatest activity at the camp is during the summer months from May through August. This is a septic tank-sand filter system with chlorination and dechlorination tanks. An 8” pipe enters 3 settling tanks (5,000 gallons, 3,500 gallons, and 3,500 gallons) and exists to four dosing tanks, each of 2,000 gallons in size. The system uses an alternating bell siphon system to disperse contents over two sand filters. The wastewater is then disinfected with chlorine, aerated in aeration tank, and dechlorinated prior to discharge through outfall 001. The sand filter beds are cleaned twice a year, weeds and leaves are raked out.

Per PADEP’s most recent inspection to the facility on January 6, 2022, the treatment plant consists of the following treatment units:

1. 3 septic tanks (1 @ 5,000-gallon, 2 @ 3,500-gallon)
2. 4 dosing tanks, 8,000-gallon capacity
3. 2 sand bed filters, above ground, 4,900 sft/per bed
4. 1 chromaglass chlorine contact tank, 2 sections, 3,000-gallon
5. 1 rectangular tank for duplex pumps
6. 1 splitter tank that controls recirculation and effluent flow
7. 1 post aeration tank with blower (200-gallon tank, 1.5 cfm air)
8. 1 tablet chlorinator
9. 1 tablet dechlorinator

Compliance History

DMR Data for Outfall 001 (from March 1, 2021 to February 28, 2022)

Parameter	FEB-22	JAN-22	DEC-21	NOV-21	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21
Flow (MGD) Average Monthly	0.0005	0.002	0.006	0.004	0.009	0.009	0.0045	0.005	0.004	0.017	0.002	0.006
pH (S.U.) Minimum	6.3	6.4	6.6	7.2	7.2	6.5	7.2	7.0	7.0	6.9	7.0	6.3
pH (S.U.) Maximum	7.0	7.8	7.2	7.3	7.7	7.8	7.7	7.6	8.0	7.3	7.4	7.6
DO (mg/L) Minimum	13.4	10.8	10.9	10.0	9.9	6.9	6.1	6.1	6.5	10.2	10.2	10.7
TRC (mg/L) Average Monthly	0.07	0.12	0.24	0.06	0.07	0.18	0.01	0.02	0.03	0.01	0.03	0.01
TRC (mg/L) Instantaneous Maximum	0.21	0.23	0.71	0.17	0.13	0.41	0.05	0.02	0.16	0.02	0.09	0.02
CBOD5 (mg/L) Average Monthly	3.0	5.5	2.5	4.5	7.0	6.5	14.0	27.5	9.0	2.5	< 2.0	2.5
CBOD5 (mg/L) Instantaneous Maximum	4.0	9.0	3.0	7.0	12.0	10.0	18.0	34.0	16.0	3.0	< 2.0	3.0
TSS (mg/L) Average Monthly	3.0	5.0	6.5	3.5	4.5	6.0	11.5	9.0	12.5	2.0	< 2.0	< 2.0
TSS (mg/L) Instantaneous Maximum	4.0	8.0	11.0	5.0	6.0	6.0	20.0	14.0	22.0	2.0	< 2.0	< 2.0
Fecal Coliform (No./100 ml) Geometric Mean	44.7	< 1.0	< 1.0	3.7	1.0	< 1.0	8.3	1.0	2.3	1.0	1.0	< 1.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	50.4	< 1.0	< 1.0	13.4	1.0	< 1.0	69.4	1.0	5.2	1.0	1.0	< 1.0
Total Nitrogen (mg/L) Daily Maximum			1.1									
Ammonia (mg/L) Average Monthly	< 0.10	0.10	1.44	1.66	0.78	0.64	4.84	9.9	4.16	< 0.10	0.31	< 0.10
Ammonia (mg/L) Instantaneous Maximum	< 0.10	0.10	1.79	3.21	0.80	1.17	4.84	16.0	8.22	< 0.10	0.40	< 0.10

Total Phosphorus (mg/L) Daily Maximum			0.16									
Total Aluminum (mg/L) Daily Maximum			< 0.10									
Total Iron (mg/L) Daily Maximum			0.10									
Total Manganese (mg/L) Daily Maximum			0.03									

Compliance History

Effluent Violations for Outfall 001, from: April 1, 2021 To: February 28, 2022

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
CBOD5	07/31/21	Avg Mo	27.5	mg/L	25.0	mg/L
Ammonia	07/31/21	Avg Mo	9.9	mg/L	6.5	mg/L
Ammonia	07/31/21	IMAX	16.0	mg/L	13.0	mg/L

Summary of Inspections:

01/06/2022: CEI conducted. DMR shows effluent violations. An NOV was issued on January 23, 2022 for the DMR violations.

06/26/2019: CEI conducted. DMR shows effluent violations. An NOV was issued on June 30, 2019.

Other Comments: To correct the chronic non-compliance, the permittee installed recirculation splitter box, post aeration, duplex pumps, changed the chlorine and dechlor system, and changed the sand media.

Existing 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	XXX	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.) Sep 1 - May 31	XXX	XXX	6.0	XXX	9.0	XXX	4/month	Grab
pH (S.U.) Jun 1 - Aug 31	XXX	XXX	6.0	XXX	9.0	XXX	5/week	Grab
Dissolved Oxygen Sep 1 - May 31	XXX	XXX	6.0	XXX	XXX	XXX	4/month	Grab
Dissolved Oxygen Jun 1 - Aug 31	XXX	XXX	6.0	XXX	XXX	XXX	5/week	Grab
Total Residual Chlorine (TRC) Sep 1 - May 31	XXX	XXX	XXX	0.5	XXX	1.6	4/month	Grab
Total Residual Chlorine (TRC) Jun 1 - Aug 31	XXX	XXX	XXX	0.5	XXX	1.6	5/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	25.0	XXX	50.0	2/month	Grab
Total Suspended Solids	XXX	XXX	XXX	30.0	XXX	60.0	2/month	Grab
Fecal Coliform (No./100 ml) Nov 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Oct 31	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Total Nitrogen	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	19.5	XXX	39.0	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	6.5	XXX	13.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab
Aluminum, Total	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab
Iron, Total	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab
Manganese, Total	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .015
Latitude 40º 10' 38.00" **Longitude** -79º 6' 9.00"
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

WQM 7.0:

WQM 7.0 is a water quality model designed to assist DEP to determine appropriate permit requirements for CBOD5, NH3-N and DO. DEP's guidance no. 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. DEP recently updated this model (ver. 1.1) to include new ammonia criteria that has been approved by US EPA as part of the 2017 Triennial Review. The model was utilized for this permit renewal by using updated Q_{7-10} and historic background water quality levels of the river. The following data were used in the attached computer model of the stream:

- Discharge pH 7.3 (median Jul-Sep, 2022, eDMR data)
- Discharge Temperature 20°C (Default per 391-2000-007)
- Discharge Hardness 100 mg/l (Default data)
- Stream pH 7.0 (Default per 391-2000-013)
- Stream Temperature 20°C (Default per 391-2000-013, CWF)
- Stream Hardness 100 mg/l (Application data)

The following nodes were considered in modeling:

Node 1: Sequanota Lutheran Conference Center & Camp STP (PA0040483) Outfall 001 at UNT to Pickings Run (45471)
Elevation: 1993.99 ft (USGS National Map viewer, 04/24/2022)
Drainage Area: 0.42 mi^2 (StreamStat Version 3.0, 04/24/2022)
River Mile Index: 0.1 (PA DEP eMapPA)
Low Flow Yield: 0.06 cfs/mi^2
Discharge Flow: 0.015 MGD

Node 2: At confluence with Picking Creek (45466) at RMI 0.0 on 45471
Elevation: 1900 ft (USGS National Map viewer, 04/24/2022)
Drainage Area: 1.67 mi^2 (StreamStat Version 3.0, 04/24/2022)
River Mile Index: 0.0 (PA DEP eMapPA)
Low Flow Yield: 0.06 cfs/mi^2
Discharge Flow: 0.0 MGD

NH_3-N:
WQM 7.0 suggested NH_3-N limit of 4.52 mg/l as monthly average and 9.04 mg/l as IMAX limit during summer months to protect water quality standards. The current permit has 6.5 mg/l and 13 mg/l as average monthly and IMAX. A review of the most recent 12 months eDMR data indicates that the facility can meet the more stringent limit at least 90% of the time without any modification to the existing treatment system. Therefore, a pre-draft survey is not necessary. The winter limits are calculated as 13.5 mg/l and 27 mg/l as average monthly and IMAX, respectively.

$CBOD_5$:
The WQM 7.0 model suggests a monthly average $CBOD_5$ limit of 25 mg/l and IMAX limit of 50 mg/l. These limits are the same as existing permit and will be carried over.

Dissolved Oxygen (DO):
The existing permit has a minimum DO of 6.0 mg/l which is also supported by the model output. Existing limit will be carried over.

Toxics:
Facilities with design flow less than 0.1 MGD aren't required to provide sample results for toxics unless the facility receives industrial or commercial wastewater. In absence of sample results, a RP analysis couldn't be performed.

Additional Considerations

Fecal Coliform:
The recent coliform guidance in 25 Pa. code § 92a.47.(a)(4) requires a summer technology limit of 200/100 ml as a geometric mean and an instantaneous maximum not greater than 1,000/100ml and § 92a.47.(a)(5) requires a winter limit of 2,000/100ml as a geometric mean and an instantaneous maximum not greater than 10,000/100ml. These are the existing limits that will be carried over.

E. Coli:
DEP's SOP titled "Establishing Effluent Limitations for Individual Sewage Permits (BCW-PMT-033, revised March 24, 2021) recommends annual E. Coli monitoring for all dischargers with flow between 0.05 MGD and 0.002 MGD. This requirement will be applied from this permit term.

pH:
The TBEL for pH is above 6.0 and below 9.0 S.U. (40 CFR §133.102(c) and Pa Code 25 § 95.2(1)) which are existing limits and will be carried over.

Total Suspended Solids (TSS):
There is no water quality criterion for TSS. The existing limits of 30 mg/L average monthly and 60 mg/L instantaneous maximum will remain in the permit based on the minimum level of effluent quality attainable by secondary treatment, 25 Pa. Code § 92a.47 and 40CFR 133.102(b). These are existing limits that will be carried over.

Total Residual Chlorine (TRC):
The attached computer printout utilizes the equation and calculations as presented in the Department's 2003 Implementation Guidance for Total Residual Chlorine (TRC) (ID#391-2000-015) for developing chlorine limitations. The attached printout indicates that a water quality limit of 0.168 mg/l would be needed to prevent toxicity concerns at the POFU. The Instantaneous Maximum (IMAX) limit is calculated to be 0.548 mg/l. The current permit has these limits as 0.5 mg/l and 1.6 mg/l, respectively. The facility has a dechlorination system in place, therefore, meeting more stringent TRC limits shouldn't be difficult. A review of last 12 months eDMR data shows the facility is discharging an average of 0.07 mg/l. The facility should be able to meet the more stringent limit with proper operation and maintenance of the facility, without any addition of treatment units. More stringent limits will be applied from permit effective date.

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

Best Professional Judgement (BPJ):
Total Nitrogen:
PADEP's SOP BCW-PMT-033 suggests monitoring requirement, at a minimum, for facilities with design flow greater than 2,000 GPD. This requirement is applied for all facilities meeting the flow criteria. This is an existing requirement that will be carried over in this renewal.

Total Phosphorus:
Existing annual monitoring requirement will be carried over in this renewal.

Monitoring Frequency and Sample Types:
Otherwise specified above, the monitoring frequency and sample type of compliance monitoring for existing parameters are recommended by DEP's SOP and Permit Writers Manual and/or on a case-by-case basis using best professional judgment (BPJ).

TMDL Parameters:
The receiving stream has an approved TMDL for AMD facilities. There is no wasteload allocation for this point source discharger. The current permit, however, included annual reporting requirements for the AMD TMDL parameters, e.g. Total Aluminum, Total Iron, and Total Manganese. These requirements will be carried over in this renewal.

Anti-Backsliding
The proposed limits are at least as stringent as are in existing permit, unless otherwise stated; therefore, anti-backsliding is not applicable.

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	XXX	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.) Sep 1 - May 31	XXX	XXX	6.0 Daily Min	XXX	XXX	9.0	4/month	Grab
pH (S.U.) Jun 1 - Aug 31	XXX	XXX	6.0 Daily Min	XXX	XXX	9.0	5/week	Grab
DO Sep 1 - May 31	XXX	XXX	6.0 Inst Min	XXX	XXX	XXX	4/month	Grab
DO Jun 1 - Aug 31	XXX	XXX	6.0 Inst Min	XXX	XXX	XXX	5/week	Grab
TRC Sep 1 - May 31	XXX	XXX	XXX	0.168	XXX	0.548	4/month	Grab
TRC Jun 1 - Aug 31	XXX	XXX	XXX	0.168	XXX	0.548	5/week	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50.0	2/month	Grab
TSS	XXX	XXX	XXX	30.0	XXX	60.0	2/month	Grab
Fecal Coliform (No./100 ml) Nov 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Oct 31	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	Report Avg. Annual	XXX	Report	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	13.5	XXX	27.0	2/month	Grab

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Ammonia May 1 - Oct 31	XXX	XXX	XXX	4.5	XXX	9.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab
Total Aluminum	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab
Total Iron	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab
Total Manganese	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab

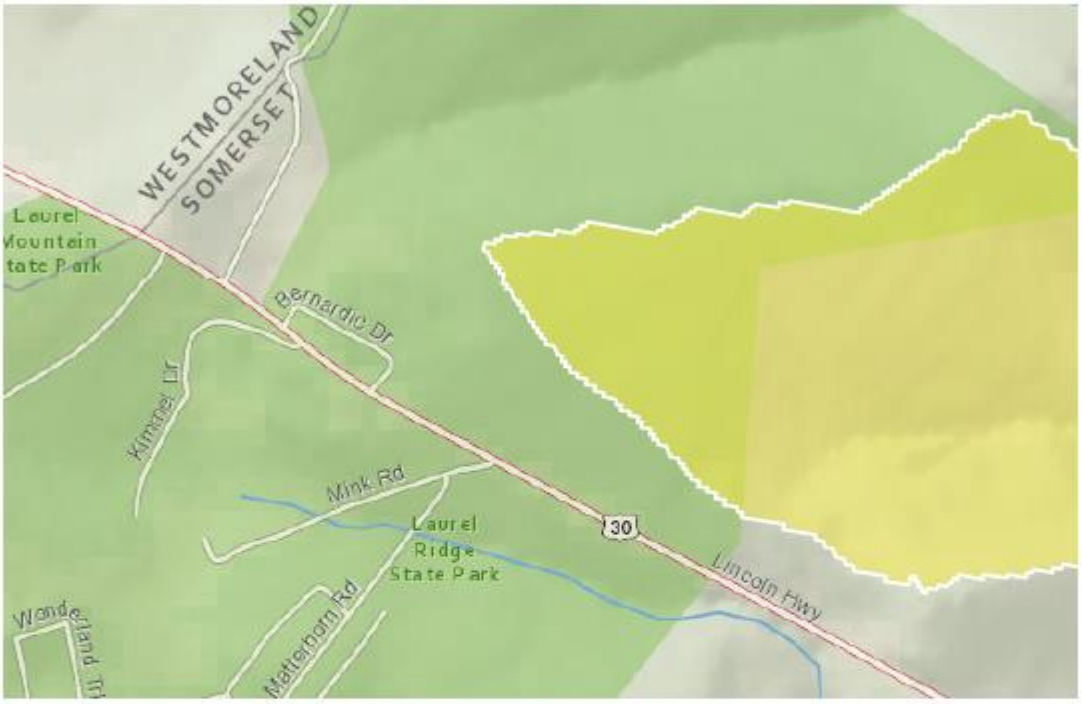
Compliance Sampling Location: At Outfall 001

Other Comments: None

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:

PA0040843 at 001

Region ID: PA
Workspace ID: PA20220424210556801000
Clicked Point (Latitude, Longitude): 40.17676, -79.10221
Time: 2022-04-24 17:06:20 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.42	square miles
ELEV	Mean Basin Elevation	2309	feet
PRECIP	Mean Annual Precipitation	45	inches

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.42	square miles	2.33	1720
ELEV	Mean Basin Elevation	2309	feet	898	2700
PRECIP	Mean Annual Precipitation	45	inches	38.7	47.9

Low-Flow Statistics Disclaimers [Low Flow Region 3]

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 3]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0622	ft^3/s
30 Day 2 Year Low Flow	0.0921	ft^3/s
7 Day 10 Year Low Flow	0.0252	ft^3/s
30 Day 10 Year Low Flow	0.0347	ft^3/s
90 Day 10 Year Low Flow	0.052	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/)

PA0040843 at node 2

Region ID: PA
Workspace ID: PA20220424210813104000
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Time: 2022-04-24 17:08:33 -0400

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1.67	square miles
ELEV	Mean Basin Elevation	2437	feet
PRECIP	Mean Annual Precipitation	46	inches

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.67	square miles	2.33	1720
ELEV	Mean Basin Elevation	2437	feet	898	2700
PRECIP	Mean Annual Precipitation	46	inches	38.7	47.9

Low-Flow Statistics Disclaimers [Low Flow Region 3]

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 3]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.279	ft^3/s
30 Day 2 Year Low Flow	0.404	ft^3/s
7 Day 10 Year Low Flow	0.126	ft^3/s
30 Day 10 Year Low Flow	0.166	ft^3/s
90 Day 10 Year Low Flow	0.244	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/)

Permit No. PA0040843

TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.0252	= Q stream (cfs)	0.5	= CV Daily
0.015	= 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 Discharge	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 =	0.365	1.3.2.iii	WLA cfc =	0.349
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	0.136	5.1d	LTA_cfc =	0.203

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.168	AFC
		INST MAX LIMIT (mg/l) =	0.548	

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)

Permit No. PA0040843

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
18E	45471	Trib 45471 to Pickings Run	0.100	1993.99	0.42	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	0.060	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Sequanota STP	PA0040843	0.0150	0.0150	0.0150	0.000	20.00	7.30

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	6.00	8.24	0.00	0.00
NH3-N	6.50	0.00	0.00	0.70

Permit No. PA0040843

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
18E	45471	Trib 45471 to Pickings Run	0.000	1900.00	1.67	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	0.060	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Permit No. PA0040843

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
18E	45471	Trib 45471 to Pickings 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												
0.100	0.03	0.00	0.03	.0232	0.17801	.415	1.86	4.48	0.06	0.097	20.00	7.12
Q1-10 Flow												
0.100	0.02	0.00	0.02	.0232	0.17801	NA	NA	NA	0.06	0.109	20.00	7.15
Q30-10 Flow												
0.100	0.03	0.00	0.03	.0232	0.17801	NA	NA	NA	0.07	0.088	20.00	7.10

Permit No. PA0040843

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	1.377	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

Permit No. PA0040843

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
18E	45471	Trib 45471 to Pickings 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
0.100	Sequanota STP	8.61	13	8.61	13	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
0.100	Sequanota STP	1.81	4.52	1.81	4.52	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
0.10	Sequanota STP	25	25	4.52	4.52	6	6	0	0

Permit No. PA0040843

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
18E	45471	Trib 45471 to Pickings Run

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.100	0.015	20.000	7.119
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
1.858	0.415	4.476	0.063
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
13.03	1.372	2.17	0.700
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.168	17.267	Owens	6
Reach Travel Time (days)			
0.097			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.010	12.85	2.15	7.18
0.019	12.68	2.14	7.19
0.029	12.51	2.12	7.20
0.039	12.35	2.11	7.21
0.049	12.18	2.09	7.23
0.058	12.02	2.08	7.24
0.068	11.86	2.07	7.26
0.078	11.71	2.05	7.28
0.088	11.55	2.04	7.30
0.097	11.40	2.02	7.31

Permit No. PA0040843

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
18E	45471	Trib 45471 to Pickings 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)
0.100	Sequanota STP	PA0040843	0.015	CBOD5	25		
				NH3-N	4.52	9.04	
				Dissolved Oxygen			6