pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0266086**
Facility Type	**Municipal**	APS ID	**868141**
Major / Minor	**Minor**	Authorization ID	**1311292**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Spring Grove Borough York County**	Facility Name	**Spring Grove Borough STP**
Applicant Address	1 Campus Avenue	Facility Address	1 Campus Avenue
	Spring Grove, PA 17362-1412		Spring Grove, PA 17362-1412
Applicant Contact	Andrew Shaffer	Facility Contact	Andrew Shaffer
Applicant Phone	(717) 225-5791	Facility Phone	(717) 225-5791
Client ID	64892	Site ID	451699
Ch 94 Load Status	Not Overloaded	Municipality	Spring Grove Borough
Connection Status	No Limitations	County	York
Date Application Received	April 7, 2020	EPA Waived?	Yes
Date Application Accepted	June 1, 2020	If No, Reason	

Purpose of Application: NPDES permit renewal.

Summary of Review

ARRO Consulting, Inc., on behalf of the Spring Grove Borough, has applied to the Pennsylvania Department of Environmental Protection (DEP) for issuance of the NPDES permit. This facility is located at 201 East Railroad Street, Spring Grove, PA. The permit was reissued on September 23, 2015 and became effective on October 1, 2015. The permit expired on September 30, 2020 but the terms and conditions of the permit have been extended since that time.

This facility serves the areas of Spring Grove Borough (98.4%), and Jackson Township (1.6%). The flow design is 0.33 MGD.

The WQM Part II No. 6715403 issued on September 23, 2015, and amendment 6715403 A-1 issued on September 30, 2015.

Sludge use and disposal description and location(s): N/A due to the sludge is hauled away by Kline's Services.

Changes from the previous permit:

- Unit of Fecal Coliform changed from CFU/100 ml to No./100 ml. The E. Coli. monitoring and report requirements will add to the proposed permit.
- The sampling frequency changed from twice per week to one per week for Ammonia-Nitrogen, Total Phosphorus, Kjeldahl-Nitrogen and Nitrate-Nitrite as Nitrogen (N) in the proposed permit.
- Section C, items # II – Schedule of Compliance will be removed for the proposed permit due to the facility upgrade and expansion project was completed on June 30, 2017 (via email from Kim Hackett, regarding Spring Grove Borough, on 6/23/2021).

Based on the review outline in this fact sheet, it is recommended that the permit be drafted and published in the Pennsylvania Bulletin for public comments for 30 days.

Approve	Deny	Signatures	Date
X		*Hilaryle* Hilary H. Le / Environmental Engineering Specialist	July 7, 2021
X		Maria D. Bebenek for Danial W. Martin Daniel W. Martin, P.E. / Environmental Engineer Manager	July 19, 2021

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.33
Latitude	39º 52' 24.00"	Longitude	-76º 51' 28.00"
Quad Name	Seven Valleys	Quad Code	
Wastewater Description:	Treated Sewage		
Receiving Waters	Codorus Creek (WWF, MF)	Stream Code	08032
NHD Com ID	57472067	RMI	26.14 miles
Drainage Area	74.0 mi.^{2}	Yield (cfs/mi^2)	0.12
Q_{7-10} Flow (cfs)	8.51	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	434.7	Slope (ft/ft)	
Watershed No.	7-H	Chapter 93 Class.	WWF, MF
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 Water Company, York County		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	44 miles	Distance from Outfall (mi)	Approximate 34 miles

Changes Since Last Permit Issuance:

Drainage Area

The drainage area upstream of the point of discharge was determined to be 74.0 mi^2 through the use of USGS PA StreamStats application (http://water.usgs.gov/osw/streamstats/pennsylvania.html).

Streamflow

According to StreamStats, the point of first use has a Q_{7-10} of 8.51 cfs and a drainage area of 74.0 mi^2, which results in a Q_{7-10} low flow yield of 0.12 cfs/mi^2. This information is used to obtain a chronic or 30-day (Q_{30-10}), and an acute or 1-day (Q_{1-10}) exposure stream flow for the discharge point as follows (Guidance No. 391-2000-023):

Q_{7-10} = 8.51 cfs
Low Flow Yield = 8.51 cfs / 74.0 mi^2 = 0.12 cfs/mi^2
Q_{30-10} = 1.36 * 8.51 cfs = 11.57 cfs
Q_{1-10} = 0.64 * 8.51 cfs = 5.45 cfs

The resulting Q_{7-10} dilution ratio is: Q_{stream} / $Q_{discharge}$ = 8.51 cfs / [0.33 MGD * (1.547 cfs/MGD)] = 16.6:1

Codorus Creek

25 Pa. Code § 93.9o classifies Codorus Creek as Warm Water and Migratory Fishes (WWF & MF) surface water. Based on the 2020 Integrated Report, Codorus Creek, assessment unit IDs 3581 & 19023, is not impaired. A TMDL currently does not exist for this stream segment, therefore, no TMDL has been taken into consideration during this review.

Public Water Supply

The nearest downstream public water supply intake is the Wrightsville Water Supply Co. on Susquehanna River in York County, approximately 34 miles downstream of this discharge. Given the nature and dilution, the discharge is not expected to significantly impact the water supply.

Treatment Facility Summary				
Treatment Facility Name: Spring Grove STP				
WQM Permit No.	**Issuance Date**			
6715403	9/23/2015			
6715403 A-1	9/30/2015			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary With Phosphorus Reduction	Sequencing Batch Reactor	Ultraviolet	0.33
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.57	1811	Not Overloaded	Aerobic Digestion	Landfill

Changes Since Last Permit Issuance:

The current treatment process is as follows:

Bar screen → Grit Removal System → Sequencing Batch Reactors (2) → Post EQ tank → UV Disinfection → Post Aeration → Discharge to Codorus Creek.

The chemical uses such as aluminum salt for phosphorus removal, flocculation, and settling, polymer for flocculation & settling, and sodium hypochlorite for maintaining chlorine residual are in the utility water system only.

Compliance History	
Summary of DMRs:	The DMRs reported from May 1, 2020 to April 30, 2021 are summarized in the Table below (Pages # 5, 6, & 7).
Summary of Inspections:	5/01/2019: Austen Randecker, DEP Water Quality Specialist, conducted a compliance evaluation inspection and indicated that no issues were found. The recommendation was to maintain a secondary thermometer in the influent and effluent composite samplers. Samples collected during the inspection show all results were in permitted range.
Other Comments:	There are currently no open violations associated to the permittee or the facility.

Other Comments:

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

Influent Testing Results			*Effluent Testing Results*		
Parameter	**Min/Max Value**	**Average Value**	**Parameter**	**Min/Max Value**	**Average Value**
BOD_5 (mg/L)	630 mg/L	300.68 mg/L	pH (minimum)	6.88 S.U.	
BOD_5 (lbs/day)	2563.7 lbs/day	921.41 lbs/day	pH (maximum)	7.81 S.U.	
TSS (mg/L)	602 mg/L	194.05 mg/L	D.O (minimum)	6.91 mg/L	8.89 mg/L
TSS (lbs/day)	1661.3 lbs/day	579.43 lbs/day	TRC	<0.1 mg/L	<0.1 mg/L
TN (mg/L)	<58 mg/L	<54.5 mg/L	Fecal Coliform	96 No./100mL	2.88 No./100mL
TN (lbs/day)	115.88 lbs/day	108.82 lbs/day	$CBOD_5$	3.25 mg/L	3.02 mg/L
TP (mg/L)	15 mg/L	5.51 mg/L	TSS	15 mg/L	3.23 mg/L
TP (lbs/day)	33.26 lbs/day	33.26 lbs/day	NH3-N	0.39 mg/L	0.12 mg/L
NH_3-N (mg/L)	36 mg/L	18.9 mg/L	TN	3.8 mg/L	1.9 mg/L
NH_3-N (lbs/day)	88.31 lbs/day	52.75 lbs/day	TP	2.4 mg/L	0.51 mg/L
TDS (mg/L)	484 mg/L	484 mg/L	Temp	39.02 F	39.02 F
TDS (lbs/day)	975.39 lbs/day	975.39 lbs/day	TKN	1.3 mg/L	0.61 mg/L
TKN	56 mg/L	32.89 mg/L	NO2-N + NO3-N	3.3 mg/L	1.29 mg/L
NO_2-N + NO_3-N	1.5 mg/L	1.5 mg/L	TDS	352 mg/L	352 mg/L
			Chloride	94 mg/L	94 mg/L
			Bromide	< 0.5 mg/L	< 0.5 mg/L
			Sulfate	29 mg/L	29 mg/L
			Oil and Grease	< 5.0 mg/L	< 5.0 mg/L
			Total Copper	<0.005 mg/L	<0.005 mg/L
			Total Lead	< 0.001 mg/L	< 0.001 mg/L
			Total Zinc	0.061 mg/L	0.061 mg/L

Compliance History

DMR Data for Outfall 001 (from May 1, 2020 to April 30, 2021)

Parameter	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20
Flow (MGD) Average Monthly	0.3112	0.4117	0.2814	0.2904	0.2632	0.2458	0.2418	0.2183	0.2674	0.2022	0.2431	0.3555
Flow (MGD) Daily Maximum	0.4782	0.7576	0.4265	0.3956	0.6614	0.3656	0.3705	0.2556	0.5357	0.3746	0.3936	0.5729
pH (S.U.) Minimum	7.43	7.41	7.31	7.41	7.50	7.31	7.19	7.29	7.22	7.42	7.43	7.46
pH (S.U.) Instantaneous Maximum	7.82	7.90	7.57	7.81	7.71	7.65	7.70	7.54	7.74	7.68	7.75	7.79
DO (mg/L) Minimum	7.91	9.08	9.99	9.83	8.81	8.01	7.64	6.88	6.82	6.25	7.8	8.75
CBOD5 (lbs/day) Average Monthly	7.06	8.89	5.37	7.74	36.51	5.83	6.21	5.70	8.17	11.28	6.06	9.15
CBOD5 (lbs/day) Weekly Average	9.57	12.18	6.15	9.86	7.48	6.27	7.70	5.91	13.40	20.05	7.64	10.61
CBOD5 (mg/L) Average Monthly	2.4	2.52	2.70	3	3	3	3	3	3.00	6.25	3	3
CBOD5 (mg/L) Weekly Average	2.4	3.00	3.0	3	3	3	3	3.00	3.00	11	3	3
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	1086.63	832.61	792.35	851.02	553.94	684	883.78	569.54	1007.12	768.57	773.26	736.25
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	1703.03	1196.20	968.54	1024.14	660.37	828.33	1029.13	726.08	1636.04	1046.69	905.5	1119.69
BOD5 (mg/L) Raw Sewage Influent Average Monthly	371.25	234.90	329.50	307.5	239.40	313.75	400.00	286.60	353.50	426.25	366	224.25
TSS (lbs/day) Average Monthly	10.84	21.55	4.52	21.61	10.08	15.71	16.43	8.36	29.17	12.62	12.43	9.16
TSS (lbs/day) Raw Sewage Influent Average Monthly	840.55	376.78	305.89	365.38	163.03	153.26	251.38	247.65	287.98	240.70	219.66	257.04
TSS (lbs/day) Raw Sewage Influent Daily Maximum	2203.30	544.03	359.82	499.42	213.41	228.06	294.04	364.06	484.75	422.05	250.41	339.52
TSS (lbs/day) Weekly Average	13.60	45.67	6.15	9.70	13.27	33.26	30.97	16.98	89.35	30.99	35.18	13.52

TSS (mg/L) Average Monthly	3.75	5.60	2.25	4.0	4.80	8.25	8.5	4.40	8.25	7	6.2	3
TSS (mg/L) Raw Sewage Influent Average Monthly	300	106.40	129.50	97.0	70.40	70.50	114.0	124.40	100.00	135	105.20	79
TSS (mg/L) Weekly Average	5.0	10.0	3.0	9.00	7	17	17	9.00	20.00	17	18	4
Fecal Coliform (CFU/100 ml) Geometric Mean	1.57	1.64	1.50	1.41	2.40	5.83	5.67	1.57	8.24	12.86	1.26	1
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	3	3.00	5	2	5	16.00	146	6.00	770.00	117	2	1
UV Intensity (mW/cm²) Minimum	383	202	281	336	255	172	183	82	99	62	282	394
Nitrate-Nitrite (mg/L) Average Monthly	2.14	1.81	1.73	2.16	2.07	2.20	1.71	1.21	0.84	0.81	1.07	1.38
Nitrate-Nitrite (lbs) Total Monthly	174.33	186.85	95.11	168.16	139.14	137.62	110.07	2.30	2.15	46.92	64.38	131.95
Total Nitrogen (mg/L) Average Monthly	3.29	2.42	2.23	2.77	3.18	3.78	3.39	2.64	2.76	7.86	1.84	1.91
Total Nitrogen (lbs) Effluent Net Total Monthly	277.34	252.70	122.93	217.44	213.44	235.25	216.55	151.26	206.43	470.71	109.86	182.46
Total Nitrogen (lbs) Total Monthly	277.34	252.70	122.93	217.44	213.44	235.25	216.55	151.26	6.66	470.71	109.86	182.46
Total Nitrogen (lbs) Effluent Net Total Annual								2026.14				
Total Nitrogen (lbs) Total Annual								2026.14				
Ammonia (lbs/day) Average Monthly	0.37	0.37	0.20	0.25	0.22	0.35	1.39	1.37	1.92	8.16	0.22	0.3
Ammonia (mg/L) Average Monthly	0.14	0.11	0.10	0.10	0.10	0.17	0.67	0.70	0.82	4.18	0.11	0.1
Ammonia (lbs) Total Monthly	11.10	11.42	5.55	7.79	6.76	10.37	43.11	41.04	52.96	252.92	6.61	9.44
Ammonia (lbs) Total Annual								700.22				
TKN (mg/L) Average Monthly	1.15	0.61	0.50	0.61	1.11	1.57	1.68	1.43	1.92	7.05	0.77	0.53
TKN (lbs) Total Monthly	103.02	65.85	27.82	49.28	74.30	97.63	106.47	82.31	139.69	423.79	45.48	50.51

Total Phosphorus (lbs/day) Average Monthly	0.30	0.63	0.21	0.32	0.34	0.68	0.31	0.21	0.59	4.03	2.84	1.51
Total Phosphorus (mg/L) Average Monthly	0.11	0.17	0.11	0.13	0.16	0.33	0.15	0.11	0.24	2.13	1.44	0.49
Total Phosphorus (lbs) Effluent Net Total Monthly	9.09	19.61	5.94	9.78	10.39	20.54	9.74	6.40	18.44	124.98	85.32	46.90
Total Phosphorus (lbs) Total Monthly	9.09	19.61	5.94	9.78	10.39	20.54	9.74	6.40	18.44	124.98	85.32	46.90
Total Phosphorus (lbs) Effluent Net Total Annual								541.97				
Total Phosphorus (lbs) Total Annual								541.97				

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.33
Latitude 39º 52' 24.00" **Longitude** -76º 51' 28.00"
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)

Water Quality-Based Limitations

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$):
The attached computer printout of the WQM 7.0 stream model (version 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. However, the existing limits of 21.0 mg/L monthly average (AML), 32.0 mg/L weekly average, and 42.0 mg/L instantaneous maximum (IMAX) will remain in the proposed permit as per guidance document 391-2000-014. 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: 21 mg/L x 0.33 MGD x 8.34 = 57.8 (57.0) lbs/day
Average weekly mass limit: 32 mg/L x 0.33 MGD x 8.34 = 88.1 lbs/day

Ammonia (NH_3-N):
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	=	20°C	(Default)
*	Stream pH	=	7.0	(Default)
*	Stream Temperature	=	25ºC	(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 IMAX are necessary to protect the aquatic life from toxicity effects at the point of discharge. However, the existing limits of 7.5 mg/L monthly average & 15.0 mg/L IMAX will remain in the proposed permit. The winter effluent limit will be set at three-times the summer limits. 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: 7.5 mg/L x 0.33 MGD x 8.34 = 20.64 (20.0) lbs/day

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

Dissolved Oxygen (D.O.):
A 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. BPNPSM-PMT-033 and has been applied to other point source dischargers throughout the state.

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 1,000/100 ml and 25 Pa. Code § 92a.47.(a)(5) requires a winter limit of 2,000/100 ml as a geometric mean and an instantaneous maximum not greater than 10,000/100 ml.

E. Coli:
As recommended by DEP's SOP no. BPNPSM-PMT-033, 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/week will be included in the permit to be consistent with the recommendation from this SOP.

UV:
The UV system monitor and report the UV intensity (mW/cm^2) after update to replace chlorine disinfection to UV disinfection system will remain in the proposed permit.

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 instantaneous maximum 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 mg/L x 0.33 MGD x 8.34 = 82.57 (82.0) lbs/day
Average weekly mass limit: 45 mg/L x 0.33 MGD x 8.34 = 123.8 (123.0) lbs/day

Total Phosphorus:
Previous permit had average monthly concentration monitoring requirement 2.0 mg/l and instantaneous maximum limit of 4.0 mg/l. Accordingly, existing TP limits will remain in the proposed permit. See the EPA guidance, Nutrient Criteria Technical Guidance Manual – Rivers and Streams, 07/2000 EPA-822-B-00-002, for more information about nutrient impacts on streams. Mass limits are calculated as follows:

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

Toxics:
DEP utilizes a Toxics Management Spreadsheet (last modified on March 2021 ver. 1.3) to facilitate calculations necessary for completing a reasonable potential analysis and determining WQBELs for toxic pollutants. The worksheet output indicates that there are no toxic pollutants of concern.

Chesapeake Bay TMDL:
In the Phase 2 WIP Wastewater Supplement revised on December 17, 2019, Attachment C-Non Significant Discharges with Cap Loads in NPDES Permits (pages # 27-28) of this document shows that Spring Grove Borough has been allocated 7,306 lbs/year of TN and 974 lbs/year of TP. This approach is consistent with the Chesapeake Bay TMDL and was based on the actual performance data previously evaluated by the Department. Since the permittee is easily capable of achieving compliance with these loads, the Department determines that no "compliance schedule" for the requirements associated with the Chesapeake Bay Strategy is necessary. Accordingly, the Chesapeake Bay nutrient existing limitations and monitoring requirements will remain in the proposed permit.

However, the facility design flow is 0.33 MGD less than 0.4 MGD and the discharge from facility is non-significant; then the Chesapeake Bay nutrient monitoring frequency will be one per week. Therefore, the monitoring frequency of Chesapeake Bay nutrient (i.e., Ammonia-N, Kjeldahl-N, Nitrate-Nitrite as N, and Total Phosphorus) will change from two (2) per week to one (1) per week in the proposed permit.

Biosolids Management
Sludge is digested on-site, via an aerobic sludge digester, and removed by a certified hauler.

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

Antidegradation (93.4):
The effluent limits for this discharge have been developed to ensure that existing in-stream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High-Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

Class A Wild Trout Fisheries:
No Class A Wild Trout Fisheries are impacted by this discharge.

303(d) Listed Streams:
This discharge is not located on a 303(d) listed stream segment.

Additional Considerations

Flow Monitoring
Flow monitoring is recommended by the permit guidance and is also required by 25 Pa. Code §§ 92a.27 and 92a.61.

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 be included in the draft permit. A 24-hr composite sample type will be required to be consistent with the proposed sampling frequency for TSS and $CBOD_5$ in the effluent.

Total Dissolved Solids (TDS)
Total Dissolved Solids and its major constituents including Bromide, Chloride, and Sulfate have become statewide pollutants of concern and threats to DEP's mission to prevent violations of water quality standards. The requirement to monitor these pollutants is necessary under the following 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.*

The facility has no record of monitoring these pollutants. However, the application shows a maximum influent concentration of 484 mg/L for TDS. The effluent concentration is not expected to exceed 1,000 mg/L. No monitoring is necessary.

Local TMDL
According to eMapPA (http://www.emappa.dep.state.pa.us/emappa/viewer.htm), the proposed discharge will be located in a stream segment listed as attaining uses. Considering nature of the discharge, the facility will not contribute to the impairment. No local TMDL has been taken into consideration during this permit review process.

Mass Loading Limitation
All mass loading effluent limitations recommended in the draft permit are concentration-based, calculated using a formula: design flow (MGD) x concentration limit (mg/L) x conversion factor of 8.34.

Compliance Schedule- Section C
A compliance schedule will be removed from the proposed permit due to the upgrade and expansion project was completed as follows.

Notice to Proceed: January 20, 2016
Substantial Completion: June 30, 2017

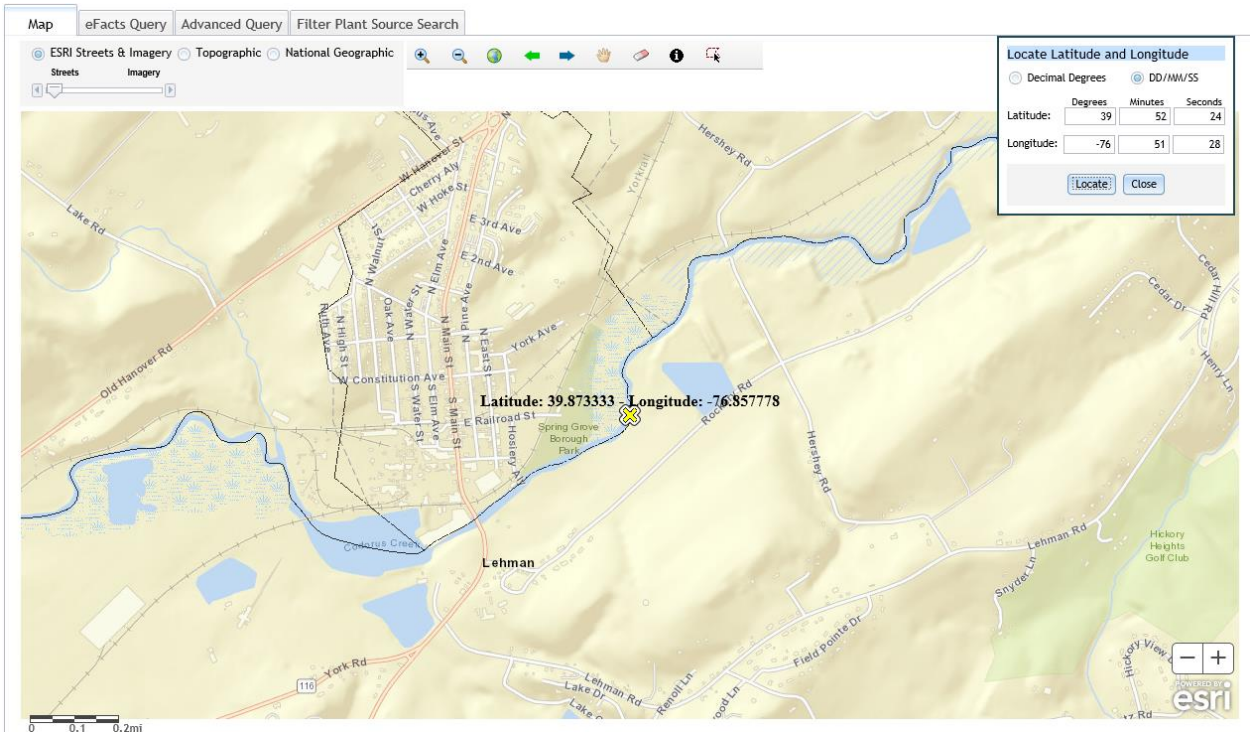
WQM 7.0

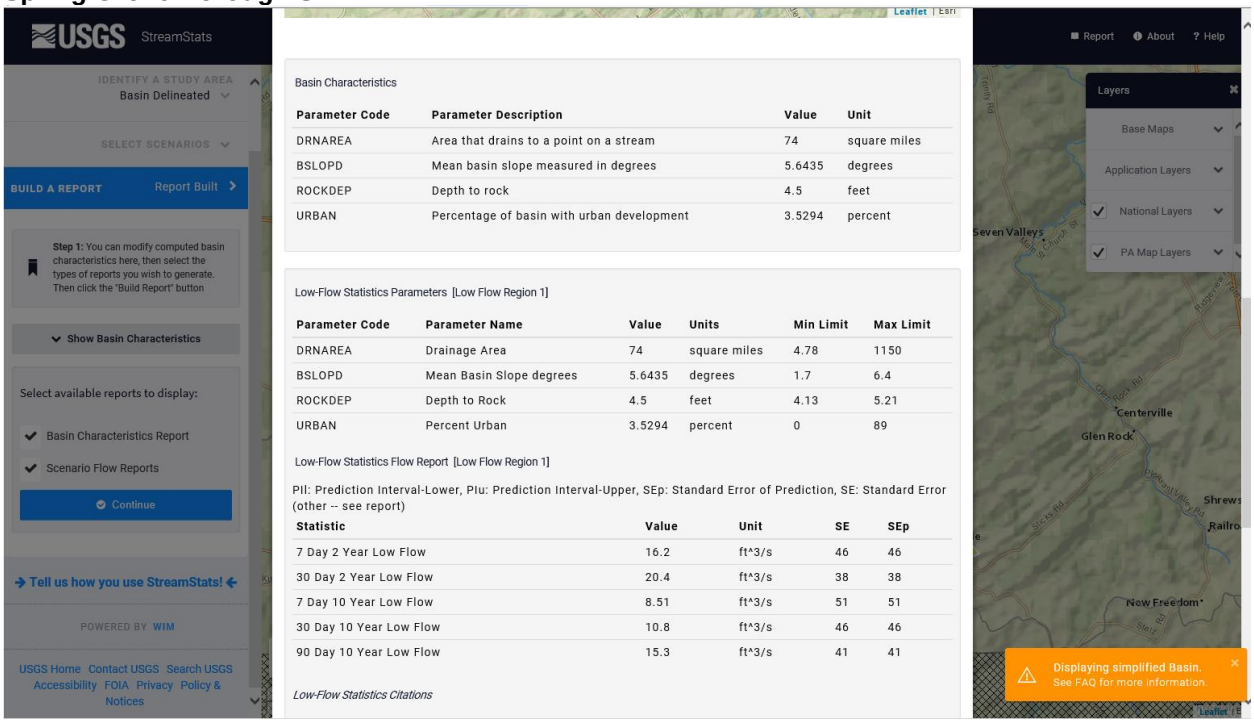
Node 1: Point of first use on Codorus Creek (08032)

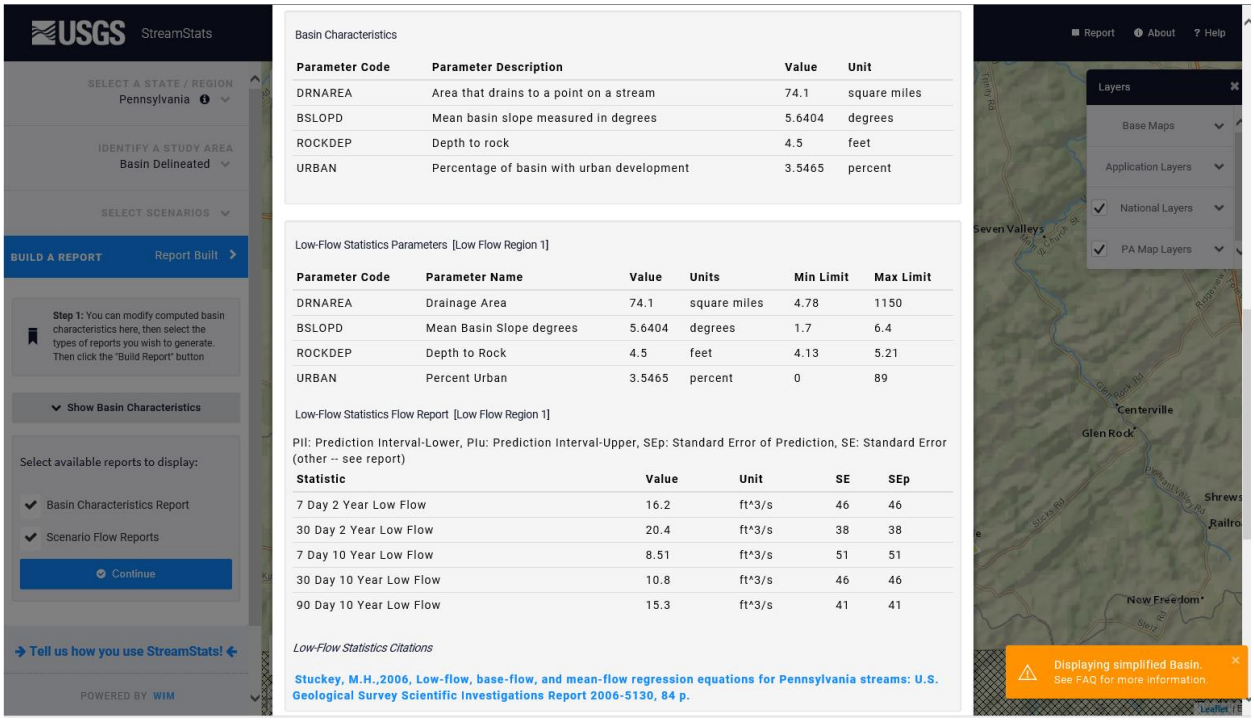
Elevation:	434.7 ft (USGS National Map Viewer)
Drainage Area:	74.0 mi^2 (USGS PA StreamStats)
River Mile Index:	26.4 (PA DEP eMapPA)
Low Flow Yield:	0.12 cfs/mi^2
Discharge Flow:	0.33 MGD

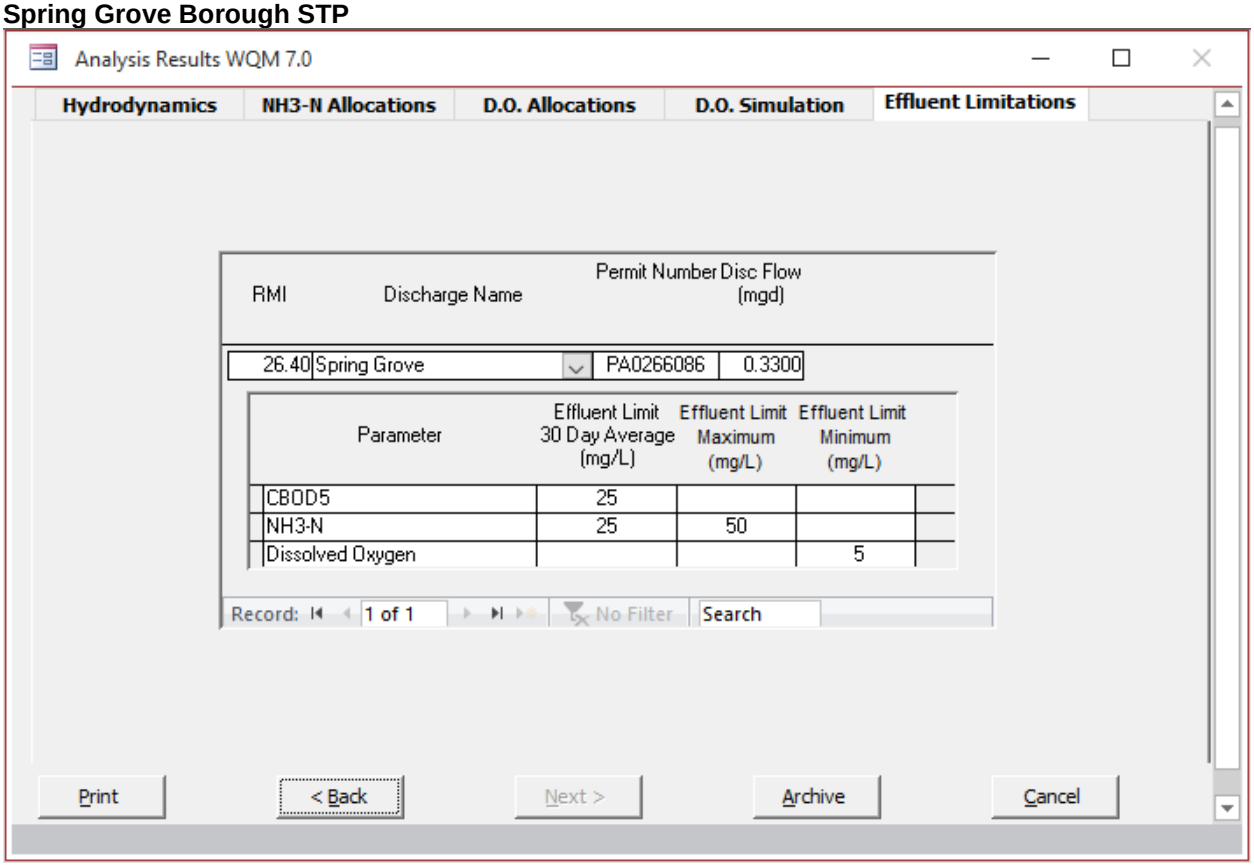
Node 2: Just before confluence of 08208

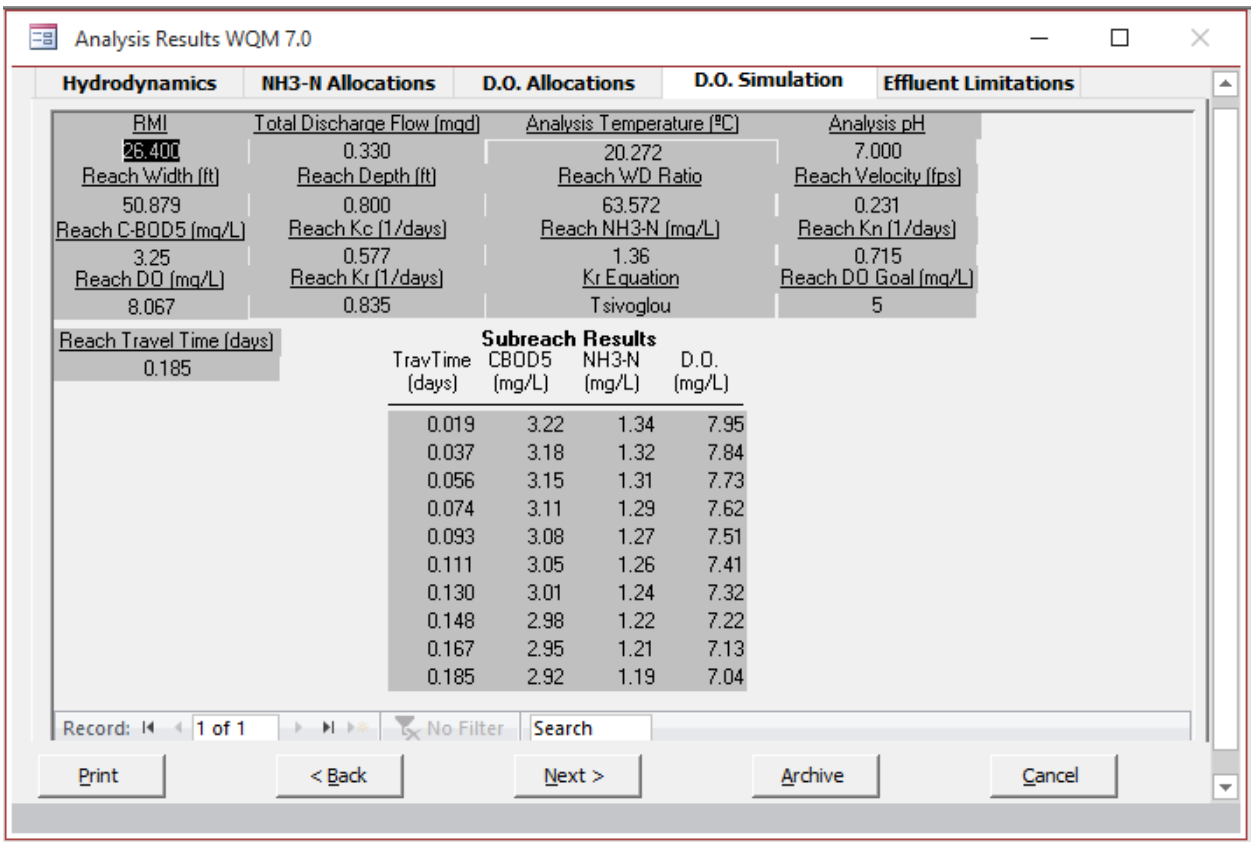
Elevation:	433.3 ft (USGS National Map Viewer)
Drainage Area:	74.1 mi^2 (USGS PA StreamStats)
River Mile Index:	25.7 (PA DEP eMapPA)
Low Flow Yield:	0.12 cfs/mi^2
Discharge Flow:	0.000 MGD




USGS StreamStats
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
Continue
Tell us how you use StreamStats!
POWERED BY WIM
USGS Home Contact USGS Search USGS
Accessibility FOIA Privacy Policy & Notices
Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
DRNAREA | Area that drains to a point on a stream | 74 | square miles
BSLOPD | Mean basin slope measured in degrees | 5.6435 | degrees
ROCKDEP | Depth to rock | 4.5 | feet
URBAN | Percentage of basin with urban development | 3.5294 | percent
Low-Flow Statistics Parameters [Low Flow Region 1]
Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit
DRNAREA | Drainage Area | 74 | square miles | 4.78 | 1150
BSLOPD | Mean Basin Slope degrees | 5.6435 | degrees | 1.7 | 6.4
ROCKDEP | Depth to Rock | 4.5 | feet | 4.13 | 5.21
URBAN | Percent Urban | 3.5294 | percent | 0 | 89
Low-Flow Statistics Flow Report [Low Flow Region 1]
PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)
Statistic | Value | Unit | SE | SEp
7 Day 2 Year Low Flow | 16.2 | ft^3/s | 46 | 46
30 Day 2 Year Low Flow | 20.4 | ft^3/s | 38 | 38
7 Day 10 Year Low Flow | 8.51 | ft^3/s | 51 | 51
30 Day 10 Year Low Flow | 10.8 | ft^3/s | 46 | 46
90 Day 10 Year Low Flow | 15.3 | ft^3/s | 41 | 41
Low-Flow Statistics Citations
Report
About
Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers
Seven Valleys
Centerville
Glen Rock
New Freedom
Displaying simplified Basin.
See FAQ for more information.


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
Continue
Tell us how you use StreamStats!
POWERED BY WIM
Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
DRNAREA | Area that drains to a point on a stream | 74.1 | square miles
BSLOPD | Mean basin slope measured in degrees | 5.6404 | degrees
ROCKDEP | Depth to rock | 4.5 | feet
URBAN | Percentage of basin with urban development | 3.5465 | percent
Low-Flow Statistics Parameters [Low Flow Region 1]
Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit
DRNAREA | Drainage Area | 74.1 | square miles | 4.78 | 1150
BSLOPD | Mean Basin Slope degrees | 5.6404 | degrees | 1.7 | 6.4
ROCKDEP | Depth to Rock | 4.5 | feet | 4.13 | 5.21
URBAN | Percent Urban | 3.5465 | percent | 0 | 89
Low-Flow Statistics Flow Report [Low Flow Region 1]
PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)
Statistic | Value | Unit | SE | SEp
7 Day 2 Year Low Flow | 16.2 | ft^3/s | 46 | 46
30 Day 2 Year Low Flow | 20.4 | ft^3/s | 38 | 38
7 Day 10 Year Low Flow | 8.51 | ft^3/s | 51 | 51
30 Day 10 Year Low Flow | 10.8 | ft^3/s | 46 | 46
90 Day 10 Year Low Flow | 15.3 | ft^3/s | 41 | 41
Low-Flow Statistics Citations
Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p.
Report
About
Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers
Seven Valleys
Centerville
Glen Rock
New Freedom
Displaying simplified Basin.
See FAQ for more information.


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)
26.40
Spring Grove
PA0266086
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


Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
RMI
26.400
Total Discharge Flow (mgd)
0.330
Analysis Temperature (°C)
20.272
Analysis pH
7.000
Reach Width (ft)
50.879
Reach Depth (ft)
0.800
Reach W/D Ratio
63.572
Reach Velocity (fps)
0.231
Reach CBOD5 (mg/L)
3.25
Reach Kc (1/days)
0.577
Reach NH3-N (mg/L)
1.36
Reach Kn (1/days)
0.715
Reach DO (mg/L)
8.067
Reach Kr (1/days)
0.835
Kr Equation
Tsivoglou
Reach DO Goal (mg/L)
5
Reach Travel Time (days)
0.185
Subreach Results
TravTime (days)
CBOD5 (mg/L)
NH3-N (mg/L)
D.O. (mg/L)
0.019 3.22 1.34 7.95
0.037 3.18 1.32 7.84
0.056 3.15 1.31 7.73
0.074 3.11 1.29 7.62
0.093 3.08 1.27 7.51
0.111 3.05 1.26 7.41
0.130 3.01 1.24 7.32
0.148 2.98 1.22 7.22
0.167 2.95 1.21 7.13
0.185 2.92 1.19 7.04
Record: 1 of 1
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Search
Print
< Back
Next >
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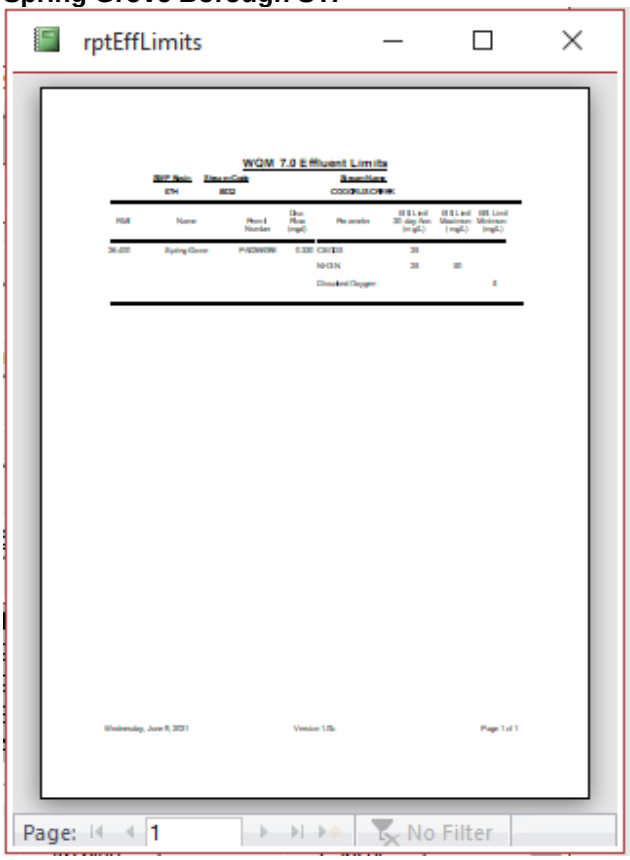
Cancel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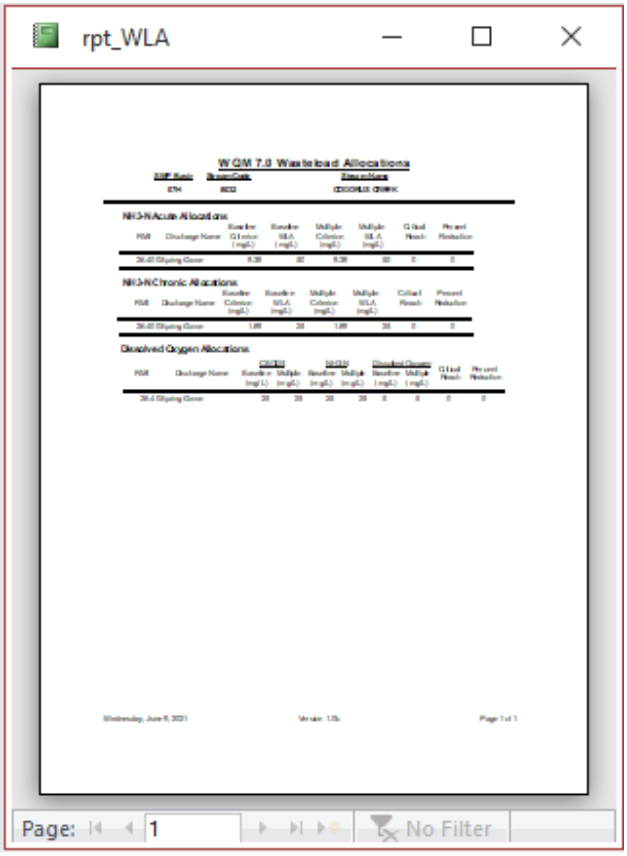
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WQM 7.0 Wasteload Allocations
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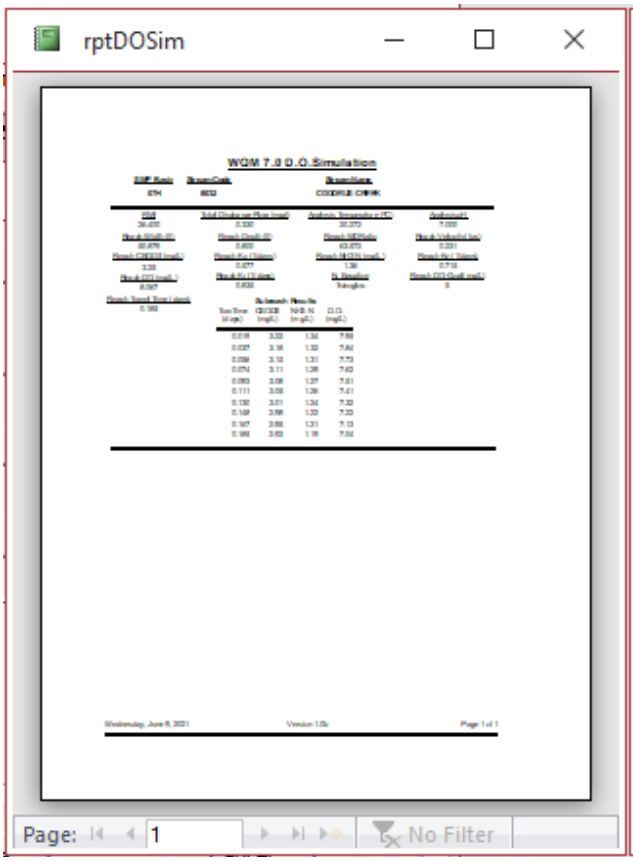
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WQM 7.0 D.O.Simulation
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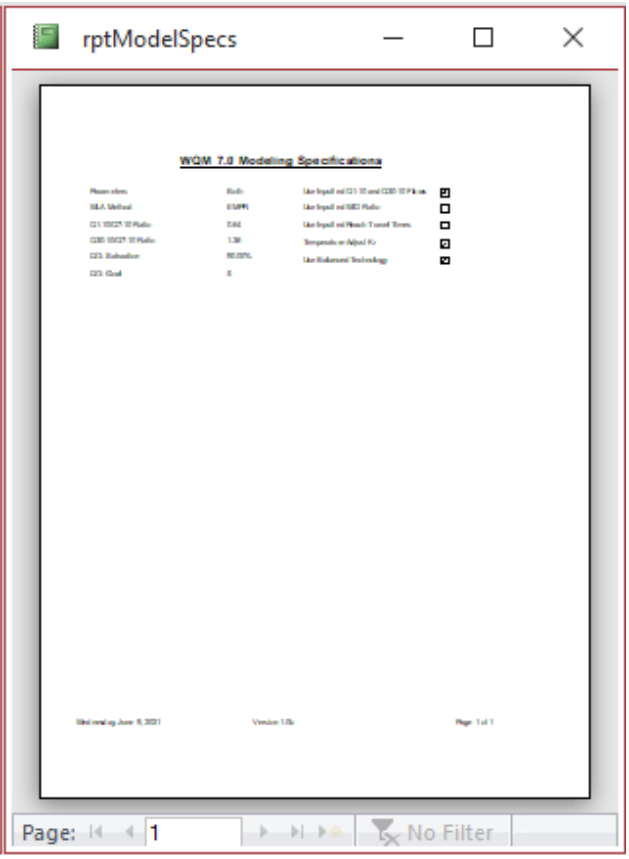
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WQM 7.0 Modeling Specifications
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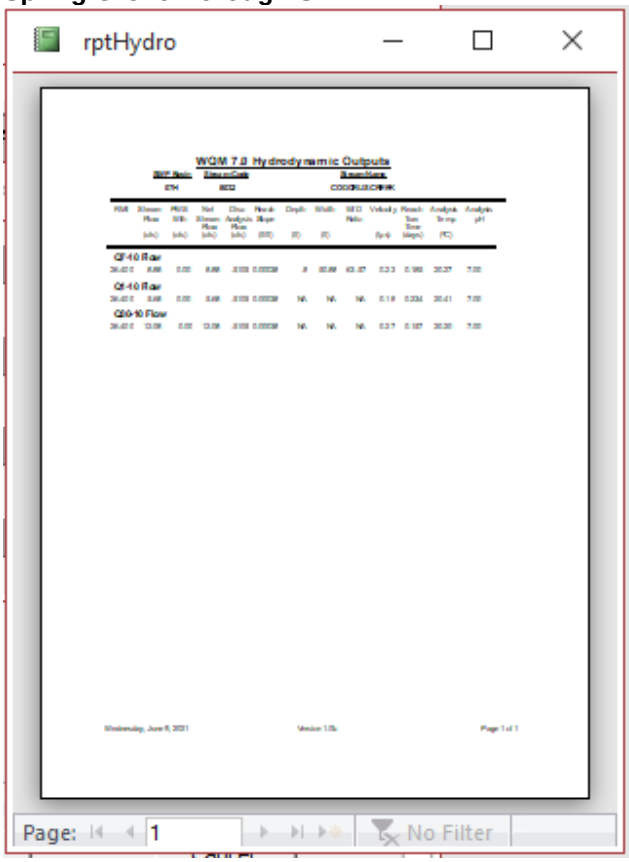
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WQM 7.0 Hydrodynamic Outputs
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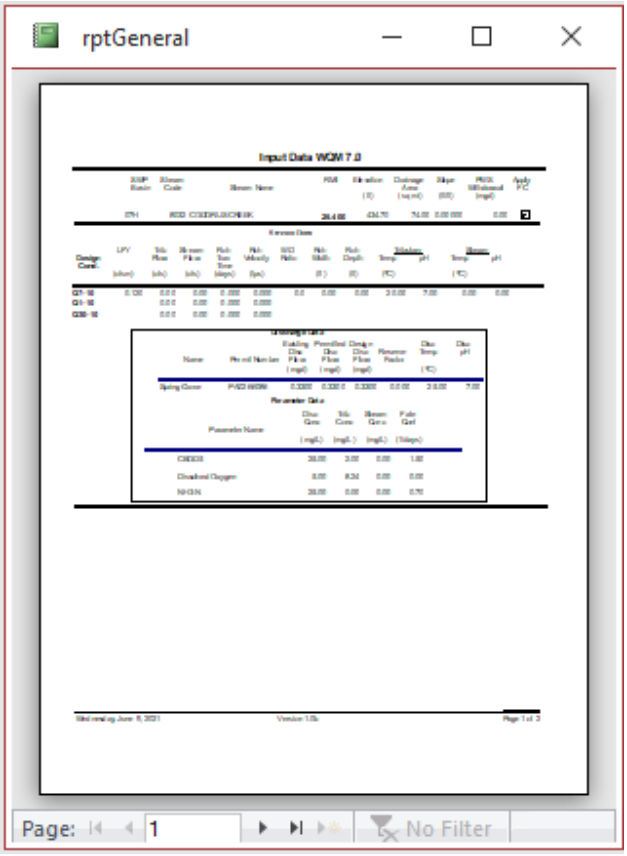
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Input Data WQM 7.0
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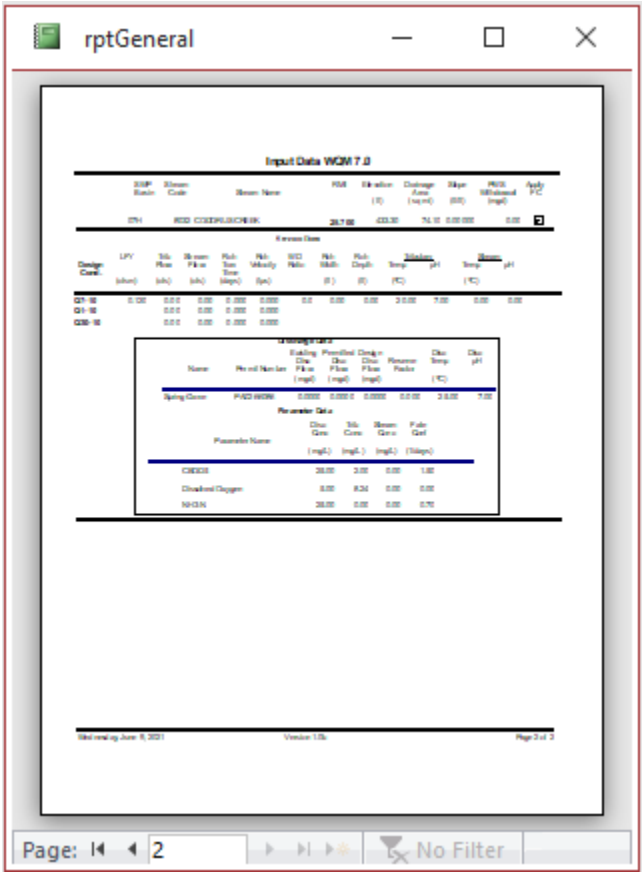
rptGeneral
Input Data WQM 7.0
Page: 2
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Existing Effluent Limitations and Monitoring Requirements

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) 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	1/day	Grab
D.O.	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
UV Intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
$CBOD_5$	57	88	XXX	21	32	42	1/week	24-Hr Composite
TSS	82	123	XXX	30	45	60	1/week	24-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-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	20	XXX	XXX	7.5	XXX	15	2/week	24-Hr Composite
Ammonia Nov 1 - Apr 30	61	XXX	XXX	22.5	XXX	45	2/week	24-Hr Composite
Total Phosphorus	5.5	XXX	XXX	2.0	XXX	4.0	2/week	24-Hr Composite

Existing Effluent Limitations and Monitoring Requirements

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	24-hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/week	24-hr Composite
Net Total Nitrogen	Report	7,306	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	974	XXX	XXX	XXX	XXX	1/month	Calculation

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Instantaneous 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
UV Intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
$CBOD_5$	57.0	88.0 Wkly Avg	XXX	21.0	32.0	42.0	1/week	24-Hr Composite
TSS	82.0	123.0 Wkly Avg	XXX	30.0	45.0	60.0	1/week	24-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	24-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
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/week	Grab
Ammonia May 1 - Oct 31	20.0	XXX	XXX	7.5	XXX	15.0	1/week	24-Hr Composite
Ammonia Nov 1 - Apr 30	61.0	XXX	XXX	22.5	XXX	45.0	1/week	24-Hr Composite
Total Phosphorus	5.5	XXX	XXX	2.0	XXX	4.0	1/week	24-Hr Composite

Compliance Sampling Location:

Other Comments:

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (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	24-hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	1/week	24-hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	1/week	24-hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	1/week	24-hr Composite
Net Total Nitrogen	Report	7,306	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	974	XXX	XXX	XXX	XXX	1/month	Calculation

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, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☒	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☒	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☒	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☒	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other: