Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0081884**
Facility Type	**Non-Municipal**	APS ID	**311055**
Major / Minor	**Minor**	Authorization ID	**1516077**

Applicant and Facility Information

Applicant Name	**Cuttin Co. LLC**	Facility Name	**Cuttin Co.**
Applicant Address	25 Sandoe Road	Facility Address	32 W Aster Way
	Gettysburg, PA 17325-7561		Gettysburg, PA 17325-6059
Applicant Contact	Victor Fiorino	Facility Contact	Troy Martin
Applicant Phone	(717) 337-1196	Facility Phone	(717) 420-7331
Client ID	139947	Site ID	451147
Ch 94 Load Status	Not Overloaded	Municipality	Straban Township
Connection Status	No Limitations	County	Adams
Date Application Received	February 13, 2025	EPA Waived?	Yes
Date Application Accepted	February 18, 2025	If No, Reason	

Purpose of Application: NPDES permit renewal.

Summary of Review

Keller Engineers Inc. on behalf of the Cuttin Company LLC applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit. The permit was last reissued on June 11, 2020, and became effective on July 1, 2020. The permit expired on June 30, 2025.

The average annual design flow and hydraulic design capacity is 0.010 MGD.

The WQM No. 0187401 amendment was issued on 1/19/2000.

Sludge use and disposal description and location(s): N/A because sludge is hauled by the facility's contractor.

Changes from the previous permit: The E. Coli. monitoring and report requirements will add to the permit. The Total Copper monitoring and report average quarterly will remove from the proposed permit.

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	May 16, 2025
X		*Maria D. Bebenek for* Daniel W. Martin, P.E. / Environmental Engineer Manager	June 30, 2025

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.01
Latitude	39º 53' 33.18"	Longitude	-77º 10' 48.70"
Quad Name	Biglerville	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Beaverdam Creek (WWF)	Stream Code	9013
NHD Com ID	57473073	RMI	0.55
Drainage Area	0.11 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)	544	Slope (ft/ft)	
Watershed No.	7-F	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Siltation		
Source(s) of Impairment	Agriculture		
TMDL Status	Final	Name	Beaverdam Creek TMDL
Nearest Downstream Public Water Supply Intake	PP & L Bruner Island		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	54.0 miles	Distance from Outfall (mi)	Approximate 60 miles

Changes Since Last Permit Issuance:

Drainage Area
The discharge is to UNT to Beaverdam Creek at RMI 0.55 mile. A drainage area upstream of the discharge is estimated to be 0.11 sq.mi, according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Streamflow
According to StreamStats, the gage station No. 1574000 on West Conewago Creek has a Q_{7-10} of 39.2 cfs and a drainage area of 512 mi.^{2}, which is near Manchester, PA. The Q_{7-10} of discharge was calculated as follows:

Low Flow Yield = $Q_{7\text{-}10gage}$ / Drainage Area$_{gage}$ = 39.2 cfs / 512 mi.^{2} = 0.08 cfs/mi.^{2}
$Q_{7\text{-}10discharge}$ = 0.08 cfs/mi.^{2} * Drainage Area$_{discharge}$ = 0.08 cfs/mi.^{2} * 0.11 mi.^{2} = 0.009 cfs
$Q_{30\text{-}10}$ = 1.36 * $Q_{7\text{-}10discharge}$ = 1.36 * 0.009 cfs = 0.01 cfs
$Q_{1\text{-}10}$ = 0.64 * $Q_{7\text{-}10discharge}$ = 0.64 * 0.009 cfs = 0.006 cfs

UNT to Beaverdam Creek to West Conewago Creek
25 Pa Code 93.9o classifies UNT to Beaverdam Creek to West Conewago Creek as Warm-Water Fishes (WWF) & Migratory Fishes (MF) surface water. Based on the 2024 Integrated Report, UNT to Beaverdam Creek, is impaired for aquatic life due to siltation from agriculture and impaired for recreational purposes due to pathogens from an unknown source. A TMDL currently does not exist for this stream segment, therefore, no TMDL has been taken into consideration during this review.

Public Water Supply Intake
The nearest downstream public water supply intake is the PP & L Bruner Island on the Susquehanna River, located approximately 60 miles from the discharge. Based on the discharge from the discharge point, the discharge is not expected to impact water supply standards.

Treatment Facility Summary				

Treatment Facility Name: Cuttin Company STP (Formerly Biggerstaff)

WQM Permit No.	Issuance Date
0187401 A-1	1/19/2000

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Aerated Lagoon	Hypochlorite	0.01

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.01		Not Overloaded		

Changes Since Last Permit Issuance:

Other Comments:
The WWTP train is as follows:

Primary Solids removal (1) ⇒ Lift Station ⇒ Primary Lagoon ⇒ Primary Wetland Filter Bed (2) ⇒ Secondary Lagoon ⇒ Secondary Wetland Filter Bed (2) ⇒ Chlorine Contact Tank (1) ⇒ Discharge (outfall)

The system incorporates chemical addition in the form of chlorine for disinfection.

Industrial/Commercial Users:
The permit application indicated there is no industrial/commercial contributor to the treatment plant.

Biosolids:
Liquid Biosolids are hauled off site by facility's contractor.

Compliance History	
Summary of DMRs:	DMRs reported last 12 months are summarized in the next page.
Summary of Inspections:	1/12/2023: Mr. Hoy, DEP WQS, conducted a compliance evaluation inspection. The discharge was clear. The field test results indicated in permit limits. DEP's Requested to collecting 8-hour composite samples are required by Part A of Permit. DEP's Recommends revising the 9/12/2022 Copper result from 0.15 mg/L to 0.005 mg/L, submit the laboratories and date to have a complete daily effluent supplemental report each month, and use a NIST thermometer for the storage refrigerator.
Other Comments:	There are currently no open violations associated with the permittee or the facility.

Other Comments:

Compliance History

DMR Data for Outfall 001 (from April 1, 2024 to March 31, 2025)

Parameter	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24
Flow (MGD) Average Monthly	0.0028	0.0029	0.0011	0.0021	0.0013	0.0011	0.0016	0.0051	0.0013	0.0019	0.00257	0.00401
Flow (MGD) Daily Maximum	0.018	0.0097	0.0026	0.011	0.0025	0.0038	0.0047	0.0511	0.0065	0.0079	0.0076	0.02106
pH (S.U.) Instantaneous Minimum	7.1	7.2	7.0	7.2	7.5	7.5	7.2	7.1	7.4	7.1	7.0	7.0
pH (S.U.) Instantaneous Maximum	7.6	7.6	7.6	7.7	7.8	7.8	7.8	7.8	7.8	7.7	7.6	7.5
DO (mg/L) Instantaneous Minimum	8.4	9.8	9.4	8.0	9.1	8.0	7.8	7.6	7.3	7.4	7.6	8.3
TRC (mg/L) Average Monthly	0.06	0.09	0.14	0.10	0.08	0.17	0.14	0.13	0.11	0.11	0.07	0.08
TRC (mg/L) Instantaneous Maximum	0.24	0.25	0.29	0.25	0.23	0.38	0.18	0.31	0.26	0.36	0.25	0.20
CBOD5 (mg/L) Average Monthly	< 2.0	< 3.0	< 2.0	< 2.0	< 2.4	< 2.0	< 2.0	< 3.0	< 2.0	3.0	< 2.0	< 2.0
TSS (mg/L) Average Monthly	2.0	9	2.0	2.0	2.0	3.0	2	1.0	2.0	1.0	1.0	5.0
Fecal Coliform (No./100 ml) Geometric Mean	< 1.0	< 5.0	< 1.0	< 1.0	< 7.0	< 1.0	< 1.0	21	< 1.0	< 4.0	< 5.0	< 1.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 1.0	63	< 1.0	1.0	48	< 1.0	1.0	435	< 1.0	15	29	< 1.0
Nitrate-Nitrite (mg/L) Annual Average				< 1.37								
Nitrate-Nitrite (lbs) Total Annual				< 4.0								
Total Nitrogen (mg/L) Annual Average				< 2.05								
Total Nitrogen (lbs) Total Annual				< 6.0								
Ammonia (mg/L) Average Monthly	2.5	1.4	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

TKN (mg/L) Annual Average				0.68								
TKN (lbs) Total Annual				2.0								
Total Phosphorus (mg/L) Annual Average				2.60								
Total Phosphorus (lbs) Total Annual				9.0								
Total Copper (mg/L) Average Quarterly	0.008			0.011			0.007			< 0.005		

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	Maximum	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	0.21	XXX	0.68	1/day	Grab
$CBOD_5$	XXX	XXX	XXX	10.0	XXX	20.0	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	10.0	XXX	20.0	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	1.5	XXX	3.0	2/month	8-Hr Composite
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	4.5	XXX	9.0	2/month	8-Hr Composite
Total Kjeldahl Nitrogen	XXX	Report Total Annual	XXX	Report Annl Avg	XXX	XXX	2/year	8-Hr Composite
Nitrate-Nitrite as N	XXX	Report Total Annual	XXX	Report Annl Avg	XXX	XXX	2/year	8-Hr Composite
Total Nitrogen	XXX	Report Total Annual	XXX	Report Annl Avg	XXX	XXX	2/year	Calculation
Total Phosphorus	XXX	Report Total Annual	XXX	Report Annl Avg	XXX	XXX	2/year	8-Hr Composite
Copper, Total	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	8-Hr Composite

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.01
Latitude 39º 53' 33.18" **Longitude** -77º 10' 48.70"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

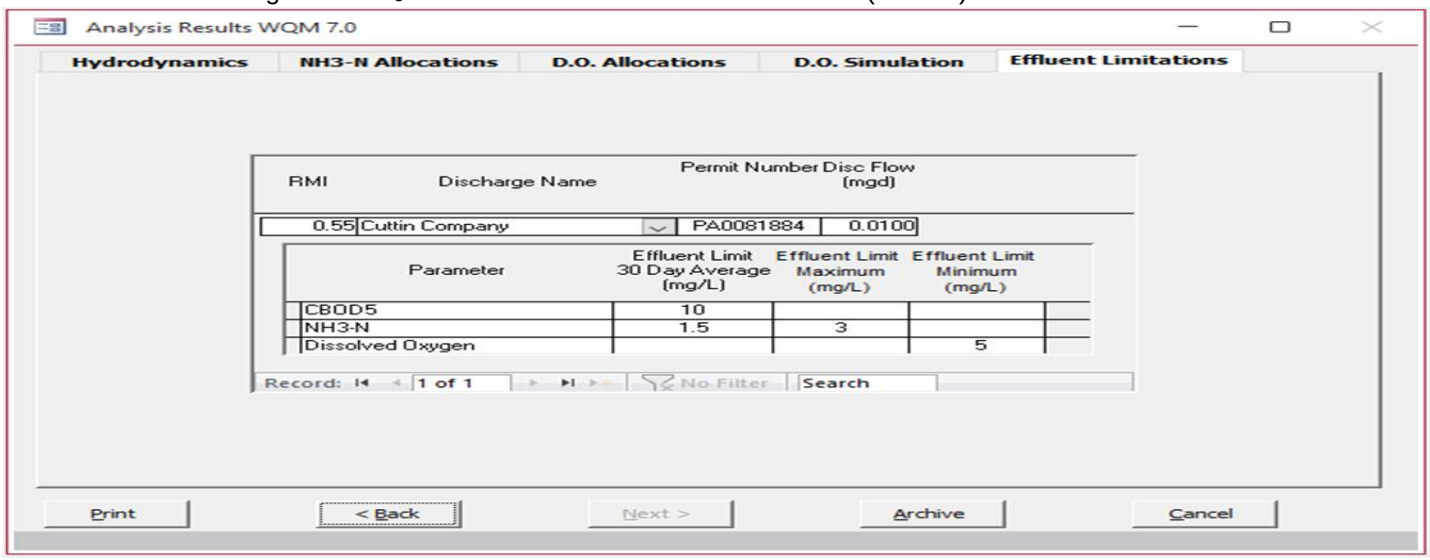
Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	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 = 25°C (Default)
- Stream pH = 7.0 (Default)
- Stream Temperature = 20ºC (Default)
- 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 0.01 MGD, limits of 1.5 mg/L NH_3-N as a monthly average and 3.0 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 used by DEP. The current NH_3-N limits of 1.5 mg/L monthly average and 3.0 mg/L IMAX for summer will remain in the proposed permit. Additionally, the facility's recent DMRs indicate that the facility has been consistently achieving concentrations under these limits.

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)
The attached computer printout of the WQM 7.0 stream model indicates that a monthly average limit of 10.0 mg/L, or secondary treatment, is adequate to protect the water quality of the stream. The existing limits of 10.0 mg/L monthly average and 20.0 mg/L instantaneous maximum are same and will remain in the proposed permit due to the stream classification as a High-Quality Cold-Water Fishery. Recent DMRs and inspection reports show that the facility has been consistently achieving these limits.

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.

pH
The effluent discharge pH should remain above 6 and below 9 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 (average monthly) 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 (average monthly) and an instantaneous maximum not greater than 10,000/100 ml, respectively.

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.

Total Suspended Solids (TSS)
The more stringent existing limits of 10.0 mg/L average monthly and 20.0 mg/L instantaneous maximum will remain in the proposed permit due to the stream classification as a High-Quality Cold-Water Fishery. Past DMRs and inspection reports show that the facility has been consistently achieving these limits.

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 0.09 mg/L and an instantaneous maximum limit of 0.3 mg/L.

Due to the fact that the point of first use is approximately 1000 feet downstream of the outfall, the limits may be relaxed slightly due to the likelihood of significant chlorine decay due to evaporation, infiltration, and the presence of organic matter in the flow path up to the point of first use. According to modeling performed by WQM 7.0 the travel time in dry conditions and at maximum discharge flow is fairly lengthy, at 0.256 days. Photos taken for the 2001 protection report support the assumption of a relatively slow flow and the presence of significant organic matter. Heavy vegetation as well as a cattle grazing area in the flow path were observed.

There appears to be limited available literature relating to the calculation of TRC decay in a dry stream. However, a web-based review did reveal that a rough approximation of TRC decay may be obtained via the following equation:

$C_o = C_d e^{-kt}$ where,
k = 20/day (default TRC decay rate)
C_o = TRC concentration required at point of first use (mg/L)
t = time of travel from outfall to point of first use (days)
C_d = TRC concentration required at discharge point (mg/L)

The TRC decay rate constant of 20/day is recommended in EPA's "Technical Guidance Manual for Performing Wasteload Allocations; Book 2, Chapter 3, Toxic Substances" June 1984, Appendix D. This manual is cited in recent wasteload analysis procedures for both the states of Utah and Iowa. The November 2010 draft version of "Iowa Surface Water Quality Standards Implementation (WLA Procedure)" recommends the use of the aforementioned decay rate specifically for situations with zero background flow (i.e., dry stream channels).

Utilizing C_o = 0.05 mg/L and t = 0.256 days for the first-order decay equation above yields:

$$C_d = C_o/(e^{-kt}) = 0.05 \text{ mg/L} / (e^{(-20/d)(0.256d)}) = 8.4 \text{ mg/L}$$

The above approximation illustrates very large amounts of decay occurring along the 1000 ft reach, implying that the existing TRC limits should be sufficient. Via best professional judgment, the existing limits of 0.21 mg/L and 0.68 mg/L will remain in place. Recent DMR data indicates that the facility has been consistently achieving these limits.

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.009	= 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 = 0.205	1.3.2.iii	WLA cfc = 0.192
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.076	5.1d	LTA_cfc = 0.112

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.094	AFC
		INST MAX LIMIT (mg/l) = 0.307	

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. Review of the permit application revealed no toxic parameters of concern. The application states that there are no industrial / commercial wastewater contributions. Therefore, the Total Copper monitoring and report average quarterly will remove from the proposed permit.

Chesapeake Bay Strategy

According to DEP's Chesapeake Bay Phase II Watershed Implementation Plan (WIP) Wastewater Supplement, this facility is considered a phase 5 non-significant sewage discharger with design flow less than 0.2 MGD but greater than 0.002 MGD. In general, DEP will issue permits for all phase 5 facilities with monitoring and reporting for Total Nitrogen (TN) and Total Phosphorus (TP) throughout the permit term at a frequency no less than annually. Furthermore, DEP's SOP No. BPNPSM-PMT-033 states that in general, at a minimum, monitoring for TN and TP should be included in new and reissued permits for sewage discharges with design flows > 2,000 gpd. At this time, the Department is not requiring a total maximum annual nitrogen or phosphorus loading cap. This plant, classified as a phase 5, to monitor and report TKN, Nitrate-Nitrite as N, TN and TP two time a year will remain in the proposed permit.

Local Total Maximum Daily Loading (TMDL)
The subject facility discharges into the Beaverdam Creek TMDL. Beaverdam Creek is a tributary of the Susquehanna River in Adams County, South Central Pennsylvania (PA). A Total Maximum Daily Load (TMDL) for sediment was developed to address impairments noted in Pennsylvania's 2008 Section 303(d) and Integrated Lists. The impairments were documented during biological surveys of the aquatic life present in the watershed (6/06/2006). Excessive siltation resulting from agricultural activities has been identified as the cause of these impairments in the basin.

The existing sediment loading in the Beaverdam Creek Watershed is 1,289,291 pounds per year (3,532 pounds per day). Based on a comparison to a similar, unimpaired watershed, Little Conewago Creek, the maximum sediment loading that should still allow water quality objectives to be met in the Beaverdam Creek Watershed is 1,111,570 pounds per year (3,045 pounds per day).

The waste load allocation (WLA) portion of the TMDL equation is the total loading of a pollutant that is assigned to point sources. There are two NPDES permitted discharges in the Beaverdam Creek Watershed and a bulk reserve allocation of 1.0% of the TMDL to account for the dynamic nature of permit activity. The permit limit for total suspended solids (TSS) for the Cuttin Company facility is 10 mg/L (monthly average) and a loading rate of 304.41 lbs/yr which is prescribed by the TMDL for this discharge.

Total Phosphorus
The previous protection report did not apply phosphorus limits for this facility based on the following method. This will remain in the proposed permit.

The phosphorus load to the lower Susquehanna River is:

10 mg/L x 0.010 MGD x 8.34 = 0.83 lbs/day

This load represents 0.02% (0.83 lbs/day / 3,814 lbs/day x 100%) of the total estimated load to the lower Susquehanna River, which is well below the minimum requirement of 0.25% required for the establishment of phosphorus limits.

Additional Consideration

Flow Monitoring
The requirement to monitor the volume of effluent will remain in the draft 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., TRC, and pH; bi-monthly effluent grab samples of $CBOD_5$, TSS, ammonia-nitrogen, and fecal coliform; annually effluent grab samples of TP; 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 renewal permit monitoring frequencies will remain the same as those specified in the existing permit.

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
eMap PA lists UNT 09013 as impaired for siltation due to agriculture. The receiving waters are included in "Beaverdam Creek TMDL," which was finalized on July 29, 2011. The TMDL lists a wasteload allocation for TSS only, allocating 304.41 lbs/yr based on the existing monthly average limit of 10 mg/L. A TSS reduction from the current limit is not prescribed.

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

WQM 7.0

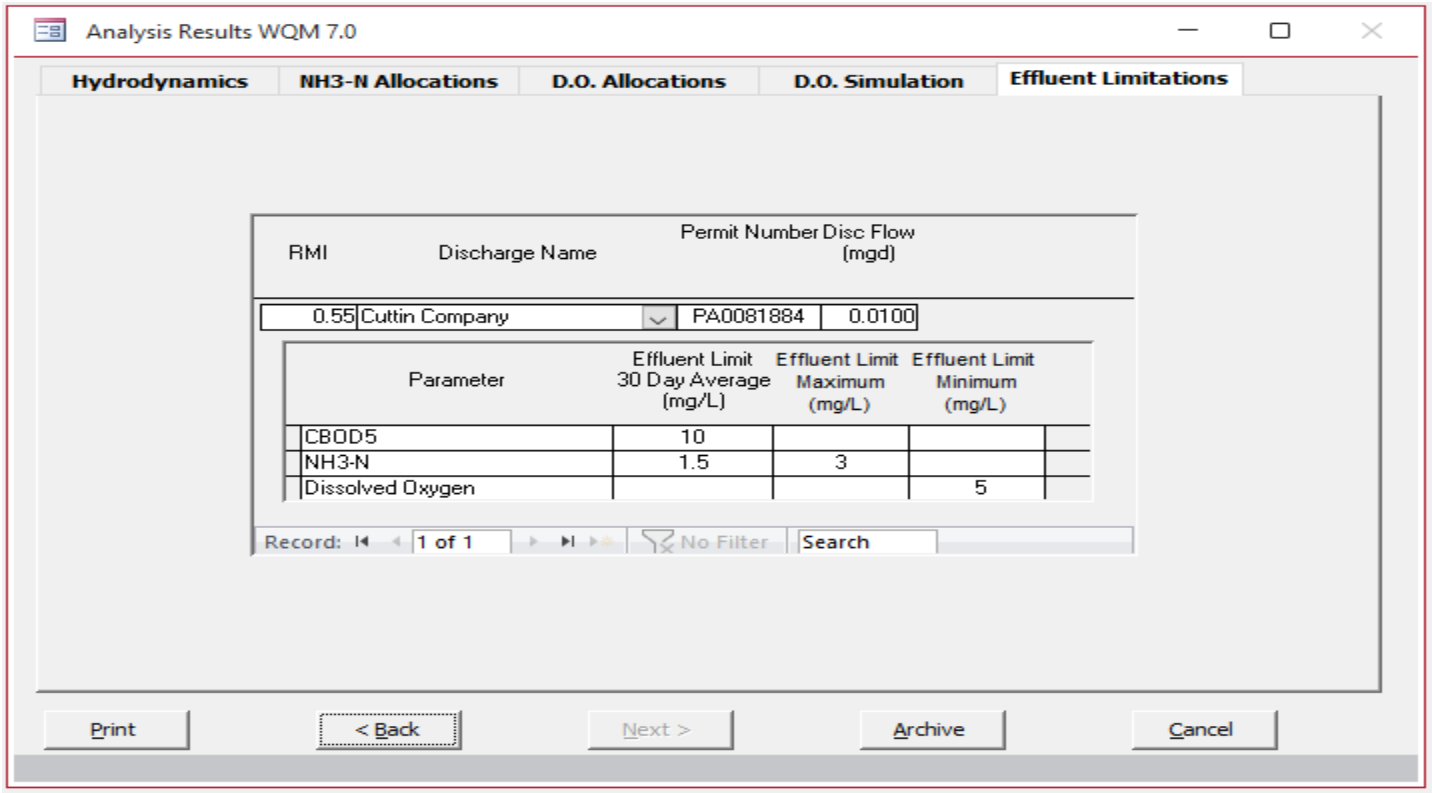
*	Discharge pH	=	7.0	(Default)
*	Discharge Temperature	=	25°C	(Default)
*	Stream pH	=	7.0	(Default)
*	Stream Temperature	=	20°C	(Default)
*	Background NH_3-N	=	0	(Default)

Node 1: Outfall 001 (9013)

Elevation:	544 ft (USGS National Map Viewer)
Drainage Area:	0.11 $mi.^2$ (USGS PA StreamStats)
River Mile Index:	0.55 mile (PA DEP eMapPA)
Low Flow Yield:	0.08 $cfs/mi.^2$
Discharge Flow:	0.01 MGD

Node 2: On UNT (9013) just before Trib. 8990

Elevation:	520 ft (USGS National Map Viewer)
Drainage Area:	0.23 $mi.^2$ (USGS PA StreamStats)
River Mile Index:	0.001 mile (PA DEP eMapPA)
Low Flow Yield:	0.08 $cfs/mi.^2$
Discharge Flow:	0.000 MGD



rptEffLimits

WQM 7.0 Effluent Limits

SWP Basin: 07F | Stream Code: 9013 | Stream Name: Trib 09013 to Beaverdam Creek

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl Limit 30-day Ave. (mg/L)	Effl Limit Maximum (mg/L)	Effl Limit Minimum (mg/L)
0.550	Cuttin Company	PA0081884	0.010	CBODS	10		
				NH3-N	1.5	3	
				Dissolved Oxygen			5

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rpt_WLA

WQM 7.0 Wasteload Allocations

SWP Basin: 07F | Stream Code: 9013 | Stream Name: Trib 09013 to Beaverdam 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
0.550	Cuttin Company	12.37	3	12.37	3	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
0.550	Cuttin Company	1.37	1.5	1.37	1.5	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBODS Baseline (mg/L)	CBODS Multiple (mg/L)	NH3-N Baseline (mg/L)	NH3-N Multiple (mg/L)	Dissolved Oxygen Baseline (mg/L)	Dissolved Oxygen Multiple (mg/L)	Critical Reach	Percent Reduction
0.55	Cuttin Company	10	10	1.5	1.5	5	5	0	0

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rptDOSim

WQM 7.0 D.O.Simulation

SWP Basin: 07F | Stream Code: 9013 | Stream Name: Trib 09013 to Beaverdam Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.550	0.010	23.167	7.000
Reach Width (ft)	Reach Depth (ft)	Reach W/D Ratio	Reach Velocity (fps)
1.833	0.298	6.142	0.044
Reach CBODS (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
7.10	1.220	0.96	0.895
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
6.176	27.192	Owens	5
Reach Travel Time (days)			
0.756			

Subreach Results

Trav Time (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.076	6.36	0.89	7.76
0.151	5.75	0.84	7.76
0.227	5.15	0.78	7.76
0.302	4.60	0.73	7.76
0.378	4.10	0.68	7.76
0.454	3.71	0.64	7.76
0.529	3.36	0.60	7.76
0.605	3.02	0.56	7.76
0.680	2.72	0.52	7.76
0.756	2.46	0.49	7.76

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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	9013	Trib 09013 to Beaverdam Creek

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												
0.550	0.01	0.00	0.01	.0155	0.00826	.298	1.83	6.14	0.01	0.756	23.19	7.00
Q1-10 Flow												
0.550	0.01	0.00	0.01	.0155	0.00826	NA	NA	NA	0.01	0.818	23.67	7.00
Q30-10 Flow												
0.550	0.01	0.00	0.01	.0155	0.00826	NA	NA	NA	0.05	0.706	22.82	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
07F	9013	Trib 09013 to Beaverdam Creek	0.550	544.00	0.11	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	0.000	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
Cuttin Company	PA0081884	0.0100	0.0100	0.0100	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	10.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	1.50	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
07F	9013	Trib 09013 to Beaverdam Creek	0.001	520.00	0.23	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	0.000	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
Cuttin Company	PA0081884	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

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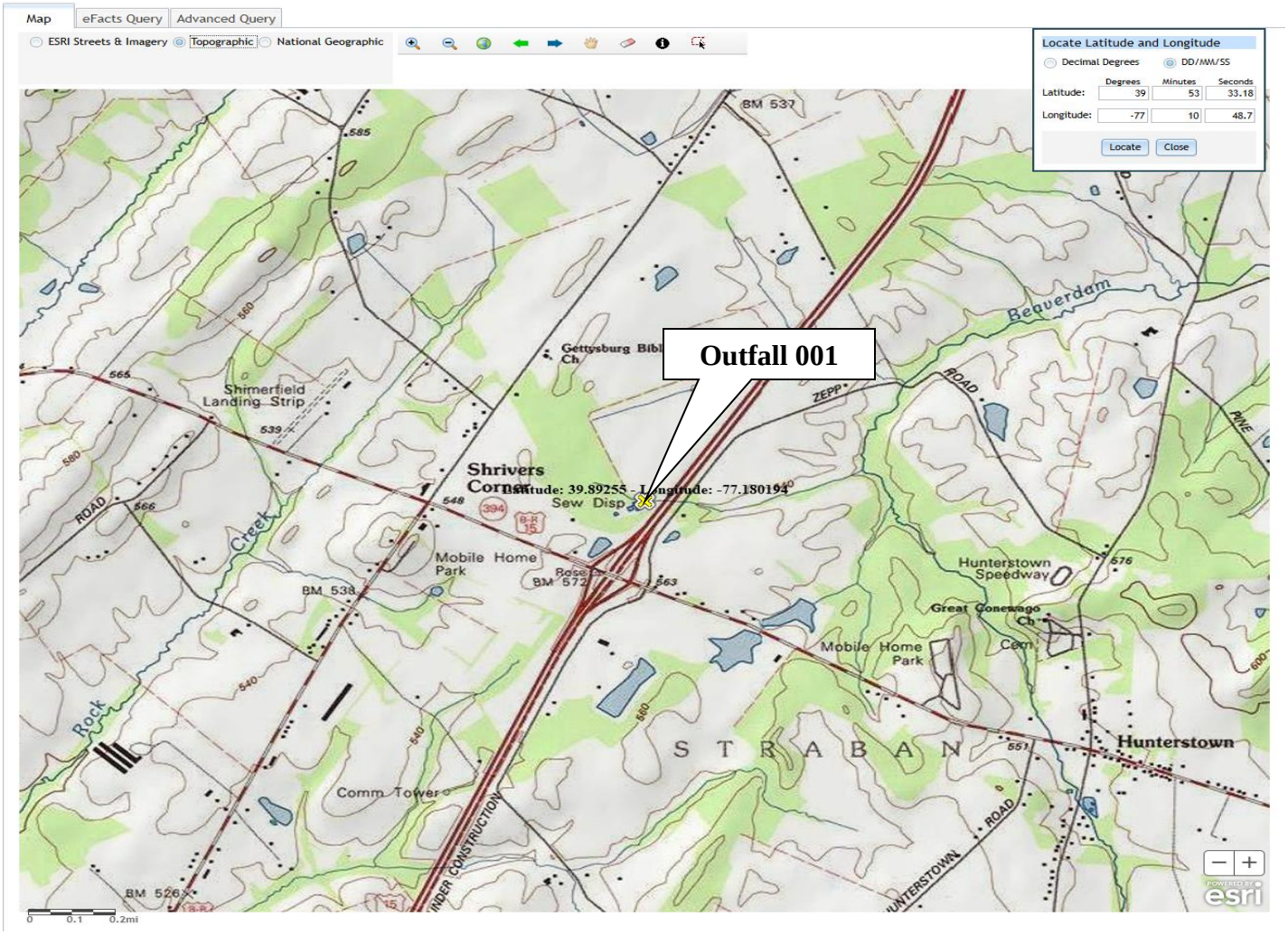
Proposed Effluent Limitations and Monitoring Requirements

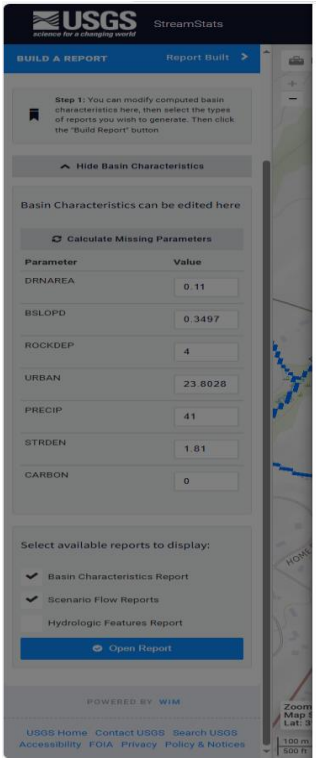
The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

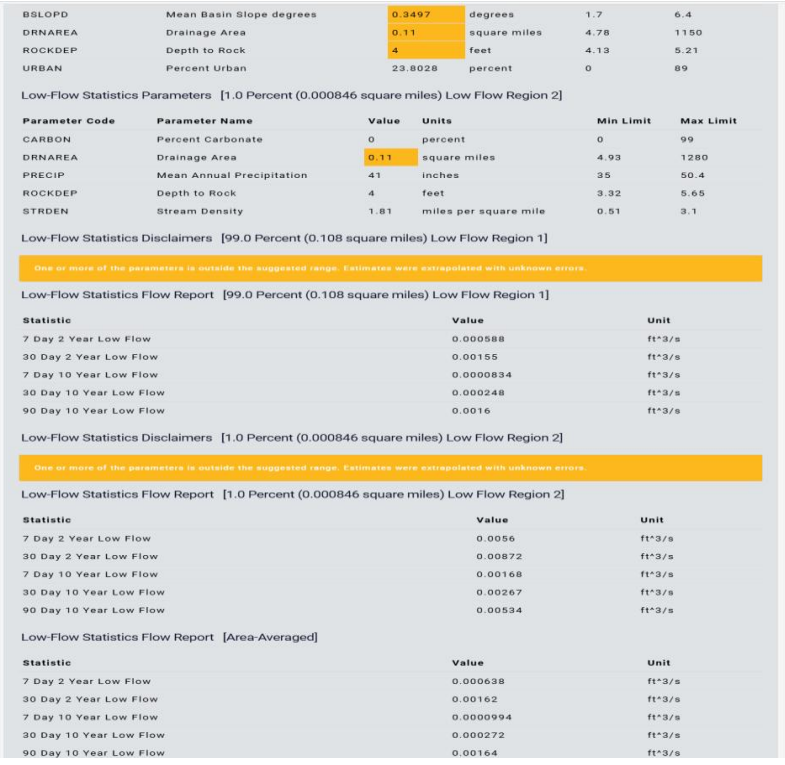
Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

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
D.O.	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.21	XXX	0.68	1/day	Grab
$CBOD_5$	XXX	XXX	XXX	10.0	XXX	20.0	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	10.0	XXX	20.0	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 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	4.5	XXX	9.0	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	1.5	XXX	3.0	2/month	8-Hr Composite
TKN	XXX	Report Total Annual	XXX	Report Annl Avg	XXX	XXX	2/year	8-Hr Composite
Nitrate-Nitrite	XXX	Report Total Annual	XXX	Report Annl Avg	XXX	XXX	2/year	8-Hr Composite
Total Nitrogen	XXX	Report Total Annual	XXX	Report Annl Avg	XXX	XXX	2/year	Calculation
Total Phosphorus	XXX	Report Total Annual	XXX	Report Annl Avg	XXX	XXX	2/year	8-Hr Composite

Compliance Sampling Location:







BSLOPD	Mean Basin Slope degrees	0.3497	degrees	1.7	6.4
DRNAREA	Drainage Area	0.11	square miles	4.78	1150
ROCKDEP	Depth to Rock	4	feet	4.13	5.21
URBAN	Percent Urban	23.8028	percent	0	89

Low-Flow Statistics Parameters [1.0 Percent (0.000846 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CARBON	Percent Carbonate	0	percent	0	99
DRNAREA	Drainage Area	0.11	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
ROCKDEP	Depth to Rock	4	feet	3.32	5.65
STRDEN	Stream Density	1.81	miles per square mile	0.51	3.1

Low-Flow Statistics Disclaimers [99.0 Percent (0.108 square miles) Low Flow Region 1]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [99.0 Percent (0.108 square miles) Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.000588	ft^3/s
30 Day 2 Year Low Flow	0.00155	ft^3/s
7 Day 10 Year Low Flow	0.0000834	ft^3/s
30 Day 10 Year Low Flow	0.000248	ft^3/s
90 Day 10 Year Low Flow	0.0016	ft^3/s

Low-Flow Statistics Disclaimers [1.0 Percent (0.000846 square miles) Low Flow Region 2]

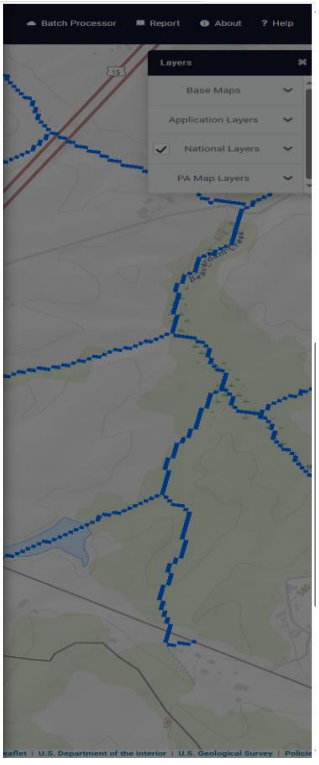
One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

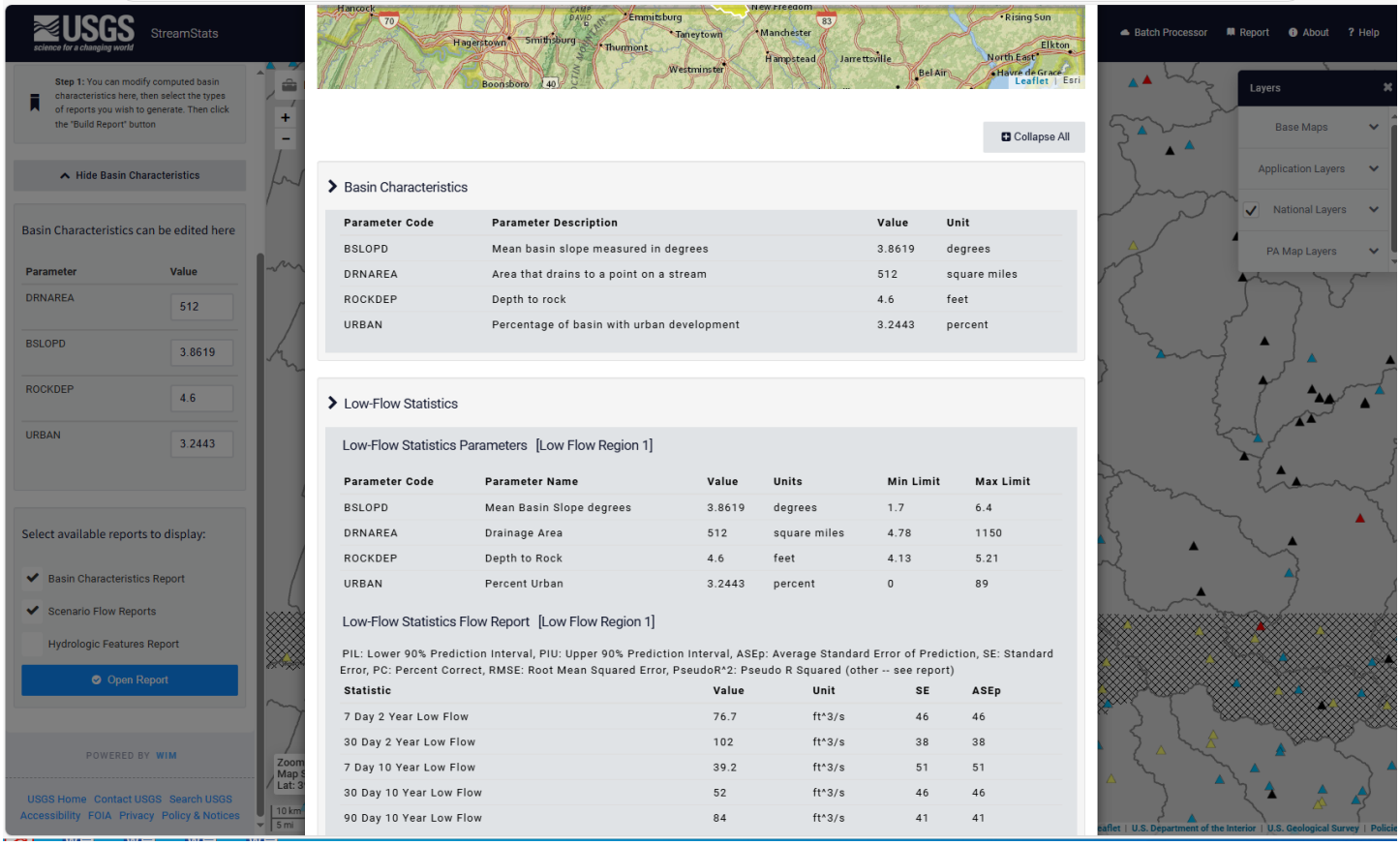
Low-Flow Statistics Flow Report [1.0 Percent (0.000846 square miles) Low Flow Region 2]

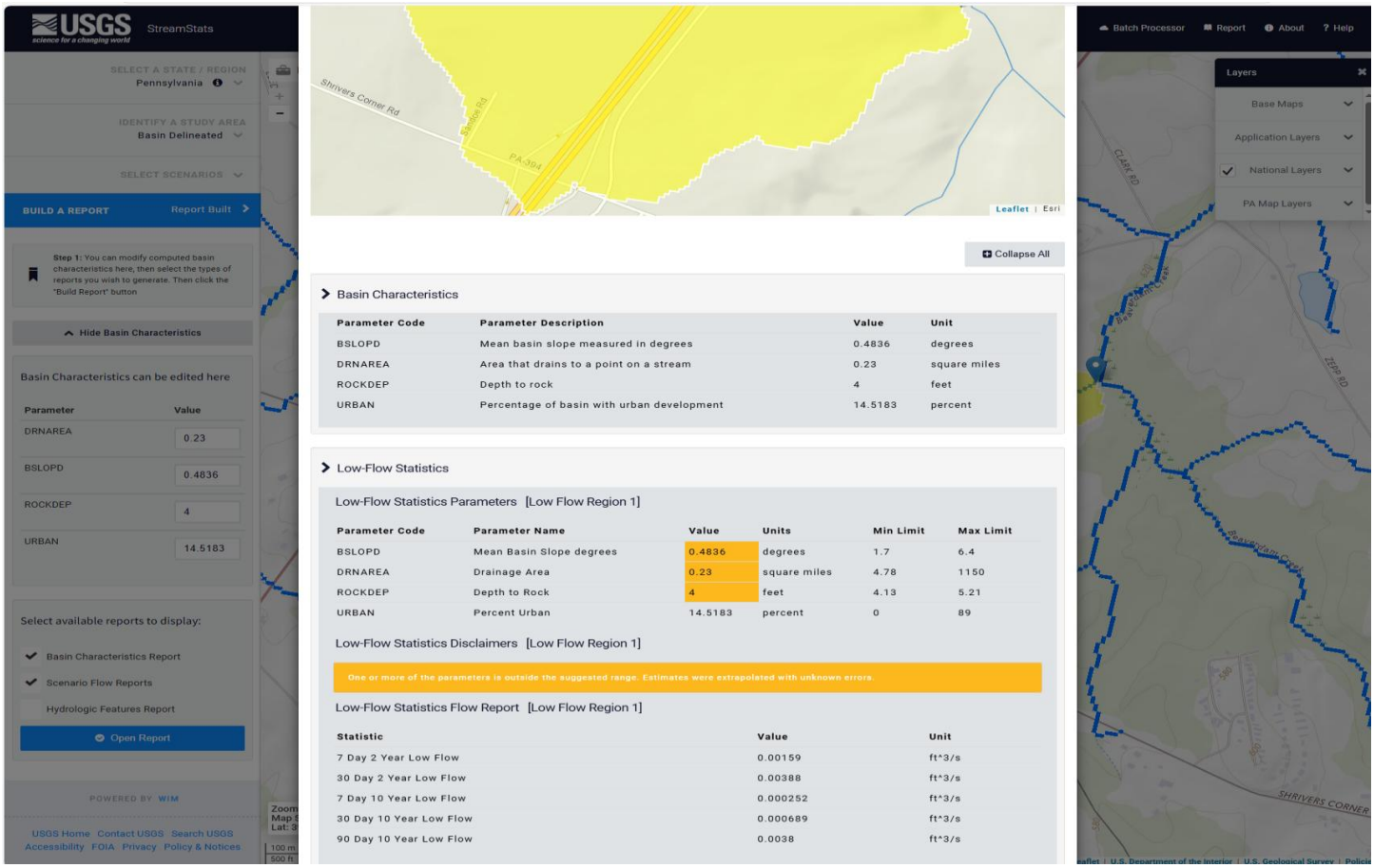
Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0056	ft^3/s
30 Day 2 Year Low Flow	0.00872	ft^3/s
7 Day 10 Year Low Flow	0.00168	ft^3/s
30 Day 10 Year Low Flow	0.00267	ft^3/s
90 Day 10 Year Low Flow	0.00534	ft^3/s

Low-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.000638	ft^3/s
30 Day 2 Year Low Flow	0.00162	ft^3/s
7 Day 10 Year Low Flow	0.0000994	ft^3/s
30 Day 10 Year Low Flow	0.000272	ft^3/s
90 Day 10 Year Low Flow	0.00164	ft^3/s




USGS StreamStats
Hancock
Hagerstown
Smithsburg
Emmitsburg
Thurmont
Taneytown
Manchester
Westminster
Hampstead
Jarrettsville
Bel Air
Rising Sun
Elkton
North East
Havre de Grace
Leaflet | Esri
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
Hide Basin Characteristics
Basin Characteristics can be edited here
Parameter
Value
DRNAREA 512
BSLOPD 3.8619
ROCKDEP 4.6
URBAN 3.2443
Select available reports to display:
Basin Characteristics Report
Scenario Flow Reports
Hydrologic Features Report
Open Report
POWERED BY WIM
USGS Home Contact USGS Search USGS
Accessibility FOIA Privacy Policy & Notices
Batch Processor
Report
About
Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers
Collapse All
Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
BSLOPD | Mean basin slope measured in degrees | 3.8619 | degrees
DRNAREA | Area that drains to a point on a stream | 512 | square miles
ROCKDEP | Depth to rock | 4.6 | feet
URBAN | Percentage of basin with urban development | 3.2443 | percent
Low-Flow Statistics
Low-Flow Statistics Parameters [Low Flow Region 1]
Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit
BSLOPD | Mean Basin Slope degrees | 3.8619 | degrees | 1.7 | 6.4
DRNAREA | Drainage Area | 512 | square miles | 4.78 | 1150
ROCKDEP | Depth to Rock | 4.6 | feet | 4.13 | 5.21
URBAN | Percent Urban | 3.2443 | 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, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)
Statistic | Value | Unit | SE | ASEp
7 Day 2 Year Low Flow | 76.7 | ft^3/s | 46 | 46
30 Day 2 Year Low Flow | 102 | ft^3/s | 38 | 38
7 Day 10 Year Low Flow | 39.2 | ft^3/s | 51 | 51
30 Day 10 Year Low Flow | 52 | ft^3/s | 46 | 46
90 Day 10 Year Low Flow | 84 | ft^3/s | 41 | 41


USGS StreamStats
SELECT A STATE / REGION
Pennsylvania
IDENTIFY A STUDY AREA
Basin Delineated
SELECT SCENARIOS
BUILD A REPORT
Report Built
Shrivers Corner Rd
Davids Rd
PA-394
Leaflet | Esri
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
Hide Basin Characteristics
Basin Characteristics can be edited here
Parameter
Value
DRNAREA 0.23
BSLOPD 0.4836
ROCKDEP 4
URBAN 14.5183
Select available reports to display:
Basin Characteristics Report
Scenario Flow Reports
Hydrologic Features Report
Open Report
POWERED BY WIM
USGS Home Contact USGS Search USGS
Accessibility FOIA Privacy Policy & Notices
Batch Processor
Report
About
Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers
Clark Rd
Beaverdam Creek
SHRIVERS CORNER
Collapse All
Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
BSLOPD | Mean basin slope measured in degrees | 0.4836 | degrees
DRNAREA | Area that drains to a point on a stream | 0.23 | square miles
ROCKDEP | Depth to rock | 4 | feet
URBAN | Percentage of basin with urban development | 14.5183 | percent
Low-Flow Statistics
Low-Flow Statistics Parameters [Low Flow Region 1]
Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit
BSLOPD | Mean Basin Slope degrees | 0.4836 | degrees | 1.7 | 6.4
DRNAREA | Drainage Area | 0.23 | square miles | 4.78 | 1150
ROCKDEP | Depth to Rock | 4 | feet | 4.13 | 5.21
URBAN | Percent Urban | 14.5183 | percent | 0 | 89
Low-Flow Statistics Disclaimers [Low Flow Region 1]
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 1]
Statistic | Value | Unit
7 Day 2 Year Low Flow | 0.00159 | ft^3/s
30 Day 2 Year Low Flow | 0.00388 | ft^3/s
7 Day 10 Year Low Flow | 0.000252 | ft^3/s
30 Day 10 Year Low Flow | 0.000689 | ft^3/s
90 Day 10 Year Low Flow | 0.0038 | ft^3/s

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: