Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0036889**
Facility Type	**Municipal**	APS ID	**5082**
Major / Minor	**Minor**	Authorization ID	**1493992**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Reading Township Municipal Authority Adams County**	Facility Name	**Reading Township Adams County STP**
Applicant Address	843 W Middle Street	Facility Address	1010 N Browns Dam Road
	Hanover, PA 17331-5011		New Oxford, PA 17350-8705
Applicant Contact	Gary Bullock	Facility Contact	Ryan Swope
Applicant Phone	(717) 259-9998	Facility Phone	(717) 880-5738
Client ID	43791	Site ID	251152
Ch 94 Load Status	Not Overloaded	Municipality	Reading Township
Connection Status	No Limitations	County	Adams
Date Application Received	July 30, 2024	EPA Waived?	Yes
Date Application Accepted	August 1, 2024	If No, Reason	
Purpose of Application	NPDES permit renewal.		

Summary of Review

Keller Engineers, on behalf of the Reading Township Municipal Authority (Authority/Permittee), applied to the Pennsylvania Department of Environmental Protection (DEP) for issuance of the NPDES permit. The permit was reissued on January 28, 2020, and became effective on February 1, 2020. The permit expires on January 31, 2025.

The average annual design flow is 0.33 MGD, hydraulic design capacity of 0.42 MGD, and the organic loading capacity is 788 lbs BOD_5/day. The renewal application indicated the STP receives its 100% from the Reading Township.

The WQM Part II permit No. 0198401 was issued on 5/22/1998. The WQM Part II permit No. 0108404 pump station was issued on 1/16/2009. The WQM Part II permit No. 0111402 pump station was issued on 7/22/2011.

Sludge use and disposal description and location(s): N/A because sludge hauled by Peck's Septic Service.

Changes from the previous permit: E. Coli monitoring and report requirements will add to the proposed permit.

Based on the review outlined in this fact sheet, it is recommended that the permit be drafted. A public notice of the draft permit will be published in the *Pennsylvania Bulletin* for public comments for 30 days.

Approve	Deny	Signatures	Date
X		*Hilaryle* Hilary H. Le / Environmental Engineering Specialist	December 19, 2024
X		*Maria D. Bebenek for* Daniel W. Martin, P.E. / Environmental Engineer Manager	January 27, 2025

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.33
Latitude	39º 55' 49.91"	Longitude	-77º 2' 22.48"
Quad Name	Hampton	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Conewago Creek (WWF)	Stream Code	08303
NHD Com ID	57471023	RMI	46.36 miles
Drainage Area	199 mi.^{2}	Yield (cfs/mi^2)	0.07
Q_{7-10} Flow (cfs)	14.0	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	418.63	Slope (ft/ft)	
Watershed No.	7-F	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Wrightsville Borough Municipal Authority, York County		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	28.52 miles	Distance from Outfall (mi)	Approximate 59.0 miles

Changes Since Last Permit Issuance:

Drainage Area
The discharge is to Conewago Creek at RMI 46.36 miles. A drainage area upstream of the discharge is estimated to be 199 mi.^{2}, according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/. The Q7-10 is 14.0 cfs, then the low flow yield is 0.07 cfs/mi.^{2}(14.0 cfs/199 mi.^{2}).

Conewago Creek
Under 25 Pa. Code § 93.9o, the Conewago Creek is designated as Warm Water Fishes (WWF).

Potable Water Supply Intake
The nearest downstream public water supply intake is the Wrightsville Borough Municipal Authority, York County intake on the Susquehanna River, approximately 59.0 miles from the point of discharge. Given the nature and dilution, the discharge is not expected to significantly impact the water supply.

Treatment Facility Summary				
Treatment Facility Name: Reading Township STP				
WQM Permit No.	**Issuance Date**			
0198401	5/22/1998			
0108404	1/16/2009			
0111402	7/22/2011			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary	Sequencing Batch Reactor	Chlorine With Dechlorination	0.33
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.42	788	Not Overloaded		

Changes Since Last Permit Issuance:

Other Comments:

The WWTP train after construction will be as follows:

Heliscreen/Bar Screen (1) → SBR Tanks (2) → Chlorine Contact Tank (1) → De-chlorination → Discharge to Conewago Creek

Chemical used:
Sodium Aluminate is used for phosphorus removal at a rate of 9.0 gpd.

Industrial/Commercial Users:
The application lists a number of commercial/industrial users contributing wastewater to the existing sewer system.

Biosolids:
The total sewage sludge/biosolids production within the facility for the previous year was 25.42 dry tons.

Compliance History	
Summary of DMRs:	A summary of past 12-month DMR data is presented on the next page.
Summary of Inspections:	**8/16/21:** Mr. Bettinger, DEP WQS, conducted a compliance evaluation inspection. There were no violations noted during inspection. The field test results were within permit limits.
Other Comments:	There are currently no open violations associated with the permittee or the facility.

Other Comments:

The table below summarizes the influent/effluent testing results submitted along with the application.

Influent Testing Results

Parameter	Min/Max Value	Average Value
BOD_5 (mg/L)	116/282 mg/L	192 mg/L
BOD_5 (lbs/day)	115/384 lbs/day	181 lbs/day
TSS (mg/L)	114/290 mg/L	188 mg/L
TSS (lbs/day)	110/315 lbs/day	178 lbs/day
TN (mg/L)	<56.8 mg/L	<56.8 mg/L
TN (lbs/day)	<31.26 lbs/day	<31.26 lbs/day
TP (mg/L)	6.0 mg/L	6.0 mg/L
TP (lbs/day)	3.3 lbs/day	3.3 lbs/day
NH_3-N (mg/L)	34 mg/L	34 mg/L
NH_3-N (lbs/day)	18.71 lbs/day	18.71 lbs/day
TDS (mg/L)	578 mg/L	578 mg/L
TDS (lbs/day)	318.15 lbs/day	318.15 lbs/day
TKN	mg/L	mg/L
NO_2-N + NO_3-N	mg/L	mg/L

Effluent Testing Results

Parameter	Min/Max Value	Average Value
pH (minimum)	6.76 S.U.	
pH (maximum)	8.57 S.U.	
D.O (minimum)	5.63 mg/L	6.92 mg/L
TRC	0.01/0.48 mg/L	0.2 mg/L
Fecal Coliform	2,420 No./100mL	29.06 No./100mL
$CBOD_5$	2.4/4.2 mg/L	2.43 mg/L
TSS	1/9 mg/L	1.89 mg/L
NH_3-N	0.1/6.6 mg/L	0.6 mg/L
TN	3.9/23.9 mg/L	12.96 mg/L
TP	0.12/2.4 mg/L	0.97 mg/L
Temp	50/75 F	63 F
TKN	0.5/9.0 mg/L	1.36 mg/L
NO_2-N + NO_3-N	2.7/23.4 mg/L	11.6 mg/L
TDS	624 mg/L	624 mg/L
Chloride	170 mg/L	170 mg/L
Bromide	<0.2 mg/L	<0.2 mg/L
Sulfate	86 mg/L	86 mg/L
Oil and Grease	<5.0 mg/L	<5.0 mg/L
Total Copper	0.006 mg/L	0.006 mg/L
Total Lead	<0.001 mg/L	<0.001 mg/L
Total Zinc	0.016 mg/L	0.016 mg/L

Compliance History

DMR Data for Outfall 001 (from November 1, 2023 to October 31, 2024)

Parameter	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23
Flow (MGD) Average Monthly	0.0952	0.0896	0.1752	0.0743	0.1176	0.1391	0.2305	0.2393	0.2102	0.2860	0.2308	0.1121
Flow (MGD) Daily Maximum	0.2632	0.1848	0.8738	0.1795	0.5758	0.2998	0.9825	0.6906	0.4275	0.8101	0.6956	0.4777
pH (S.U.) Daily Minimum	6.47	6.62	6.6	6.84	6.94	7.11	7.06	7.05	6.91	6.89	6.83	6.88
pH (S.U.) Instantaneous Maximum	6.94	7.27	7.13	7.29	7.51	7.41	7.58	7.68	7.59	7.52	7.47	7.44
DO (mg/L) Daily Minimum	6.16	5.91	5.81	5.67	6.01	6.42	7.20	7.67	8.81	7.33	6.92	6.12
TRC (mg/L) Average Monthly	0.22	0.22	0.20	0.22	0.21	0.22	0.23	0.22	0.23	0.21	0.19	0.20
TRC (mg/L) Instantaneous Maximum	0.36	0.35	0.30	0.35	0.32	0.54	0.36	0.32	0.40	0.48	0.48	0.30
CBOD5 (lbs/day) Average Monthly	< 2	< 2	< 3	< 1	< 3	< 3	< 4.0	< 3.85	3.96	6.80	< 4.34	3.20
CBOD5 (lbs/day) Weekly Average	4	< 3	< 7	2	< 7	< 5	< 7	5.09	4.94	16.21	< 6.36	10.36
CBOD5 (mg/L) Average Monthly	< 2	< 3	< 2	< 2	< 2	< 3	< 2	< 2.53	2.64	2.45	< 2.4	2.52
CBOD5 (mg/L) Weekly Average	3	3	2	3	< 2	3	3.0	2.90	3.20	2.60	< 2.4	2.80
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	187	165	167	150	309	179	197	198.75	157.49	269.58	253.40	384.38
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	237	276	196	227	643	219	237	235.32	166.87	506.72	516.84	1354.57
BOD5 (mg/L) Raw Sewage Influent Average Monthly	264	265	199	274	253	202	135	135.50	108.80	115.50	132.50	281.60
TSS (lbs/day) Average Monthly	1	2	1	1	2	2	3	4.33	2.85	4.69	2.55	1.23
TSS (lbs/day) Raw Sewage Influent Average Monthly	169	145	194	150	353	189	157	186.65	195.24	262.17	219.95	291.19

TSS (lbs/day) Raw Sewage Influent Daily Maximum	205	212	357	173	873	242	193	206.72	245.01	405.37	487.68	956.16
TSS (lbs/day) Weekly Average	2	4	3	1	3	6	6	6.89	5.92	6.76	3.46	3.98
TSS (mg/L) Average Monthly	2	2	1	2	2	2	2	3.0	1.80	2.25	1.50	1.00
TSS (mg/L) Raw Sewage Influent Average Monthly	242	244	197	277	256	205	122	132.00	134.40	121.00	114.00	234.40
TSS (mg/L) Weekly Average	4	3	1	3	2	3	2	6.0	3.00	4.00	2.00	1.00
Fecal Coliform (No./100 ml) Geometric Mean	< 6	< 3	< 1	< 14	< 14	< 5	16	10.86	3.99	23.24	12.57	9.50
Fecal Coliform (No./100 ml) Instantaneous Maximum	63	6	4	> 2420	> 2420	28	157	579.00	23.00	75.00	21.00	2420
Nitrate-Nitrite (lbs/day) Average Monthly	< 9	< 6	< 10	< 4	< 12	< 10	< 9	10.45	11.83	25.41	18.78	6.58
Nitrate-Nitrite (lbs/day) Daily Maximum	< 11	< 9	< 21	5	< 29	< 17	< 10	14.03	13.80	65.64	35.52	14.74
Nitrate-Nitrite (mg/L) Average Monthly	< 13.9	< 9	< 8.5	< 8.02	< 9.1	< 10.1	< 6.7	6.81	7.95	8.81	9.80	8.64
Nitrate-Nitrite (lbs) Total Monthly	< 293	< 167	< 300	< 137	< 362	< 310	< 282	324.08	343.03	787.81	582.25	197.32
Total Nitrogen (lbs/day) Average Monthly	< 10	< 6	< 10	< 5	< 13	< 11	< 13	17.04	17.80	29.30	19.69	8.93
Total Nitrogen (lbs/day) Daily Maximum	< 12	< 10	< 22	< 5	< 30	< 18	16	21.24	21.07	68.91	36.84	23.90
Total Nitrogen (mg/L) Average Monthly	< 14.44	< 9.66	< 9	< 8.67	< 9.6	< 10.81	< 8.97	11.51	11.97	10.68	10.30	10.14
Total Nitrogen (lbs) Total Monthly	< 307	< 180	< 319	< 148	< 383	< 330	< 401	528.36	516.16	908.23	610.29	267.77
Total Nitrogen (lbs) Total Annual		4867.15										
Ammonia (lbs/day) Average Monthly	< 0.08	< 0.07	< 0.1	< 0.06	< 0.1	< 0.1	3	4.96	4.76	2.37	0.25	1.39
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.12	1.79	3.45	3.22	1.29	0.13	0.93
Ammonia (mg/L) Instantaneous Maximum	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.19	2.9	5.0	4.2	3.5	0.17	2.1

Ammonia (lbs) Total Monthly	< 3	< 2	< 4	< 2	< 4	< 4	95	153.84	138.10	73.45	7.78	41.82
Ammonia (lbs) Total Annual		528.30										
TKN (lbs/day) Average Monthly	< 0.4	< 0.4	< 0.6	< 0.4	< 0.7	< 0.7	< 4	6.59	5.97	3.88	< 0.90	2.35
TKN (lbs/day) Daily Maximum	< 0.7	< 0.7	< 1	0.6	< 1	< 0.9	6	7.46	8.07	9.34	< 1.33	9.16
TKN (mg/L) Average Monthly	< 0.56	< 0.71	< 0.5	< 0.7	< 0.55	< 0.69	< 2.3	4.70	4.02	1.88	< 0.50	1.50
TKN (lbs) Total Monthly	< 13	< 13	< 19	< 11	< 20	< 20	< 119	204.28	173.13	120.42	28.04	70.45
Total Phosphorus (lbs/day) Average Monthly	1.0	0.9	1.0	0.9	2.0	1.0	1.0	0.94	0.83	1.97	0.58	1.01
Total Phosphorus (mg/L) Average Monthly	1.6	1.3	1.14	1.7	1.5	1.27	0.81	0.64	0.56	0.68	0.28	0.97
Total Phosphorus (mg/L) Instantaneous Maximum	1.9	1.4	1.2	1.8	1.9	1.7	1.4	1.1	0.74	0.82	0.58	1.3
Total Phosphorus (lbs) Total Monthly	38	26	40	29	53	37	33	29.07	23.98	61.06	17.92	30.19
Total Phosphorus (lbs) Total Annual		401.86										

Existing Effluent Limitations and Monitoring Requirements

Outfall 001,

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
D.O.	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.23	XXX	0.75	1/day	Grab
$CBOD_5$	68	110 Wkly Avg	XXX	25	40	50	1/week	8-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	8-Hr Composite
TSS	82	123 Wkly Avg	XXX	30	45	60	1/week	8-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	1/week	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	1/week	Grab
Ammonia May 1 - Oct 31	19	XXX	XXX	7.0	XXX	14	1/week	8-Hr Composite
Ammonia Nov 1 - Apr 30	58	XXX	XXX	21	XXX	42	1/week	8-Hr Composite
Total Phosphorus	5.5	XXX	XXX	2.0	XXX	4.0	1/week	8-Hr Composite

Parameter	Effluent Limitations					Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				
	Monthly	Annual	Minimum	Average Monthly	Instant. Maximum	Minimum Measurement Frequency	Required Sample Type
Ammonia—N	Report	Report	XXX	Report	XXX	1/week	8-Hr Composite
Kjeldahl—N	Report	XXX	XXX	Report	XXX	1/week	8-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	1/week	8-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	1/week	8-Hr Composite

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.33
Latitude 39º 55' 49.91" **Longitude** -77º 2' 22.48"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

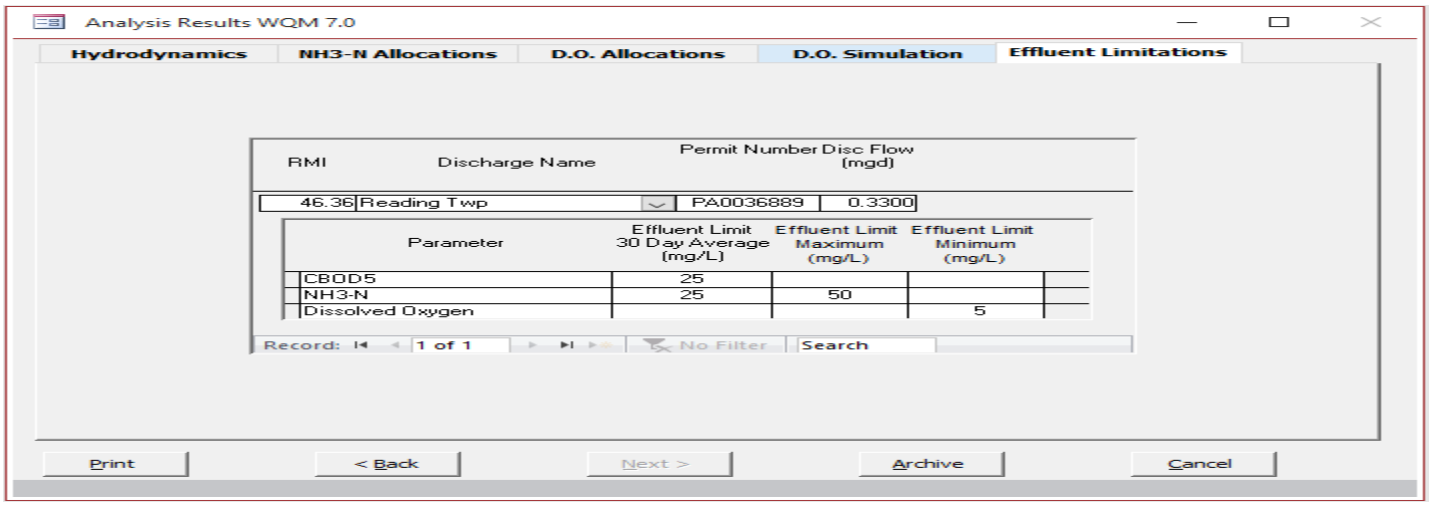
Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	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)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Comments:

Water Quality-Based Limitations

NH_3N calculations are based on the Department's Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013). The following data is necessary to determine the in-stream NH_3-N criteria used in the attached WQM 7.0 computer model of the stream:

*	Discharge pH	=	7.0	(Default)
*	Discharge Temperature	=	25°C	(Default)
*	Stream pH	=	7.0	(Default)
*	Stream Temperature	=	20ºC	(Default)
*	Background NH_3-N	=	0 mg/L	(Default)



Regarding NH_3-N limits, the attached computer printout of the WQM 7.0 stream model (version 1.1) indicates that a limit of 25.0 mg/L as a monthly average and 50.0 mg/L instantaneous maximum (IMAX) are necessary to protect the aquatic life from toxicity effects at the point of discharge. Therefore, the existing summer limits of 7.0 mg/L monthly average & 14.0 mg/L IMAX are more stringer and will remain in the proposed permit. The existing winter average monthly limit of 21.0 mg/L & IMAX limit of 42.0 mg/L will remain in place. Recent DMRs and inspection reports show that the facility has been consistently achieving these limits. Mass limits are calculated as follows:

Summer average monthly mass limit: 7.0 mg/L x 0.33 MGD x 8.34 = 19. 265 (19.0) lbs/day
Winter average monthly mass limit: 21.0 mg/L x 0.33 MGD x 8.34 = 57.796 (58.0) lbs/day

Dissolved Oxygen (D.O.):
The minimum D.O. of 5.0 mg/L is required per 25 Pa. Code § 93.7. It is recommended that this limit be maintained in the proposed permit to ensure the protection of water quality standards. This approach is consistent with DEP's current Standard Operating Procedure (SOP) No. BCW-PMT-033, version 2.0 revised February 5, 2024, and has been applied to other point source dischargers throughout the state.

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$):
The attached computer printout of the WQM 7.0 stream model (ver. 1.1) indicates that a monthly average limit of 25.0 mg/L, or secondary treatment, is adequate to protect the water quality of the stream. Therefore, the existing summer permit 25.0 mg/L as AML, 40.0 mg/L as weekly average limit (AWL), & 50.0 mg/L as IMAX will remain in the proposed permit. Recent DMRs and inspection reports show that the facility has typically been achieving concentrations below this limit. Mass limits are calculated as follows:

Summer Average monthly mass limit: 25.0 mg/L x 0.33 MGD x 8.34 = 68.80 (68.0) lbs/day
Summer Average weekly mass limit: 40.0 mg/L x 0.33 MGD x 8.34 = 110.09 (110.0) lbs/day

These values are rounded down to 68.0 lbs/day and 110.0 lbs/day, respectively. The minimum monitoring frequency will remain the same as 1/week.

pH:
The effluent discharge pH should remain above 6.0 and below 9.0 standard units according to 25 Pa. Code § 95.2(1).

Total Suspended Solids (TSS):
The existing technology-based limits of 30.0 mg/L average monthly, 45.0 mg/L weekly average, and 60.0 mg/L IMAX will remain in the proposed permit based on the minimum level of effluent quality attainable by secondary treatment based on 25 Pa. Code § 92a.47. Recent DMRs and inspection reports show that the facility has been consistently achieving these limits. Mass limits are calculated as follows:

Average monthly mass limit: 30.0 mg/L x 0.33 MGD x 8.34 = 82.57 (82.0) lbs/day
Average weekly mass limit: 45.0 mg/L x 0.33 MGD x 8.34 = 123.85 (123.0) lbs/day

The average monthly and weekly average mass loadings will be rounded down to 82.0 lbs/day and 123.0 lbs/day, respectively. The minimum monitoring frequency will remain the same as 1/week.

Fecal Coliform:
The recent coliform guidance in 25 Pa. Code § 92a.47.(a)(4) requires a summer technology limit of 200/100 ml as a geometric mean and an instantaneous maximum not greater than 1,000/100ml and § 92a.47.(a)(5) requires a winter limit of 2,000/100ml as a geometric mean and an instantaneous maximum not greater than 10,000/100ml.

E. Coli:
As recommended by DEP's SOP No. BCW-PMT-033, version 2.0 revised February 5, 2024, a routine monitoring for E. Coli will be included in the proposed permit under 25 Pa. Code § 92a.61. This requirement applies to all sewage dischargers greater than 0.002 MGD in their new and reissued permits. A monitoring frequency of 1/quarter will be included in the permit to be consistent with the recommendation from this SOP.

Raw Sewage Influent Monitoring:
As a result of negotiation with EPA, influent monitoring of TSS and BOD_5 are required for any POTWs; therefore, influent sampling of BOD_5 and TSS will remain in the proposed permit. A 24-hr composite sample type will be required to be consistent with the proposed sampling frequency for TSS and BOD_5 in the effluent.

Total Phosphorus:
The existing permit average monthly TP concentration of 2.0 mg/L, and 4.0 mg/L IMAX will remain in the proposed permit. Mass average monthly is calculated and also in the proposed permit.

Average monthly mass limit: 2.0 mg/L x 0.33 MGD x 8.34 = 5.504 (5.5) lbs/day

Stormwater:
There is no known stormwater outfall associated with this facility.

Total Residual Chlorine (TRC):
The attached computer printout utilizes the equations and calculations as presented in the Department's May 1, 2003 Implementation Guidance for TRC (ID No. 391-2000-015) for developing chlorine limitations. The attached printout indicates that a water quality limit of 0.5 mg/L monthly average and 1.6 mg/L IMAX would be needed to prevent toxicity concerns. Therefore, the existing TRC limit of 0.23 mg/L monthly average and 0.75 mg/L IMAX are more stringer and will remain in the proposed permit.

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

14	= Q stream (cfs)	0.5	= CV Daily
0.33	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	1.3.2.iii	WLA afc =	8.767	1.3.2.iii	WLA cfc =	8.540
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	3.267	5.1d	LTA_cfc =	4.965

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)**

Chesapeake Bay Requirement:
According to the Pennsylvania's Chesapeake Bay Tributary Strategy, this facility is categorized as a phase 4 facility, non-significant point source sewage discharges design annual average daily flow greater than or equal to 0.2 MGD but less than 0.4 MGD. The permittee has already performed two (2) year nutrient monitoring as required by the Strategy. However, the Department's new Supplement to Phase II Watershed Implementation Plan indicates that any renewed or amended permits for phase 4 facilities that do not increase in design flow will contain monitoring and reporting for Total Nitrogen and Total Phosphorus throughout the permit term at a frequency no less than monthly. Accordingly, monitoring requirements for nutrients will remain in the proposed permit.

Toxic:
DEP's current permit renewal application for minor sewage facilities requires sampling of Total Copper, Total Lead, and Total Zinc for facilities with a design flow greater than or equal to 0.1 MGD. The application reported non-detect sample results for these pollutants. Previously, a routine monitoring requirement were developed for Total Copper, Total Lead, Total Zinc and Osmotic Pressure. As none of these parameters has been considered pollutants of concern based on the review of DMR data, DEP removed this requirement during the last permit renewal. Consequently, DEP determined that there is no toxic pollutant of concern for this facility at this time.

Additional Considerations

Flow Monitoring
The requirement to monitor the volume of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii).

Total Dissolved Solids
TDS and its associated solids including Bromide, Chloride, and Sulfate have become statewide pollutants of concern. The requirement to monitor these pollutants must be considered under the criteria specified in 25 Pa. Code § 95.10 and the following January 23, 2014 DEP Central Office Directive:

For point source discharges and upon issuance or reissuance of an individual NPDES permit:

-Where the concentration of TDS in the discharge exceeds 1,000 mg/L, or the net TDS load from a discharge exceeds 20,000 lbs/day, and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for TDS, sulfate, chloride, and bromide. Discharges of 0.1 MGD or less should monitor and report for TDS, sulfate, chloride, and bromide if the concentration of TDS in the discharge exceeds 5,000 mg/L.

- Where the concentration of bromide in a discharge exceeds 1 mg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for bromide. Discharges of 0.1 MGD or less should monitor and report for bromide if the concentration of bromide in the discharge exceeds 10 mg/L.

CTA reported maximum concentrations of 624.0 mg/L for TDS and < 0.2 mg/L for Bromide. Accordingly, the requirement to monitor for these pollutants is not necessary.

WETT:
Minor facilities and facilities without a formal EPA approved pretreatment program are exempted from WETT.

Antidegradation Requirements:
All effluent limitations and monitoring requirements have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected.

Anti-backsliding Requirements:
Unless stated otherwise in this fact sheet, all permit requirements proposed in this fact sheet are at least as stringent as those specified in the existing permit.

WQM 7.0:
The following data were used in the attached computer model (WQM 7.0) of the stream:

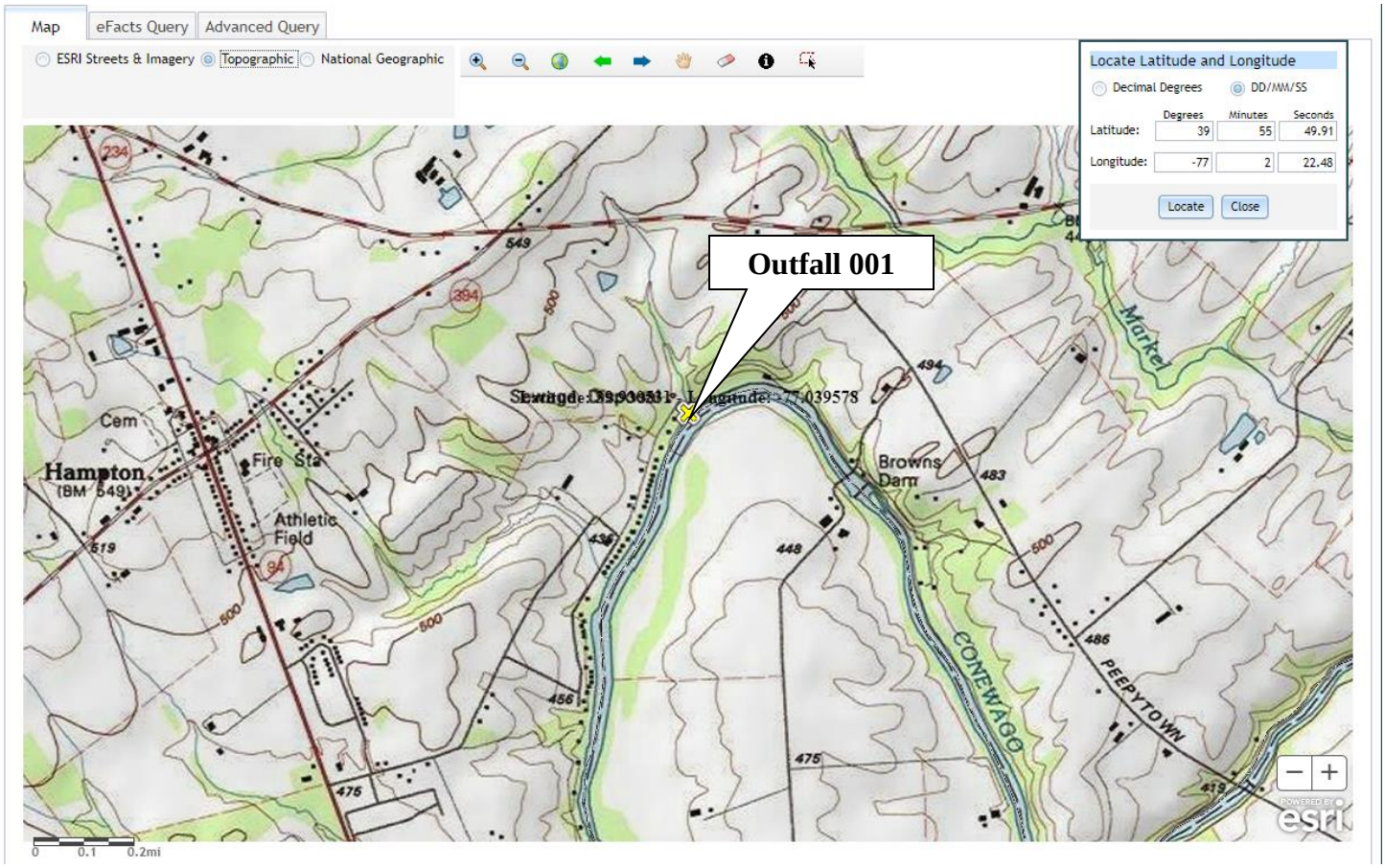
*	Discharge pH	=	7.0	(Default)
*	Discharge Temperature	=	25°C	(Default)
*	Stream pH	=	7.0	(Default)
*	Stream Temperature	=	20°C	(Default)
*	Background NH_3-N	=	0 mg/L	(Default)

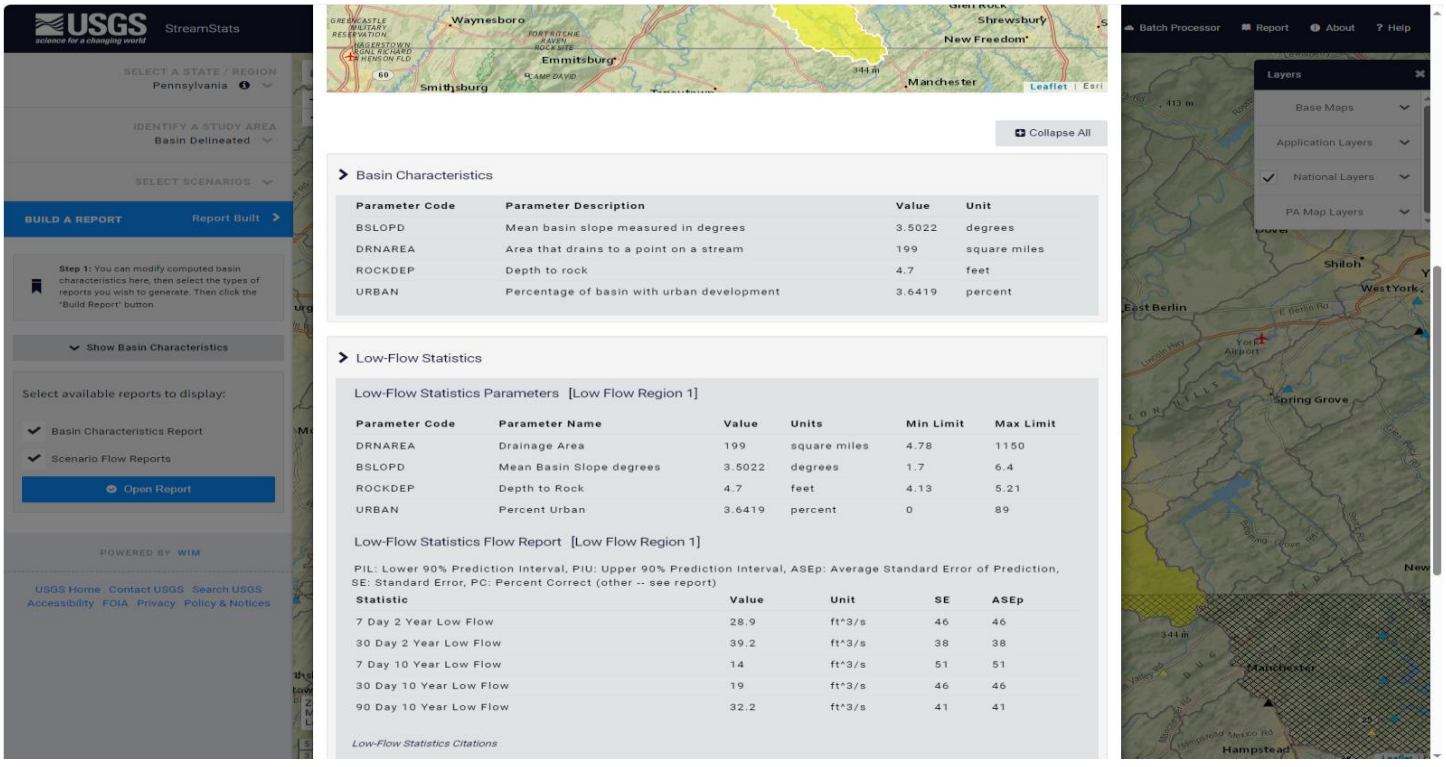
Node 1: Outfall 001 Conewago Creek (08303)

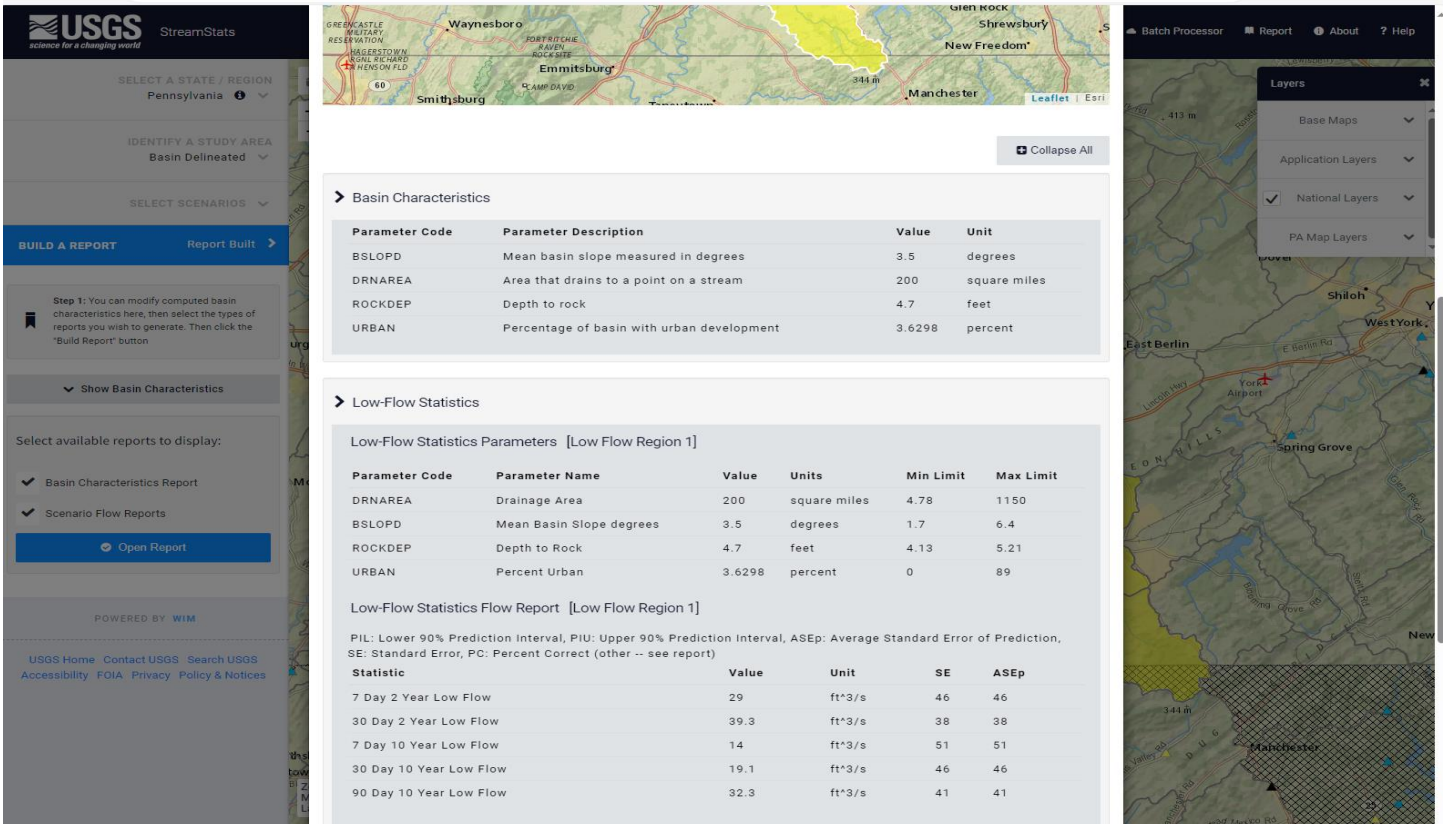
Elevation:	418.63 ft (USGS National Map Viewer)
Drainage Area:	199.0 mi^2 (USGS PA StreamStats)
River Mile Index:	46.36 (PA DEP eMapPA)
Low Flow Yield:	0.07 cfs/mi^2
Discharge Flow:	0.33 MGD

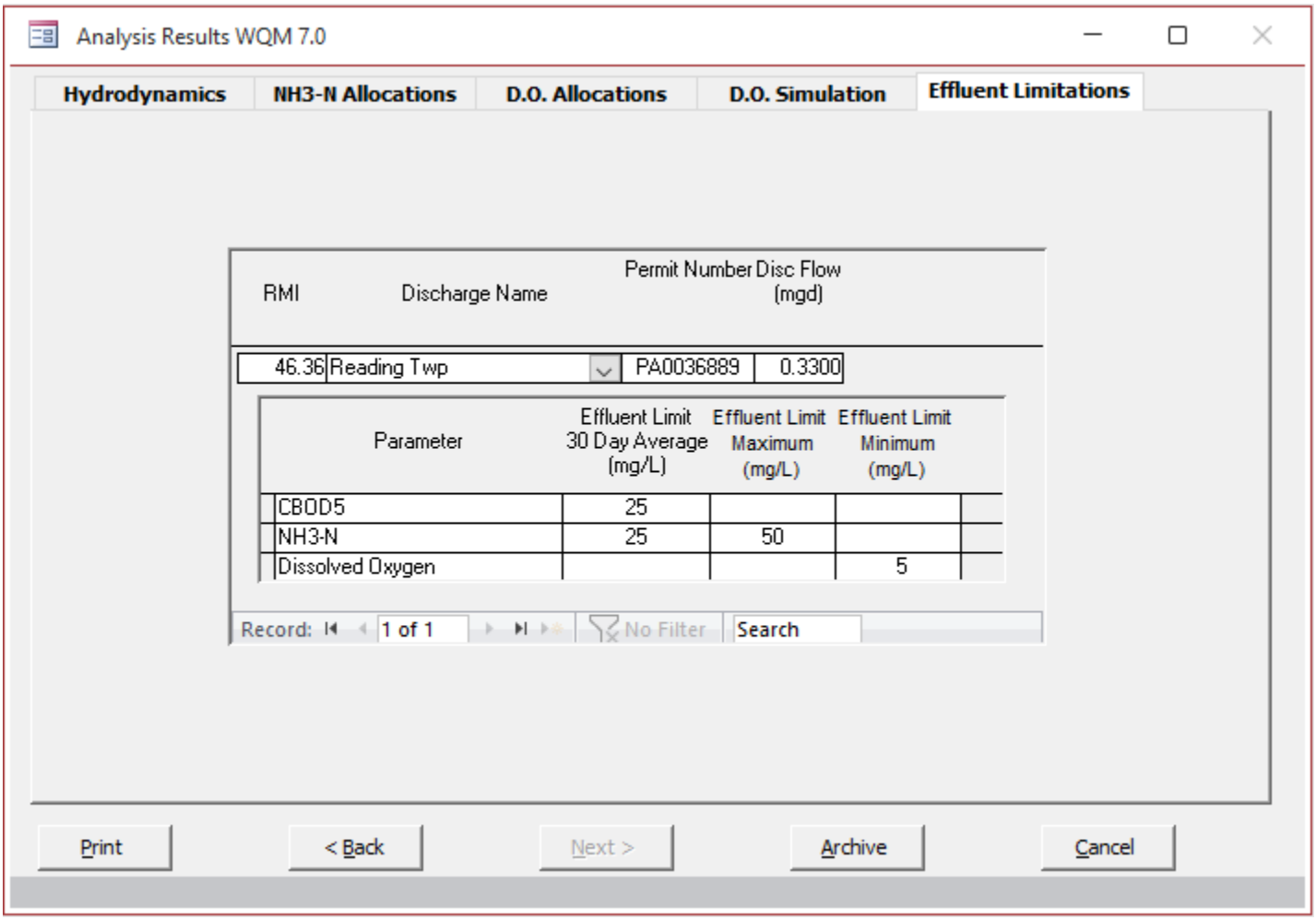
Node 2: At confluence with Unnamed Tributary 08800

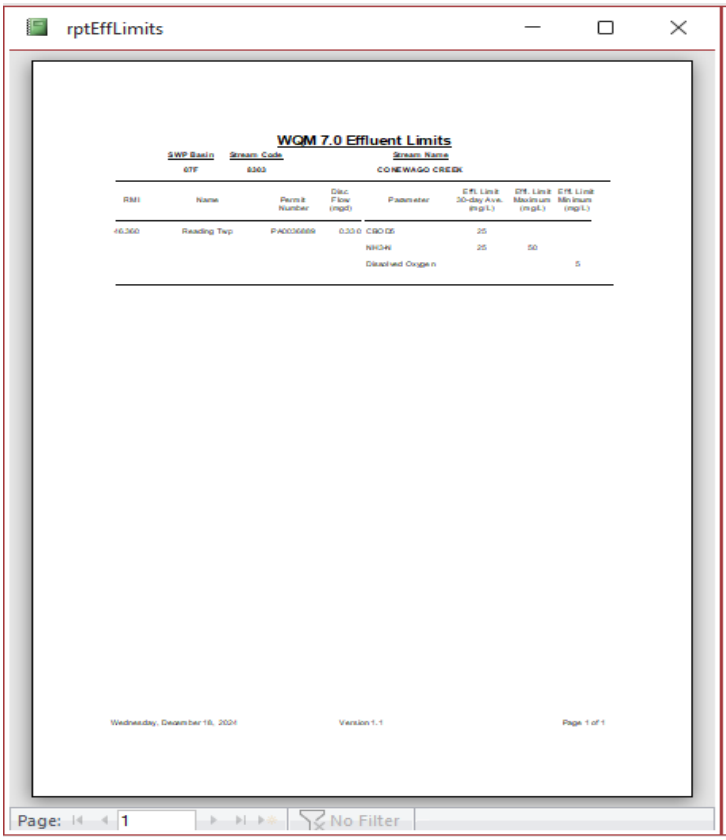
Elevation:	415.79 ft (USGS National Map Viewer)
Drainage Area:	200.0 mi^2 (USGS PA StreamStats)
River Mile Index:	44.50 (PA DEP eMapPA)
Low Flow Yield:	0.07 cfs/mi^2
Discharge Flow:	0.0 MGD


Map
eFacts Query
Advanced Query
ESRI Streets & Imagery
Topographic
National Geographic
Locate Latitude and Longitude
Decimal Degrees
DD/MM/SS
Degrees Minutes Seconds
Latitude: 39 55 49.91
Longitude: -77 2 22.48
Locate
Close
Outfall 001
Hampton
(BM 549)
Cem
Fire Sta
Athletic Field
Browns Dam
CONEWAGO
PEEPYTOWN
Market
0 0.1 0.2mi
esri


USGS StreamStats
Waynesboro
Shrewsbury
New Freedom
Emmitsburg
Smithsburg
Manchester
Collapse All
Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
BSLOPD | Mean basin slope measured in degrees | 3.5022 | degrees
DRNAREA | Area that drains to a point on a stream | 199 | square miles
ROCKDEP | Depth to rock | 4.7 | feet
URBAN | Percentage of basin with urban development | 3.6419 | percent
Low-Flow Statistics
Low-Flow Statistics Parameters [Low Flow Region 1]
Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit
DRNAREA | Drainage Area | 199 | square miles | 4.78 | 1150
BSLOPD | Mean Basin Slope degrees | 3.5022 | degrees | 1.7 | 6.4
ROCKDEP | Depth to Rock | 4.7 | feet | 4.13 | 5.21
URBAN | Percent Urban | 3.6419 | percent | 0 | 89
Low-Flow Statistics Flow Report [Low Flow Region 1]
PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct (other -- see report)
Statistic | Value | Unit | SE | ASEp
7 Day 2 Year Low Flow | 28.9 | ft^3/s | 46 | 46
30 Day 2 Year Low Flow | 39.2 | ft^3/s | 38 | 38
7 Day 10 Year Low Flow | 14 | ft^3/s | 51 | 51
30 Day 10 Year Low Flow | 19 | ft^3/s | 46 | 46
90 Day 10 Year Low Flow | 32.2 | ft^3/s | 41 | 41
Low-Flow Statistics Citations
Batch Processor
Report
About
Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers
Shiloh
West York
East Berlin
Spring Grove
Hampstead


USGS StreamStats
SELECT A STATE / REGION
Pennsylvania
IDENTIFY A STUDY AREA
Basin Delineated
SELECT SCENARIOS
BUILD A REPORT
Report Built
Step 1: You can modify computed basin characteristics here, then select the types of reports you wish to generate. Then click the "Build Report" button
Show Basin Characteristics
Select available reports to display:
Basin Characteristics Report
Scenario Flow Reports
Open Report
POWERED BY WIM
USGS Home Contact USGS Search USGS
Accessibility FOIA Privacy Policy & Notices
Waynesboro
Emmitsburg
Smithsburg
Shrewsbury
New Freedom
Manchester
Leaflet | Esri
Collapse All
Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
BSLOPD | Mean basin slope measured in degrees | 3.5 | degrees
DRNAREA | Area that drains to a point on a stream | 200 | square miles
ROCKDEP | Depth to rock | 4.7 | feet
URBAN | Percentage of basin with urban development | 3.6298 | percent
Low-Flow Statistics
Low-Flow Statistics Parameters [Low Flow Region 1]
Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit
DRNAREA | Drainage Area | 200 | square miles | 4.78 | 1150
BSLOPD | Mean Basin Slope degrees | 3.5 | degrees | 1.7 | 6.4
ROCKDEP | Depth to Rock | 4.7 | feet | 4.13 | 5.21
URBAN | Percent Urban | 3.6298 | percent | 0 | 89
Low-Flow Statistics Flow Report [Low Flow Region 1]
PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct (other -- see report)
Statistic | Value | Unit | SE | ASEp
7 Day 2 Year Low Flow | 29 | ft^3/s | 46 | 46
30 Day 2 Year Low Flow | 39.3 | ft^3/s | 38 | 38
7 Day 10 Year Low Flow | 14 | ft^3/s | 51 | 51
30 Day 10 Year Low Flow | 19.1 | ft^3/s | 46 | 46
90 Day 10 Year Low Flow | 32.3 | ft^3/s | 41 | 41
Batch Processor
Report
About
Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers
Shiloh
West York
East Berlin
Spring Grove
Manchester


Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
RMI
Discharge Name
Permit Number
Disc Flow (mgd)
46.36
Reading Twp
PA0036889
0.3300
Parameter
Effluent Limit 30 Day Average (mg/L)
Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
CBOD5
25
NH3-N
25
50
Dissolved Oxygen
5
Record: 1 of 1
No Filter
Search
Print
< Back
Next >
Archive
Cancel


rptEffLimits

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07F	8303	CONEWAGO CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Eff. Limit 30-day Ave. (mg/L)	Eff. Limit Maximum (mg/L)	Eff. Limit Minimum (mg/L)
46.360	Reading Twp	PA0036889	0.330	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			5

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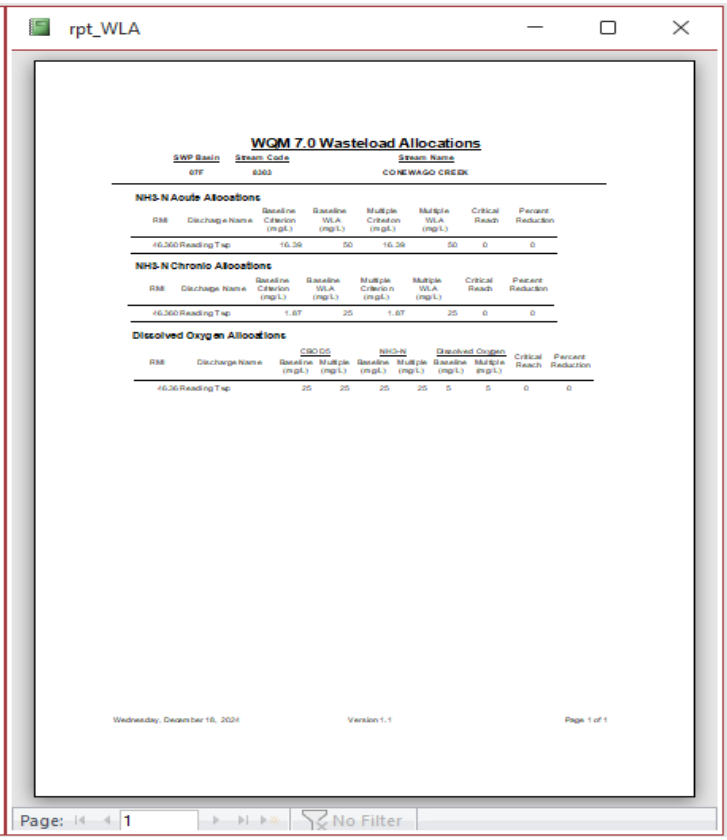
rpt_WLA

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07F	8303	CONEWAGO 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
46.360	Reading Twp	16.39	50	16.39	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
46.360	Reading Twp	1.87	25	1.87	25	0	0

Dissolved Oxygen Allocations

		CBOD5		NH3-N		Dissolved Oxygen			
RMI	Discharge Name	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Critical Reach	Percent Reduction
46.360	Reading Twp	25	25	25	25	5	5	0	0

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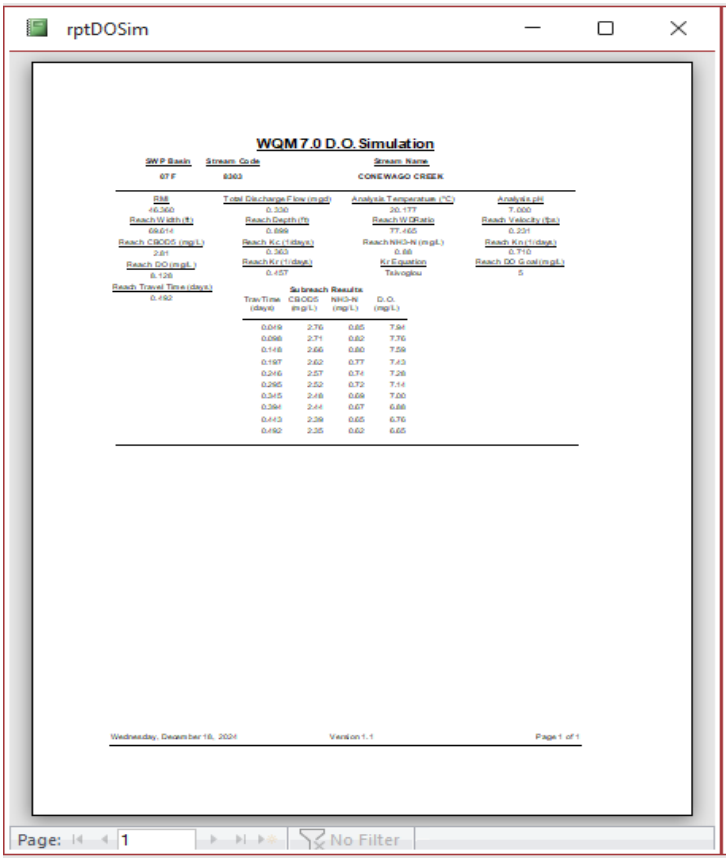
rptDOSim

WQM 7.0 D.O. Simulation

SWP Basin	Stream Code	Stream Name
07F	8303	CONEWAGO CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
46.360	0.330	20.177	7.000
Reach W idth (ft)	Reach Depth (ft)	Reach W DRatio	Reach Velocity (fps)
69.614	0.899	77.465	0.231
Reach CBOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
2.81	0.303	0.66	0.710
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
8.126	0.457	Tsivoglou	5
Reach Travel Time (days)			
0.492			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.049	2.76	0.65	7.94
0.098	2.71	0.62	7.76
0.148	2.66	0.60	7.59
0.197	2.62	0.77	7.43
0.246	2.57	0.74	7.28
0.295	2.52	0.72	7.14
0.345	2.48	0.69	7.00
0.394	2.44	0.67	6.88
0.443	2.39	0.65	6.76
0.492	2.35	0.62	6.65

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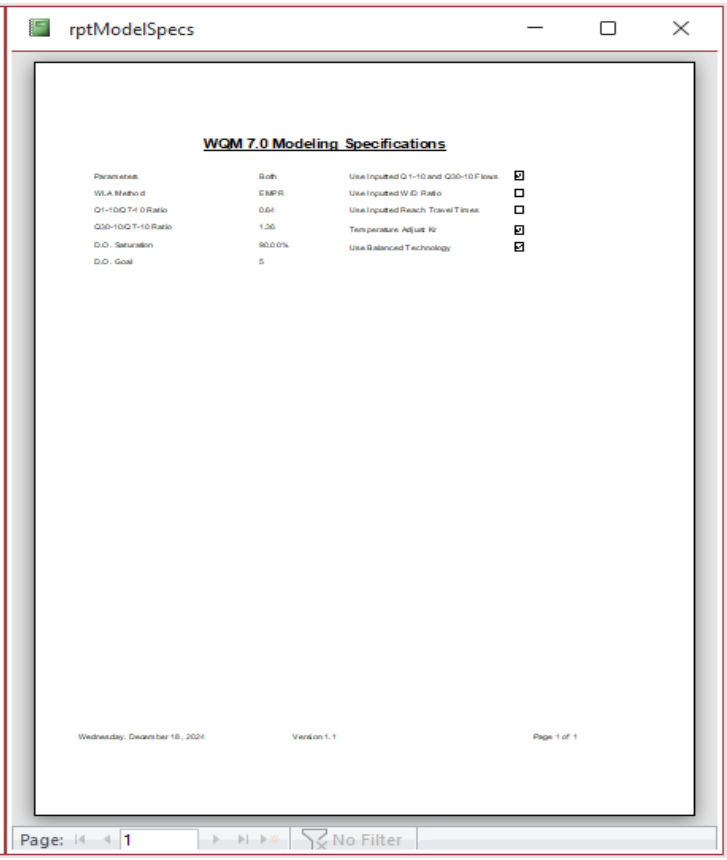
rptModelSpecs

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	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

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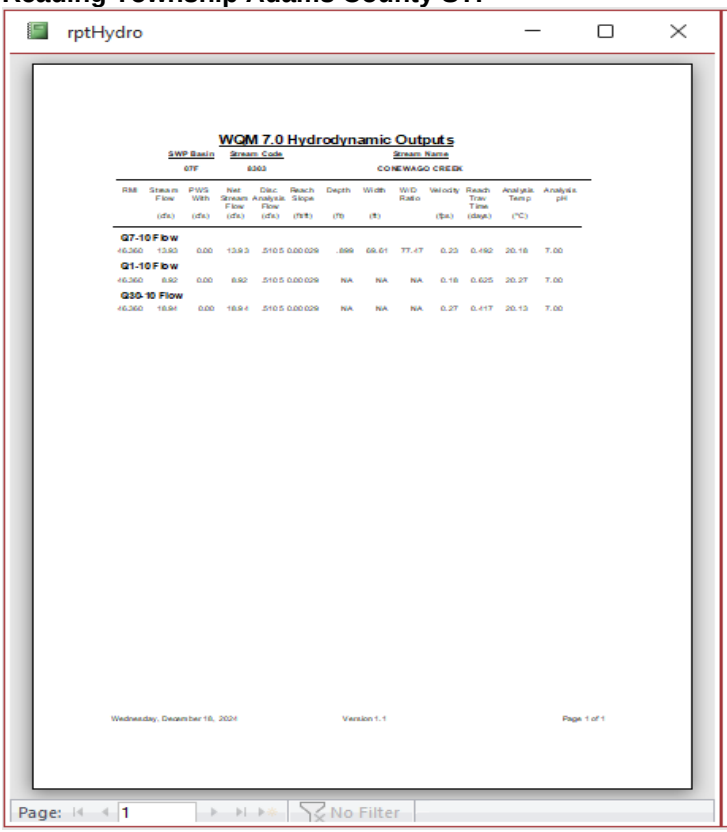
rptHydro
WQM 7.0 Hydrodynamic Outputs
SWP Basin
Stream Code
Stream Name
07F
8303
CONEWAGO CREEK
RMI
Stream Flow (cfs)
PWS With (cfs)
Net Stream Flow (cfs)
Disc Analysis Flow (cfs)
Reach Slope (ft/ft)
Depth (ft)
Width (ft)
W/D Ratio
Velocity (fps)
Reach Trav Time (days)
Analysis Temp (°C)
Analysis pH
Q7-10 Flow
46.360 13.93 0.00 13.93 .5105 0.00029 .899 69.61 77.47 0.23 0.492 20.16 7.00
Q1-10 Flow
46.360 8.92 0.00 8.92 .5105 0.00029 NA NA NA 0.18 0.625 20.27 7.00
Q30-10 Flow
46.360 18.94 0.00 18.94 .5105 0.00029 NA NA NA 0.27 0.417 20.13 7.00
Wednesday, December 18, 2024
Version 1.1
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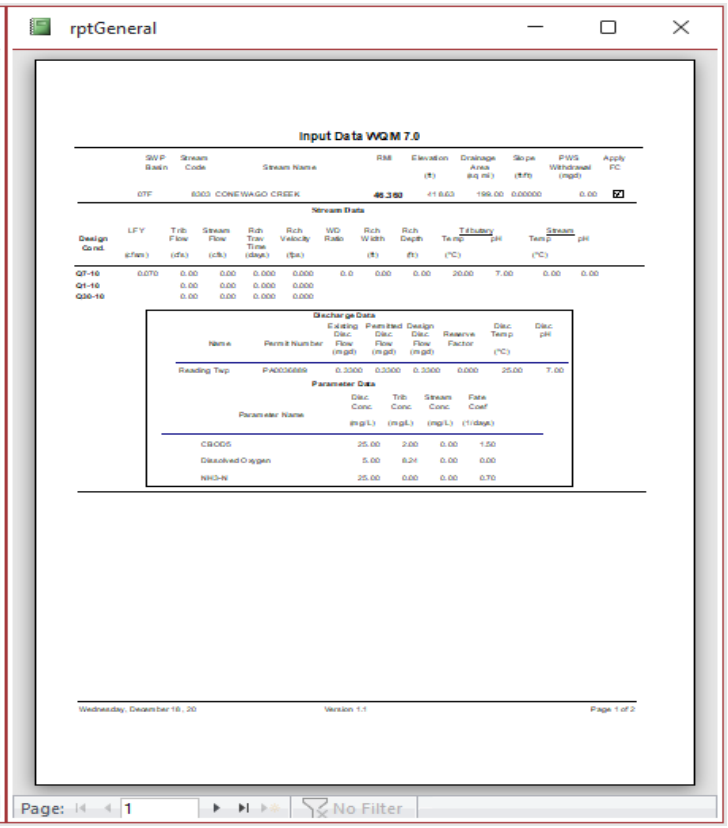
No Filter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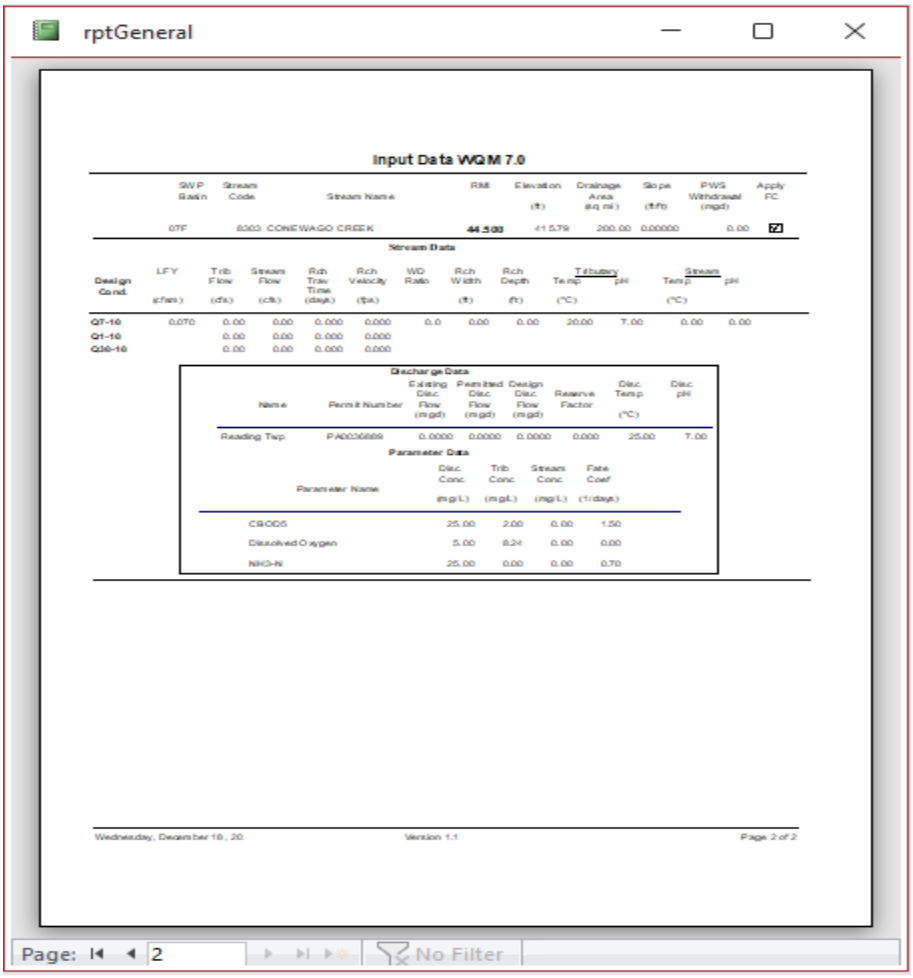
Input Data WQM 7.0
SWP Basin
Stream Code
Stream Name
RMI
Elevation (ft)
Drainage Area (sq mi)
Slope (ft/ft)
PWS Withdrawal (mgd)
Apply FC
07F
8303 CONEWAGO CREEK
46.360
411.63
199.00
0.00000
0.00
Stream Data
Design Cond.
LFY (cfm)
Trib Flow (cfs)
Stream Flow (cfs)
Rch Trav Time (days)
Rch Velocity (fps)
WD Ratio
Rch Width (ft)
Rch Depth (ft)
Tributary Temp (°C)
Tributary pH
Stream Temp (°C)
Stream pH
Q7-10 0.070 0.00 0.00 0.000 0.000 0.0 0.00 0.00 20.00 7.00 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
Reading Twp
PA0036889
0.3000 0.3000 0.3000 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 5.00 8.24 0.00 0.00
NH3-N 25.00 0.00 0.00 0.70
Wednesday, December 18, 20
Version 1.1
Page 1 of 2
Page: 1
No Filter


rptGeneral
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
07F
8303 CONEWAGO CREEK
44.500
411.79
200.00
0.00000
0.00
Stream Data
Design Cond.
LFY (cfm)
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 0.070 0.00 0.00 0.000 0.000 0.0 0.00 0.00 20.00 7.00 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
Reading Twp
PA0036889
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 5.00 8.24 0.00 0.00
NH3-N 25.00 0.00 0.00 0.70
Wednesday, December 18, 20
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Page: 2
No Filter

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) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	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 Daily Min	XXX	XXX	9.0	1/day	Grab
D.O.	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.23	XXX	0.75	1/day	Grab
$CBOD_5$	68.0	110.0	XXX	25.0	40.0	50.0	1/week	8-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
TSS	82.0	123.0	XXX	30.0	45.0	60.0	1/week	8-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
Ammonia Nov 1 - Apr 30	58.0	XXX	XXX	21.0	XXX	42.0	1/week	8-Hr Composite
Ammonia May 1 - Oct 31	19.0	XXX	XXX	7.0	XXX	14.0	1/week	8-Hr Composite
Total Phosphorus	5.5	XXX	XXX	2.0	XXX	4.0	1/week	8-Hr Composite

Compliance Sampling Location:

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) (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	1/week	8-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	1/week	8-Hr Composite

Compliance Sampling Location:

Other Comments:

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☒	TRC Model Spreadsheet (see Attachment)
☐	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, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☒	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☒	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 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, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 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, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☒	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP:
☐	Other: