pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Amendment, Major**	Application No.	**PA0221961**
Facility Type	**Non-Municipal**	APS ID	**1012642**
Major / Minor	**Minor**	Authorization ID	**1307688**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Timberlee Valley Sanitary Company, Inc.**	Facility Name	**Timberlee Valley STP**
Applicant Address	800 South Washington Street	Facility Address	Smalstig Road
	Evans City, PA 16033		Evans City, PA 16033
Applicant Contact	Robert Brennan, President	Facility Contact	Robert Brennan, President
Applicant Phone	(412) 287-6728	Facility Phone	(412) 287-6728
Client ID	142306	Site ID	483556
Ch 94 Load Status	Not Overloaded	Municipality	Connoquenessing Township
Connection Status	No Limitations	County	Butler County
Date Application Received	March 3, 2020	EPA Waived?	Yes
Date Application Accepted	March 5, 2020	If No, Reason	-

Purpose of Application: Major Amendment of an NPDES Permit for an existing discharge of treated sanitary wastewater from a non-municipal sewer system to re-rate the discharge flow from 0.018 MGD to 0.030 MGD.

Summary of Review

Act 14 - Proof of Notification was submitted and received.

A Part II Water Quality Management permit will be required prior to upgrades made to the STP.

The applicant should be able to meet the limits of this permit, which will continue to protect the uses of the receiving stream.

I. OTHER REQUIREMENTS:
- A. Stormwater into sewers
- B. Right of way
- C. Solids handling
- D. Ultraviolet (UV) Light Disinfection Reporting

SPECIAL CONDITIONS:
- II. Solids Management

There are no open violations in efacts associated with the subject Client ID (142306) as of 10/30/2020.

Approve	Deny	Signatures	Date
X		Stephen A. McCauley Stephen A. McCauley, E.I.T. / Environmental Engineering Specialist	10/30/2020
X		Justin C. Dickey Justin C. Dickey, P.E. / Environmental Engineer Manager	October 30, 2020

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.030 (previously 0.018)
Latitude	40º 51' 09"	Longitude	-80º 03' 53"
Quad Name	-	Quad Code	-
Wastewater Description:	Sewage Effluent		

Receiving Waters	Crab Run (CWF)	Stream Code	34957
NHD Com ID	126218424	RMI	2.562 mi
Drainage Area	7.8 mi^2	Yield (cfs/mi^2)	0.047
Q_{7-10} Flow (cfs)	0.367	Q_{7-10} Basis	Buffalo Ck near Freeport
Elevation (ft)	1007	Slope (ft/ft)	0.0057
Watershed No.	20-C	Chapter 93 Class.	CWF
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	Final	Name	Little Connoquenessing Creek Watershed

Background/Ambient Data		Data Source
pH (SU)	7.4	Stream survey on Crab Run
Temperature (°F)	-	-
Hardness (mg/L)	-	-
Other:	-	-

Nearest Downstream Public Water Supply Intake	Harmony Borough Water Co.		
PWS Waters	Little Connoquenessing Creek	Flow at Intake (cfs)	2.0
PWS RMI	1.1	Distance from Outfall (mi)	6.0

* - The TMDL for the Little Connoquenessing Creek Watershed is due to low pH and metals caused by Abandoned Mine Drainage (AMD). This discharge is not expected to add Aluminum, Iron, or Manganese in any quantities that would add to the impairment of the Little Connoquenessing Creek, which is at least 2 miles downstream from the discharge.

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.

Narrative: This Fact Sheet details the determination of draft NPDES permit limits for an existing permitted discharge of 0.018 MGD of treated sewage from a non-municipal sewage treatment plant in Connoquenessing Township, Butler County.

Treatment permitted under WQM 1096404 and WQM 1001406 consists of the following: A 3,079 gallon trash trap, a manual bar screen with bypass, two 10,000 gallon flow equalization tanks in series, an 8,984 gallon aeration tank and a 12,542 gallon aeration tank in series, a 3,072 clarification tank, and Ultraviolet (UV) light disinfection. Sludge is handled via a 6,000 gallon aerobic sludge digestion tank, which is pumped when necessary by a Permitted Contractor and disposed of at a Permitted Disposal Facility. Alum is approved for use to control phosphorus. Soda Ash is approved for use in controlling alkalinity.

