Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0084646**
Facility Type	**Non-Municipal**	APS ID	**278297**
Major / Minor	**Minor**	Authorization ID	**1495603**

Applicant and Facility Information

Applicant Name	**Southern Fulton School District**	Facility Name	**Southern Fulton Elementary School**
Applicant Address	3072 Great Cove Road, Suite 100	Facility Address	3072 Great Cove Road
	Warfordsburg, PA 17267-8530		Warfordsburg, PA 17267-8530
Applicant Contact	James Will	Facility Contact	James Will
Applicant Phone	(717) 830-6690	Facility Phone	(717) 830-6690
Client ID	44393	Site ID	2355
Ch 94 Load Status	Not Overloaded	Municipality	Bethel Township
Connection Status		County	Fulton
Date Application Received	August 14, 2024	EPA Waived?	Yes
Date Application Accepted	August 16, 2024	If No, Reason	

Purpose of Application: NPDES permit renewal.

Summary of Review

Southern Fulton School District has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit. The permit was last reissued on January 28, 2020, and became effective on February 1, 2020. The permit expired on January 31, 2025.

The annual average design flow and hydraulic flow is 0.01 MGD. The discharge is to UNT to White Oak Run.

Sludge use and disposal description and location(s): N/A because sludge is hauling by County Septic contractor.

Changes from the previous permit: The 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 24, 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)	0.01
Latitude	39º 47' 42.90"	Longitude	-78º 11' 21.04"
Quad Name	Needmore	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	UNT to White Oak Run (TSF)	Stream Code	60898
NHD Com ID	49477866	RMI	0.09 mile
Drainage Area	0.8 mi.^{2}	Yield (cfs/mi^2)	See comments below
Q_{7-10} Flow (cfs)	See comments below	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)		Slope (ft/ft)	
Watershed No.	13-B	Chapter 93 Class.	TSF
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	R.C. Wilson Water Treatment Plant near Williamsport, MD		
PWS Waters	Potomac River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	Approximate 23.0 miles

Drainage Area
The discharge is to Unnamed Tributary to White Oak Run at RMI 0.09 mile. A drainage area upstream of the discharge is estimated to be 0.8 mi.^{2}, according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Stream Flow
According to StreamStats, the discharge point on Unnamed Tributary to White Oak Run has a Q_{7-10} of 0.00502 cfs and a drainage area of 0.8 mi.^{2} (resulting in a low flow yield of 0.00628 cfs/mi.^{2}). However, the drainage area at the discharge point is well below the minimum value for the regression equations used. Therefore, the entire White Oak Run watershed was chosen as an appropriate representative drainage area. The Q_{7-10} at the exit point of this watershed is 0.034 cfs and the drainage area is 3.38 mi.^{2} which results in a Q_{7-10} low flow yield of 0.01 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 point of first use as follows (Guidance No. 391-2000-023):

Low Flow Yield = 0.034 cfs / 3.38 mi.^{2} ≈ 0.01 cfs/mi.^{2}
Q_{7-10} = 0.01 cfs/mi.^{2} * 0.8 mi.^{2} ≈ 0.008 cfs
Q_{30-10} = 1.36 * 0.008 cfs ≈ 0.011 cfs
Q_{1-10} = 0.64 * 0.008 cfs ≈ 0.005 cfs

The resulting Q_{7-10} dilution ratio is: Q_{stream} / $Q_{discharge}$ = 0.008 cfs / [0.01 MGD * (1.55 cfs/MGD)] = 0.52:1

Unnamed Tributary to White Oak Run to Little Tonoloway Creek
25 Pa. Code 93.9z classifies Little Tonoloway Creek as Trout Stocking Fishes (TSF) surface water. Based on the 2024 Integrated Report, Little Tonoloway Creek, is not impaired. A TMDL currently does not exist for this stream segment, therefore, no TMDL has been taken into consideration during this review.

Potable Water Supply Intake
The nearest downstream public water supply intake is the R.C. Wilson Water Treatment Plant near Williamsport, MD intake on the Potomac River, approximately 23.0 miles from the point of discharge. eMapPA confirms that there are still no public water supplies downstream of this facility prior to the PA-MD border (over nine miles of stream). Given the nature and dilution, the discharge is not expected to significantly impact the water supply.

Treatment Facility Summary				
Treatment Facility Name: Southern Fulton Elementary				
WQM Permit No.	**Issuance Date**			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Tertiary	Extended Aeration With Solids Removal	Gas Chlorine	0.01
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.01		Not Overloaded	Aerobic Digestion	Combination of methods

Changes Since Last Permit Issuance: none

Other Comments:

The WWTP train is as follows:

Comminutor / Bar Screen (1) ⇒ EQ Tank (1) ⇒ Aeration Tank (1) ⇒ Settling Tank (1) ⇒ Sand Filters (2) ⇒ Chlorine Contact Tank (with liquid feed) (1) ⇒ De-chlorination System (with tablet feed) (1) ⇒ Discharge

The system incorporates chemical addition in the form of liquid chlorine (for disinfection), sodium bisulfite tablets (for de-chlorination), and sodium carbonate dry (for pH control). A sludge holding tank is used for solids storage.

Compliance History	
Summary of DMRs:	A summary of past 12-month DMRs is presented on the next pages.
Summary of Inspections:	4/30/2024: Mr. Clark, DEP WQS, conducted a compliance evaluation inspection. There was no discharge during the inspection and no samples were taken. There were no violations during inspection. The field test results were within the permit limits. There were recommendations: submit the appropriate paperwork to change the permissions for eDMR, obtain copies of sludge hauler receipts for past five years, contact DEP permits engineer about flow meter chart recorder, and NPDES permit renewal application is due by August 4, 2024. 4/3/2023: Mr. Clark, DEP WQS, conducted a compliance evaluation inspection. The effluent was clear. There were no violations during inspection. There were recommendations: remove weeds from both sand beds and rake sand as part of routine plant maintenance, have the flow meter calibrated and chart recorder repaired, record all individual grab times for composite sample, place NIST traceable thermometer in storage fridge, submit a sludge disposal supplemental from with the February 2023 DMR, submit a change of Operator form through the DEP website, and install new floats in EQ tank.
Other Comments:	There are no open violations against permittee or facility.

Other Comments:

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	0.00347	0.00448	0.00359		0.00092	0.00393	0.00285	0.0003	0.0017	0.00205	0.00217	0.00251
Flow (MGD) Daily Maximum	0.00543	0.00898	0.0077		0.00855	0.00846	0.00498	0.0007	0.00342	0.00420	0.00387	0.0069
pH (S.U.) Instantaneous Minimum	7.12	6.85	5.6		7.02	7.12	6.93	6.81	6.79	6.89	6.90	6.86
pH (S.U.) Instantaneous Maximum	7.75	8.15	7.59		7.38	7.69	8.01	7.62	7.46	7.56	7.48	7.58
DO (mg/L) Instantaneous Minimum	8.71	8.28	6.21		7.23	8.36	8.26	7.32	8.29	9.14	5.9	5.24
TRC (mg/L) Average Monthly	0.01	0.01	0.02		0.01	0.01	0.02	0.01	0.0002	0.0003	0.0003	0.0003
TRC (mg/L) Instantaneous Maximum	0.02	0.02	0.02		0.02	0.02	0.06	0.02	0.0003	0.0004	0.0005	0.007
CBOD5 (mg/L) Average Monthly	41.0	39	69		96.0	78.0	36.0	59.0	4.0	42.0	< 3.0	3.0
TSS (mg/L) Average Monthly	4.0	12.0	8.0		11.0	7.0	14.0	12.0	8.0	5.0	2.0	< 2.0
Fecal Coliform (No./100 ml) Geometric Mean	< 1.0	< 1.0	< 1.0		< 1.0	< 1.0	< 7	< 5.0	161	< 10	< 2.0	< 1.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 1.0	< 1.0	< 1.0		< 1.0	< 1.0	52	22	206	92	3.0	< 1.0
Nitrate-Nitrite (lbs/day) Total Annual											240	
Nitrate-Nitrite (mg/L) Annual Average											48.7	
Total Nitrogen (lbs/day) Total Annual											< 245	
Total Nitrogen (mg/L) Annual Average											< 49.7	

Ammonia (mg/L) Average Monthly	< 1.0	< 3.0	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0
TKN (lbs/day) Total Annual											< 5	
TKN (mg/L) Annual Average											< 1.0	
Total Phosphorus (lbs/day) Total Annual											6	
Total Phosphorus (mg/L) Annual Average											1.12	

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	Total Annual	Minimum	Average Monthly	Maximum	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
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.04	XXX	0.13	1/day	Grab
$CBOD_5$	XXX	XXX	XXX	25.0	XXX	50.0	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30.0	XXX	60.0	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	3.0	XXX	6.0	2/month	8-Hr Composite
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	9.0	XXX	18.0	2/month	8-Hr Composite
Nitrate-Nitrite	XXX	Report	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Nitrogen	XXX	Report	XXX	Report Annl Avg	XXX	XXX	1/year	Calculation
TKN	XXX	Report	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Phosphorus	XXX	Report	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.01
Latitude 39º 47' 42.90" **Longitude** -78º 11' 21.04"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

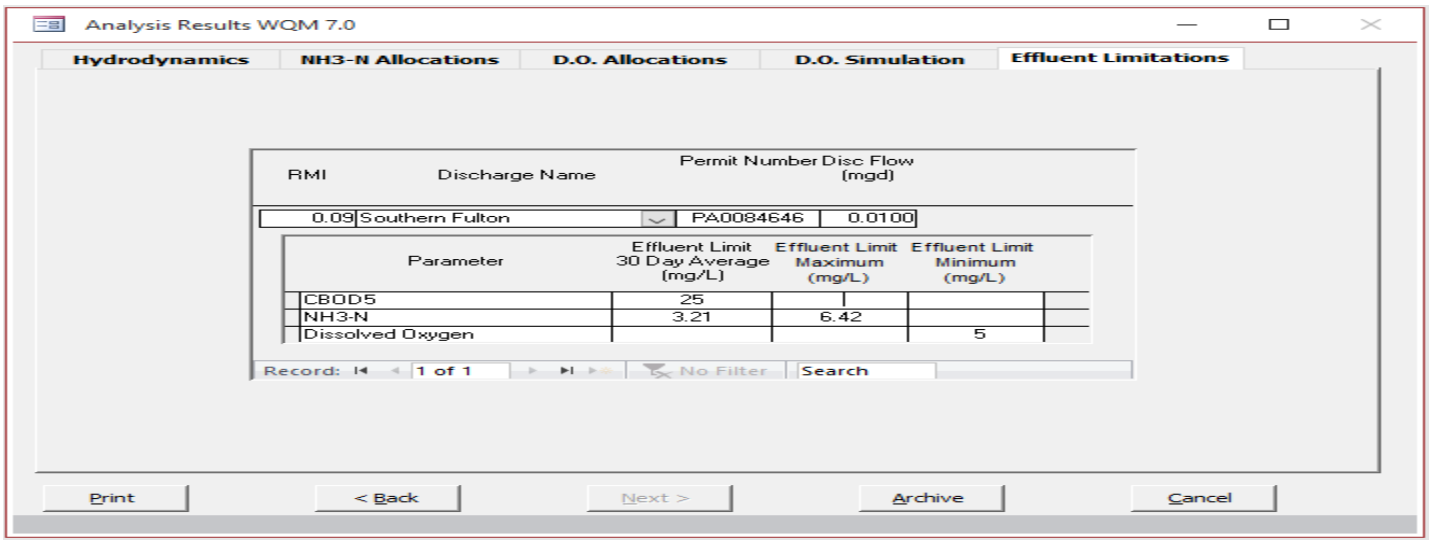
Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.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

Ammonia (NH_3-N):
NH_3-N calculations were first 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 computer model of the stream:

- Discharge pH = 7.0 (Default)
- Discharge Temperature = 20°C (Estimated)
- Stream pH = 7.0 (Default)
- Stream Temperature = 20ºC (Estimated for shaded TSF)
- Background NH_3-N = 0 (Default)



The model input data and results are attached. The printout of the WQM 7.0 output indicates that at a discharge of 0.010 MGD, limits of 3.21 (3.0) mg/L NH_3-N as a monthly average and 6.42 (6.0) mg/L NH_3-N instantaneous maximum are necessary to protect the aquatic life from toxicity effects for summer, to calculate winter limits based on a typical multiplier of 3.0 used by DEP. Therefore, the existing limits of 3.0 mg/L NH_3-N monthly average and 6.0 mg/L NH_3-N instantaneous maximum for summer are same and will place in the proposed permit. The facility's recent DMRs indicate that the facility has been consistently achieving concentrations below these limits.

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$):
The attached printout of the WQM 7.0 model indicates that a monthly average limit of 25.0 mg/L, or secondary treatment, is adequate to protect the water quality of the stream. Recent DMRs and inspection reports show that the facility has been consistently achieving concentrations well below this limit.

Dissolved Oxygen (D.O.):
A minimum D.O. of 5.0 mg/L is required per 25 Pa. Code § 93.7. This is consistent with the previous permit and current Department criteria.

Total Suspended Solids (TSS):
The existing limits of 30.0 mg/L average monthly 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 concentrations well under these limits.

pH:
The effluent discharge pH should remain above 6.0 and below 9.0 standard units according to 25 Pa. Code § 95.2(2).

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. 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/year will be included in the permit to be consistent with the recommendation from this SOP.

Chesapeake Bay Strategy:
The discharge of TN and TP from this facility is consistent with and covered under the Chesapeake Bay TMDL aggregate WLA for non-significant wastewater discharges.

This facility falls in Phase V of Pennsylvania's Chesapeake Bay Tributary Strategy Point Source Implementation Plan. At this time, the Department is not requiring a total maximum annual phosphorus or nitrogen loading cap.

The Supplement to Phase II Watershed Implementation Plan states the following:

"For Phase V sewage facilities with individual permits (average annual design flow on August 29, 2005 > 0.002 MGD and < 0.2 MGD), DEP will issue individual permits with monitoring and reporting for TN and TP throughout the permit term at a frequency no less than annually, unless 1) the facility has already conducted at least two years of nutrient monitoring and 2) a summary of the monitoring results are included in the next permit's fact sheet. If, however, Phase V facilities choose to expand, the renewed or amended permits will contain Cap Loads based on the lesser of a) existing TN/TP concentrations at existing average annual flow or b) 7,306 lbs/yr TN and 974 lbs/yr TP."

A 1/year "Monitor & Report" requirement for TN and TP will remain in the proposed permit.

Total Residual Chlorine (TRC):
Based on the attached TRC Excel Spreadsheet calculator, which uses the equations and calculations from the Department's May 1, 2003, Implementation Guidance for Total Residual Chlorine (ID No. 391-2000-015), the facility's discharge must meet a monthly average limit of 0.08 mg/L and an instantaneous maximum limit of 0.28 mg/L. Therefore, the existing TRC limits of 0.04 mg/L monthly average and 0.13 mg/L instantaneous maximum are more stringent and will remain in the proposed permit.

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.008	= Q stream (cfs)	0.5	= CV Daily
0.01	= 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 = 0.184	1.3.2.iii	WLA cfc = 0.172
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.069	5.1d	LTA_cfc = 0.100

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.084	AFC
		INST MAX LIMIT (mg/l) = 0.276	

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)**

Toxic:
This is a minor sewage facility receiving domestic wastewater only and the current application does not require sampling of toxic pollutants (or heavy metals) for those facilities with design flows less than 0.1 MGD. Therefore, no reasonable potential analysis for toxic pollutants has been performed for this permit renewal.

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.

303d LISTED STREAMS

This discharge is not located on a 303d listed stream segment.

Class A Wild Trout Fisheries

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

Additional Considerations

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

Monitoring Frequency and Sample Type
The facility currently is required to collect daily effluent grab samples for D.O., pH; and total residual chlorine; two-month effluent 8-hr composite samples of $CBOD_5$, and TSS; two-month effluent grab samples of fecal coliform; two-month influent 8-hr composite sample of ammonia-nitrogen; annually effluent 8-hr composite samples of TP, nitrate-nitrite as N, and total Kjeldahl Nitrogen; and annually effluent calculation samples of TN. Based on the best professional judgement of the author, the existing monitoring frequencies are sufficient and necessary. Therefore, the existing monitoring frequencies will remain the same as those specified in the proposed permit.

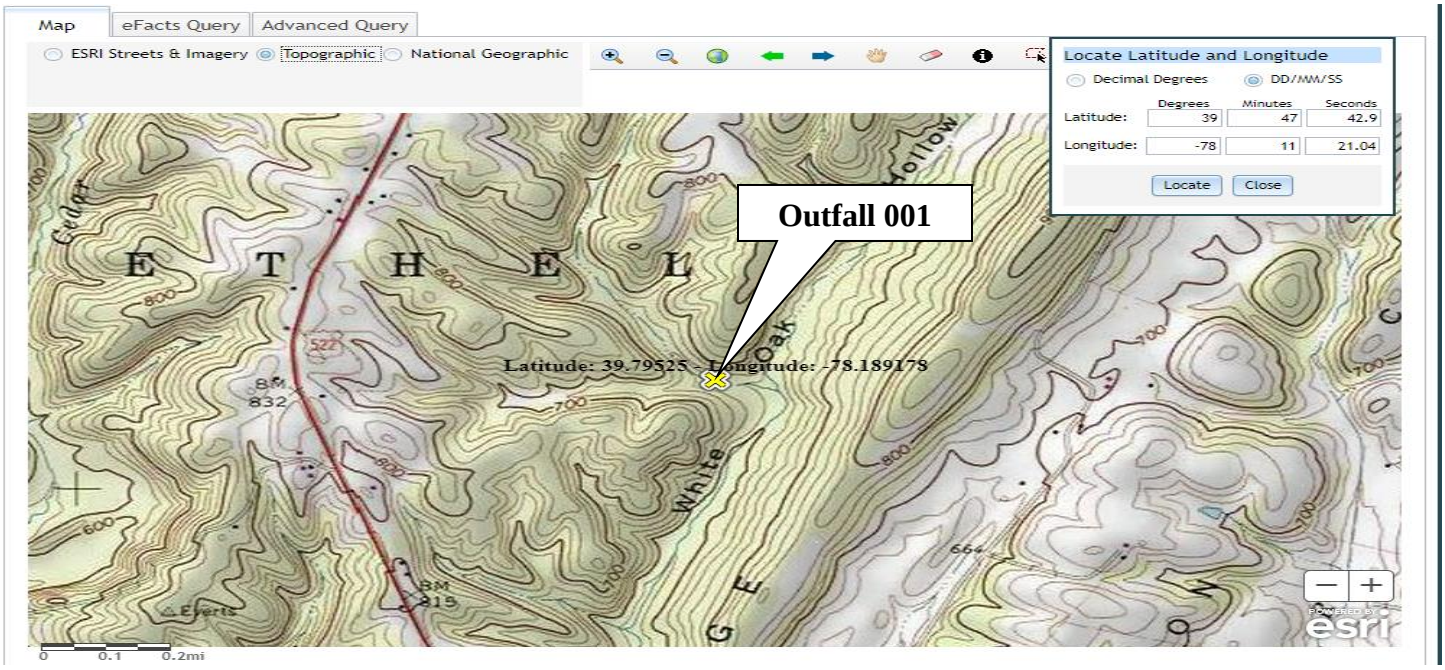
<u>WQM 7.0 Data</u>:

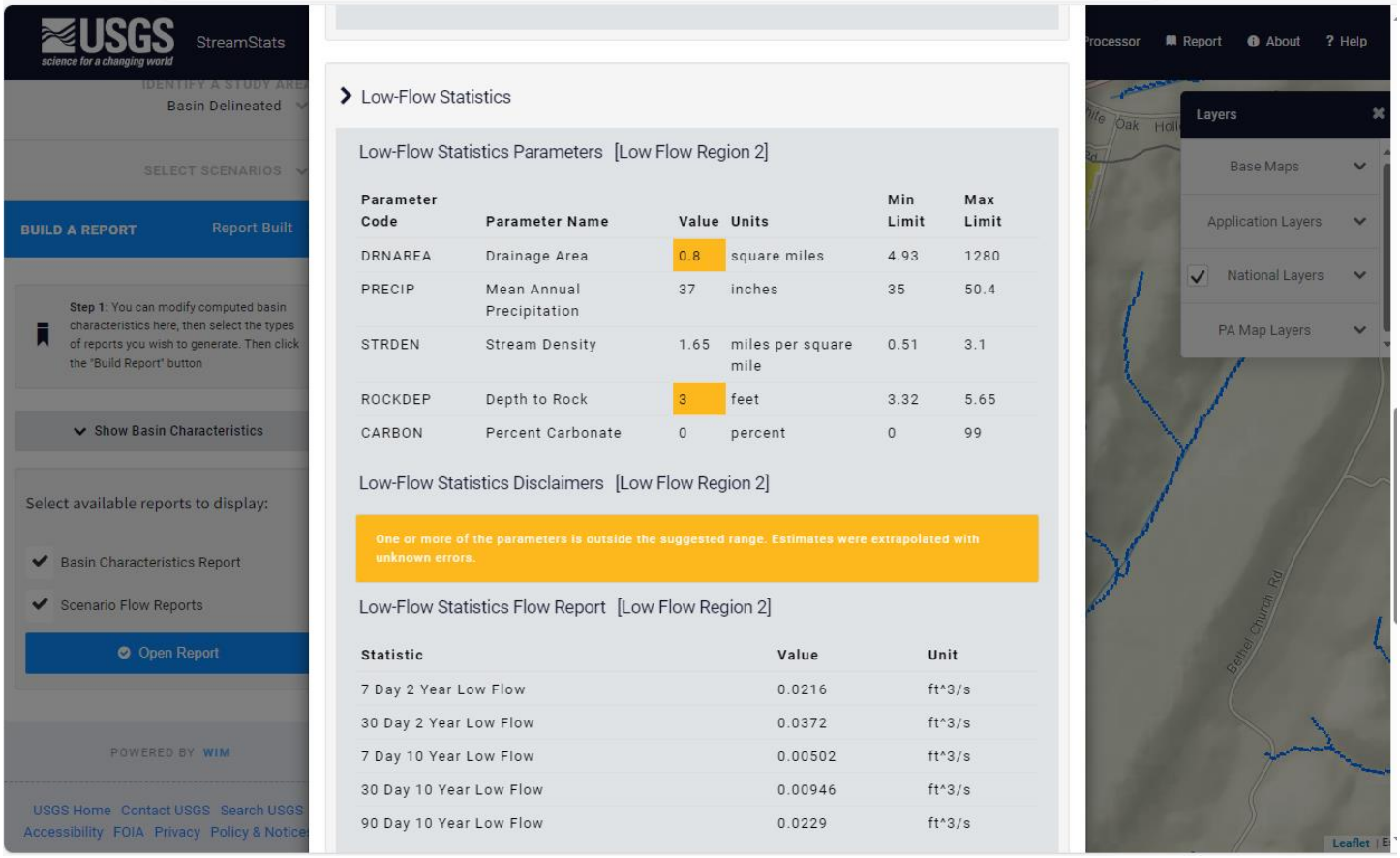
*	Discharge pH	=	7.0	(Default)
*	Discharge Temperature	=	20°C	(Estimated)
*	Stream pH	=	7.0	(Default)
*	Stream Temperature	=	20°C	(Estimated for shaded TSF)
*	Background NH_3-N	=	0	(Default)

There are no upstream discharges. Hence, the two nodes were used:

Node 1: Outfall 001 on UNT White Oak Run (60898)
Elevation: 630 ft (USGS National Map Viewer)
Drainage Area: 0.80 mi.^{2} (USGS PA StreamStats)
River Mile Index: 0.09 mile (PA DEP eMapPA)
Low Flow Yield: 0.01 cfs/mi.^{2}
Discharge Flow: 0.010 MGD

Node 2: Just before confluence with White Oak Run
Elevation: 615 ft (USGS National Map Viewer)
Drainage Area: 0.81 mi.^{2} (USGS PA StreamStats)
River Mile Index: 0.001 mile (PA DEP eMapPA)
Low Flow Yield: 0.01 cfs/mi.^{2}
Discharge Flow: 0.000 MGD




USGS
science for a changing world
StreamStats
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
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Low-Flow Statistics
Low-Flow Statistics Parameters [Low Flow Region 2]
Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit
DRNAREA | Drainage Area | 0.8 | square miles | 4.93 | 1280
PRECIP | Mean Annual Precipitation | 37 | inches | 35 | 50.4
STRDEN | Stream Density | 1.65 | miles per square mile | 0.51 | 3.1
ROCKDEP | Depth to Rock | 3 | feet | 3.32 | 5.65
CARBON | Percent Carbonate | 0 | percent | 0 | 99
Low-Flow Statistics Disclaimers [Low Flow Region 2]
One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.
Low-Flow Statistics Flow Report [Low Flow Region 2]
Statistic | Value | Unit
7 Day 2 Year Low Flow | 0.0216 | ft^3/s
30 Day 2 Year Low Flow | 0.0372 | ft^3/s
7 Day 10 Year Low Flow | 0.00502 | ft^3/s
30 Day 10 Year Low Flow | 0.00946 | ft^3/s
90 Day 10 Year Low Flow | 0.0229 | ft^3/s
Processor
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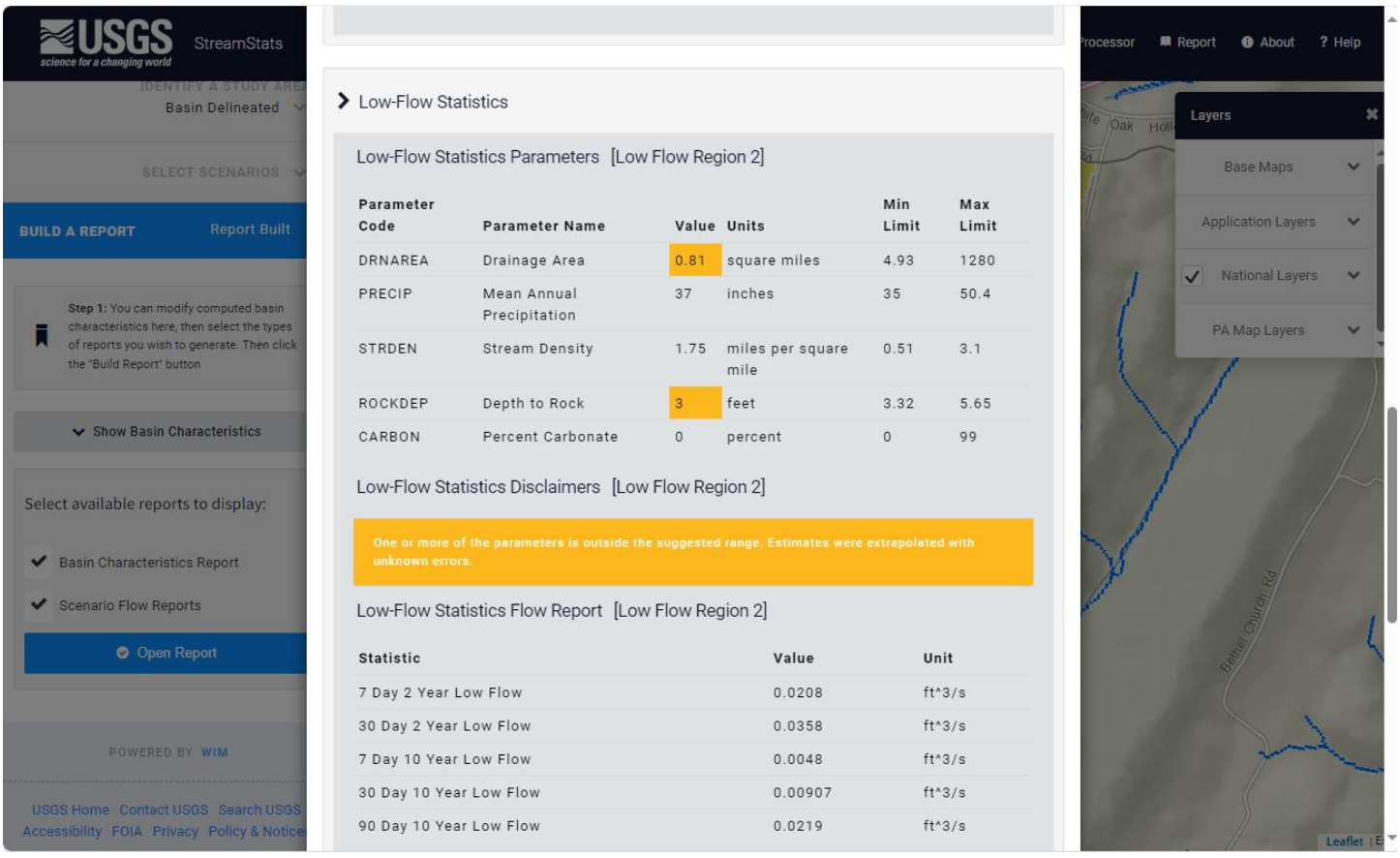
Application Layers
National Layers
PA Map Layers
Bethel Church Rd
Leaflet


USGS
science for a changing world
StreamStats
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
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Low-Flow Statistics
Low-Flow Statistics Parameters [Low Flow Region 2]
Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit
DRNAREA | Drainage Area | 0.81 | square miles | 4.93 | 1280
PRECIP | Mean Annual Precipitation | 37 | inches | 35 | 50.4
STRDEN | Stream Density | 1.75 | miles per square mile | 0.51 | 3.1
ROCKDEP | Depth to Rock | 3 | feet | 3.32 | 5.65
CARBON | Percent Carbonate | 0 | percent | 0 | 99
Low-Flow Statistics Disclaimers [Low Flow Region 2]
One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.
Low-Flow Statistics Flow Report [Low Flow Region 2]
Statistic | Value | Unit
7 Day 2 Year Low Flow | 0.0208 | ft^3/s
30 Day 2 Year Low Flow | 0.0358 | ft^3/s
7 Day 10 Year Low Flow | 0.0048 | ft^3/s
30 Day 10 Year Low Flow | 0.00907 | ft^3/s
90 Day 10 Year Low Flow | 0.0219 | ft^3/s
Processor
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Application Layers
National Layers
PA Map Layers
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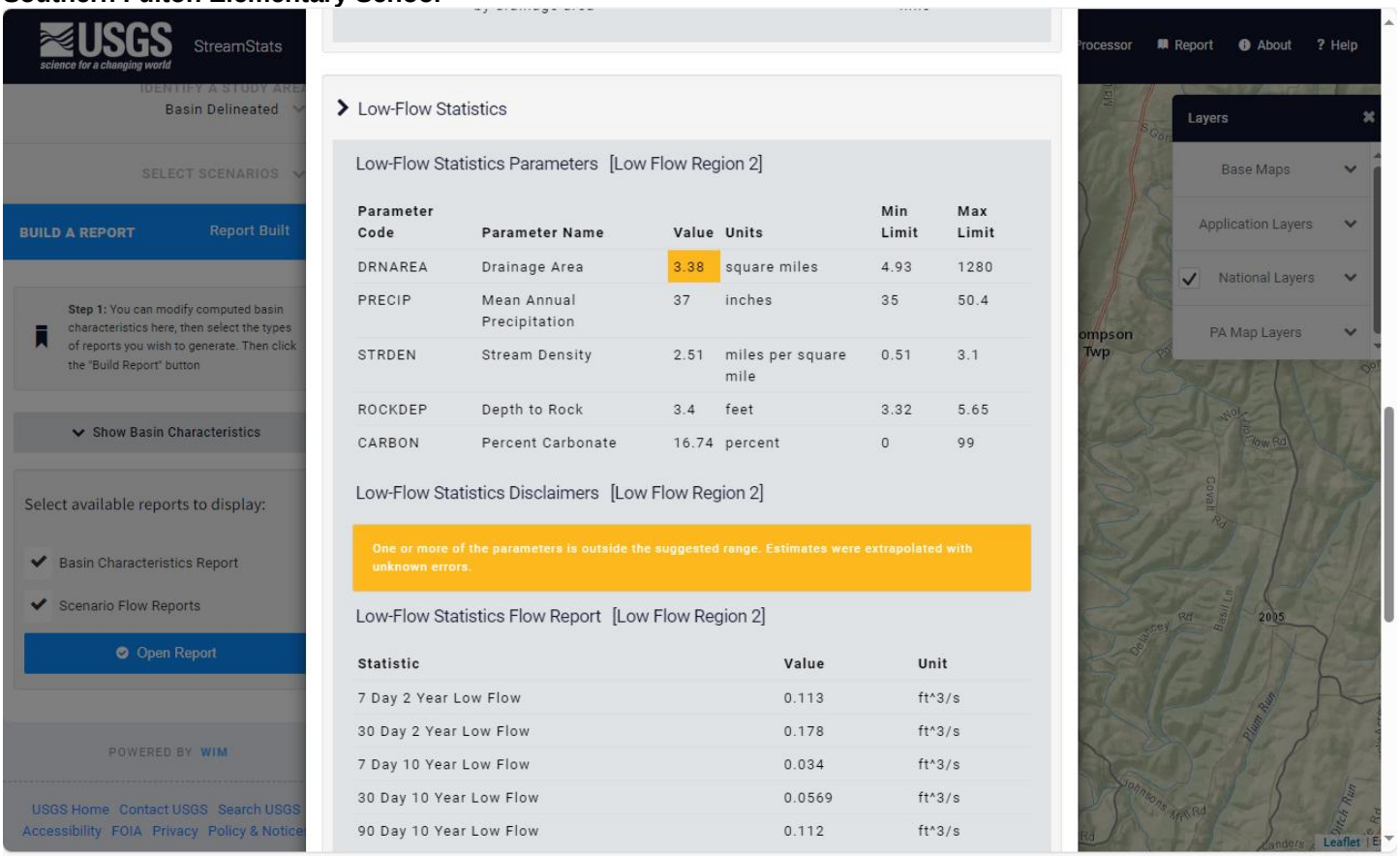
Leaflet


USGS
science for a changing world
StreamStats
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
Low-Flow Statistics
Low-Flow Statistics Parameters [Low Flow Region 2]
Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit
DRNAREA | Drainage Area | 3.38 | square miles | 4.93 | 1280
PRECIP | Mean Annual Precipitation | 37 | inches | 35 | 50.4
STRDEN | Stream Density | 2.51 | miles per square mile | 0.51 | 3.1
ROCKDEP | Depth to Rock | 3.4 | feet | 3.32 | 5.65
CARBON | Percent Carbonate | 16.74 | percent | 0 | 99
Low-Flow Statistics Disclaimers [Low Flow Region 2]
One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.
Low-Flow Statistics Flow Report [Low Flow Region 2]
Statistic | Value | Unit
7 Day 2 Year Low Flow | 0.113 | ft^3/s
30 Day 2 Year Low Flow | 0.178 | ft^3/s
7 Day 10 Year Low Flow | 0.034 | ft^3/s
30 Day 10 Year Low Flow | 0.0569 | ft^3/s
90 Day 10 Year Low Flow | 0.112 | ft^3/s
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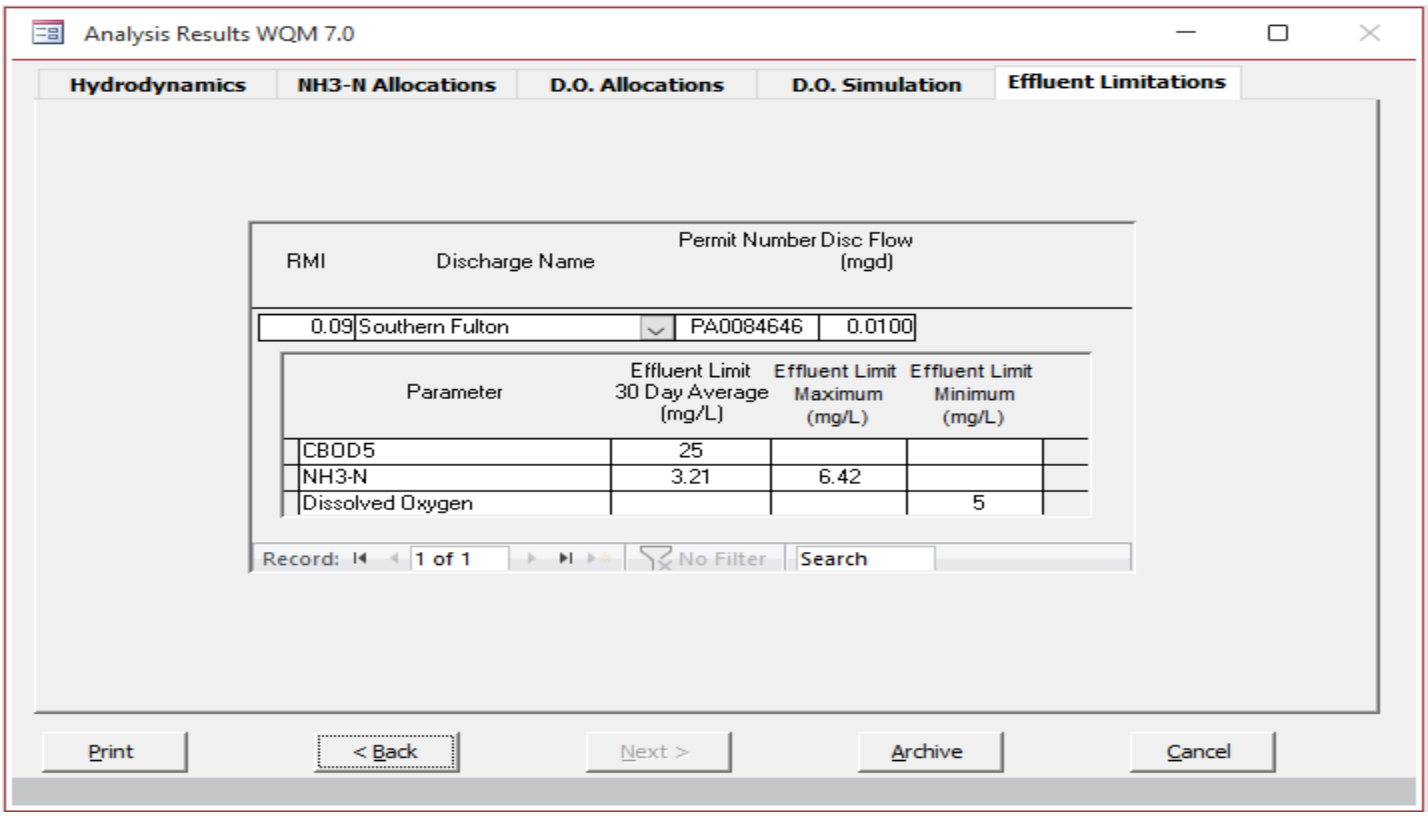
PA Map Layers
Leaflet


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)
0.09 | Southern Fulton | PA0084646 | 0.0100
Parameter | Effluent Limit 30 Day Average (mg/L) | Effluent Limit Maximum (mg/L) | Effluent Limit Minimum (mg/L)
CBOD5 | 25 | |
NH3-N | 3.21 | 6.42 |
Dissolved Oxygen | | | 5
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rptEffLimits

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
13B	60090	Trib 60090 to White Oak Run

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)
0.090	Southern Fulton	PA0084646	0.010	CBOD5	25		
				NH3-N	3.21	6.42	
				Dissolved Oxygen			5

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rpt_WLA

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
13B	60090	Trib 60090 to White Oak 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
0.090	Southern Fulton	16.76	22.31	16.76	22.31	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
0.090	Southern Fulton	1.69	3.21	1.69	3.21	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)		
0.09	Southern Fulton	25	25	3.21	3.21	5	5	0	0

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rptDOSim

WQM 7.0 D.O. Simulation

SWP Basin	Stream Code	Stream Name
13B	60090	Trib 60090 to White Oak Run

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.090	0.010	20.000	7.000
Reach Width (ft)	Reach Depth (ft)	Reach W/D Ratio	Reach Velocity (fps)
2.667	0.279	9.544	0.031
Reach CBOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
17.16	1.432	2.12	0.700
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
6.105	22.613	Owens	5
Reach Travel Time (days)			
0.173			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.017	16.74	2.09	6.48
0.035	16.33	2.07	6.74
0.052	15.93	2.04	6.93
0.069	15.54	2.02	7.09
0.086	15.16	1.99	7.19
0.104	14.79	1.97	7.27
0.121	14.43	1.95	7.35
0.138	14.08	1.92	7.41
0.155	13.73	1.90	7.46
0.173	13.40	1.88	7.51

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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
13 B	60898	Trib 60898 to White Oak Run

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc. Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	WD Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
0.090	0.01	0.00	0.01	.0155	0.03192	.279	2.67	9.54	0.03	0.173	20.00	7.00
Q1-10 Flow												
0.090	0.01	0.00	0.01	.0155	0.03192	NA	NA	NA	0.03	0.166	20.00	7.00
Q30-10 Flow												
0.090	0.01	0.00	0.01	.0155	0.03192	NA	NA	NA	0.03	0.162	20.00	7.00

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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
13B	60898	Trib 60898 to White Oak Run	0.090	630.00	0.60	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	0.010	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
Southern Fulton	PA0084646	0.0100	0.0100	0.0100	0.000	20.00	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

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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
13B	60898	Trib 60898 to White Oak Run	0.001	615.00	0.61	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	0.010	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
Southern Fulton	PA0084646	0.0000	0.0000	0.0000	0.000	20.00	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

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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	Average Weekly	Minimum	Average Monthly	Maximum	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
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.04	XXX	0.13	1/day	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50.0	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30.0	XXX	60.0	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10,000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	9.0	XXX	18.0	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	3.0	XXX	6.0	2/month	8-Hr Composite
TKN	XXX	Report Total Annual	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Nitrate-Nitrite	XXX	Report Total Annual	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Nitrogen	XXX	Report Total Annual	XXX	Report Annl Avg	XXX	XXX	1/year	Calculation
Total Phosphorus	XXX	Report Total Annual	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite

Compliance Sampling Location:

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: BCW-PMT-033
☐	Other: