pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES/WQM PERMITS FACT SHEET INDIVIDUAL SFTF/SRSTP

Application Type	**New**	Application No.	**PA0267198 & WQM 3120401**
Wastewater Type	**Sewage**	APS ID	**1020060**
Facility Type	**SRSTP**	Authorization ID	**1320925 & 1320927 WQM**

Applicant, Facility and Project Information

Applicant Name	**Carey L. Lightner**	Facility Name	**Lightner Property**
Applicant Address	7072 Diamond Valley Road	Facility Address	6018 Diehl Road
	Alexandria, PA 16611		Alexandria, PA 16611
Applicant Contact	Carey Lightner	Facility Contact	Carey Lightner
Applicant Phone	(814) 669-4186	Facility Phone	(814) 669-4186
Client ID	357536	Site ID	844046
SIC Code	8811	Municipality	Logan Township
SIC Description	Services - Private Households	County	Huntingdon
Date Application Received	July 21, 2020	WQM Required	
Date Application Accepted	September 16, 2020	WQM App. No.	3120401

Project Description: NPDES and WQM permits applications for a new SRSTP.

Summary of Review

This fact sheet supports the issuance of new NPDES and WQM permits for discharge of treated sewage from the single residence sewage treatment plant (SRSTP) located in Logan Township, Huntingdon County. The annual average design flow is 500 gallons per day. The discharge will be to Unnamed Tributary to Reeds Run which is classified as High-Quality Cold Water & Migratory Fishes (HQ-CWF & MF). The WQM permit for the construction of the treatment system with permit No. 3120401 is concurrently under review. DEP Planning for the project was approved under Code No. A3-31922-043-3s.

DEP has prepared this report for the applications for both NPDES and WQM permits. Based on the review outlined in this report, it is recommended that the NPDES permit be drafted and published in the Pennsylvania Bulletin for public comments for 30 days.

Also, it is recommended that the WQM permit be issued upon issuance of the NPDES permit.

Approve	Deny	Signatures	Date
X		*Hilaryle* Hilary H. Le / Environmental Engineering Specialist	March 19, 2021
		Daniel W. Martin, P.E. / Environmental Engineer Manager	

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.0005
Latitude	40º 35' 43.99"	Longitude	-78º 3' 44.08"
Quad Name	Alexandria	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Reeds Run (HQ-CWF, MF)	Stream Code	15581
NHD Com ID	65605314	RMI	0.2400
Drainage Area	1.83 mi.^{2}	Yield (cfs/mi^2)	See Comments below
Q_{7-10} Flow (cfs)	See Comments Below	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	737.32	Slope (ft/ft)	
Watershed No.	11-B	Chapter 93 Class.	HQ-CWF, MF
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	Petersburg Borough MA, Huntingdon County		
PWS Waters	Shaver Creek	Flow at Intake (cfs)	
PWS RMI	0.3 mile	Distance from Outfall (mi)	Approximate 2.7 miles

Changes Since Last Permit Issuance: none because the application type is new.

Drainage Area
The discharge will be to unnamed tributary to Reeds Run at 0.24 RMI. A drainage area upstream of the point of proposed discharge is estimated to be 1.83 mi.^{2}, according to USGS StreamStats available at https://streamstats.usgs.gov/ss/.

Stream flows
A USGS station Juniata River at Huntingdon, PA (01559000) was used to determine the site stream flow. Based on the recent USGS StreamStats flow report available at https://streamstats.usgs.gov/ss/, the Q_{7-10} and drainage area at the station are 131 cfs and 817 mi.^{2}, respectively. The Q_{7-10} yield is 0.16 cfs/mi.^{2} (131 cfs / 817 mi.^{2}) and the Q_{7-10} at discharge is 0.29 cfs (0.16 cfs/mi.^{2} x 1.83 mi.^{2}) for the drainage area at discharge as calculated by StreamStats is 1.83 mi.^{2}.

Unnamed Tributary to Reeds Run to Shaver Creek
Under 25 Pa Code §93.9n, Unnamed Tributary to Reeds Run is designated as High Quality Cold-Water and Migratory Fishes and attaining its uses. Reeds Run is a tributary to Shaver Creek. The discharge from the end of sewer treatment system to reach Unnamed Tributary to Reeds Run is approximately 50 feet. Additionally, the dilution ratio of >100/1 is sufficient to assimilate an effluent without impact (dilution ratio is Q_{stream} / $Q_{discharge}$ = 0.29 cfs / [0.0005 MGD * (1.55 cfs/MGD)] = 374.2 : 1) [Water Quality Antidegradation Implementation Guidance No. 391-0300-002/November 29, 2003/Page 60]. Therefore, HQ limits do not apply to the discharge.

Based on integrated report 2018, Unnamed Tributary to Reeds Run, assessment ID 1380, is not impaired.

No TMDL has been developed yet to address this impairment. Shaver Creek does not support a Class A Wild Trout fishery. Therefore, no Class A Wild Trout fishery is impacted by this discharge.

Public Water Supply Intake
According to DEP's eMapPA available at http://www.depgis.state.pa.us/emappa/, the nearest downstream public water supply intake is Petersburg Borough Municipal Authority, Huntingdon County located on Shaver Creek, approximately 2.7 miles from the point of proposed discharge. Given the nature and distance, the proposed discharge is not expected to impact the water supply.

Treatment Facility Summary

The facility is proposed to serve the four-bedroom single family residences (500 GPD) located at 6018 Diehl Road, Alexandria, PA 16611. The facilities will be owned and maintained by Carey L. Lightner. The proposed treatment process, according to the application, is as follows:

New Norweco Singulair Model 960-500 aerobic unit → Norweco Bio Film Reactor tank with a Salcor 3G UV unit in the second compartment of the Bio Film tank → Outfall

The proposed Norweco Singulair Model 960 Wastewater Treatment System, which will have enough capacity to handle the proposed design flow, is evaluated under the provisions of AMSI/NSF Standard 40 on Individual Aerobic Wastewater Treatment Plants, and has been demonstrated to produce effluent that does not exceed 10 mg/L BOD_5 and 10 mg/L TSS. The proposed UV disinfection system will be able to provide an effluent fecal coliform concentration less than or equal to 200 No./100 mL.

The primary treatment tank sludge levels will be monitored yearly and pumped out no longer than 3-year intervals. The outlet of the tank will have an effluent filter, preventing solids from leaving the tank. The surface filter will be inspected annually. The UV unit will be accessible from the ground surface, allowing the UV bulb to be replaced or cleaned. The UV unit has an alarm-light system to alert for a treatment malfunction, and one or more spare bulbs will be kept on site for emergency replacement.

Compliance History

On July 9, 2020, DEP approved the Act 537 planning as a revision to the Act 537 official sewage facilities plan of Jackson Township (DEP Code No. A3-31922-043-3s).

This is a new facility; therefore, there are no effluent sample results, nor any inspection reports associated with this facility. The Department's database indicates that there is currently no open violation associated with the facility or the applicant.

Development of Effluent Limitations and Monitoring Requirements

The effluent limitations and monitoring requirements are derived from DEP's Standard Operating Procedure (SOP) for New and Reissuance Small Flow Treatment Facility Individual NPDES Permit Applications (SOP No. BPNPSM-PMT-003, revised May 17, 2019). Since the facility will utilize ultraviolet (UV) disinfection, monitoring requirements for total residual chlorine are not applicable.

According to the SOP referenced above, water quality monitoring using PentoxSD and/or WQM are not required for SRSTPs. The permittee will be required to submit a completed Annual Maintenance Report (AMR) as part of the permit requirements. No DMR is necessary for any facilities that are required to report effluent monitoring results on AMRs annually.

The draft permit will include the following Part C conditions:

a. Small Flow Treatment Facility Maintenance, including measurement of the depth of septage and scum, 3-year septic tank pumping requirement, reporting requirement of a completed Annual Maintenance Form.
b. Stormwater Prohibition
c. Property Rights
d. Proper Disposal of Solids

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.

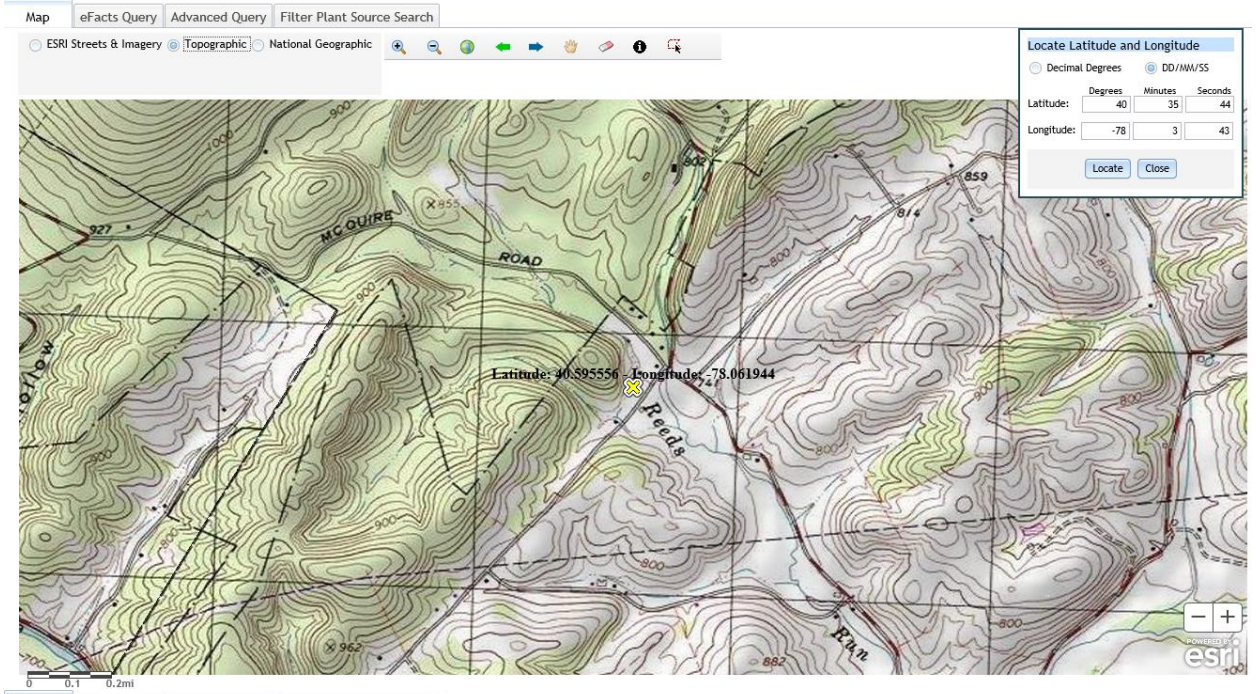
Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

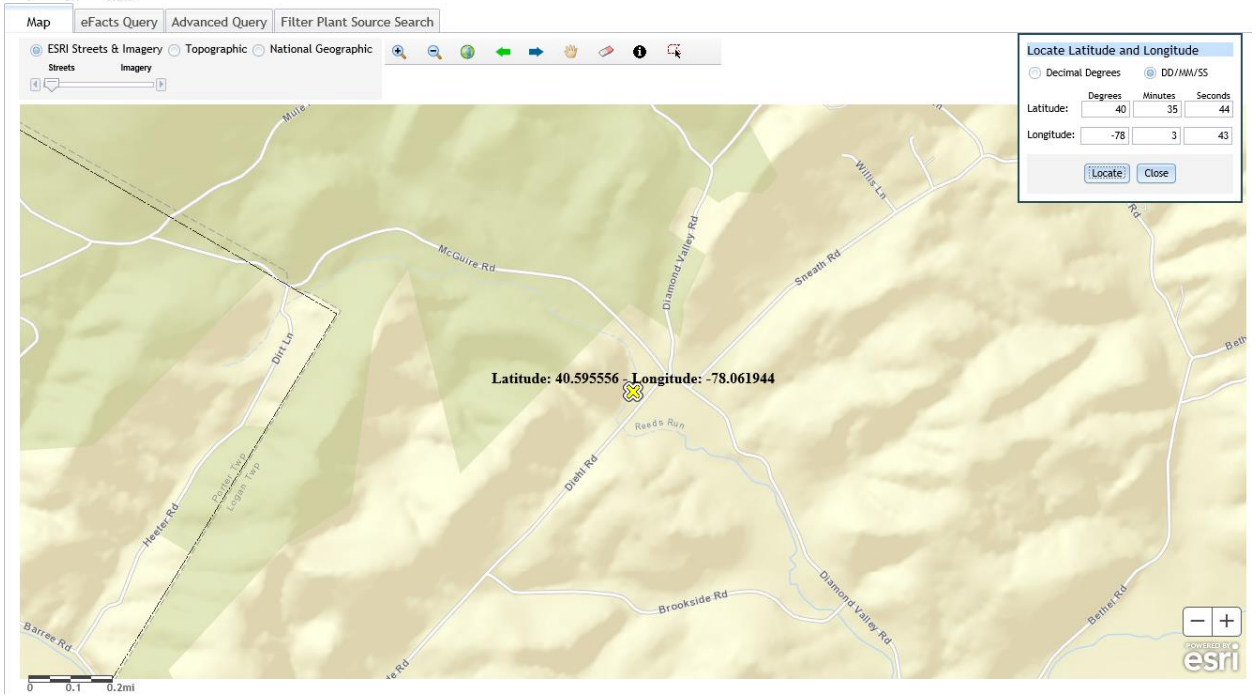
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Annual Average	Maximum	Instant. Maximum		
Flow (GPD)	Report Annl Avg	XXX	XXX	XXX	XXX	XXX	1/year	Estimate
BOD_5	XXX	XXX	XXX	10.0	XXX	20.0	1/year	Grab
TSS	XXX	XXX	XXX	10.0	XXX	20.0	1/year	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200	XXX	XXX	1/year	Grab

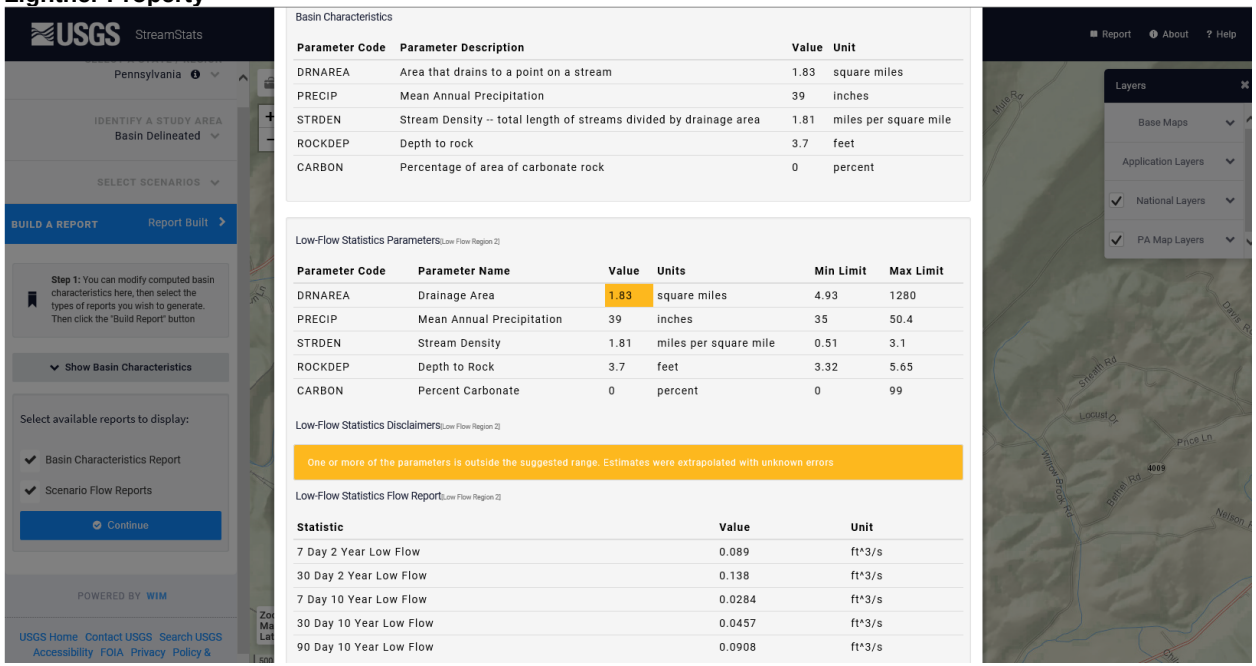
Compliance Sampling Location:

Other Comments:

This is a topographic map for the subject facility.







Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1.83	square miles
PRECIP	Mean Annual Precipitation	39	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	1.81	miles per square mile
ROCKDEP	Depth to rock	3.7	feet
CARBON	Percentage of area of carbonate rock	0	percent

Low-Flow Statistics Parameters[Low Flow Region 2]

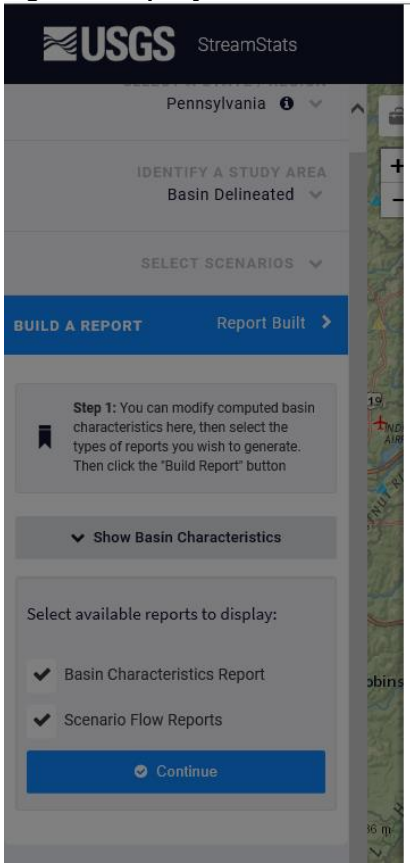
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.83	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	39	inches	35	50.4
STRDEN	Stream Density	1.81	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	3.7	feet	3.32	5.65
CARBON	Percent Carbonate	0	percent	0	99

Low-Flow Statistics Disclaimers[Low Flow Region 2]

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 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.089	ft^3/s
30 Day 2 Year Low Flow	0.138	ft^3/s
7 Day 10 Year Low Flow	0.0284	ft^3/s
30 Day 10 Year Low Flow	0.0457	ft^3/s
90 Day 10 Year Low Flow	0.0908	ft^3/s



Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	817	square miles
PRECIP	Mean Annual Precipitation	39	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	1.79	miles per square mile
ROCKDEP	Depth to rock	4.8	feet
CARBON	Percentage of area of carbonate rock	34.57	percent

Low-Flow Statistics Parameters[100 Percent (816 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	817	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	39	inches	35	50.4
STRDEN	Stream Density	1.79	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.8	feet	3.32	5.65
CARBON	Percent Carbonate	34.57	percent	0	99

Low-Flow Statistics Flow Report[100 Percent (816 square miles) Low Flow Region 2]

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

Statistic	Value	Unit	SE	SEp
7 Day 2 Year Low Flow	185	ft^3/s	38	38
30 Day 2 Year Low Flow	215	ft^3/s	33	33
7 Day 10 Year Low Flow	131	ft^3/s	51	51
30 Day 10 Year Low Flow	151	ft^3/s	46	46
90 Day 10 Year Low Flow	181	ft^3/s	36	36