pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0232971**
Facility Type	**Municipal**	APS ID	**1079799**
Major / Minor	**Minor**	Authorization ID	**1424964**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Franklin Township**	Facility Name	**Lairdsville WWTP**
Applicant Address	PO Box 85	Facility Address	61 School Lane
	Lairdsville, PA 17742-0085		Lairdsville, PA 17742
Applicant Contact	Raine Ohnmeiss	Facility Contact	Raine Ohnmeiss
Applicant Phone	(570) 584-3240	Facility Phone	(570) 584-3240
Client ID	114816	Site ID	828287
Ch 94 Load Status	Not Overloaded	Municipality	Franklin Township
Connection Status	No Limitations	County	Lycoming
Date Application Received	January 20, 2023	EPA Waived?	No
Date Application Accepted	February 2, 2023	If No, Reason	Chesapeake Bay
Purpose of Application	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	3/12/2024
X		Nicholas W. Hartranft, P.E. / Environmental Engineer Manager	3/12/2024

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.018
Latitude	41º 13' 48.39"	Longitude	-76º 36' 33.59"
Quad Name	Lairdsville	Quad Code	0933
Wastewater Description:	Sewage Effluent		

Receiving Waters	Little Muncy Creek	Stream Code	19431
NHD Com ID	66913971	RMI	14.10
Drainage Area	38.7	Yield (cfs/mi^2)	0.05
Q_{7-10} Flow (cfs)	1.95	Q_{7-10} Basis	Streamgage No. 01552500
Elevation (ft)	732	Slope (ft/ft)	0.00008
Watershed No.	10-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	Pennsylvania-American Water Company		
PWS Waters	West Branch Susquehanna River	Flow at Intake (cfs)	688
PWS RMI	10.64	Distance from Outfall (mi)	35.24

Treatment Facility Summary

The Lairdsville Wastewater Treatment Plant ("LWWTP") is a recently constructed sequencing batch reactor ("SBR") facility. eDMR submissions indicate that the facility became operational September 2023. Treatment at the facility consists of:

- Equalization
  - One (1) 8.844-gallon surge tank
- Biological treatment
  - Two (2) 15,150-gallon SBRs
- Disinfection
  - Ultraviolet Light
- Sludge Processing
  - One (1) 9,936-gallon sludge holding tank

Disinfected effluent is discharged to Little Muncy Creek via Outfall 001.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Sequencing Batch Reactor	Ultraviolet	0.019
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.025	50.04	Not Overloaded	Holding Tank	Landfill

Compliance History

The facility was most recently inspected March 13, 2023. The facility was still under construction at the time of the inspection.

There are no eDMR violations associated with the facility.

There are no open violations associated with the permittee.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.018
Latitude 41º 13' 48.41" **Longitude** -76º 36' 34.31"
Wastewater Description: 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
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)

Water Quality-Based Limitations

DEP models in-stream conditions to determine if WQBELs are appropriate. The water quality model WQM 7.0 v1.1 was used to determine if WQBELs for dissolved oxygen, CBOD5 and ammonia-n (NH3-N) are necessary to protect the receiving surface water. The model assumes complete and instantaneous mixing with the receiving surface water. The reach chosen to model the in-stream characteristics is appropriate as a recovery in dissolved oxygen levels is demonstrated. The modeling output is as follows:

Parameter	Discharge Conc. (mg/L)	Effluent Limits (mg/L)		
		Monthly Average	Maximum	Minimum
CBOD5	25	25		
Ammonia-N	25	25	50	
Dissolved Oxygen	3			3

The discharge concentration for CBOD5 is the secondary treatment standard for sewage discharges. The discharge concentrations for ammonia-n and dissolved oxygen are expected concentrations in sewage effluent. Based on the model output, no WQBELs are recommended for CBOD5, ammonia-n, or dissolved oxygen.

Best Professional Judgment (BPJ) Limitations

The ultraviolet light disinfection system monitors bulb life using dosage. DEP recommends the existing dosage reporting requirement remains in the permit.

DEP recommends that the existing dissolved oxygen and ammonia-n reporting requirements remain in the permit to help characterize the wastewater.

DEP recommends that the existing influent monitoring requirements for BOD5 and TSS remain in the permit to help with Chapter 94 reporting.

Annual E. Coli reporting requirements have been proposed per the 2017 Triennial Review of Water Quality Standards, published in the PA Bulletin on July 11, 2020.

Chesapeake Bay

The LWWTP is a new Phase 5 facility per the Phase 3 Watershed Implementation Plan (WIP) Wastewater Supplement (rev. July 29, 2022). New facilities are generally assigned cap loads of zero pounds of total nitrogen and total phosphorus unless previously permitted facilities are connected to the public sewer system. When existing facilities are connected to the system their cap loads may be transferred to the new treatment plant, or if no existing cap loads are in place a load can be calculated assuming raw wastewater characteristics of 25 mg/l total nitrogen and 4 mg/l total phosphorus. The Lairdsville Sewer Project connected two single residence sewage treatment plants (SRSTPs), PAG045037 and PAG045164, both with design flows of 400 GPD. Accordingly, per the Wastewater Supplement, the previous permit issuance assigned the LWWTP the following cap loads:

Total Nitrogen = (25 mg/l x 0.0004 MGD x 8.34 x 365 days) x 2 = 60 lbs
Total Phosphorus = (8 mg/l x 0.0004 MGD x 8.34 x 365 days) x 2 = 9.7 lbs

Franklin Township has requested additional phosphorus loading added to the cap load in a letter dated December 20, 2023. The letter states that the East Lycoming School District Renn Elementary School has connected to the sewer system. However, it does not appear that the facility was ever assigned an NPDES permit or directly discharge to a surface water. Accordingly, DEP is unable to accommodate this request for additional phosphorus loading.

In addition to cap loads, the LWWTP is eligible for total nitrogen offsets. Offsets of 25 lbs/yr of total nitrogen per EDU may be included in the permit when on-lot septic systems that existed prior to January 1, 2003 are connected to the public sewer system. Franklin Township previously provided DEP with a list of on-lot septic systems in existence prior to January 1, 2003 which validates the inclusion of 71.4 EDUs. As a supplement to this most recent renewal application, Franklin Township provided documentation for an additional 74.0 EDUs. Accordingly, per the Wastewater Supplement, the LWWTP will be assigned the following offsets:

145.4 EDUs x 25 lbs/yr TN = 3,635 lbs/yr TN

The most recent offset documentation also includes an additional three EDU property that is proposed to be hooked up to the system by Spring 2024. Since it does not appear that the connection has occurred yet, it will not be included in the draft permit. If the connection is completed before permit issuance, DEP will include the additional 3 EDUs. If not, Franklin Township will be required to request the additional offsets separately.

Anti-Backsliding

No limits were relaxed because of this review. Anti-backsliding regulations are not applicable.

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	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	Report	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	3.5	6.0	XXX	25.0	40.0	50	2/month	Grab
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	Grab
Total Suspended Solids	4.5	6.5	XXX	30.0	45.0	60	2/month	Grab
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Ammonia-Nitrogen	Report	Report	XXX	Report	Report	XXX	2/week	Grab
Ultraviolet light dosage (mjoules/cm^2)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured

Compliance Sampling Location: Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	2/week	Grab
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/week	Grab
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	Grab
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/week	Grab
Net Total Nitrogen	Report	60 (3)	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	9.7	XXX	XXX	XXX	XXX	1/month	Calculation

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): Outfall 001

Footnotes:
(1) See Part C for Chesapeake Bay Requirements.
(2) This is the minimum number of sampling events required. Permittees are encouraged, and it may be advantageous in demonstrating compliance, to perform more than the minimum number of sampling events required.
(3) The permittee is authorized to use 1,785 lbs/year as Total Nitrogen (TN) Offsets toward compliance with the Annual Net TN mass load limitation (Cap Load), in accordance with Part C. These offsets may be applied through the Compliance Year or during the Truing Period. The application of Offsets must be reported to DEP as described in Part C. The offsets are authorized for the following pollutant load reduction activities.
- Connection of 71.4 EDUs to the public sewer system after January 1, 2003, in which 25 lbs/year of TN offsets are granted per EDU

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" (386-0400-001), 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	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	Report	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	3.5	6.0	XXX	25.0	40.0	50	2/month	Grab
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	Grab
Total Suspended Solids	4.5	6.5	XXX	30.0	45.0	60	2/month	Grab
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Ammonia-Nitrogen	Report	Report	XXX	Report	Report	XXX	2/week	Grab
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	2/week	Grab
Ultraviolet light dosage (mjoules/cm^2)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured

Compliance Sampling Location: Outfall 001

The limitations and monitoring requirements specified below are proposed for the draft permit, to comply with Pennsylvania's Chesapeake Bay Tributary Strategy.

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
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	2/week	Grab
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/week	Grab
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	Grab
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/week	Grab
Net Total Nitrogen	XXX	60 (3)	XXX	XXX	XXX	XXX	1/year	Calculation
Net Total Phosphorus	XXX	9.7	XXX	XXX	XXX	XXX	1/year	Calculation

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): Outfall 001

Footnotes:
(1) See Part C for Chesapeake Bay Requirements.
(2) This is the minimum number of sampling events required. Permittees are encouraged, and it may be advantageous in demonstrating compliance, to perform more than the minimum number of sampling events required.
(3) The permittee is authorized to use 3,635 lbs/year as Total Nitrogen (TN) Offsets toward compliance with the Annual Net TN mass load limitation (Cap Load), in accordance with Part C. These offsets may be applied through the Compliance Year or during the Truing Period. The application of Offsets must be reported to DEP as described in Part C. The offsets are authorized for the following pollutant load reduction activities.
- Connection of 145.4 EDUs to the public sewer system after January 1, 2003, in which 25 lbs/year of TN offsets are granted per EDU

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')	Regulated[1]
01541303	West Branch Susquehanna River at Hyde, Pa.	41.005	-78.457	474	y
01541308	Bradley Run near Ashville, Pa.	40.509	-78.584	6.77	N
01541500	Clearfield Creek at Dimeling, Pa.	40.972	-78.406	371	y
01542000	Moshannon Creek at Osceola Mills, Pa.	40.850	-78.268	68.8	N
01542500	WB Susquehanna River at Karthaus, Pa,	41.118	-78.109	1,462	y
01542810	Waldy Run near Emporium, Pa.	41.579	-78,293	5.24	N
01543000	Driftwood Branch Sinnemahoning Creek at Sterling R.un,_Pa.	41.413	-78.197	272	N
01543500	Sinnemahoning Creek at Sinnemahoning, Pa.	41.317	-78.103	685	N
01544000	First ForkSinnemahoning Creek near Sinnemahoning, Pa.	41.402	-78.024	245	y
01544500	Kettle Creek at Cross Fork,_Pa.	41.476	-77.826	136	N
01545000	Kettle Creek near Westport, Pa.	41.320	-77.874	233	y
01545500	West Branch Susquehanna River at Renovo, Pa.	41.325	-77.751	2,975	y
01545600	Young Womans Creek near Renovo, Pa.	41.390	-77.691	46.2	N
01546000	North Bald Eagle Creek at Milesburg, Pa.	40.942	-77.794	119	N
01546400	Spring Creek at Houserville, Pa.	40.834	-77.828	58.5	N
01546500	Spring Creek near Axemann, Pa,_	40.890	-77.794	87,2	N
01547100	Spring Creek at Milesburg, Pa.	40.932	-77.786	142	N
01547200	Bald Eagle Creek below Spr_ing Creek at Milesburg, PU.	40.943	-77.786	265	N
01547500	Bald Eagle Creek at Blanchard, Pa.	41.052	-77.604	339	y
01547700	Marsh Creek at Blanchard, Pa.	41.060	·77.606	44.1	N
01547800	South Fork Beech Creek near Snow Shoe, Pa.	41.024	-77.904	12.2	N
01547950	Beech Creek at Monument, Pa.	41.112	-77.702	152	N
01548005	Bald Eagle Creek near Beech Creek Station, Pa.	41.081	-77.549	562	y
01548500	Pine Creek al Cedar Run, Pa.	41.522	-77.447	604	N
01549000	Pine Creek near Waterville, Pa.	41.313	-77.379	750	N
01549500	Blockhouse Creek near-English Center, Pa.	41.474	-77.231	37.7	N
01549700	Pinc,Creek below Little Pine'Creek near Waterville, Pa.	41.274	-77.324	944	y
01550000	Lycoming Creek near Trout Run, Pa.	41.418	-77.033	173	N
01551500	WB Susquehanna River afWilliamsporl, Pa',	41.236	-76.99.7	5,682	y
01552000	Loyalsock Creek at Loyalsockville, Pa.	41,325	-76.912	435	N
01552500	Muncy Creek near Sonestown, Pa,	41.357	-76.535	23.8	N
01553130	Sand Spring Run near White Deer, Pa.	41.059	-77.077	4.93	N
01553500	West Branch Susquehanna River at Lewisburg, Pa.	40.968	-76.876	6,847	y
01553700	Chillisquaque Creek at Washingtonville, Pa.	41.062	-76.680	51.3	N
01554000	Susquehanna River at Sunbury, Pa.	40.835	-76.827	18,300	y
01554500	Shamokin Creek near Shamokin, Pa,	.40.810	-76.584	54.2	N
01555000	Penns Creek at Penns Creek,- Pa.	40,867	-77.048	301	N
01555500	East Mabantango Creek near Dalmalia, Pa.	40.611	-76.912	162	N
01556000	Frankstown Branch Juniata River at Williamsburg, Pa.	40.463	-78.200	291	N
01557500	Bald Eagle Creek at Tyrone, Pa.	40.684	-78.234	44.1	N
01558000	Little Juniata River at Spruce Creek, Pa.	40.613	-78.141	220	N
01559000	Juniata River at Huntingdon, Pa.	40.485	-78.019	816	LF
01559500	Standing Stone Creek near Huntingdon, Pa.	40.524	-77.971	128	N
01559700	Sulphur Springs Creek near Manns Choice, Pa,	39.978	-78.619	5.28	N
01560000	Dunning Creek at Belden, Pa.	40.072	-78.493	172	N

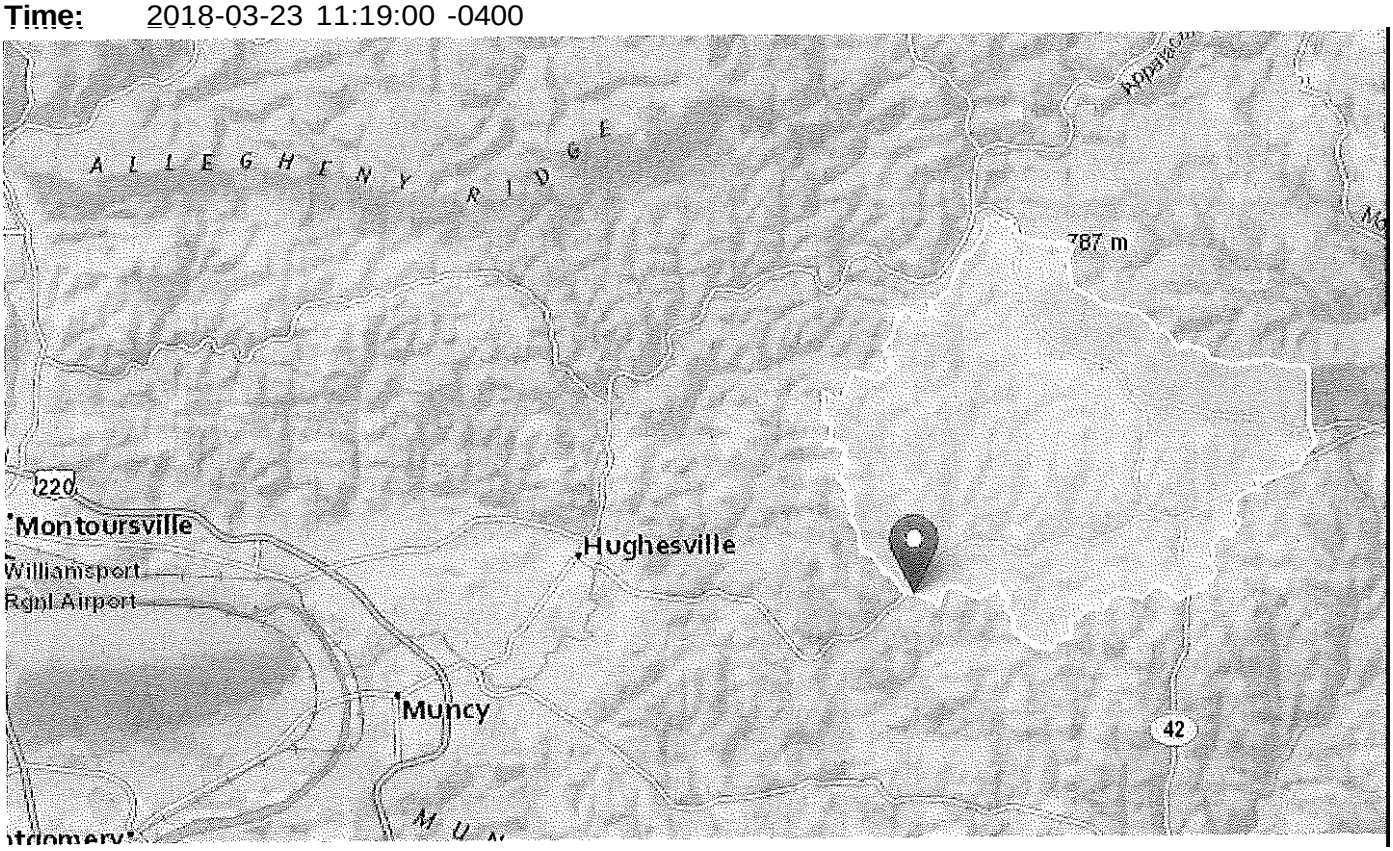
Table 2. Selected low-flow statistics for streamgage locations in and near Pennsylvania.-Continued

[iris; 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'/s)	7-day, 10-year (ft'/s)	7-day, 2-year (ft'/s)	30-day, 10-year (ft'/s)	30-day, 2-year (ft'/s)	90-day, 10-year (11'/s)
01546000	1912-1934	17	1.8	2.2	6.8	3.7	12.1	11.2
01546400	1986-2008	23	13.5	14.0	19.6	15.4	22.3	18.7
01546500	1942-2008	67	26.8	29.0	41.3	31.2	44.2	33.7
01547100	1969-2008	40	102	105	**128**	111	133	117
01547200	1957-2008	52	99.4	IOI	132	106	142	**115**
01547500	'1971-2008	38	28.2	109	151	131	172	153
01547500	'1956-1969	14	90.0	94.9	123	98.1	**131**	105
01547700	1957-2008	52	.5	.6	2.7	I.I	3.9	2.2
01547800	1971-1981	II	1.6	1.8	2.4	2.1	2.9	3.5
01547950	1970-2008	39	**12.1**	13.6	28.2	17.3	36.4	23.8
01548005	'1971-2000	25	142	**151**	206	178	241	223
01548005	**'1912-1969**	58	105	114	147	**125**	165	140
01548500	1920-20.08	**89**	21.2	24.2	50,1	33.6	**68.6**	49.3
01549000	1910-1920	II	26.0	32.9	78.0	46.4	106	**89.8**
01549500	1942-2008	67	.6	**,8**	2.5	1.4	3,9	2.6
01549700	1959-2008	SO	33.3	37.2	83.8	S1.2	117	78.4
01550000	1915-2008	94	6.6	7.6	16.8	11.2	24.6	18.6
01551500	'1963-2008	46	520	578	1,020	678	1,330	919
01551500	'1901-1961	61	400	439	742	523	943	752
01552000	1927-2008	80	20.S	22.2	49.S	29.2	69.8	49.6
01552500	1942-2008	67	.9	1.2	3.1	**1.7**	4.4	3.3
0155313.0	**1969-1981**	13	1.0	**LI**	1.5	1.3	LS	1.7
.01553500	'1968-2008	41	760	838	1,440	1,000	**1,850**	1,470
01553500	'1941-1966	26	562	619	**880**	690	1,090	**881**
01553700	**1981-2008**	28	**9.1**	10.9	15.0	12.6	17,1	15.2
01554000	'1981-2008	28	1,830	1,990	3,270	2,320	4,210	3,160
01554000	'1939-1979	41	1,560	1,630	2,870	1,880	3,620	2.570
01554500	1941-1993	53	16.2	22.0	31.2	25.9	35.7	31.4
01555000	1931-2008	78	33.S	37.6	58.8	43.4	69.6	54.6
01555500	1931-2008	78	4.9	6.5	18.0	9.4	24.3	16.6
01556000	1918-2008	91	43.3	47.8	66.0	55.]	75.0	63.7
01557500	1946-2008	63	2.8	3.2	6.3	4,2	**8,1**	**5,8**
01558000	1940-2008	69	56.3	59.0	**79.8**	65,7	86.2	73.7
01559000	1943-2008	66	104	177	249	198	279	227
01559500	1931-1958	28	9.3	10,S	15,0	12.4	17,8	**15.8**
01559700	1963-1978	16	.I	.1	.2	**.1**	.3	.2
01560000	1941-2008	68	8.5	9.4	15.6	12.0	20.2	16.2
01561000	1932-1958	27	.4	**.S**	1.6	.8	2.5	1.7
01562000	1913-2008	96	64.1	67.1	106	77.4	122	94.S
01562500	1931-1957	27	I.I	1.6	3.8	2.3	5.4	3.7
01563200	'1974-2008	35				112	266	129
01563200	'1948,,1972	25	I0.3	28,2	**86,1**	64.5	**113**	**95.5**
01563500	'1974-2008	35	384	415	519	441	580	493
01563500	'1939-1972	34	153	242	343	278	399	333
01.564500	1940-2008	69	3.6	4.2	J0.0	6.2	14.4	10.6

Franklin Township Wastewater Treatment Plant

Region ID: PA
Workspace ID: PA20180323151855728000
Clicked Point (Latitude, Longitude): 41.23014, -76.60934
Time: 2018-03-23 11:19:00 -0400



Outfall 001Drainage Area

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	9.5	degrees
BSLOPDRAW	Unadjusted basin slope, in degrees	9.72	
CARBON	Percentage of area of carbonate rock	0	percent
CENTROXA83	X coordinate of the centroid, in NAO_1983_Albers, meters	120581.5	

Parameter Code	Parameter Description	Value	Unit
CENTROYA83	Basin centroid horizontal (y) location in NAD 1983 Albers	252887.5	
DRN	Drainage quality index from STATSGO	3.4	
DRNAREA	Area that drains to a point on a stream	38.7	square miles
ELEV	Mean Basin Elevation	1254.9	feet
FOREST	Percentage of area covered by forest	71	percent
GLACIATED	Percentage of basin area that was historically covered by glaciers	15	percent
IMPNLCD01	Percentage of impervious area determined from NLCD 2001 impervious dataset	0	percent
LC01DEV	Percentage of land-use from NLCD 2001 classes 21-24	5	percent
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	5.34	percent
LC11IMP	Average percentage cit impervious area determined from NLCD 2011 impervious dataset	0.46	percent
LONG_OUT	Longitude of Basin Outlet	-76.60933	degrees
MAXTEMP	Mean annual maximum air temperature over basin area from PRISM 1971-2000 800-m grid	56	degrees F
OUTLETXA83	X coordinate of the outlet, in NAD_1983_Albers,meters	116575	
OUTLETYA83	Y coordinate of the outlet, in NAD_1983_Albers, meters	248545	
PRECIP	Mean Annual Precipitation	42	inches
ROCKDEP	Depth to rock	4	feet
STORAGE	Percentage of area of storage (lakes ponds reservoirs wetlands)	1	percent
STRDEN	Stream Density -- total length of streams divided by drainage area	2.03	miles per square mile
STRMTOT	total length of all mapped streams (1:24,000-scale) in the basin	78.57	miles
URBAN	Percentage of basin with urban development	0	percent

Low-Flow ($0_{7\text{-}10}$) Calculation

Facility: **Lairdsville Wastewater Treatment Plant**
NPDES Permit No. **PA0232971**

Gage Information		Outfall Information	
Drainage Area:	**23.8** mi2	Drainage Area:	**38.7** mi^2
01.10:	**1.2** els	01.10:	**1.95** cfs
LFY:	**0.05** cfsm		

Downstream Locations

RMI:	**13.68**	RMI:	--
Drainage Area:	**39.3** mi^2	Drainage Area:	_____ mi^2
01.10:	**1.982** cfs	01.10:	_____ cfs
RMI:		RMI:	_____
Drainage Area:	_____ mi^2	Drainage Area:	_____ mi^2
01.10:	___ els	07.10:	-- cfs
RMI:		RMI:	--
Drainage Area:	_____ mi^2	Drainage Area:	_____ mi^2
01.10:	___ cfs	07.10:	_____ cfs
RMI:		RMI:	--
Drainage Area:	_____ mi^2	Drainage Area:	_____ mi^2
01.10:	___ cfs	01.10:	-- cfs

Input Data WQM 7.0

Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
19431	LITTLE MUNCY CREEK	**14.100**	732.00	38.70	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.050	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	6.50	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
LairdsvilleWWTP	PA0232971	0.0180	0.0180	0.0180	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
19431	LITTLE MUNCY CREEK	**13.680**	721.00	39.30	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.050	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	6.50	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
10D	19431	LITTLE MUNCY CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (ºC)	Analysis pH
Q7-10 Flow												
14.100	1.94	0.00	1.94	.0278	0.00496	.6	23.86	39.75	0.14	0.187	20.07	6.50
Q1-10 Flow												
14.100	1.84	0.00	1.84	.0278	0.00496	NA	NA	NA	0.13	0.193	20.07	6.50
Q30-10 Flow												
14.100	2.42	0.00	2.42	.0278	0.00496	NA	NA	NA	0.16	0.166	20.06	6.50

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.95	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.25	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
10D	19431	LITTLE MUNCY CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
14.100	LairdsvilleWWTP	22.5	50	22.5	50	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
14.100	LairdsvilleWWTP	2.12	25	2.12	25	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
14.10	LairdsvilleWWTP	25	25	25	25	3	3	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
10D	19431	LITTLE MUNCY CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (ºC)	Analysis pH
14.100	0.018	20.071	6.504
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
23.860	0.600	39.745	0.137
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.33	0.203	0.35	0.704
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.169	6.470	Tsivoglou	5
Reach Travel Time (days)			
0.187			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.019	2.32	0.35	8.23
0.037	2.31	0.35	8.23
0.056	2.30	0.34	8.23
0.075	2.29	0.34	8.23
0.094	2.28	0.33	8.23
0.112	2.27	0.33	8.23
0.131	2.26	0.32	8.23
0.150	2.26	0.32	8.23
0.169	2.25	0.31	8.23
0.187	2.24	0.31	8.23

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
10D	19431	LITTLE MUNCY CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
14.100	LairdsvilleWWTP	PA0232971	0.018	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			3