pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**New**	Application No.	**PA0276863**
Facility Type	**Non-Municipal**	APS ID	**1111823**
Major / Minor	**Minor**	Authorization ID	**1481057**

Applicant and Facility Information

Applicant Name	**Michelle Davies**	Facility Name	**8278 Mertztown Road Lower Macungie**
Applicant Address	8278 Mertztown Road Alburtis, PA 18011-9516	Facility Address	8278 Mertztown Road Alburtis, PA 18011-9516
Applicant Contact	Michelle Davies	Facility Contact	Michelle Davies
Applicant Phone	610-844-4319	Facility Phone	610-844-4319
Client ID	385249	Site ID	868910
Ch 94 Load Status	Not Overloaded	Municipality	Lower Macungie Township
Connection Status	No Limitations	County	Lehigh
Date Application Received	April 15, 2024	EPA Waived?	Yes
Date Application Accepted	April 15, 2024	If No, Reason	

Purpose of Application: New NPDES and WQM permit for SRSTP discharge.

Summary of Review

The applicant is requesting a new SRSTP NPDES permit for discharge of 600 gpd (0.0006 MGD) of treated sewage to Little Lehigh Run, a High Quality – Cold Water Fishes, Migratory Fishes (HQ-CWF, MF) receiving stream in state water plan basin 2-C (Lower Lehigh River). As per the Department's current existing use list, the receiving stream does not have an existing use classification that is more protective than its designated use. The SRSTP will replace the existing malfunctioning on-lot disposal system.

Little Lehigh Run has two existing impairments: Pathogens and Siltation. Treated effluent from this facility is not expected to have an impact on these impairments.

The proposed system will consist of primary treatment, followed by a recirculating tank, and disinfection. Primary treatment will be through a 1000-gallon primary tank containing a Biotube Effluent Filter and 24" PVC access risers. Discharge from this first tank will travel to a 800-gallon recirculating tank controlled by a recirculating pump. Effluent is sprayed over hanging sheets of porous synthetic textile media. This creates an aerobic environment where microorganisms thrive. This is known as an AX-20 pod. Effluent recirculates from the tank to the pod. Effluent is finally discharged through a UV disinfection unit and finally to an outfall sewer system.

The property is not located on wetlands. Soil present in this area is silt loams and 0-8% slopes.

Current septic system will be filled in with stone. Proposed on-lot system will be placed approximately 100ft to the south of the 4-bedroom house. Sewage will travel from the house to the treatment system, and then another approximately 200ft to the outfall at Little Lehigh Creek.

The most stringent of the limitations in the PAG-04 general permit, water quality modeling, and antidegradation ABACT limitations are included in this permit (see table below). A note is added under the Part A effluent limitation table requiring

Approve	Deny	Signatures	Date
X		William Hon (s) William Hon / Environmental Engineer Trainee	June 27, 2024
X		Amy M. Bellanca (signed) Amy M. Bellanca, P.E. / Acting Engineer Manager	7-1-24

Summary of Review

the samples for Fecal Coliform and Ammonia-Nitrogen to be taken between June 1 and August 31 each year. The treatment plant will utilize ultraviolet light for disinfection so the sampling frequency for TRC is "daily when discharging". The permittee will have to sample for TRC only when using chlorine for cleaning the treatment system or if utilizing chlorine for back-up disinfection (see Part C.I.D.). As per ABACT standards, TRC must not be detected in the effluent. The maximum QL used to analyze TRC must be 0.02 mg/L. Part C.II includes specific sampling requirements for TRC. Part C. III includes a requirement for monthly cleaning of the UV bulb contact surface. In addition to the annual average Fecal Coliform limitation below, an IMAX of 1,000 No./100mL is included in the permit.

Parameter	Monthly Average Limitations		
	ABACT (< 2,000 gpd)	Modeling	PAG-04 Permit
CBOD5 (5/1-10/31)	10.0	25.0	-
CBOD5 (11/1 – 4/30)	20.0	25.0	-
BOD5	-	-	**10.0**
Total Suspended Solids	20.0	30.0	**10.0**
NH3-N (5/1 – 10/31)	**5.0**	25.0	-
NH3-N (11/1 – 4/30)	15.0	Report	-
Total Residual Chlorine	**< 0.02 / ND**	0.5	Report
pH (standard units)	-	**6.0 – 9.0**	**6.0 – 9.0**
Fecal Coliform	-	200 / 2000	**200**

The default low flow yield (LFY) of 0.1 cfs/mi2 was used to model the discharge since there are no nearby representative stream gages and the drainage area is too small for USGS StreamStats to generate reliable flow assumptions in the delineated watershed. Drainage areas, RMIs and elevations were obtained using USGS StreamStats and DEP's eMapPA (see attached).

Act 537 planning approval was granted in a letter from the DEP, dated February 2, 2024. Water Quality Management (WQM) permit application 3924404 was submitted for construction of the treatment system.

The Annual Maintenance Report (AMR) that's to be issued with the final permit shall be used to record the monitoring results. Discharge Monitoring Reports (DMRs) will not be sent will the final permit. EPA wavier is in effect.

Antidegradation guidance states that land application includes the installation of a treatment system providing a minimum of secondary treatment prior to release of the effluent onto the land. Project includes secondary treatment. Use of UV disinfection is used in accordance with guidance for discharging to HQ waters. Total Residual Chloride spreadsheet modeling was performed and will be included in limitations in the event of issues with UV disinfection.

An "Open Violations" report was run for this client. There are no open violations for this client that would warrant withholding the issuance of this permit.

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.

The following data was used for modeling inputs:

PT1 at outfall 001

Summary of Review

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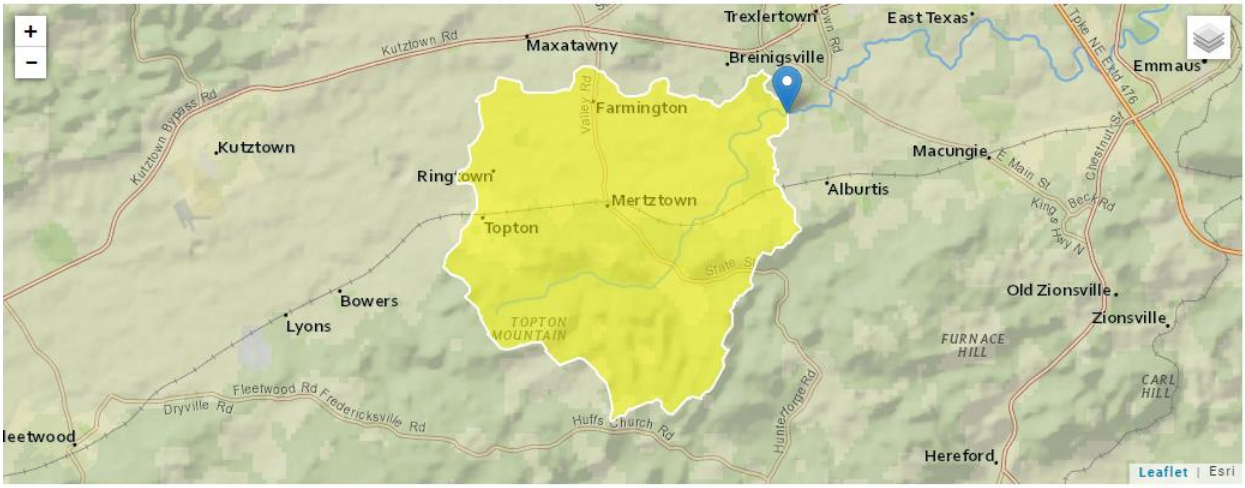
Time: 2024-05-22 15:29:12 -0400

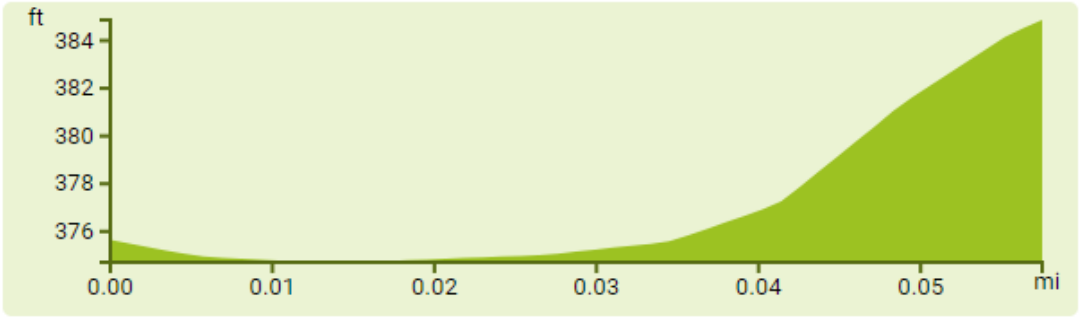


Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	58.2	percent
DRNAREA	Area that drains to a point on a stream	19.1	square miles

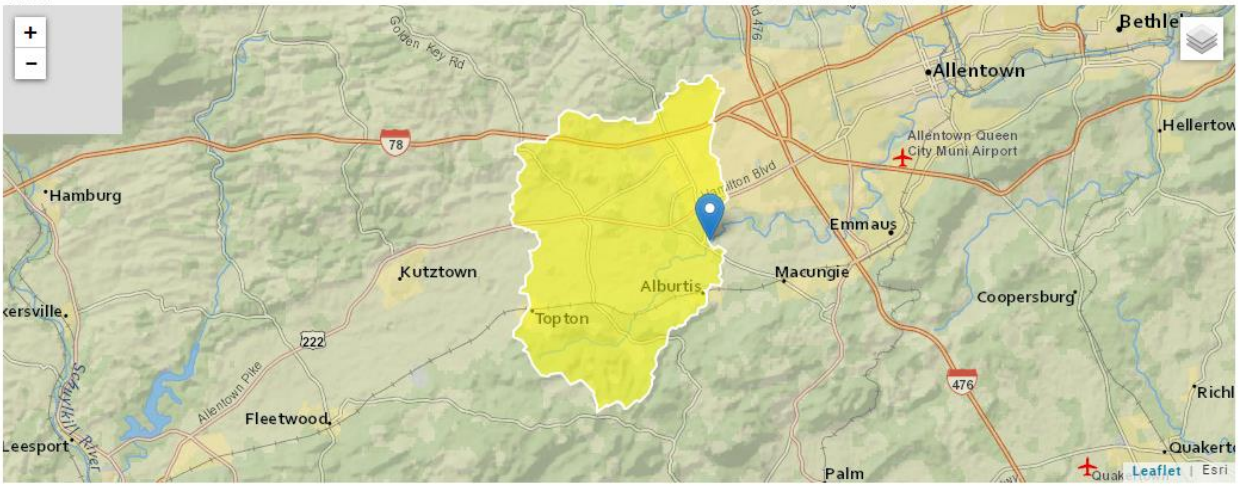
Elevation profile



PT2 @ conflux with Spring Creek 6027ft downstream

Summary of Review

Clicked Point (Latitude, Longitude): 40.53370, -75.59948
Time: 2024-05-22 15:40:49 -0400

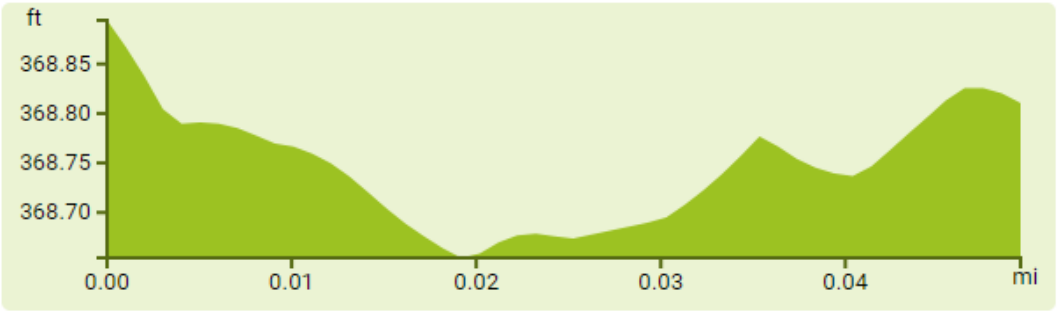


Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	67.54	percent
DRNAREA	Area that drains to a point on a stream	45.1	square miles

Elevation profile



Summary of Review

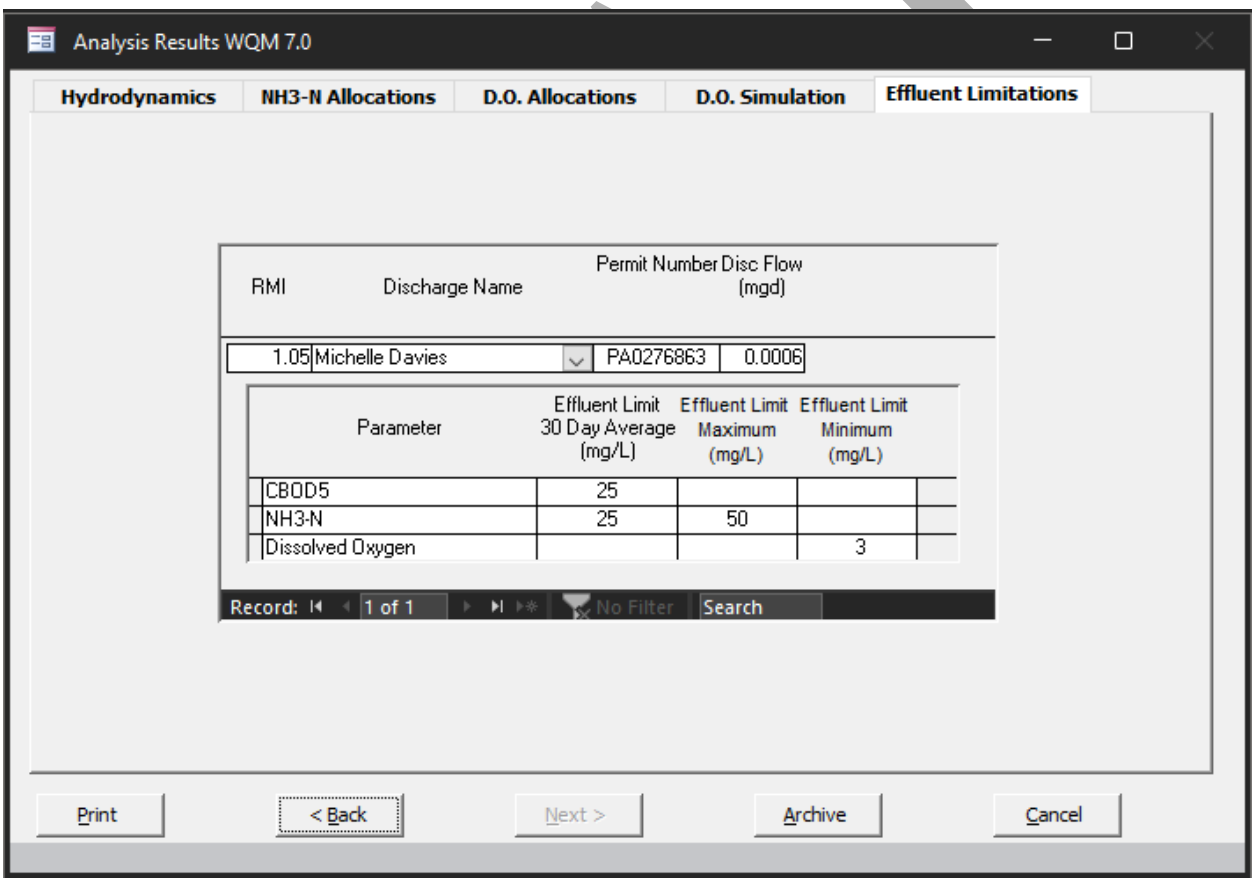
TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

1	= Q stream (cfs)	0.5	= CV Daily
0.0006	= 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 = 343.695	1.3.2.iii	WLA cfc = 335.068
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 128.069	5.1d	LTA_cfc = 194.793

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	



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X		Amy M. Bellanca (signed) Amy M. Bellanca, P.E. / Acting Engineer Manager	7-1-24