pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0209481**
Wastewater Type	**Sewage**	APS ID	**1029216**
Facility Type	**SFTF**	Authorization ID	**1337433**

NPDES PERMIT FACT SHEET
INDIVIDUAL SFTF/SRSTP

Applicant, Facility and Project Information

Applicant Name	**Anthony R. & Margaret M. Caprio**	Facility Name	**Anthony R. & Margaret M. Caprio**
Applicant Address	342 Voyzey Road	Facility Address	342 Voyzey Road
	Philipsburg, PA 16866-8529		Philipsburg, PA 16866-8529
Applicant Contact	Anthony Caprio	Facility Contact	Anthony Caprio
Applicant Phone	(814) 339-7341	Facility Phone	(814) 339-7341
Client ID	359001	Site ID	462362
SIC Code	4952	Municipality	Decatur Township
SIC Description	Trans. & Utilities - Sewerage Systems	County	Clearfield
Date Application Received	December 21, 2020	WQM Required	No
Date Application Accepted	December 29, 2020	WQM App. No.	N/A

Project Description: Renewal of an existing NPDES permit for the discharge of treated sewage.

Summary of Review

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.

Note: It will be noted in the draft permit cover letter that if this facility is only being used as a residence, the oil-water separator line is from the garage to the siphon chamber is removed, and the WQM permit is amended, the facility will be considered a SRSTP and permitted accordingly.

Approve	Deny	Signatures	Date
X		*Jonathan P. Peterman* Jonathan P. Peterman / Project Manager	October 8, 2021
X		*Nicholas W. Hartranft* Nicholas W. Hartranft, P.E. / Environmental Engineer Manager	October 20, 2021

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.00081
Latitude	40º 52' 25.15"	Longitude	-78º 15' 5.56"
Quad Name	Houtzdale	Quad Code	1219
Wastewater Description:	Sewage Effluent		
Receiving Waters	Shimel Run (CWF, MF)	Stream Code	25866
NHD Com ID	61830513	RMI	0.45
Drainage Area	1.84 sq. mi.	Yield (cfs/mi^2)	.1318
Q_{7-10} Flow (cfs)	0.2426	Q_{7-10} Basis	USGS Stream Gage 01542000
Elevation (ft)	1460	Slope (ft/ft)	N/A
Watershed No.	8-D	Chapter 93 Class.	CWF, MF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	N/A		
Source(s) of Impairment	N/A		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake	PA American Water White Deer		
PWS Waters	West Branch of Susquehanna River	Flow at Intake (cfs)	682
PWS RMI	10.5	Distance from Outfall (mi)	150

Changes Since Last Permit Issuance: The updated Q_{7-10} data was obtained from the updated stream gage information obtained from *Stuckey, M.H., and Roland, M.A., 2011, Selected Streamflow Statistics for Streamgage Locations In and Near Pennsylvania*. A comparative stream analysis was conducted using a comparative stream gage based on basin characteristics. The Q_{7-10} calculations indicate that the Q_{7-10} is 0.2426 cfs.

Other Comments: None.

Treatment Facility Summary

Treatment Facility Name: Anthony R. & Margaret M. Caprio SFTF

WQM Permit No.	Issuance Date	Notes:
1797402	7/18/1997	Initial construction.
1797402-T1	2/5/2010	Transfer.
1797402-T2	7/72014	Transfer.
1797402-T3	11/6/2020	Transfer to current owner.

Waste Type	Degree of Treatment	Process Type	Disinfection	Design Flow (MGD)
Sewage	Secondary	Septic Tank Sand Filter	Hypochlorite	0.00081
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.00081	N/A	Not Overloaded	N/A	N/A

Treatment System Components:
Three (3) 1,000-gallon septic tanks, a 1,000-gallon siphon chamber, a 1,225 square foot sand filter, a tablet chlorinator, a 500-gallon chlorine contact tank, a discharge pipe. Also an oil/water separator at the maintenance shop truck wash.

The treatment system is comprised of two parallel sides prior to the siphon chamber: industrial waste and sewage. Industrial wastewater from the truck washbay flows to the oil/water separator and then the common siphon chamber. Sewage flows through three (3) septic tanks and then to the common siphon chamber. Both sides flow from the siphon chamber to the sand filter and chlorine disinfection system. The design flow is comprised of 0.00048 MGD of industrial wastewater and 0.00033 MGD of sewage.

Chesapeake Bay Requirements

Facilities that are designed based on a flow of less than 2,000 GPD (1,000 GPD design flow for this facility) are not a part of Pennsylvania's Chesapeake Bay Tributary Strategy. Accordingly, it is not practicable to require the permittee to perform nutrient monitoring.

Anti-Backsliding

In accordance with 40 CFR 122.44(l)(1) and (2), this permit does not contain effluent limitations, standards, or conditions that are less stringent than the previous permit.

Existing Effluent Limitations and Monitoring Requirements

Existing Limits – Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly		Average Monthly	Geometric Mean		Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Min	XXX	XXX	9.0	1/day	Grab
Total Residual Chlorine	XXX	XXX	0.5	XXX	XXX	1.6	1/day	Grab
CBOD5	XXX	XXX	10	XXX	XXX	20	1/month	Grab
Total Suspended Solids	XXX	XXX	20	XXX	XXX	40	1/month	Grab
Oil and Grease	XXX	XXX	15	XXX	XXX	30	1/quarter	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200	XXX	1,000	1/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000	XXX	10,000	1/month	Grab

*The existing effluent limits for Outfall 001 were based on a design flow of 0.00081 MGD.

Development of Effluent Limitations and Monitoring Frequencies

Outfall No. 001 **Design Flow (MGD)** 0.00081
Latitude 40º 52' 25.15" **Longitude** -78º 15' 5.56"
Wastewater Description: Treated 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
BOD_5	10	Average Monthly	125.3(a)(2)(i)	DEP SFTF Design Manual (Document 362-0300-002)
	20	IMAX		
Total Suspended Solids	10	Average Monthly	125.3(a)(2)(i)	DEP SFTF Design Manual (Document 362-0300-002)
	20	IMAX		
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform	200 / 100 ml	Geo Mean	-	92a.47(a)(4)

Water Quality-Based Limitations

The Department utilizes the WQM 7.0 v1.0b and PENTOXSD v2.0d models to establish water quality based effluent limitations. This modeling is not utilized for facilities that discharge less than 2,000 gpd. See TRC section below.

Best Professional Judgement (BPJ) Limitations

None.
Comments: None.

Additional Considerations
None

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 the abovementioned 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) and/or BPJ.

Proposed Limits - Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date

Existing Limits – Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly		Average Monthly	Geometric Mean		Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Min	XXX	XXX	9.0	1/day	Grab
Total Residual Chlorine	XXX	XXX	0.5	XXX	XXX	1.6	1/day	Grab
BOD5	XXX	XXX	10	XXX	XXX	20	1/month	Grab
Total Suspended Solids	XXX	XXX	20	XXX	XXX	40	1/month	Grab
Oil and Grease	XXX	XXX	15	XXX	XXX	30	1/quarter	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200	XXX	1,000	1/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000	XXX	10,000	1/month	Grab

*The proposed effluent limits for Outfall 001 were based on a design flow of 0.00081 MGD.

Flow
There are no proposed changes for flow monitoring which is required by §92a.61(d)(1).

Five-Day Biochemical Oxygen Demand (BOD_5)
The limits for BOD_5 are existing technology-based effluent limits. Facilities that have been designed and built utilizing the technologies established in the *Small Flow Treatment Facilities Design Manual* (Document 362-0300-002) have been proven to continuously produce effluent with less than 10 mg/l BOD_5 and is considered best practicable control technology currently available (BPT). In accordance with current policies and procedures for facilities of this type, an effluent limit for BOD_5 is utilized in lieu of $CBOD_5$.

Total Suspended Solids (TSS)
The limits for TSS are existing technology-based effluent limits. Facilities that have been designed and built utilizing the technologies established in the *Small Flow Treatment Facilities Design Manual* (Document 362-0300-002) have been proven to continuously produce effluent with less than 10 mg/l TSS and is considered best practicable control technology currently available (BPT).

pH
40 CFR §133.102(c) and 25 PA Code §95.2(1) provide the basis of effluent limitations for pH. No changes are proposed for pH limitations.

Fecal Coliforms
The existing fecal coliform limits with IMAX limits were updated from the previous Chapter 92 code to correspond with what is specified in the updated 25 PA Code § 92a.47 (a)(4)&(5).

Total Residual Chlorine (TRC)
However, in accordance with 25 Pa. Code 92a.48(b)(2), a best available technology (BAT) value of 0.5 mg/l was used in the TRC Spreadsheet. The attached TRC model indicates that the technology based effluent limits of 0.5 mg/L (Average Monthly) and 1.6 mg/L (Instantaneous Maximum) are still protective of water quality.

Sample Types
The sample types (grab and measured) for all of the parameters correspond with the *Technical Guidance for the Development and Specification of Effluent Limitations* (362-0400-001) Table 6-3, are appropriate for small flow facilities, and will remain.

Monitoring Frequencies
The monitoring frequency (1/month) for all of the parameters correspond with the *Technical Guidance for the Development and Specification of Effluent Limitations* (362-0400-001) Table 6-3, are appropriate for small flow facilities, and will remain.

Other Comments: None.

Compliance History

WMS Query Summary - A WMS Query was run at *Reports - Violations & Enforcements – Open Violations for Client Report* to determine whether there are any unresolved violations associated with the client that will affect issuance of the permit (per CSL Section 609). This query revealed that there were no unresolved violations.
File Review / AMR's – The last SFTF Compliance Inspection Report was conducted by the Department on 9/30/202. The report noted a failure to submit DMRs and AMRs as well as a failure to monitor required parameters. The owner was unaware of their obligations.

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☒	TRC Model Spreadsheet (see Attachment **A**)
☐	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:

APPENDIX A

TRC ANALYSIS SPREADSHEET

1A	B	C	D	E	F	G
2	**TRC EVALUATION**			**Caprio**		
3	Input appropriate values in B4:B8 and E4:E7					
4	0.24	= Q stream (cfs)		0.5	= CV Daily	
5	0.00081	= Q discharge (MGD)		0.5	= CV Hourly	
6	30	= no. samples		1	= AFC_Partial Mix Factor	
7	0.3	= Chlorine Demand of Stream		1	= CFC_Partial Mix Factor	
8	0	= Chlorine Demand of Discharge		15	= AFC_Criteria Compliance Time (min)	
9	0.5	= BAT/BPJ Value		720	= CFC_Criteria Compliance Time (min)	
	0	= % Factor of Safety (FOS)		0	=Decay Coefficient (K)	
10	Source	Reference	AFC Calculations		Reference	CFC Calculations
11	TRC	1.3.2.iii	WLA afc = 61.117		1.3.2.iii	WLA cfc = 59.577
12	PENTOXSD TRG	5.1a	LTAMULT afc = 0.373		5.1c	LTAMULT cfc = 0.581
13	PENTOXSD TRG	5.1b	LTA_afc= 22.774		5.1d	LTA_cfc = 34.635
14						
15	Source		Effluent Limit Calculations			
16	PENTOXSD TRG	5.1f	AML MULT = 1.231			
17	PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500		BAT/BPJ	
18			INST MAX LIMIT (mg/l) = 1.635			

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)**