Facility Area: See the Topographical Map (Attachment 1) and the Aerial Image (Attachment 2)

1. Streamflow: Crab Run @ Outfall 001 (from the previous WQPR):

Drainage Area:	7.8	sq. mi.	(previous WQPR)
Yieldrate:	0.047	cfsm	(previous WQPR)
Q_{7-10}:	0.367	cfs	(calculated)

% of stream allocated: 100% Basis: No nearby discharges

2. Wasteflow:

Maximum discharge: 0.03 MGD = 0.046 cfs

Runoff flow period: 24 hours Basis: Runoff flow for a Municipal STP

There is greater than 3 parts stream flow (Q7-10) to 1 part effluent (design flow). In accordance with the SOP, since this is an existing discharge, the treatment requirements in document number 391-2000-014, titled, "Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers", dated April 12, 2008, will not be implemented in this NPDES Permit.

3. Parameters:

The following parameters were evaluated: pH, Total Suspended Solids, Fecal Coliform, Phosphorus, NH_3-N, $CBOD_5$, Dissolved Oxygen, and Total Residual Chlorine. NH_3-N, $CBOD_5$, and Dissolved Oxygen were evaluated using WQM 7.0 at the discharge point.

a. pH

Between 6.0 and 9.0 at all times

Basis: Application of Chapter 93.7 technology-based limits. The measurement frequency is planned to be increased to 1/day during the next NPDES Permit renewal.

b. Total Suspended Solids

Limits are 30 mg/l as a monthly average and 60 as a daily maximum.

Basis: Application of Chapter 92a47 technology-based limits

c. Fecal Coliform

05/01 - 09/30:	200/100ml	(monthly average geometric mean)
	1,000/100ml	(instantaneous maximum)
10/01 - 04/30:	2,000/100ml	(monthly average geometric mean)
	10,000/100ml	(instantaneous maximum)

Basis: Application of Chapter 92a47 technology-based limits

d. Phosphorus

☐ Limit necessary due to:

☐ Discharge to lake, pond, or impoundment
☒ Discharge to stream

Basis: The technology-based limits for Total Phosphorus under Chapter 96.5 that were set for the Conneaut Creek Basin will be retained with this amendment.

☐ Limit not necessary

Basis: N/A

e. Ammonia-Nitrogen (NH_3-N)

Median discharge pH to be used: 7.2 Standard Units (S.U.)

Basis: eDMR data for the past 12 months

Discharge temperature: 25°C (default value used in the absence of data)

Median stream pH to be used: 7.0 Standard Units (S.U.)

Basis: default value used in the absence of data

Stream Temperature: 20˚C (default value used for CWF modeling)

Background NH_3-N concentration: 0.1 mg/l

Basis: Default value.

Calculated NH_3-N Summer limits: 17.5 mg/l (monthly average)
35.0 mg/l (instantaneous maximum)

Calculated NH_3-N Winter limits: 25.0 mg/l (monthly average)
50.0 mg/l (instantaneous maximum)

Result: WQ modeling resulted in the summer water quality-based limits above (see Attachment 3). The winter limits are calculated as three times the summer limits, but since the technology-based limits are more protective, they will be used.

f. $CBOD_5$

Median discharge pH to be used: 7.2 Standard Units (S.U.)

Basis: eDMR data for the past 12 months

Discharge temperature: 25°C (default value used in the absence of data)

Median stream pH to be used: 7.0 Standard Units (S.U.)

Basis: default value used in the absence of data

Stream Temperature: 20˚C (default value used for CWF modeling)

Background $CBOD_5$ concentration: 2.0 mg/l

Basis: Default value

$CBOD_5$ Summer limits:	25.0	mg/l (monthly average)
	50.0	mg/l (instantaneous maximum)
$CBOD_5$ Winter limits:	25.0	mg/l (monthly average)
	50.0	mg/l (instantaneous maximum)

Result: WQ modeling resulted in the calculated summer limits above (see Attachment 3), which are the same as the previous NPDES Permit. The winter limits are calculated as three times the summer limits, but since the technology-based limits are more protective, they will be used. Since the summer limits and the winter limits are the same, the limits for $CBOD_5$ will be set year-round as in the previous NPDES Permit.

g. Dissolved Oxygen (DO)

- ☒ 4.0 mg/l - minimum desired in effluent to protect all aquatic life
- ☐ 5.0 mg/l - desired in effluent for CWF, WWF, or TSF
- ☐ 6.0 mg/l - minimum required due to discharge falling under guidance document 391-2000-014
- ☐ 8.0 mg/l - required due to discharge going to a naturally reproducing salmonid stream

Discussion: The Dissolved Oxygen minimum of 4.0 mg/l will be retained with this amendment. The measurement frequency will remain set as 3/week as set during the previous draft NPDES Permit development. The measurement frequency is planned to be increased to 1/day during the next NPDES Permit renewal.

h. Total Residual Chlorine (TRC)

☒ No limit necessary

Basis: Since Ultraviolet (UV) light is used for disinfection, limits for TRC are not necessary. UV Intensity reporting will be retained with this amendment. The measurement frequency will remain set as 3/week as set during the previous draft NPDES Permit development. The measurement frequency is planned to be increased to 1/day during the next NPDES Permit renewal.

☐ TRC limits: _____ mg/l (monthly average)
_____ mg/l (instantaneous maximum)

Basis: N/A

4. Attachment List:

Attachment 1 - Topographical Map of the Facility Area

Attachment 2 - Aerial Image of the Facility

Attachment 3 - WQ Modeling Printouts

If viewing this electronically, please refer to the following PDF to view the above Attachments:

Adobe Acrobat Document

Compliance History

DMR Data for Outfall 001 (from September 1, 2019 to August 31, 2020)

Parameter	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19
Flow (MGD) Average Monthly	0.011	0.011	0.011	0.015	0.013	0.015	0.015	0.014	0.015	0.013	0.012	0.011
pH (S.U.) Minimum	7.2	6.6	7.0	7.0	6.9	7.2	7.0	7.2	7.2	7.4	6.7	7.0
pH (S.U.) Maximum	7.8	7.4	7.8	7.4	7.5	7.7	7.5	7.8	7.6	7.7	7.7	7.8
DO (mg/L) Minimum	4.3	4.3	4.3	4.3	4.3	4.3	4.2	4.2	4.5	4.3	4.4	4.3
CBOD5 (mg/L) Average Monthly	3.0	3.0	5.3	6.2	8.9	3.3	3.0	< 3	3.2	3.0	4.0	3.0
TSS (mg/L) Average Monthly	4.0	10.5	3	5.5	19.0	13.5	5.0	8.5	14	5	3.5	6.0
Fecal Coliform (No./100 ml) Geometric Mean	49	144	39	1	31	49	1	1152	420	85	795	129
Fecal Coliform (No./100 ml) Instantaneous Maximum	2420	167	1553	1	961	2420	1	2420	2420	2420	1733	722
UV Intensity (µw/cm²) Average Monthly	260	260	260	260	260	260	260	260	260	260	260	260
Total Nitrogen (mg/L) Average Monthly	44.1	35.9	41.0	36.0	32.2	20.1	20.8	19.3	23.0	19.5	19.3	22.5
Total Phosphorus (mg/L) Average Monthly	1.6	0.3	0.4	0.5	0.7	0.6	0.9	0.5	0.5	1.2	1.3	1.1

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	XXX	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	3/week	Grab
DO	XXX	XXX	4.0 Daily Min	XXX	XXX	XXX	3/week	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30.0	XXX	60	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
UV Intensity (µw/cm²)	XXX	XXX	XXX	Report	XXX	XXX	3/week	Measured
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	25.0	XXX	50	2/month	8-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	17.5	XXX	35	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	2.0	XXX	4	2/month	8-Hr Composite

Compliance Sampling Location: Outfall 001, after Ultraviolet (UV) light disinfection.

Flow, UV Intensity, are Total Nitrogen are monitor only based on Chapter 92a.61. The limits for DO and pH are technology-based on Chapter 93.7. The limits for $CBOD_5$, Total Suspended Solids, and Fecal Coliforms are technology-based on Chapter 92a.47. The limits for Ammonia-Nitrogen are water quality-based on Chapter 93.7. The limits for Total Phosphorus are technology-based on Chapter 96.5.