pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0035688**
Facility Type	**Municipal**	APS ID	**1125011**
Major / Minor	**Minor**	Authorization ID	**1505175**

Applicant and Facility Information

Applicant Name	**Potter Township**	Facility Name	**Potter Township CC Estates WWTP**
Applicant Address	124 Short Road	Facility Address	115 Park Drive
	Spring Mills, PA 16875-9326		Centre Hall, PA 16828
Applicant Contact	David Boliek	Facility Contact	David Boliek
Applicant Phone	(814) 364-9314	Facility Phone	(814) 364-9314
Client ID	35324	Site ID	461404
Ch 94 Load Status	Not Overloaded	Municipality	Potter Township
Connection Status	No Limitations	County	Centre
Date Application Received	October 31, 2024	EPA Waived?	Yes
Date Application Accepted	November 4, 2024	If No, Reason	
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	October 6, 2025
X		Nicholas W. Hartranft, P.E. / Environmental Engineer Manager	October 7, 2025

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.035
Latitude	40º 47' 52.46"	Longitude	-77º 43' 44.78"
Quad Name	Centre Hall	Quad Code	224
Wastewater Description:	Sewage Effluent		

Receiving Waters	Cedar Run	Stream Code	23059
NHD Com ID	67180100	RMI	4.09
Drainage Area (mi^2)	5.88	Yield (cfs/mi^2)	n/a
Q_{7-10} Flow (cfs)	0 – Intermittent Stream (1)	Q_{7-10} Basis	n/a
Elevation (ft)	1,164	Slope (ft/ft)	n/a
Watershed No.	9-C	Chapter 93 Class.	HQ-CWF (2)
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Impaired		
Cause(s) of Impairment	Siltation		
Source(s) of Impairment	Agriculture		
TMDL Status	Final, 4/28/23	Name	Upper Cedar Run Sediment TMDL

Nearest Downstream Public Water Supply Intake	PA American Water at Milton, PA		
PWS Waters	West Branch Susquehanna River	Flow at Intake (cfs)	695
PWS RMI	10.6	Distance from Outfall (mi)	96

(1) Cedar Run at the point of Outfall 001 is an intermittent stream. The point of first use ("POFU") has historically been designated downstream at RMI 3.08.

(2) The designated use was upgraded from Cold Water Fishes ("CWF") to High Quality – Cold Water Fishes ("HQ-CWF") during the existing permit's term in April 2021. It is a mainstem designation, from source to mouth.

Treatment Facility Summary

The Potter Township Country Club Estates Wastewater Treatment Plant ("WWTP") is a 0.035 MGD Biologically Engineering Single-Sludge Treatment ("BESST") system. It was constructed and operates under WQM Permit No. 1409401, issued July 23, 2009. The BESST system generally consists of the following:

- One (1) manual bar screen
- One (1) comminutor
- One (1) equalization tank
- One (1) anoxic tank
- Two (2) aerobic tanks
- Two (2) clarifiers
- One (1) membrane polishing filter
- One (1) ultraviolet disinfection system

The disinfected effluent is ultimately discharged to Cedar Run via Outfall 001. The discharge is measured by an ultrasonic flow meter.

Sludge is wasted to an aerobic digester and hauled off to the Bellefonte Borough Wastewater Treatment Plant, NPDES Permit No. PA0020486.

Compliance History

The facility was most recently inspected by DEP on August 27, 2025. All treatment units were online and operational at the time of the inspection. No impact was observed in Cedar Run at Outfall 001. Two non-compliances were noted in the report: 1) Failure to submit the Lab Accreditation Form when laboratories were changed in March 2025, and 2) late eDMRs were submitted in March, May, and June 2025.

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

Noncompliance Date	Parameter	Sample Value	Violation Condition	Permit Value	Units	SBC
6/17/2020	Fecal Coliform	1664	>	200	No./100 ml	Geo Mean
6/17/2020	Fecal Coliform	3194	>	1000	No./100 ml	IMAX
5/28/2021	CBOD5	3.4	>	2.9	lbs/day	Avg Monthly
8/18/2022	Fecal Coliform	1454	>	1000	No./100 ml	IMAX
11/13/2023	Total Suspended Solids	76.2	>	45	mg/L	Weekly Avg
8/22/2024	Ammonia-Nitrogen	1.3	>	0.9	lbs/day	Avg Monthly
8/22/2024	Ammonia-Nitrogen	16.2	>	3	mg/L	Avg Monthly
8/22/2024	Ammonia-Nitrogen	2.6	>	1.4	lbs/day	Weekly Avg
8/22/2024	Ammonia-Nitrogen	32	>	4.5	mg/L	Weekly Avg
8/22/2024	Fecal Coliform	398	>	200	No./100 ml	Geo Mean
8/22/2024	Fecal Coliform	9678.4	>	1000	No./100 ml	IMAX

There are no open violations associated with the permittee.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.035
Latitude 40º 47' 53.45" **Longitude** -77º 43' 45.17"
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 water quality-based effluent limitations ("WQBELs") are appropriate. A model was created using WQM 7.0 v1.1 to determine if the existing limits for CBOD5, ammonia-N and dissolved oxygen are appropriate or if more stringent limits are necessary. 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 Limitations		
		30 Day Average (mg/l)	Maximum (mg/l)	Minimum (mg/l)
CBOD5	10	10	-	-
NH3-N	3	3	6	-
Dissolved Oxygen	3	-	-	3

The input discharge concentrations for CBOD5 and ammonia-N are the intended existing permit requirements (see BPJ Limitations section below). The dissolved oxygen input discharge concentration is the default value typical of sewage. As demonstrated by the results above, the intended existing limits are protective of Cedar Run and no changes are proposed.

Best Professional Judgment (BPJ) Limitations

Historically, the permit has had the following limitations based on BPJ to avoid negatively impacting Cedar Run due to the lack of dilution available at Outfall 001:

Parameter	Effluent Limitations				
	Mass Units (lbs/day)		Concentrations (mg/L)		
	Average Monthly	Weekly Average	Average Monthly	Weekly Average	Instant. Maximum
Carbonaceous Biochemical Oxygen Demand (CBOD5)	2.9	4.4	10.0	15.0	20
Total Suspended Solids	5.8	8.8	20.0	30.0	40
Ammonia-Nitrogen Nov 1 - Apr 30	2.7	4.0	9.0	13.5	18
Ammonia-Nitrogen May 1 - Oct 31	0.9	1.4	3.0	4.5	6

The fact sheet developed during the most recent renewal recommended that the existing BPJ limits should remain; however, the permit unintentionally established less stringent technology-based concentration limits for CBOD5 and TSS while maintaining mass limits based on the more stringent BPJ concentrations. Accordingly, DEP has reverted the concentration limits to their intended values.

It is recommended to continue to apply a factor of three to establish seasonal ammonia-nitrogen limits to account for the increase in dilution that is typically available during cold-weather months compared to warm-weather months.

DEP recommends annual E. Coli reporting per the 2017 Triennial Review of Water Quality Standards, published in the PA Bulletin on July 11, 2020.

DEP recommends the existing dissolved oxygen reporting requirement remains in the permit to continue to characterize the effluent to ensure the discharge does not negatively impact Cedar Run.

DEP recommends the existing UV intensity reporting requirement remains in the permit to ensure effective disinfection is occurring prior to discharge.

DEP recommends the existing influent reporting requirements for BOD5 and TSS remain in the permit to ensure adequate percent removal is occurring for each parameter and to help with Chapter 94 reporting.

Chesapeake Bay Requirements

The facility completed six years' worth of nutrient monitoring from 2014 to 2019. Over those six years, the facility averaged 18 mg/l and 1.7 lbs/day total nitrogen and 5.2 mg/l and 0.4 lbs/day total phosphorus. Since the permittee has completed over five years of sampling, in accordance with requirements for Phase V facilities in Phase 2 of Pennsylvania's Chesapeake Bay Watershed Implementation Plan, reporting requirements for total nitrogen and phosphorus are not necessary.

TMDL Considerations

The Upper Cedar Run TMDL was finalized on April 14, 2023 and addresses siltation impairments caused by agricultural activities noted in the DEP 2020 Final Pennsylvania Integrated Water Quality Monitoring and Assessment Report, including the Clean Water Act Section 303(d) List. The potential sediment loading from the Potter Township CC Estates WWTP was included in the TMDL's calculations. However, no specific controls were recommended outside of the existing TSS limits. Accordingly, the TMDL should not impact the development of effluent limits.

Monitoring Requirements

Previous negotiations between DEP and the permittee resulted in a monitoring frequency of 6/week for pH, dissolved oxygen, and UV intensity. Since the facility has demonstrated 100% compliance with these parameters at this frequency, DEP does not see the need to increase the frequency to the standard 1/day frequency for discharges of this magnitude.

Anti-Backsliding

No limits or monitoring requirements are proposed to be made less stringent than existing requirements. Accordingly, anti-backsliding regulations at 40 CFR § 122.44(l) should not impact the permit.

Existing Effluent Limitations and Monitoring Requirements

The existing effluent limitations and monitoring requirements are as follows:

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	Instantaneous 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	XXX	XXX	9.0	6/week	Grab
Dissolved Oxygen	XXX	XXX	Report	XXX	XXX	XXX	6/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	2.9	4.4	XXX	25.0	40.0	50	2/month	8-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Suspended Solids	5.8	8.8	XXX	30.0	45.0	60	2/month	8-Hr Composite
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
Ultraviolet light intensity ($\mu w/cm^2$)	XXX	XXX	Report	XXX	XXX	XXX	6/week	Metered
Ammonia-Nitrogen Nov 1 - Apr 30	2.7	4.0	XXX	9.0	13.5	18	2/month	8-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	0.9	1.4	XXX	3.0	4.5	6	2/month	8-Hr Composite

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" (386-0400-001), SOPs and/or BPJ.

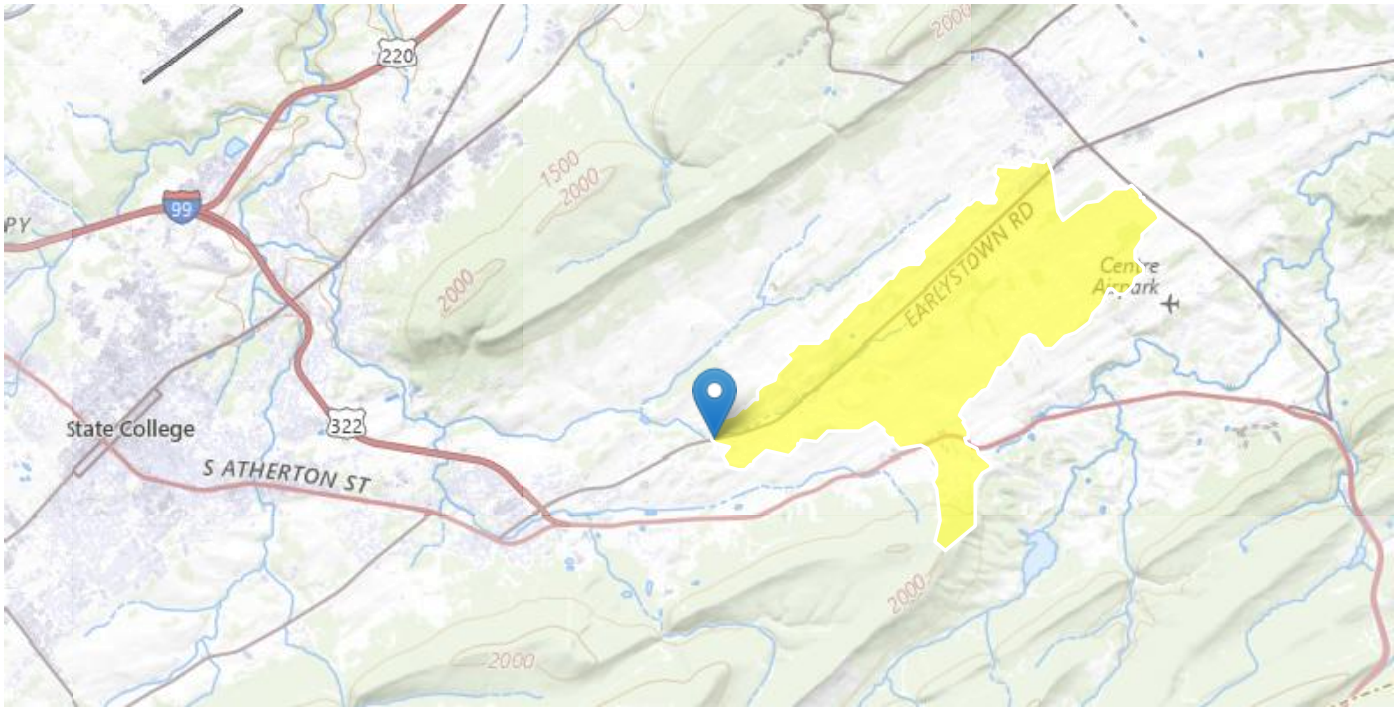
Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous 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	XXX	XXX	9.0	6/week	Grab
DO	XXX	XXX	Report	XXX	XXX	XXX	6/week	Grab
CBOD5	2.9	4.4	XXX	10.0	15.0	20	2/month	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS	5.8	8.8	XXX	20.0	30.0	40	2/month	8-Hr Composite
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
UV Intensity (mW/cm^2)	XXX	XXX	Report	XXX	XXX	XXX	6/week	Metered
Ammonia Nov 1 - Apr 30	2.7	4.0	XXX	9.0	13.5	18	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	0.9	1.4	XXX	3.0	4.5	6	2/month	8-Hr Composite

Compliance Sampling Location: Outfall 001

Potter Township CC Estates

Region ID: PA
Workspace ID: PA20250923181716114000
Clicked Point (Latitude, Longitude): 40.79172, -77.74588
Time: 2025-09-23 14:17:36 -0400



Drainage area at POFU (RMI 3.08)

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	2.4255	degrees
BSLOPDRAW	Unadjusted basin slope, in degrees	2.6153	degrees
BSLPDRPA20	Unadjusted basin slope, in degrees, from PA v1	3.0342	degrees
CARBON	Percentage of area of carbonate rock	95.34	percent
CENTROXA83	X coordinate of the centroid, in NAD_1983_Albers, meters	25361.7876	meters
CENTROYA83	Basin centroid horizontal (y) location in NAD 1983 Albers	200744.1033	meters
DRN	Drainage quality index from STATSGO	3.2	dimensionless

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	6.45	square miles
ELEV	Mean Basin Elevation	1280	feet
ELEVMAX	Maximum basin elevation	2018	feet
FOREST	Percentage of area covered by forest	7.4619	percent
GLACIATED	Percentage of basin area that was historically covered by glaciers	0	percent
IMPNLCD01	Percentage of impervious area determined from NLCD 2001 impervious dataset	1.3231	percent
LC01DEV	Percentage of land-use from NLCD 2001 classes 21-24	8.5608	percent
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	8.5608	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	1.3334	percent
LONG_OUT	Longitude of Basin Outlet	-77.745933	degrees
MAXTEMP	Mean annual maximum air temperature over basin area from PRISM 1971-2000 800-m grid	58.5	degrees F
OUTLETXA83	X coordinate of the outlet, in NAD_1983_Albers,meters	21440.0234	meters
OUTLETYA83	Y coordinate of the outlet, in NAD_1983_Albers, meters	198956.5692	meters
PRECIP	Mean Annual Precipitation	41	inches
ROCKDEP	Depth to rock	5.4	feet
STORAGE	Percentage of area of storage (lakes ponds reservoirs wetlands)	0.02	percent
STRDEN	Stream Density -- total length of streams divided by drainage area	0.92	miles per square mile
STRMTOT	total length of all mapped streams (1:24,000-scale) in the basin	5.91	miles
URBAN	Percentage of basin with urban development	0.431	percent

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]
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 Run, Pa.	41.413	-78.197	272	N
01543500	Sinnemahoning Creek at Sinnemahoning, Pa.	41.317	-78.103	685	N
01544000	First Fork Sinnemahoning 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 Spring Creek at Milesburg, Pa.	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 at 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	Pine 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 at Williamsport, Pa.	41.236	-76.997	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 Mahantango Creek near Dalmatia, 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

[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)
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	101	132	106	142	115
01547500	[2]1971–2008	38	28.2	109	151	131	172	153
01547500	[3]1956–1969	14	90.0	94.9	123	98.1	131	105
01547700	1957–2008	52	.5	.6	2.7	1.1	3.9	2.2
01547800	1971–1981	11	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	[2]1971–2000	25	142	151	206	178	241	223
01548005	[3]1912–1969	58	105	114	147	125	165	140
01548500	1920–2008	89	21.2	24.2	50.1	33.6	68.6	49.3
01549000	1910–1920	11	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	50	33.3	37.2	83.8	51.2	117	78.4
01550000	1915–2008	94	6.6	7.6	16.8	11.2	24.6	18.6
01551500	[2]1963–2008	46	520	578	1,020	678	1,330	919
01551500	[3]1901–1961	61	400	439	742	523	943	752
01552000	1927–2008	80	20.5	22.2	49.5	29.2	69.8	49.6
01552500	1942–2008	67	.9	1.2	3.1	1.7	4.4	3.3
01553130	1969–1981	13	1.0	1.1	1.5	1.3	1.8	1.7
01553500	[2]1968–2008	41	760	838	1,440	1,000	1,850	1,470
01553500	[3]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	[2]1981–2008	28	1,830	1,990	3,270	2,320	4,210	3,160
01554000	[3]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	33.5	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	55.1	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	10.5	15.0	12.4	17.8	15.8
01559700	1963–1978	16	.1	.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	.5	1.6	.8	2.5	1.7
01562000	1913–2008	96	64.1	67.1	106	77.4	122	94.5
01562500	1931–1957	27	1.1	1.6	3.8	2.3	5.4	3.7
01563200	[2]1974–2008	35	—	—	—	112	266	129
01563200	[3]1948–1972	25	10.3	28.2	86.1	64.5	113	95.5
01563500	[2]1974–2008	35	384	415	519	441	580	493
01563500	[3]1939–1972	34	153	242	343	278	399	333
01564500	1940–2008	69	3.6	4.2	10.0	6.2	14.4	10.6

Low-Flow (Q_{7-10}) Calculation

Facility: **Potter Township CC Estates**
NPDES Permit No. **PA0035688**

Gage Information

Drainage Area: **58.5** mi^2
Q_{7-10}: **14** cfs
LFY: **0.239** cfsm

Outfall Information

Drainage Area: **0** mi^2
Q_{7-10}: **0** cfs

Downstream Locations

RMI: **3.08**
Drainage Area: **6.45** mi^2
Q_{7-10}: **1.544** cfs

RMI: **2.18**
Drainage Area: **15.2** mi^2
Q_{7-10}: **3.64** cfs

RMI:
Drainage Area: mi^2
Q_{7-10}: cfs

RMI:
Drainage Area: mi^2
Q_{7-10}: cfs

RMI:
Drainage Area: mi^2
Q_{7-10}: cfs

RMI:
Drainage Area: mi^2
Q_{7-10}: cfs

RMI:
Drainage Area: mi^2
Q_{7-10}: cfs

RMI:
Drainage Area: mi^2
Q_{7-10}: cfs

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
09C	23059	CEDAR RUN	**3.080**	1130.00	6.45	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	0.239	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
PotterTwpCCEst	PA0035688	0.0350	0.0350	0.0350	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	10.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	3.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
09C	23059	CEDAR RUN	**2.180**	1101.00	15.20	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	0.239	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
09C	23059	CEDAR RUN

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												
3.080	1.54	0.00	1.54	.0541	0.00610	.541	16.02	29.62	0.18	0.299	20.17	6.51
Q1-10 Flow												
3.080	1.48	0.00	1.48	.0541	0.00610	NA	NA	NA	0.18	0.305	20.18	6.51
Q30-10 Flow												
3.080	1.70	0.00	1.70	.0541	0.00610	NA	NA	NA	0.19	0.284	20.15	6.51

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	0.96	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.1	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	8		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
09C	23059	CEDAR RUN

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
3.080	PotterTwpCCEst	22.25	6	22.25	6	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
3.080	PotterTwpCCEst	2.1	3	2.1	3	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)		
3.08	PotterTwpCCEst	10	10	3	3	3	3	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
09C	23059	CEDAR RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (ºC)	Analysis pH
3.080	0.035	20.170	6.510
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
16.021	0.541	29.618	0.184
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.27	0.185	0.10	0.709
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.065	10.721	Tsivoglou	8
Reach Travel Time (days)			
0.299			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.030	2.26	0.10	8.22
0.060	2.25	0.10	8.22
0.090	2.23	0.10	8.22
0.119	2.22	0.09	8.22
0.149	2.21	0.09	8.22
0.179	2.20	0.09	8.22
0.209	2.18	0.09	8.22
0.239	2.17	0.09	8.22
0.269	2.16	0.08	8.22
0.299	2.15	0.08	8.22

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
09C	23059	CEDAR RUN

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)
3.080	PotterTwpCCEst	PA0035688	0.035	CBOD5	10		
				NH3-N	3	6	
				Dissolved Oxygen			3