pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0083160**
Facility Type	**Non-Municipal**	APS ID	**319551**
Major / Minor	**Minor**	Authorization ID	**1453670**

Applicant and Facility Information

Applicant Name	**Anchor Mobile Estates Peifer & Gross Inc.**	Facility Name	**Anchor Estates MHP**
Applicant Address	PO Box 506	Facility Address	2215 Biglerville Road
	Elizabethtown, PA 17022-0506		Gettysburg, PA 17325-8042
Applicant Contact	Irvin Peifer	Facility Contact	Irvin Peifer
Applicant Phone	(717) 367-5109	Facility Phone	(717) 367-5109
Client ID	142301	Site ID	3795
Ch 94 Load Status	Not Overloaded	Municipality	Butler Township
Connection Status		County	Adams
Date Application Received	September 5, 2023	EPA Waived?	Yes
Date Application Accepted	September 6, 2023	If No, Reason	

Purpose of Application: NPDES Permit Renewal.

Summary of Review

Kline Engineering, on behalf of the Anchor Mobile Estates, Peifer & Gross, Inc. (Authority/Permittee), applied to the Pennsylvania Department of Environmental Protection (DEP) for issuance of the NPDES permit. The permit was reissued on February 27, 2019 and became effective on March 1, 2019. The permit expires on February 29, 2024.

The average annual design flow and hydraulic design capacity is 0.021 MGD.

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

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	January 5, 2024
X		*Maria D. Bebenek for* Daniel W. Martin, P.E. / Environmental Engineer Manager	February 1, 2024

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.021
Latitude	39º 53' 20.51"	Longitude	-77º 14' 39.18"
Quad Name	Biglerville	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Willoughby Run (WWF)	Stream Code	58925
NHD Com ID	53319470	RMI	8.47 (7.84 at POFU)
Drainage Area	0.15 mi.^{2} (0.84 mi.^{2} at POFU)	Yield (cfs/mi^2)	See comments below
Q_{7-10} Flow (cfs)	See comments below	Q_{7-10} Basis	See comments below
Elevation (ft)	606.11 (598.79 at POFU)	Slope (ft/ft)	
Watershed No.	13-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	City of Frederick, MD		
PWS Waters	Monocacy River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	Approximate 46.0 miles

Changes Since Last Permit Issuance:

Streamflow

As per the previous fact sheet, Willoughby Run occasionally goes dry until it confluences with the next downstream tributary (UNT 58943), which is approximately 0.6 mile downstream of discharge point where the point of first use (POFU) was determined to be. According to the StreamStats, the drainage area at the discharge point is 0.15 mi^2 and the drainage area at the POFU is 0.84 mi^2.

There are no nearby stream gages with low flow data that have adequately extensive or recent periods of record. In addition, the gage used to calculate stream flow in the previous protection report is approximately 80 miles away. Therefore, data used for the stream flows for the water quality analysis was determined via the use of USGS StreamStats https://streamstats.usgs.gov/ss/). At the discharge point, the calculated drainage area is below the minimum value for the regression equations used. Therefore, the entire Marsh Creek watershed (which contains Willoughby Run) was chosen as a proper representative drainage area. The Q_{7-10} at the exit point of the Marsh Creek Watershed is 3.53 cfs and the drainage area is 68.1 mi^2 which results in a yield of 0.052 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 drainage point as follows (391-2000-023):

Yield = 3.53 cfs / 68.1 mi^2 = 0.052 cfs/mi^2
Q_{7-10} = 0.052 cfs/mi^2 * 0.84 mi^2 = 0.044 cfs
Q_{30-10} = 1.36 * 0.044 = 0.06 cfs
Q_{1-10} = 0.64 * 0.044 = 0.028 cfs

303d Listed Streams

The discharge from this facility is in Willoughby which is classified as Warm Water Fishes and Migratory Fishes (WWF & MF). The receiving stream is supporting its designated use(s) and not listed on 303d list; however, the stream is Aquatic Life impaired between RMI 1.67 and 0.0 from agricultural sources, causes are other Habitat Alterations, Siltation, and Organic Enrichment/Low D.O.

PWS Intake

There is no PWS intake downstream from the discharge in PA. The nearest downstream public water supply is City of Frederick, MD on the Monocacy River, located at approximately 46.0 miles from the discharge. Due to the distance, dilution, and effluent limits the discharge is not expected to impact the water supply.

Treatment Facility Summary

Treatment Facility Name: Anchor Mobile Estates

WQM Permit No.	Issuance Date
None in database	

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Hypochlorite	0.021

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

Changes Since Last Permit Issuance: none

Other Comments:

Per DEP's recent inspection report on 9/09/2021, the treatment plant consists of the following treatment units:

1. Two basket screens
2. One Equalization (EQ) tank
3. Three aeration tanks
4. One clarifier
5. Two filters
6. One chlorine contact tank
7. One post aeration tank
8. Two sludge holding tanks

Chemical used:

Chlorine tablet and soda ash are the only chemicals used for disinfection.

Biosolids:

Solids are wasted to two sludge holding tanks and hauled-off of site by hauler Smith's Septic Service to Smith's Disposal Facility, LLC. The total sewage sludge/biosolids production within the facility for the previous year was 1.216 dry tons.

Industrial/Commercial Users:

The permit application indicated there is no industrial or commercial contributor to the treatment plant.

Compliance History	
Summary of DMRs:	A summary of past 12-month DMRs is presented on pages 4 & 5.
Summary of Inspections:	**9/09/21:** Mr. Betting, DEP WQS, conducted a compliance evaluation inspection. There were no violations noted during inspection. The field test results were within permit limits. Recommendations were to verify the temperature in the composite sampler's refrigerator and exploring options for an emergency power source. **6/17/2020**: Mr. Bettinger, DEP Environmental Trainee, conducted an administrative inspection. There were no violations noted during inspection
Other Comments:	There were no violations against the permittee or applicant.

Compliance History

DMR Data for Outfall 001 (from December 1, 2022 to November 30, 2023)

Parameter	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23	JAN-23	DEC-22
Flow (MGD) Average Monthly	0.00563	0.00746	0.00843	0.00733	0.00904	0.00702	0.00788	0.00782	0.00976	0.00648	0.00977	0.01045
Flow (MGD) Daily Maximum	0.01482	0.02084	0.02073	0.01436	0.01774	0.01114	0.02677	0.02047	0.03538	0.00923	0.017	0.02817
pH (S.U.) Daily Minimum	7.7	7.8	7.7	7.8	8.0	7.9	7.6	7.2	7.6	7.5	7.5	7.3
pH (S.U.) Daily Maximum	8.1	8.2	8.0	8.2	8.2	8.1	8.1	8.3	8.2	8.0	7.8	8.0
DO (mg/L) Daily Minimum	8.3	8.2	7.8	8.2	7.9	8.4	8.5	9.0	8.9	9.1	9.0	8.9
TRC (mg/L) Average Monthly	0.3	0.4	0.3	0.2	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3
TRC (mg/L) Instantaneous Maximum	0.59	0.61	0.69	0.38	0.68	0.53	0.48	1.15	0.67	0.58	0.64	0.67
CBOD5 (mg/L) Average Monthly	< 2.4	< 2.4	< 2.4	< 2.4	< 2.4	< 2.4	< 2.4	< 2.4	< 2.4	< 2.4	< 2.4	< 2.4
TSS (mg/L) Average Monthly	2.5	1.5	2.5	2.0	2.5	2.5	1.5	1.5	1.5	1.0	1.5	1.5
Fecal Coliform (No./100 ml) Geometric Mean	< 1	< 1	< 1	< 1	< 1	< 1	< 13	< 1	< 1	< 1	< 1	< 1
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 1	< 1	1	< 1	< 1	< 1	180	2	< 1	< 1	2	< 1
Nitrate-Nitrite (mg/L) Average Quarterly			< 28.4			< 5.1			< 32.4			< 42.4
Nitrate-Nitrite (lbs) Total Quarterly			< 52			< 8			< 88			< 53
Total Nitrogen (mg/L) Average Quarterly			< 28.9			< 19.1			< 32.9			< 42.9
Total Nitrogen (lbs) Total Quarterly			< 53			< 30			< 89			< 53
Total Nitrogen (lbs) Total Annual			225									
Ammonia (mg/L) Average Monthly	3.3	< 0.1	< 0.2	< 0.1	< 0.1	< 0.7	< 0.1	2.9	< 0.4	< 2.0	< 0.1	< 0.1

Ammonia (mg/L) Average Quarterly			< 0.1			2.9			< 0.1			< 0.1
Ammonia (lbs) Total Quarterly			< 0.2			4			< 0.2			< 0.1
Ammonia (lbs) Total Annual			5									
TKN (mg/L) Average Quarterly			< 0.5			14			< 0.5			< 0.5
TKN (lbs) Total Quarterly			< 0.9			22			< 1			< 0.6
Total Phosphorus (mg/L) Average Quarterly			5.5			7			2.9			5.5
Total Phosphorus (lbs) Total Quarterly			10			11			8			7
Total Phosphorus (lbs) Total Annual			36									

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.021
Latitude 39º 53' 20.51" **Longitude** -77º 14' 39.18"
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: DEP's guidance document titled "Implementation Guidance for Evaluating Wastewater Discharges to Drainage Ditches and Swales" or Dry Stream guidance, document ID 391-2000-014 will be used along with TBEL, WQBEL, and BPJ to develop effluent limits.

Dry Stream Guidance Limitations:

Dry stream guidance (*391-2000-014, Final April 12, 2008, page 6*) indicates advanced treatment is required "For discharges to intermittent and ephemeral streams, drainage channels and swales, and storm sewers, a high degree of treatment is required to compensate for the lack of available assimilative capacity and to minimize the potential for nuisance conditions. Effluent limits will be determined by the regional permit engineer on a case-by-case basis, but for discharges of treated sewage and similar oxygen-consuming wastes, effluent limits should include and be at least as stringent as these, or equivalent:

$CBOD_5$ – 10 mg/L as monthly average;
TSS – 10 mg/L as monthly average;
Total N – 5 mg/L as a monthly average;
Dissolved oxygen – minimum 6 mg/L at all times;
Phosphorus – 0.5 mg/L as a monthly average"

However, the guidance postdates the issuance of the original NPDES permit for this facility. The existing permit doesn't contain limits for TN and Phosphorous. Section I of the 2008 guidance states that the policy is for new or expanded discharges. Since this is not new or expanding the existing limits developed according to Section IV of the 1997 guidance. These limits are as follows:

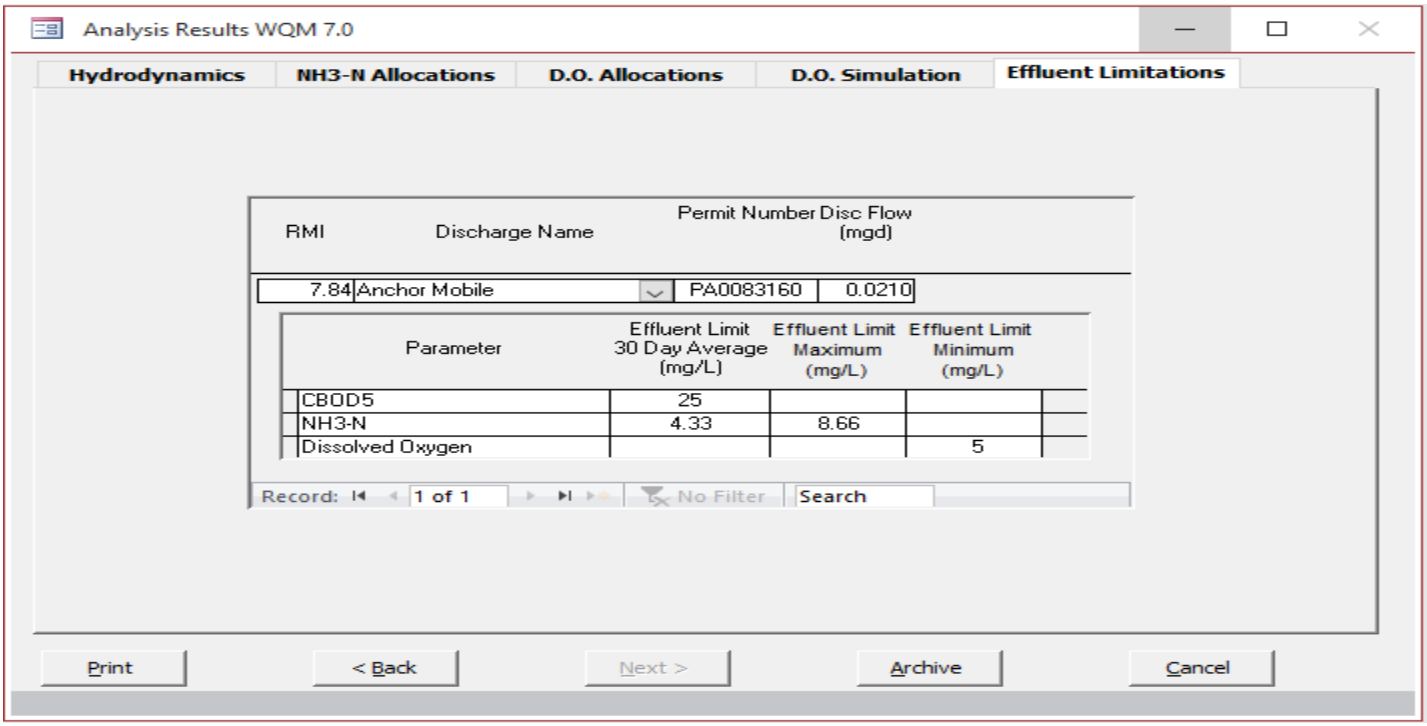
$CBOD_5$ and TSS - 10 mg/L as a monthly average;
20 mg/L as IMAX
NH_3-N - 3 mg/L as a monthly average;
Dissolved oxygen – 3 mg/L or greater, monthly average
Bacteria – 200/100 ml summertime; 2000/100 ml wintertime

These values will be compared to TBELS, WQBELs, and BPJ, and most stringent limitations will be applied in the permit.

Water Quality-Based Limitations

NH_3-N:
The following data were used in the attached computer model (WQM 7.0) of the stream:

- Discharge pH 7.0 (Default)
- Discharge Temperature 20°C (Default per 391-2000-013)
- Stream pH 7.0 (Default per 391-2000-007)
- Stream Temperature 25°C (Default per 391-2000-013)



The attached WQM 7.0 modeling (version 1.1) suggested NH_3-N limit of 4.33 mg/L as monthly average and 8.66 mg/L as instantaneous maximum limit is necessary to protect the water quality of the stream. However, the existing NH_3-N limit of 3.0 mg/L as monthly average and 6.0 mg/L as instantaneous maximum limit during summer are more stringent and will remain in the proposed permit. The winter season limits are calculated by multiplying summer limits by a factor of 3, and average monthly and IMAX limits are 9.0 mg/L and 18.0 mg/L, respectively. The summer limits are more stringent compared to applicable 1997 dry stream guidance. Minimum monitoring frequency will remain 2/month per 362-0400-001 Chapter 6 Page 10.

$CBOD_5$:
The attached WQM 7.0 modeling (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 summer limit of 10.0 mg/L AML is more stringent and will remain in the proposed permit. Dry stream limits are the same as WQM suggested limit. A multiplication factor of 2 will be used to calculate Instantaneous Maximum (IMAX) value. The limits Minimum monitoring frequency will be 2/month.

Dissolved Oxygen (D.O.):
The D.O. goal is 6.0 mg/L. However, 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. BCW-PMT-033, version 1.9 revised March 22, 2021, and has been applied to other point source dischargers throughout the state.

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

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

E. Coli:
As recommended by DEP's SOP No. BCW-PMT-033, version 1.9 revised March 22, 2021, 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 Residual Chlorine (TRC):
The attached computer printout utilizes the equation and calculations as presented in the Department's 2003 Implementation Guidance for Total Residual Chlorine (TRC) (ID#391-2000-015) for developing chlorine limitations. The attached printout indicates that a water quality limit of 0.207 mg/L as average monthly would be needed to prevent toxicity concerns at the POFU. The Instantaneous Maximum (IMAX) limit is 0.677 mg/L. These limits are more stringent compared to the existing permit. The previous fact sheet documented that the TRC_Spreadsheet resulted in average monthly limit of 0.21 mg/L and 0.69 mg/L, however, due to distance from discharge point to POFU, the effluent flow will significantly reduce due to evaporation and infiltration during $Q_{7\text{-}10}$ condition and limits may be relaxed. An overview of the past 12 months TRC limits revealed that the facility is consistently discharging an average monthly concentration of 0.32 mg/L.

The permit writer agrees with previous permit writers' decision that a relaxed TRC limit will be sufficient. Therefore, an average monthly limit of 0.5 mg/L and IMAX limit of 1.6 mg/L will be carried over in this renewal.

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.044	= Q stream (cfs)	0.5	= CV Daily
0.021	= 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 =	0.451	1.3.2.iii	WLA cfc =	0.432
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	0.168	5.1d	LTA_cfc =	0.251

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.207	AFC
		INST MAX LIMIT (mg/l) =	0.677	

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)

Toxics:
Minor sewage facilities with a design flow less than 0.1 MGD are not required to submit toxic data in application form. Due to the lack of data, toxics monitoring, or limit requirement could not be evaluated.

Total Suspended Solids (TSS):
There is no water quality criterion for TSS. The limits of 10.0 mg/L average monthly and 20.0 mg/L instantaneous maximum will be placed in the permit based on dry stream guidance as indicated in page 6 of this report. Minimum monitoring frequency remain 2/month.

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

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

Total Dissolved Solids (TDS)
The facility is not required to report TDS since reporting TDS is not mandatory for flow less than 0.1 MGD

Total Phosphorus (local):
Phosphorus limitations are based on the Department's Implementation Guidance for Section 96.5 Phosphorus Discharges to Free-flowing Streams, dated 10/27/97 (ID No. 391-2000-018). Total phosphorus loading from this discharge would be 8.34 x 10 mg/L x 0.01885 MGD or 1.57 lbs/day. Using the equation that was documented in EPA's Chesapeake Bay Management Report, Total P @ Y = Total P x 0.99^{Y}, where Y = stream miles to PA-MD line, the actual loading to the critical part of the Susquehanna River would be 0.599 lbs/day at an estimated distance of 95.95 miles. This loading represents 0.599 lbs/day ÷ 3,814 lbs/day or 0.016% of the total phosphorus loading of all discharges in the Lower Susquehanna River Basin. According to the above phosphorus guidance, phosphorus removal will be required if this percentage is > 0.25%. Therefore, since 0.016% is < 0.25%, phosphorus limitations will not be required.

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. Ammonia-Nitrogen, Nitrate-Nitrite as N, Total Kjeldahl Nitrogen, TN, and TP monitoring is already included in the existing permit and will remain in the proposed renewal.

The quarterly "Monitor & Report" requirements for Ammonia-Nitrogen, Nitrate-Nitrite as N, and Total Kjeldahl Nitrogen; and annual calculation "Monitor & Report" for Ammonia-Nitrogen, TN, & TP will remain in the proposed 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.

Anti-Backsliding:
The proposed limits will be as stringent as existing limits; therefore, anti-backsliding is not applied in this permit term.

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

303(d) Listed Streams:
The discharge from this facility is to a stream segment that is attaining its designated use(s).

WQM 7.0:

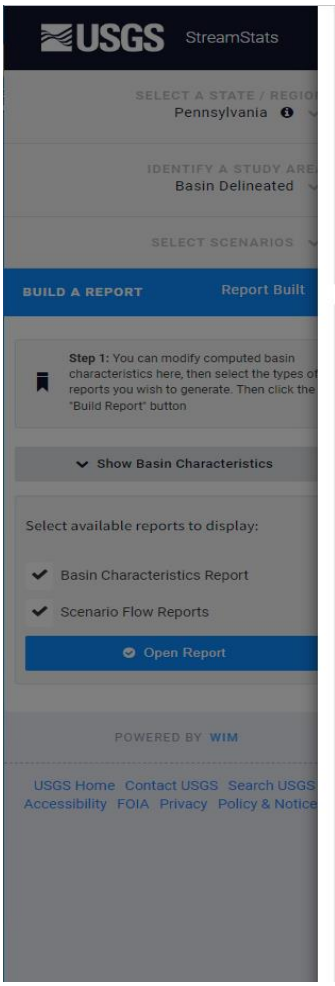
The following data were used in the attached computer model (WQM 7.0) of the stream:

*	Discharge pH	7.0	(Default)
*	Discharge Temperature	20°C	(Default per 391-2000-013)
*	Stream pH	7.0	(Default per 391-2000-007)
*	Stream Temperature	25°C	(Default per 391-2000-013)

The following two nodes were used in modeling:

Node 1: At POFU on Willoughby Run (58925)
Elevation: 598.79 ft (USGS National Map)
Drainage Area: 0.84 mi^2 (USGS StreamStats)
River Mile Index: 7.84 (PA DEP eMapPA)
Low Flow Yield: 0.052 cfs/mi^2 (calculated)
Discharge Flow: 0.021 MGD

Node 2: At the confluence with UNT 58940
Elevation: 593.31ft (USGS National Map)
Drainage Area: 1.59 mi^2 (USGS StreamStats)
River Mile Index: 7.29 (PA DEP eMapPA)
Low Flow Yield: 0.052 cfs/mi^2
Discharge Flow: 0.00 MGD



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	0.84	square miles
PRECIP	Mean Annual Precipitation	41	inches
ROCKDEP	Depth to rock	4	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.97	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [99.8 Percent (0.842 square miles) Low Flow Region 2]

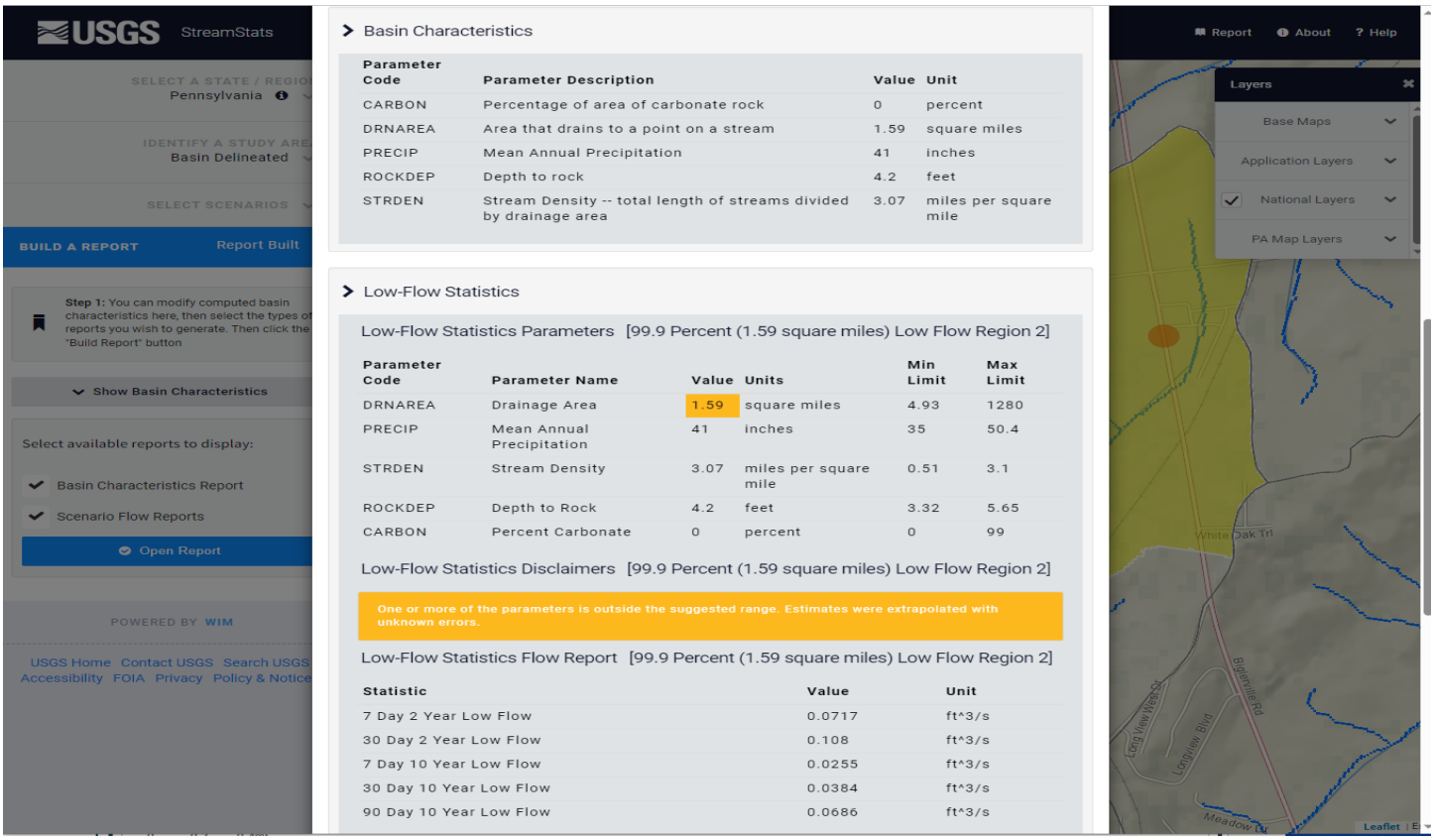
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.84	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
STRDEN	Stream Density	2.97	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4	feet	3.32	5.65
CARBON	Percent Carbonate	0	percent	0	99

Low-Flow Statistics Disclaimers [99.8 Percent (0.842 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 [99.8 Percent (0.842 square miles) Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0334	ft^3/s
30 Day 2 Year Low Flow	0.0516	ft^3/s
7 Day 10 Year Low Flow	0.0108	ft^3/s
30 Day 10 Year Low Flow	0.0169	ft^3/s
90 Day 10 Year Low Flow	0.0318	ft^3/s



USGS StreamStats

Pennsylvania

Basin Delineated

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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White Oak Trl | Biglerville Rd | Longview Blvd | Long View Ln | Meadow Ln | Leaflet

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	1.59	square miles
PRECIP	Mean Annual Precipitation	41	inches
ROCKDEP	Depth to rock	4.2	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	3.07	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [99.9 Percent (1.59 square miles) Low Flow Region 2]

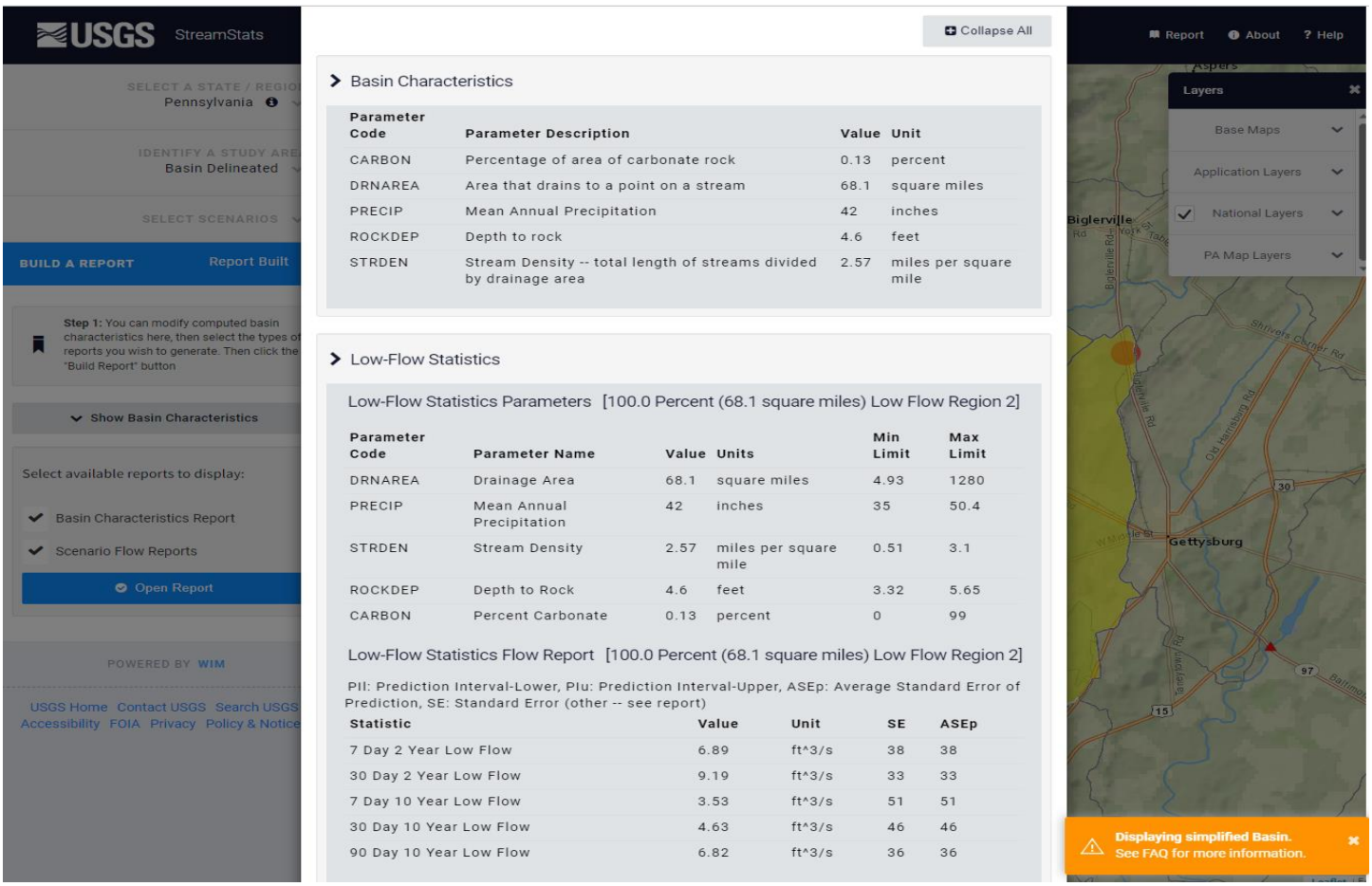
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.59	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
STRDEN	Stream Density	3.07	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.2	feet	3.32	5.65
CARBON	Percent Carbonate	0	percent	0	99

Low-Flow Statistics Disclaimers [99.9 Percent (1.59 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 [99.9 Percent (1.59 square miles) Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0717	ft^3/s
30 Day 2 Year Low Flow	0.108	ft^3/s
7 Day 10 Year Low Flow	0.0255	ft^3/s
30 Day 10 Year Low Flow	0.0384	ft^3/s
90 Day 10 Year Low Flow	0.0686	ft^3/s



USGS StreamStats

Pennsylvania

Basin Delineated

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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Biglerville | Gettysburg | Biglerville Rd | Old Harrisburg Rd | Shrivers Corner Rd | 30 | 97 | 15

Displaying simplified Basin.
See FAQ for more information.

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0.13	percent
DRNAREA	Area that drains to a point on a stream	68.1	square miles
PRECIP	Mean Annual Precipitation	42	inches
ROCKDEP	Depth to rock	4.6	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.57	miles per square mile

Low-Flow Statistics

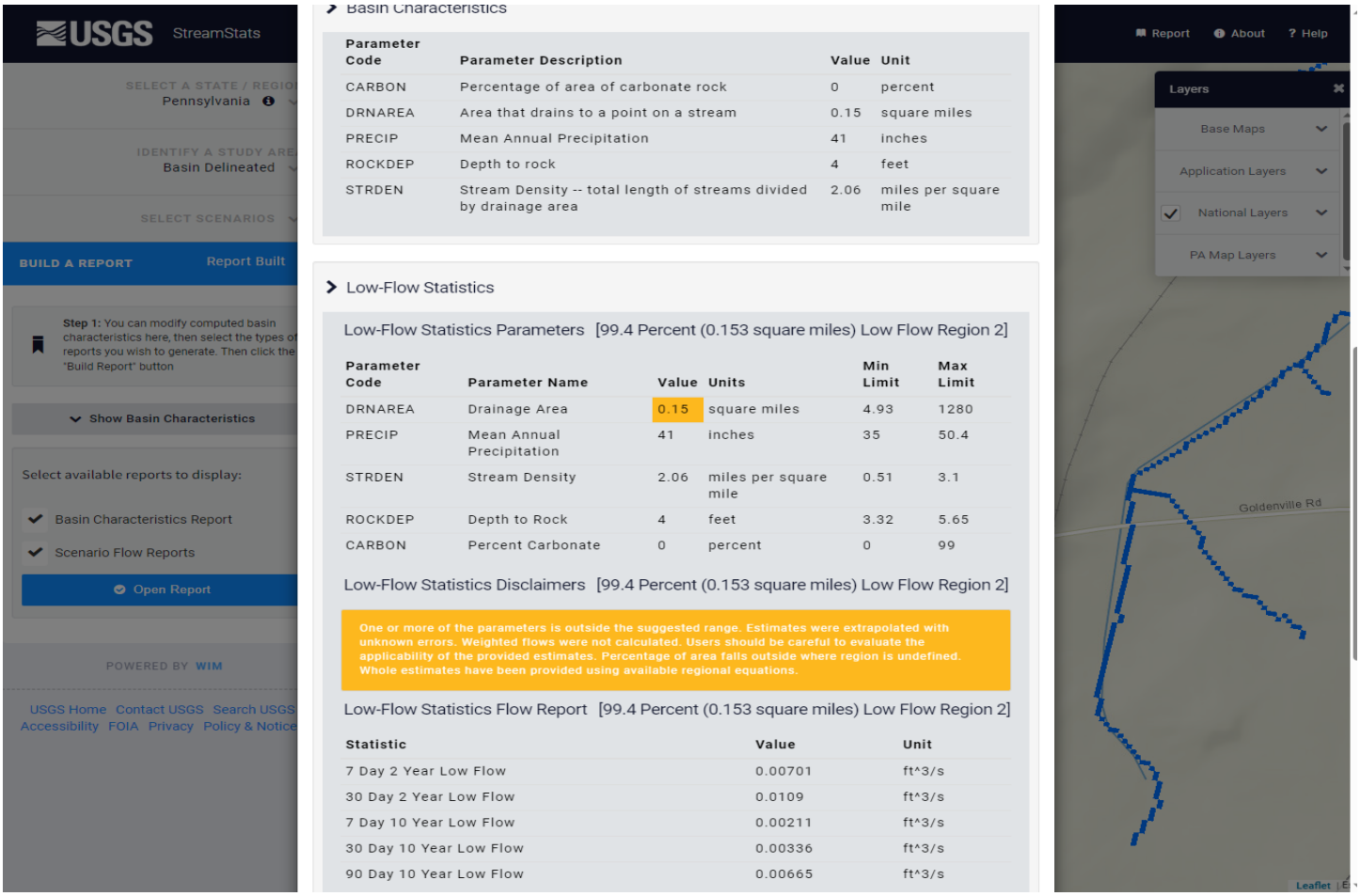
Low-Flow Statistics Parameters [100.0 Percent (68.1 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	68.1	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	42	inches	35	50.4
STRDEN	Stream Density	2.57	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.6	feet	3.32	5.65
CARBON	Percent Carbonate	0.13	percent	0	99

Low-Flow Statistics Flow Report [100.0 Percent (68.1 square miles) Low Flow Region 2]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	6.89	ft^3/s	38	38
30 Day 2 Year Low Flow	9.19	ft^3/s	33	33
7 Day 10 Year Low Flow	3.53	ft^3/s	51	51
30 Day 10 Year Low Flow	4.63	ft^3/s	46	46
90 Day 10 Year Low Flow	6.82	ft^3/s	36	36



USGS StreamStats

SELECT A STATE / REGION
Pennsylvania

IDENTIFY A STUDY AREA
Basin Delineated

SELECT SCENARIOS

BUILD A REPORT — Report Built

Step 1: You can modify computed basin characteristics here, then select the types of reports you wish to generate. Then click the "Build Report" button

Show Basin Characteristics

Select available reports to display:

- Basin Characteristics Report
- Scenario Flow Reports

Open Report

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Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	0.15	square miles
PRECIP	Mean Annual Precipitation	41	inches
ROCKDEP	Depth to rock	4	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	2.06	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [99.4 Percent (0.153 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.15	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
STRDEN	Stream Density	2.06	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4	feet	3.32	5.65
CARBON	Percent Carbonate	0	percent	0	99

Low-Flow Statistics Disclaimers [99.4 Percent (0.153 square miles) Low Flow Region 2]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors. Weighted flows were not calculated. Users should be careful to evaluate the applicability of the provided estimates. Percentage of area falls outside where region is undefined. Whole estimates have been provided using available regional equations.

Low-Flow Statistics Flow Report [99.4 Percent (0.153 square miles) Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.00701	ft^3/s
30 Day 2 Year Low Flow	0.0109	ft^3/s
7 Day 10 Year Low Flow	0.00211	ft^3/s
30 Day 10 Year Low Flow	0.00336	ft^3/s
90 Day 10 Year Low Flow	0.00665	ft^3/s

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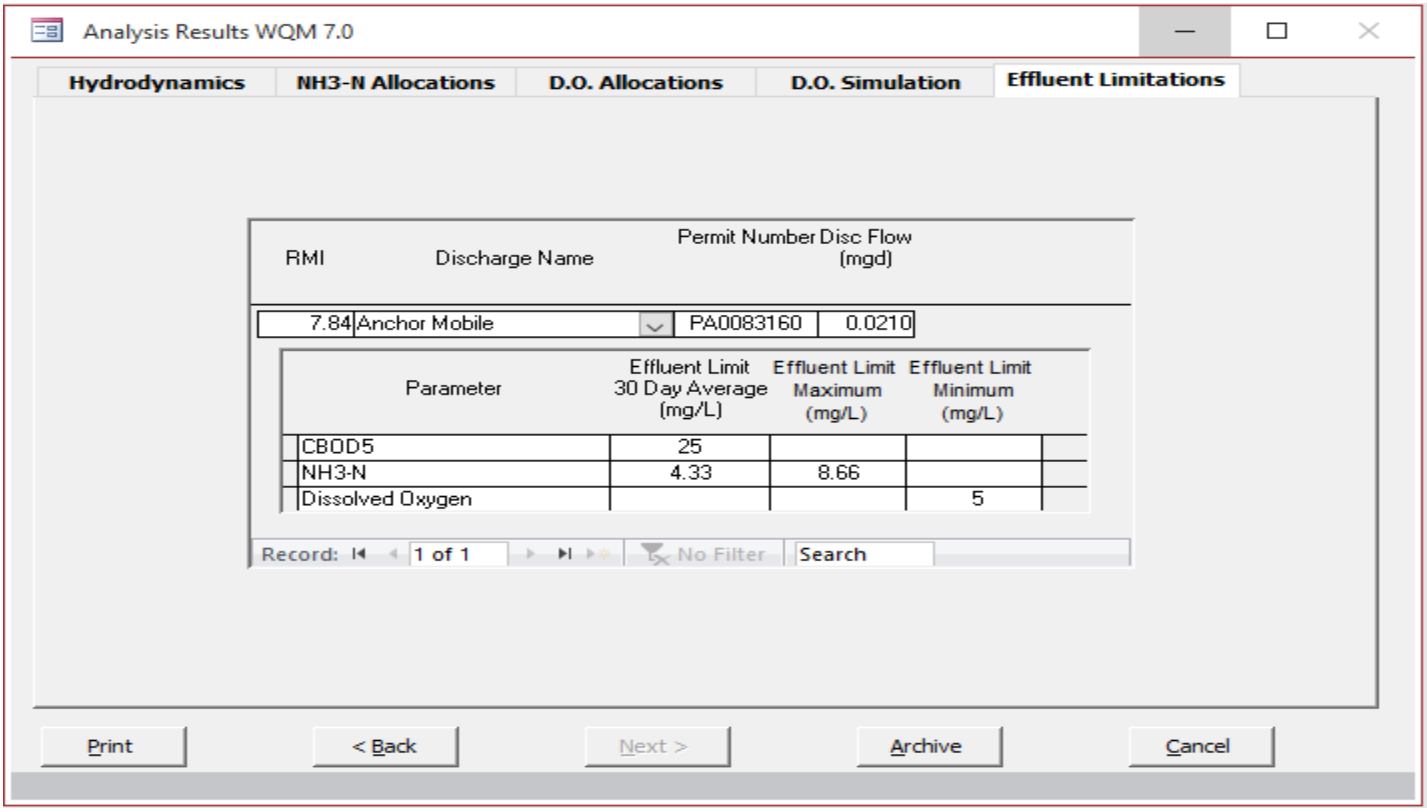
Goldenville Rd

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)
7.84	Anchor Mobile	PA0083160	0.0210

Parameter	Effluent Limit 30 Day Average (mg/L)	Effluent Limit Maximum (mg/L)	Effluent Limit Minimum (mg/L)
CBOD5	25		
NH3-N	4.33	8.66	
Dissolved Oxygen			5

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rptEffLimits

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
13D	59925	WILLOUGHBY 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)
7.840	Anchor Mobile	PA0083160	0.021	CBOD5	25		
				NH3-N	4.33	8.66	
				Dissolved Oxygen			5

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rpt_WLA

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
13D	59925	WILLOUGHBY 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
7.840	Anchor Mobile	13.84	25.74	13.84	25.74	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
7.840	Anchor Mobile	1.53	4.33	1.53	4.33	0	0

Dissolved Oxygen Allocations

		CBOD5		NH3-N		Dissolved Oxygen			
RMI	Discharge Name	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Critical Reach	Percent Reduction
7.84	Anchor Mobile	25	25	4.33	4.33	5	5	0	0

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rptDOSim

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
13D	59925	WILLOUGHBY RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
7.840	0.021	22.867	7.000
Reach Width (ft)	Reach Depth (ft)	Reach W/D Ratio	Reach Velocity (fps)
4.564	0.349	13.135	0.048
Reach CBOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
11.61	1.245	1.25	0.873
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
6.260	21.179	Owens	6
Reach Travel Time (days)			
0.706			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.071	10.68	1.74	7.16
0.141	9.88	1.63	7.32
0.212	8.74	1.54	7.45
0.282	7.91	1.44	7.56
0.353	7.15	1.36	7.65
0.424	6.47	1.28	7.74
0.494	5.85	1.20	7.82
0.565	5.30	1.13	7.82
0.635	4.79	1.06	7.82
0.706	4.33	1.00	7.82

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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	6		

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rptHydro

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
13D	58925	WILLOUGHBY RUN

RM	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
7.840	0.04	0.00	0.04	.0325	0.00189	.349	4.58	13.13	0.05	0.706	22.87	7.00
Q1-10 Flow												
7.840	0.03	0.00	0.03	.0325	0.00189	NA	NA	NA	0.04	0.803	22.31	7.00
Q30-10 Flow												
7.840	0.06	0.00	0.06	.0325	0.00189	NA	NA	NA	0.05	0.635	23.23	7.00

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rptGeneral

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RM	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
13D	58925	WILLOUGHBY RUN	7.840	928.79	0.84	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	0.052	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	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
Anchor Mobile	PA0083160	0.0210	0.0210	0.0210	0.00	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	RM	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
13D	58925	WILLOUGHBY RUN	7.290	923.31	1.52	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	0.052	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	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
Anchor Mobile	PA0083160	0.0000	0.0000	0.0000	0.00	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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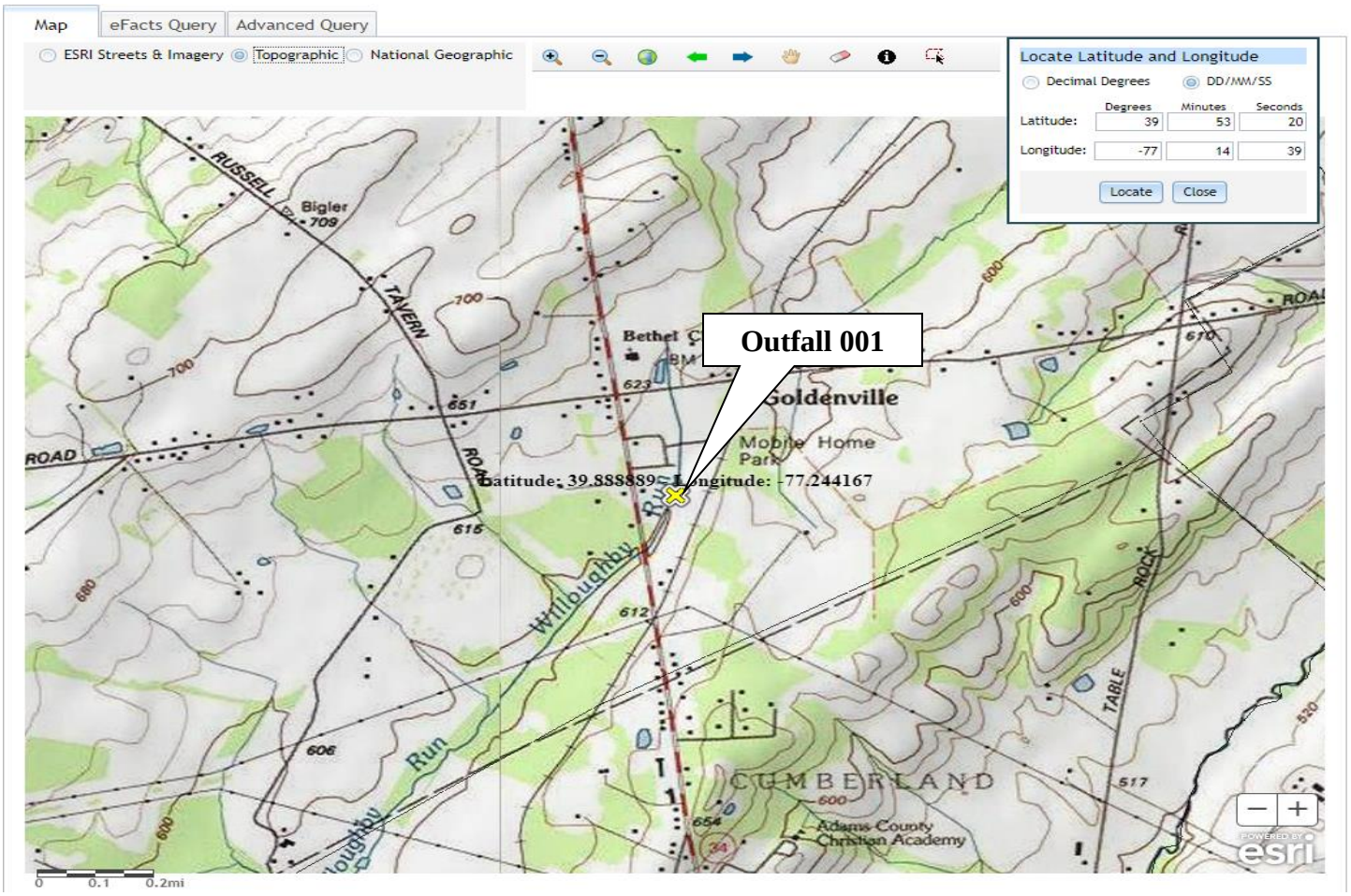
Map
eFacts Query
Advanced Query
ESRI Streets & Imagery
Topographic
National Geographic
Locate Latitude and Longitude
Decimal Degrees
DD/MM/SS
Degrees
Minutes
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Latitude: 39 53 20
Longitude: -77 14 39
Locate
Close
Outfall 001
Latitude: 39.888889 Longitude: -77.244167
Goldenville
Mobile Home Park
CUMBERLAND
Adams County Christian Academy
Willoughby Run
RUSSELL
TAVERN
ROAD
TABLE ROCK
Bigler
0 0.1 0.2mi
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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	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	9.0 Daily Max	XXX	1/day	Grab
D.O.	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
$CBOD_5$	XXX	XXX	XXX	10.0	XXX	20	2/month	24-Hr Composite
TSS	XXX	XXX	XXX	10.0	XXX	20	2/month	24-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	2/month	24-Hr Composite
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	9.0	XXX	18	2/month	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	Quarterly Average	Maximum	Instant. Maximum		
Ammonia--N	Report Total Quarterly	Report	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Kjeldahl--N	Report Total Quarterly	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Nitrate-Nitrite as N	Report Total Quarterly	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Total Nitrogen	Report Total Quarterly	Report	XXX	Report	XXX	XXX	1/quarter	Calculation
Total Phosphorus	Report Total Quarterly	Report	XXX	Report	XX	XXX	1/quarter	24-Hr Composite

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	9.0 Daily Max	XXX	1/day	Grab
D.O.	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
$CBOD_5$	XXX	XXX	XXX	10.0	XXX	20.0	2/month	24-Hr Composite
TSS	XXX	XXX	XXX	10.0	XXX	20.0	2/month	24-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
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	3.0	XXX	6.0	2/month	24-Hr Composite
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	9.0	XXX	18.0	2/month	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" (386-0400-001), SOPs and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Quarterly Average	Maximum	Instant. Maximum		
Ammonia--N	Report Total Quarterly	Report	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Kjeldahl--N	Report Total Quarterly	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Nitrate-Nitrite as N	Report Total Quarterly	XXX	XXX	Report	XXX	XXX	1/quarter	24-Hr Composite
Total Nitrogen	Report Total Quarterly	Report	XXX	Report	XXX	XXX	1/quarter	Calculation
Total Phosphorus	Report Total Quarterly	Report	XXX	Report	XX	XXX	1/quarter	24-Hr Composite

Compliance Sampling Location:

Other Comments:

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☒	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☒	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☒	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☒	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☒	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☒	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: SOP No. BCW-PMT-033
☐	Other: