pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0032212**
Wastewater Type	**Sewage**	APS ID	**1113595**
Facility Type	**SFTF**	Authorization ID	**1484865**

NPDES PERMIT FACT SHEET
INDIVIDUAL SFTF/SRSTP

Applicant, Facility and Project Information

Applicant Name	**Pamela Nelson**	Facility Name	**Camp Silver Lake STP**
Applicant Address	144 Silver Lake Lane	Facility Address	144 Silver Lake Lane
	Fombell, PA 16123-1230		Fombell, PA 16123-1230
Applicant Contact	Pamela Nelson	Facility Contact	Pamela Nelson
Applicant Phone	(724) 452-6720	Facility Phone	(724) 452-6720
Client ID	85999	Site ID	258460
SIC Code	7011	Municipality	Marion Township
SIC Description	Services - Hotels and Motels	County	Beaver
Date Application Received	May 7, 2024	WQM Required	No
Date Application Accepted	May 16, 2024	WQM App. No.	n/a
Project Description	Renewal of an existing NPDES permit for the discharge of treated sewage.		

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.

Approve	Deny	Signatures	Date
X		Derek S. Garner / Project Manager	August 6, 2024
X		Mahbuba Iasmin Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineer Manager	August 8, 2024

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.0016
Latitude	40º 47' 37.44"	Longitude	-80º 11' 21.35"
Quad Name	Evans City	Quad Code	1205
Wastewater Description:	Sewage Effluent		

Receiving Waters	Unnamed Tributary to Connoquenessing Creek	Stream Code	34025 UNT
NHD Com ID	126223506	RMI	0.095
Drainage Area	0.29	Yield (cfs/mi^2)	0.033
Q_{7-10} Flow (cfs)	0.01	Q_{7-10} Basis	Streamgage No. 03106000
Elevation (ft)	885	Slope (ft/ft)	0.04
Watershed No.	20-C	Chapter 93 Class.	WWF
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	Beaver Falls Municipal Authority		
PWS Waters	Beaver River	Flow at Intake (cfs)	564
PWS RMI	5.6	Distance from Outfall (mi)	23

Facility Description

The Camp Silver Lake Sewage Treatment Plant is a small flow treatment facility that serves a campground and one single-family home. Treatment is provided by two lagoons operated in series and chlorine disinfection. Disinfected effluent is discharged via Outfall 001 to an unnamed tributary of Connoquenessing Creek.

Compliance History

The following violations occurred during the existing permit's term:

Submission Date	Noncompliance Description	Parameter	Sample Value	Violation Condition	Permit Value	Units	SBC
10/13/2020 (1)	Violation of permit condition	Fecal Coliform	251	>	200	No./100 ml	Geometric Mean
7/26/2021 (2)	Violation of permit condition	CBOD5	36	>	25	mg/L	Average Monthly
7/26/2021 (2)	Violation of permit condition	CBOD5	64	>	50	mg/L	IMAX
7/26/2021 (2)	Violation of permit condition	TSS	38	>	30	mg/L	Average Monthly
9/23/2021 (3)	Violation of permit condition	TRC	0.9	>	0.5	mg/L	Average Monthly
9/23/2021 (4)	Violation of permit condition	TSS	53	>	30	mg/L	Average Monthly
9/22/2022 (4)	Violation of permit condition	TSS	56	>	30	mg/L	Average Monthly
11/16/2022 (4)	Violation of permit condition	TSS	103	>	30	mg/L	Average Monthly
11/16/2022 (4)	Violation of permit condition	TSS	103	>	60	mg/L	IMAX
1/30/2023	Late DMR Submission	---	---	---	---	---	---
8/24/2023 (5)	Violation of permit condition	Fecal Coliform	250	>	200	No./100 ml	Geometric Mean
8/24/2023 (3)	Violation of permit condition	TRC	0.74	>	0.5	mg/L	Average Monthly
8/24/2023 (4)	Violation of permit condition	TSS	39.5	>	30	mg/L	Average Monthly
12/14/2023 (4)	Violation of permit condition	TSS	33	>	30	mg/L	Average Monthly
1/19/2024 (4)	Violation of permit condition	TSS	33	>	30	mg/L	Average Monthly

(1) Heavy rain day before sampling resulted in high flows beyond system capacity.
(2) Clogged discharge line.
(3) Chlorine added to drinking water resulted in high sewage chlorine levels.
(4) Heavy algae cover.
(5) High fecal coliform concentrations are assumed to be related to high TSS concentrations from low flows and heavy algae cover.

The facility was most recently inspected by DEP on March 24, 2017. No violations were noted in the inspection report.

Development of Effluent Limitations

The existing limits and monitoring requirements are based off of secondary treatment standards at 25 PA Code § 92a.47(a)(1) and 40 CFR § 133.102, and are less stringent than those recommended in the Small Flow Treatment Facilities Manual (385-2188-005, 11/11/2023). Construction of this facility predates the original publication of the Manual (August 1998) and is mostly likely not capable of meeting the Manual's recommended tertiary limits. Accordingly, it is recommended that the existing limits and monitoring requirements be retained as follows:

Parameter	Limit (mg/l)	SBC
BOD5	25	Average Monthly
TSS	30	Average Monthly
pH (S.U.)	6.0 – 9.0	Min – Max
Fecal Coliform (No./100 ml)	200 / 100 ml	Geometric Mean
Total Residual Chlorine	0.5	Average Monthly

In addition to the above technology-based effluent limits, this permit has historically included water quality-based effluent limits for ammonia-n at 9 mg/l average monthly from May through October and 25 mg/l average monthly from November through April. These limits were not reevaluated because DEP generally does not develop WQBELs for small flow treatment facilities (< 2,000 GPD). However, since these are preexisting limits, DEP recommends they remain in the renewed permit to ensure protection of the receiving water.

The previous renewal of the permit established annual monitoring for total nitrogen and total phosphorus due to the downstream nutrient impairment of Connoquenessing Creek. DEP recommends that the annual monitoring requirements remain in the permit.

Existing total residual chlorine (TRC) limits were reevaluated. The TRC evaluation (attached) indicates that the existing technology-based limits are protective. Accordingly, DEP recommends that they remain in the permit.

Existing Effluent Limitations and Monitoring Requirements

The existing effluent limitations and monitoring requirements are as follows:

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/month	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/month	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.5	XXX	1.6	1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	25	XXX	50	1/month	Grab
Total Suspended Solids	XXX	XXX	XXX	30	XXX	60	1/month	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/month	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	25	XXX	50	1/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	9.0	XXX	18.0	1/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab

Compliance Sampling Location: Outfall 001

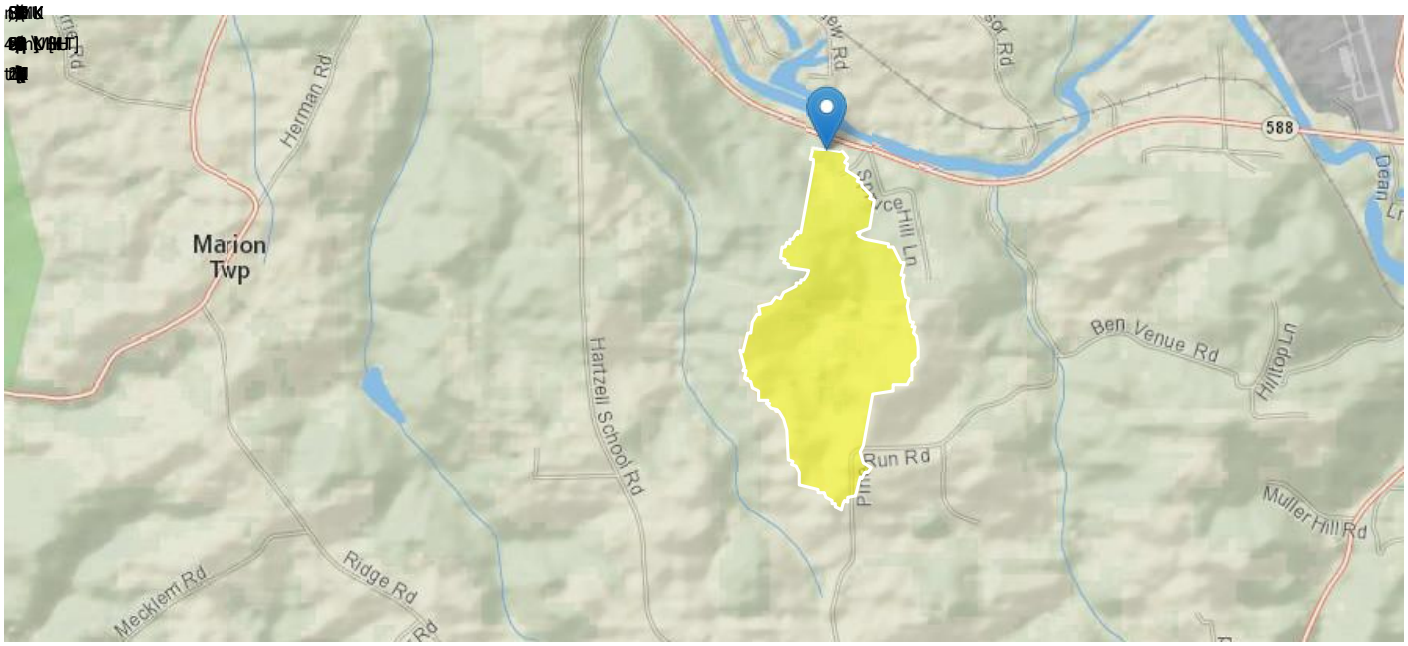
Proposed Effluent Limitations and Monitoring Requirements

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)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/month	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/month	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/month	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	1/month	Grab
TSS	XXX	XXX	XXX	30	XXX	60	1/month	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/month	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	25	XXX	50	1/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	9	XXX	18	1/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab

Compliance Sampling Location: Outfall 001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USGS
science for a changing world

Prepared in cooperation with the Pennsylvania Department of Environmental Protection

Selected Streamflow Statistics for Streamgage Locations in and near Pennsylvania

Open-File Report 2011-1070

U.S. Department of the Interior
U.S. Geological Survey

Table 1. List of U.S. Geological Survey streamgage locations in and near Pennsylvania with updated streamflow statistics.—Continued

[Latitude and Longitude in decimal degrees; mi^2, square miles]

Streamgage number	Streamgage name	Latitude	Longitude	Drainage area (mi^2)	Regulated[1]
03102500	Little Shenango River at Greenville, Pa.	41.422	-80.376	104	N
03102850	Shenango River near Transfer, Pa.	41.354	-80.398	337	Y
03102950	Pymatuning Creek at Kinsman, Ohio	41.443	-80.588	96.7	N
03103000	Pymatuning Creek near Orangeville, Pa.	41.311	-80.478	169	N
03103500	Shenango River at Sharpsville, Pa.	41.266	-80.473	584	Y
03104000	Shenango River at Sharon, Pa.	41.232	-80.510	608	N
03104500	Shenango River at New Castle, Pa.	41.000	-80.356	792	Y
03104760	Harthegig Run near Greenfield, Pa.	41.186	-80.327	2.26	N
03105500	Beaver River at Wampum, Pa.	40.889	-80.337	2,235	Y
03106000	Connoquenessing Creek near Zelienople, Pa.	40.817	-80.242	356	N
03106300	Muddy Creek near Portersville, Pa.	40.963	-80.125	51.2	Y
03106500	Slippery Rock Creek at Wurtemburg, Pa.	40.884	-80.234	398	Y
03107500	Beaver River at Beaver Falls, Pa.	40.763	-80.315	3,106	Y
03108000	Raccoon Creek at Moffatts Mill, Pa.	40.628	-80.338	178	LF
03109500	Little Beaver Creek near East Liverpool, Ohio	40.676	-80.541	496	N
03110000	Yellow Creek near Hammondsville, Ohio	40.538	-80.725	147	N
03111150	Brush Run near Buffalo, Pa.	40.198	-80.408	10.3	N
03111500	Short Creek near Dillonvale, Ohio	40.193	-80.734	123	N
03111534	Ohio River at Martins Ferry, Ohio	40.105	-80.708	24,620	N
03111548	Wheeling Creek below Blaine, Ohio	40.067	-80.808	97.7	N
03112000	Wheeling Creek at Elm Grove, W.Va.	40.045	-80.661	281	Y
03114000	Captina Creek at Armstrongs Mills, Ohio	39.909	-80.924	134	N
04209000	Chagrin River at Willoughby, Ohio	41.631	-81.403	246	N
04212500	Ashtabula River near Ashtabula, Ohio	41.856	-80.762	121	N
04213000	Conneaut Creek at Conneaut, Ohio	41.927	-80.604	175	N
04213040	Raccoon Creek near West Springfield, Pa.	41.945	-80.447	2.53	N
04213075	Brandy Run near Girard, Pa.	41.992	-80.291	4.45	N
04221000	Genesee River at Wellsville, N.Y.	42.122	-77.957	288	N
04223000	Genesee River at Portageville, N.Y.	42.570	-78.042	984	N
04224775	Canaseraga Creek above Dansville, N.Y.	42.536	-77.704	88.9	N
04227000	Canaseraga Creek at Shakers Crossing, N.Y.	42.737	-77.841	335	N

[1]Refers to regulation of streamflow during period of record of streamgage; N, no regulation during period of record; Y, regulation during period of record; LF, regulation for low flows during period of record.

Table 2. Selected low-flow statistics for streamgage locations in and near Pennsylvania.—Continued

[ft^3/s; cubic feet per second; —, statistic not computed; <, less than]

Streamgage number	Period of record used in analysis[1]	Number of years used in analysis	1-day, 10-year (ft^3/s)	7-day, 10-year (ft^3/s)	7-day, 2-year (ft^3/s)	30-day, 10-year (ft^3/s)	30-day, 2-year (ft^3/s)	90-day, 10-year (ft^3/s)
03086500	1943–1993	51	0	0	3.9	<.1	5.1	1.6
03090500	[2]1945–1992	48	0	1.0	17.5	3.0	39.9	21.3
03090500	[3]1933–1942	11	2.2	2.7	4.3	5.0	9.7	8.6
03091500	1931–2008	78	3.7	7.6	37.3	20.5	60.3	45.0
03092000	1943–1993	51	0	<.1	.1	.1	.3	.2
03092090	1967–1993	27	.3	.5	1.5	1.2	2.4	2.4
03092460	1971–1992	22	6.7	7.6	19.1	12.9	24.3	26.4
03092500	[2]1969–1982	14	9.7	11.0	22.8	14.5	30.2	29.8
03092500	[3]1929–1966	39	4.1	4.7	6.7	5.9	8.5	7.8
03093000	1928–2008	77	3.7	6.8	11.2	8.6	14.0	11.3
03094000	1942–2008	67	101	109	162	130	207	157
03095500	1945–1991	27	0	0	5.2	.9	6.4	2.3
03097550	1989–2008	20	189	200	247	227	316	268
03098000	1923–1982	60	64.2	75.4	168	90.3	203	115
03098500	1945–2000	27	.1	.2	.8	.8	2.4	2.4
03098600	1989–2008	20	200	217	285	255	378	314
03099500	1945–2000	46	198	217	312	245	382	304
03100000	1913–1922	10	3.1	3.6	5.8	5.2	9.5	7.3
03101500	1936–2008	73	2.2	3.5	19.2	8.4	35.7	25.2
03102000	[3]1921–1932	12	2.6	3.5	5.9	4.3	9.2	6.8
03102500	1915–2008	90	4.8	5.5	10.4	7.1	13.8	9.7
03102850	1967–2008	42	47.3	54.4	82.5	69.8	106	103
03102950	1967–1994	28	.2	.4	2.0	1.4	5.0	4.4
03103000	1915–1963	46	1.2	1.8	4.4	2.9	6.7	5.1
03103500	1939–1991	53	81.3	94.8	154	124	196	154
03104000	[3]1911–1932	22	13.1	14.8	29.9	19.6	41.5	28.8
03104500	[3]1911–1932	20	12.6	16.5	30.4	24.4	47.8	36.5
03104760	1970–1981	12	<.1	.1	.1	.1	.1	.2
03105500	1916–2008	77	266	295	617	355	736	427
03106000	1921–2008	88	10.0	11.9	24.5	16.2	35.6	25.7
03106300	[2]1971–2008	36	1.3	1.9	4.0	2.6	6.3	3.9
03106500	[3]1913–1969	57	—	30.4	44.6	38.8	59.3	49.2
03106500	[2]1971–2008	38	44.0	47.5	73.5	57.5	101	78.2
03107500	1958–2008	51	510	564	842	657	989	781
03108000	[3]1943–1956	14	6.2	7.7	11.2	10.4	17.4	16.6
03108000	[2]1958–2008	51	7.4	8.3	16.3	11.0	22.6	16.9
03109500	1917–2008	92	18.3	20.4	38.4	29.0	53.3	43.1
03110000	1942–2008	67	1.9	2.3	6.7	3.8	10.6	8.2
03111150	1962–1985	19	0	0	.1	0	.3	<.1
03111500	1943–2008	66	7.7	9.5	19.8	12.9	24.5	19.3
03111534	1980–1995	16	4,620	5,610	8,430	6,530	10,700	8,320
03111548	1983–2008	21	10.2	11.0	20.8	13.4	26.5	20.9
03112000	[2]1988–2008	21	.7	1.3	7.7	3.2	14.6	11.1
[5]03112000	[3]1942–1986	45	.4	.7	3.5	1.6	8.9	4.8
03114000	1928–2003	52	0	<.1	1.6	.5	5.6	3.6

TRC EVALUATION

Input appropriate values in B4:B8 and E4:E7

0.01	= Q stream (cfs)	0.5	= CV Daily
0.0016	= 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)	0	=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 1.308	1.3.2.iii	WLA cfc = 1.267
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.487	5.1d	LTA_cfc = 0.737

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	

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)