pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0218600**
Wastewater Type	**Sewage**	APS ID	**1057400**
Facility Type	**SRSTP**	Authorization ID	**1386133**

NPDES PERMIT FACT SHEET
INDIVIDUAL SFTF/SRSTP

Applicant, Facility and Project Information

Applicant Name	**Arthur J Leonard**	Facility Name	**Leonard SRSTP**
Applicant Address	310 Spang Road Baden, PA 15005-2540	Facility Address	Triple Creek Acres Road Champion, PA 15005
Applicant Contact	Arthur Leonard	Facility Contact	Same as Applicant
Applicant Phone	(412) 281-5431	Facility Phone	Same as Applicant
Client ID	144503	Site ID	536828
SIC Code	6514	Municipality	Middlecreek Township
SIC Description	Fin, Ins & Real Est - Dwelling Operators, Except Apartments	County	Somerset
Date Application Received	February 24, 2022	WQM Required	No
Date Application Accepted	March 10, 2022	WQM App. No.	N/A

Project Description: Renewal of NPDES Permit.

Summary of Review

The Department received Mr. Leonard's application for a renewal to his NPDES Permit PA0218600 on February 24, 2022. The permit was last issued on August 9, 2017 and is going to expire on August 31, 2022. The application was received on time.

The WQM No. 5600403 issued on October 27, 2000 authorized construction of sewage treatment facilities for the residential sewage of 400GPD from the Leonard SRSTP. The discharge is to Laurel Hill Creek, a High Quality Cold Water Fishery classified stream per Chapter 93 Designated Use.

The SRSTP consists of septic tank, dosing tank, subsurface sand filter, chlorination and dichlorination.

The property is a vacation home of 4 bedrooms, 2 full bath, ½ bath.

The application stated that there were no changes to the facility conditions regarding effluent discharge, receiving stream, stormwater outfall, or treatment technology from the last Permit issued, or there will not be any for the next five years, thus Act 537 was not needed.

A proper evidence of the Act – 14 PL 834 Municipal Notification was provided by the applicant on January 27, 2022. No comments were received.

Approve	Deny	Signatures	Date
X		Hazim Aldalli / Environmental Engineering Specialist	April 27, 2022
x		Mahbuba Iasmin, Ph.D. P.E. / Environmental Engineer Manager	April 27, 2022

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 and Stream Data – 2 - Receiving Waters and PWS

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.0004
Latitude	39º 59' 8.40"	Longitude	-79º 15' 23.07"
Quad Name	Kingwood	Quad Code	39079H3
Wastewater Description:	Sewage Effluent		

Receiving Waters	Laurel Hill Creek (HQ-CWF)	Stream Code	38580
NHD Com ID	69917563	RMI	22.04
Drainage Area	48.1	Yield (cfs/mi^2)	0.0293
Q_{7-10} Flow (cfs)	1.41	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	2309	Slope (ft/ft)	0.0059
Watershed No.	19-E	Chapter 93 Class.	HQ-CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s); Aquatic Life; Recreational.		
Cause(s) of Impairment	NUTRIENTS; SILTATION; ORGANIC ENRICHMENT.		
Source(s) of Impairment			
TMDL Status	Tentative	Name	Laurel Hill Creek TMDL

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake	None		
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	Up to State borders.

Changes Since Last Permit Issuance: DEP updated its WQM 7.0 criteria for Ammonia (NH_3) on 2019, limits and conditions of this permit need to be redeveloped to an adequate level to protect water quality.

Other Comments: None.

Treatment Facility Summary				
Treatment Facility Name: Leonard SRSTP				
WQM Permit No.	**Issuance Date**			
5600403	10/27/2000			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Tertiary	Septic Tank, Sand Filter	Chlorination, Tablet	0.0004
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.0004	-----	Not Overloaded	N/A	-----

Changes Since Last Permit Issuance: None.

Operations Compliance Check Summary Report

Facility: Leonard SRSTP
NPDES Permit No.: PA0218600
Compliance Review Period: 3/2017 – 3/2022

Inspection Summary:

INSP ID	INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC
2997639	01/27/2020	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted
2606861	06/22/2017	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted

Violation Summary:
No violations
Open Violations by Client ID:
No open violations for Client ID 144503
Enforcement Summary:
No enforcements
DMR Violation Summary:
No DMR violations
Compliance Status:
Permittee in compliance
Completed by: John Murphy
Completed date: 3/14/2022

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.0004
Latitude 39º 59' 8.4" **Longitude** -79º 15' 23.07"
Wastewater Description: Sewage Effluent

Technology-Based Limitations (TBELs)

The following effluent limitations and monitoring requirements, at a minimum, will be established in all new and renewed SRSTP permits based on the requirements of DEP's "Standard Operating Procedure (SOP) for Clean Water Program New and Reissuance Small Flow Treatment Facility Individual NPDES Permit Application" (SOP No. BCW-PMT-003, Version 1.8, Final, November 9, 2012, Revised May 17, 2019).

Parameter	Avg	IMAX	Sample Type	Frequency: SFTFs	Frequency: SRSTPs
Flow (GPD)	Report	XXX	Estimate (SRSTPs) Measured (SFTFs)	1/month	1/year
BOD5 (mg/L)	10	20	Grab	1/month	1/year
TSS (mg/L)	10	20	Grab	1/month	1/year
pH*	6.0 S.U. Inst. Min.	9.0 S.U.	Grab	1/month	1/year
TRC (mg/L)	Report for SRSTPs; Use TRC Spreadsheet to determine WQBELs or 0.02 mg/L for SFTFs		Grab	1/month	1/year
Fecal Coliform (No./100 ml)	200 Geometric Mean (SFTFs) / Average (SRSTPs)		Grab	1/month	1/year

Additional TBELs:

Outfall 001 discharges to Laurel Hill Creek, which is classified as a HQ-CWF. Limits were imposed before the establishment of ABACT in 2003 and the SRSTP SOP in 2019.

The following Antidegradation Best Available Combination of Technologies (ABACT) effluent limits, at a minimum, will be established based on the requirements of DEP's "Water Quality Antidegradation Implementation Guidance" (Doc. No. 391-0300-002; November 29, 2003).

Parameter	Treatment Process Performance Expectations (mg/L)		
	<2,000 gpd	2,000-50,000 gpd	>50,000 gpd
$CBOD_5$ (May 1 – Oct. 31)	10	10	10
$CBOD_5$ (Nov. 1 – Apr. 30)	20	20	10
Suspended Solids	20	10	10
NH_3-N (May 1 – Oct. 31)	5.0	3.0	1.5
NH_3-N (Nov. 1 – Apr. 30)	15.0	9.0	4.5
Effective disinfection	Disinfection should be accomplished using a method that leaves no detectable residual. Disinfection using ultra-violet light or other non-chlorine based systems is encouraged and must be considered.		
Other parameters, as needed	*Determined by the size and characteristics of the proposed discharge, may include – NO_2/NO_3-N, Total Phosphorus, Copper, Lead, Zinc*		

The limitations and monitoring requirements, specified on page 8 of this Fact Sheet, reflect the most stringent limitation amongst the above Technology-Based Effluent Limitations, which can be justified as follows:

TSS, and Fecal Coliform limitations were imposed based upon the Department's SOP – New and Reissuance Individual SRSTP NPDES Permits.

Technology-based effluent limits for pH will be imposed based upon State Regulation 95.2(1).

BOD_5 limitations were imposed instead of $CBOD_5$ which reflect the most stringent limitation amongst the Technology-Based Effluent Limitations and based upon the Department's SOP – New and Reissuance Individual SRSTP NPDES Permits, and per DEP Small Flow Treatment Facilities Manual (Nov. 2003).

The existing facility was originally permitted prior to the development of the "Water Quality Antidegradation Implementation Guidance". Therefore, per Pa. Code 25 § 92a.48(b)(2), a technology-based effluent limit of 0.5 mg/L for TRC will be imposed.

Anti-Backsliding:

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second situation addressed by Section 402(o) arises when a permittee seeks relaxation of an effluent limitation which is based upon a State treatment standard of water quality standard.

Pursuant to EPA's antibacksliding regulation (40 CFR § 122.44) which requires effluent limits in reissued permits to be at least as stringent as the final effluent limits in the previous permit.

Ammonia limits been imposed based on the DEP guideline "Special Protection Waters Implementation Handbook" and carried over through previous permits.

The previously imposed limits (most stringent) for Ammonia-Nitrogen (1.5 mg/l) will be unchanged due to Anti-Backsliding as stated in 40 CFR Section 122.44(l).

Checking on the submitted DMRs and Operations compliance report, no violations or exceedances were noted for the last permit cycle.

Laurel Hill Creek TMDL:

TMDL Drafted on 8/25/2012, EPA TMDL website shows that the Laurel Hill Creek TMDL still not in final phase and no final report is issued. Per DEP SOP [No. BCW-PMT-003 Version 1.8] under Section IV.F, no WLA will be assigned to this SRSTP. Cause of impairment are Nutrients; Siltation; Organic Enrichment.

Additional Considerations:

Sampling frequency for all parameters will be 1/year, with an exception for TRC which will be 1/month.

These frequencies are consistent with the Department's SOP - New and Reissuance of SRSTP Individual NPDES Permit Applications and with Table 6-3 from DEP Sewage Manual.

Sewage discharges with design flows < 2,000 gpd do not require monitoring for Total Nitrogen and Total Phosphorus in new and reissued permits.

The applicant does not use eDMR and current policy does not require eDMR to be used for SRSTPs.

Disinfection & Chlorination:

Per PA. Code 25 § 92a.48(b)(3):

"Facilities using chlorination that discharge to an Exceptional Value Water, or to a High Quality Water where economic or social justification under § 93.4c(b) (1)(iii) (relating to implementation of antidegradation requirements) has not been

demonstrated under applicable State or Federal law or regulations, shall discontinue chlorination or dechlorinate their effluents prior to discharge into the waters."

Therefore, the Department recommends that the facility should continue dechlorinate the water prior to discharge and consider replacing the chlorination system with UV disinfection or other non-chlorine-based systems before or during the renewal of the next NPDES permitting cycle. A recommendation has been added to the cover letter which states:

Pursuant to Pa. Code 25 § 92a.48(b)(3) that regulate the facilities that discharge to Exceptional Value Water or to a High Quality Water, which is the case with Laurel Hill Creek (HQ-CWF) as the receiving water body, the facilities are required to dechlorinate the treated water prior to discharge. Please consider replacing the chlorination system with UV disinfection or other non-chlorine-based systems before or during the next renewal cycle.

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.

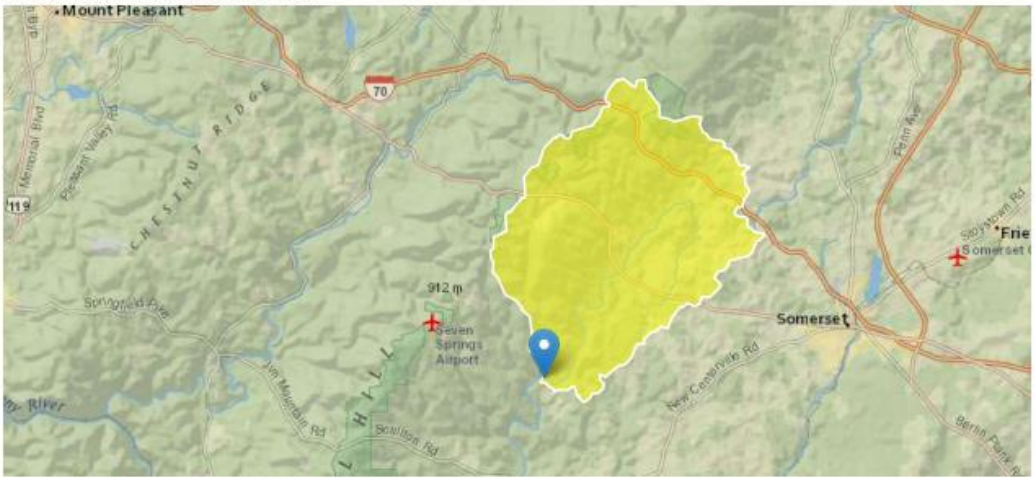
Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Annual Average	Average Weekly	Minimum	Annual Average	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/year	Estimate
pH (S.U.)	XXX	XXX	6.0 Inst. Min	XXX	9.0 Inst. Max	XXX	1/year	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.0	1/month	Grab
BOD5	XXX	XXX	XXX	10	XXX	20	1/year	Grab
TSS	XXX	XXX	XXX	10	XXX	20	1/year	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200 Average	XXX	1000	1/year	Grab
Ammonia-Nitrogen	XXX	XXX	XXX	1.5	XXX	3.0	1/year	Grab

Compliance Sampling Location: Outfall #001

StreamStats Report

Region ID: PA
Workspace ID: PA20220314133357202000
Clicked Point (Latitude, Longitude): 39.98573, -79.25680
Time: 2022-03-14 09:34:18 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	48.1	square miles
ELEV	Mean Basin Elevation	2309	feet

Low-Flow Statistics Parameters [100.0 Percent (48.1 square miles) Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	48.1	square miles	2.26	1400
ELEV	Mean Basin Elevation	2309	feet	1050	2580

Low-Flow Statistics Flow Report [100.0 Percent (48.1 square miles) Low Flow Region 4]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	4	ft^3/s	43	43
30 Day 2 Year Low Flow	6.69	ft^3/s	38	38
7 Day 10 Year Low Flow	1.41	ft^3/s	66	66

Statistic	Value	Unit	SE	ASEp
30 Day 10 Year Low Flow	2.4	ft^3/s	54	54
90 Day 10 Year Low Flow	4.71	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: 4.7.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

1.41	= Q stream (cfs)	0.5	= CV Daily
0.0004	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharg	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 = 726.894	1.3.2.iii	WLA cfc = 708.657
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 270.858	5.1d	LTA_cfc = 411.980

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.170	

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)**