

Application Type Renewal
Facility Type Industrial
Major / Minor Minor

**NPDES PERMIT FACT SHEET
INDIVIDUAL INDUSTRIAL WASTE (IW)
AND IW STORMWATER**

Application No. PA0027677
APS ID 1115851
Authorization ID 1488833

Applicant and Facility Information

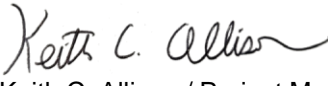
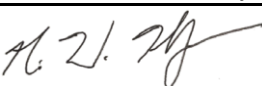
Applicant Name	<u>US DOI</u>	Facility Name	<u>US F&W Service Nat. Fish R & D Lab</u>
Applicant Address	<u>11649 Leetown Road</u> <u>Kearneysville, WV 25430-5526</u>	Facility Address	<u>Northern Appalachian Research</u> <u>Laboratory 176 Straight Run Road</u> <u>Wellsboro, PA 16901</u>
Applicant Contact	<u>Adam Kotulka</u>	Facility Contact	<u>Adam Kotulka</u>
Applicant Phone	<u>(304) 724-4487</u>	Facility Phone	<u>(304) 724-4487</u>
Client ID	<u>7925</u>	Site ID	<u>259110</u>
SIC Code	<u>8733</u>	Municipality	<u>Shippen Township</u>
SIC Description	<u>Services - Noncommercial Research</u> <u>Organizations</u>	County	<u>Tioga</u>
Date Application Received	<u>June 13, 2024</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>June 28, 2024</u>	If No, Reason	
Purpose of Application	<u>Renewal of a NPDES Permit.</u>		

Summary of Review

This NPDES Permit is for the US Department of Interior Northern Appalachian Research Lab. The facility is not currently operating. The permittee is planning to sell the property to the PA DCNR. DCNR does not intend to use the facility for the same type of operation. A map of the discharge is attached.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Approve	Deny	Signatures	Date
✓		 Keith C. Allison / Project Manager	November 7, 2024
✓		 Nicholas W. Hartranft, P.E. / Environmental Engineer Manager	November 14, 2024

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	1.86*
Latitude	41° 46' 25.86"	Longitude	-77° 23' 44.22"
Quad Name	Asaph, PA	Quad Code	0426
Wastewater Description: IW Process Effluent without ELG			
Receiving Waters	Marsh Creek (CWF)	Stream Code	21856
NHD Com ID	66535437	RMI	3.24
Drainage Area	60.36 mi ²	Yield (cfs/mi ²)	0.0394
Q ₇₋₁₀ Flow (cfs)	2.38	Q ₇₋₁₀ Basis	Gage No.1548500, Pine Creek @ Cedar Run, PA
Elevation (ft)	1139	Slope (ft/ft)	0.000264
Watershed No.	9-A	Chapter 93 Class.	CWF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Attaining Use(s)		
Nearest Downstream Public Water Supply Intake	Jersey Shore Area Joint Water Authority		
PWS Waters	Pine Creek	Flow at Intake (cfs)	39
PWS RMI	1.92	Distance from Outfall (mi)	59.5

Changes Since Last Permit Issuance: The existing stream characteristics above are unchanged.

Design discharge flow is listed above. However, because the facility is shut down minimal flow passes through. Any actual flow being discharged currently is the result of runoff or small amounts of water flowing through the laboratory building. The permittee has been reporting no discharge in recent months due to minimal precipitation. It is not anticipated that the actual wastewater discharge will resume.

Other Comments: None

Treatment Facility Summary

Treatment Facility Name: US Geological Survey

WQM Permit No.	Issuance Date			
5982201	January 25, 1983			
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Industrial	N/A	N/A	No Disinfection	N/A
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
N/A	N/A	Not Overloaded	N/A	N/A

Changes Since Last Permit Issuance: None.

Other Comments: The treatment consists of two settling lagoons.

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	ND	ND	ND	ND	ND	ND	0.0216	0.245	0.245	0.0216	0.219	0.0864
Flow (MGD) Daily Maximum							0.0216	0.245	0.245	0.0216	0.219	0.0864
pH (S.U.) Instantaneous Minimum							8.10	6.13	5.81	7.37	7.78	7.28
pH (S.U.) Instantaneous Maximum							8.10	6.13	5.81	7.37	7.78	7.28
DO (mg/L) Instantaneous Minimum							7.54	8.20	8.20	8.27	9.25	7.53
CBOD5 (mg/L) Average Monthly							< 3.0	< 2.7	< 2.2	< 4.4	< 2.1	< 3.4
TSS (mg/L) Average Monthly							< 0.10	< 0.10	< 0.10	< 12.0	< 4.0	< 0.010
Total Nitrogen (mg/L) Annual Average											< 0.01	
Ammonia (mg/L) Average Monthly							< 0.10	< 0.10	< 0.10	< 0.01	< 0.010	< 0.010
Total Phosphorus (mg/L) Annual Average											< 0.036	

Compliance History

Effluent Violations for Outfall 001, from: November 1, 2023 to October 31, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
pH	02/29/24	Inst Min	5.81	S.U.	6.0	S.U.
CBOD5	01/31/24	Avg Mo	< 4.4	mg/L	4.3	mg/L
CBOD5	09/30/23	Avg Mo	< 6.1	mg/L	4.3	mg/L
TSS	09/30/23	Avg Mo	< 18.0	mg/L	10.0	mg/L
TSS	01/31/24	Avg Mo	< 12.0	mg/L	10.0	mg/L

Compliance History

Summary of Inspections:	The facility was inspected most recently by the Department on February 20, 2024. This inspection noted NPDES effluent violations as reported in eDMRs.
Other Comments:	There are no open violations in eFACTS for The US Department of Interior.

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	1/month	Recorded
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/month	Grab
DO	XXX	XXX	6.0 Inst Min	XXX	XXX	XXX	1/month	Grab
CBOD5	XXX	XXX	XXX	4.3	XXX	8.6	1/month	Grab
TSS	XXX	XXX	XXX	10.0	XXX	20	1/month	Grab
Total Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	3.9	XXX	7.8	1/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	1.3	XXX	2.6	1/month	Grab
Total Phosphorus	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Grab

Development of Effluent Limitations

Outfall No.	001	Design Flow (MGD)	1.86*
Latitude	41° 46' 25.20"	Longitude	-77° 23' 44.10"
Wastewater Description: IW Process Effluent without ELG			

As mentioned above, the design discharge flow is based on normal operation which is not anticipated to resume. The discharge that remains is primarily due to precipitation through the open raceways and lagoons.

Technology, Water Quality-Based, and BPJ Limitations

Carbonaceous Biochemical Oxygen Demand (CBOD₅)

The facility has an existing water quality based CBOD₅ limit of 4.3 mg/L. Modeling for the previous renewal found this limit to be protective of the receiving waters. This limit is more stringent than the technology-based limit of 5 mg/L in the PAG-11 General Permit for Discharges from Aquatic Animal Production Facilities. The previous modeling is attached.

Total Suspended Solids (TSS)

The existing BPJ TSS limit of 10 mg/L is based on the limits in the PAG-11.

pH

The existing standard pH limits are based on CFR Title 40 §133.102(c) and 25 PA Code §95.2(1).

Ammonia-Nitrogen (NH₃-N)

The facility has existing water-quality-based limitations for NH₃-N. The previous modeling is attached.

Toxics Management

Due to the lack of formal discharge at this time, no further "Reasonable Potential Analysis" was performed to determine additional toxic parameters as candidates for limitations.

Chesapeake Bay/Nutrient Requirements

A portion of the Chesapeake Bay and many of its tidal tributaries have been listed as impaired under Section 303(d) of the Water Pollution Control Act, 33 U.S.C. §1313(d). Total Nitrogen and Total Phosphorus cap loads have been established for significant dischargers in Pennsylvania to reduce the total nutrient load to the Bay and meet State of Maryland Water Quality Standards. This facility is not a Chesapeake Bay Significant Industrial Wastewater discharger. Nutrient loadings over the past permit term have been minimal. Total Nitrogen has averaged <0.7 mg/L and Total Phosphorus has averaged <0.03. Therefore, the existing annual monitoring for TN and TP will be removed.

Anti-Backsliding

No limitations were made less stringent than the existing limits in this proposed draft permit consistent with the anti-backsliding requirements of 40 CFR 122.44(l).

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	1/month	Recorded
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/month	Grab
DO	XXX	XXX	6.0 Inst Min	XXX	XXX	XXX	1/month	Grab
CBOD5	XXX	XXX	XXX	4.3	XXX	8.6	1/month	Grab
TSS	XXX	XXX	XXX	10.0	XXX	20	1/month	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	3.9	XXX	7.8	1/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	1.3	XXX	2.6	1/month	Grab

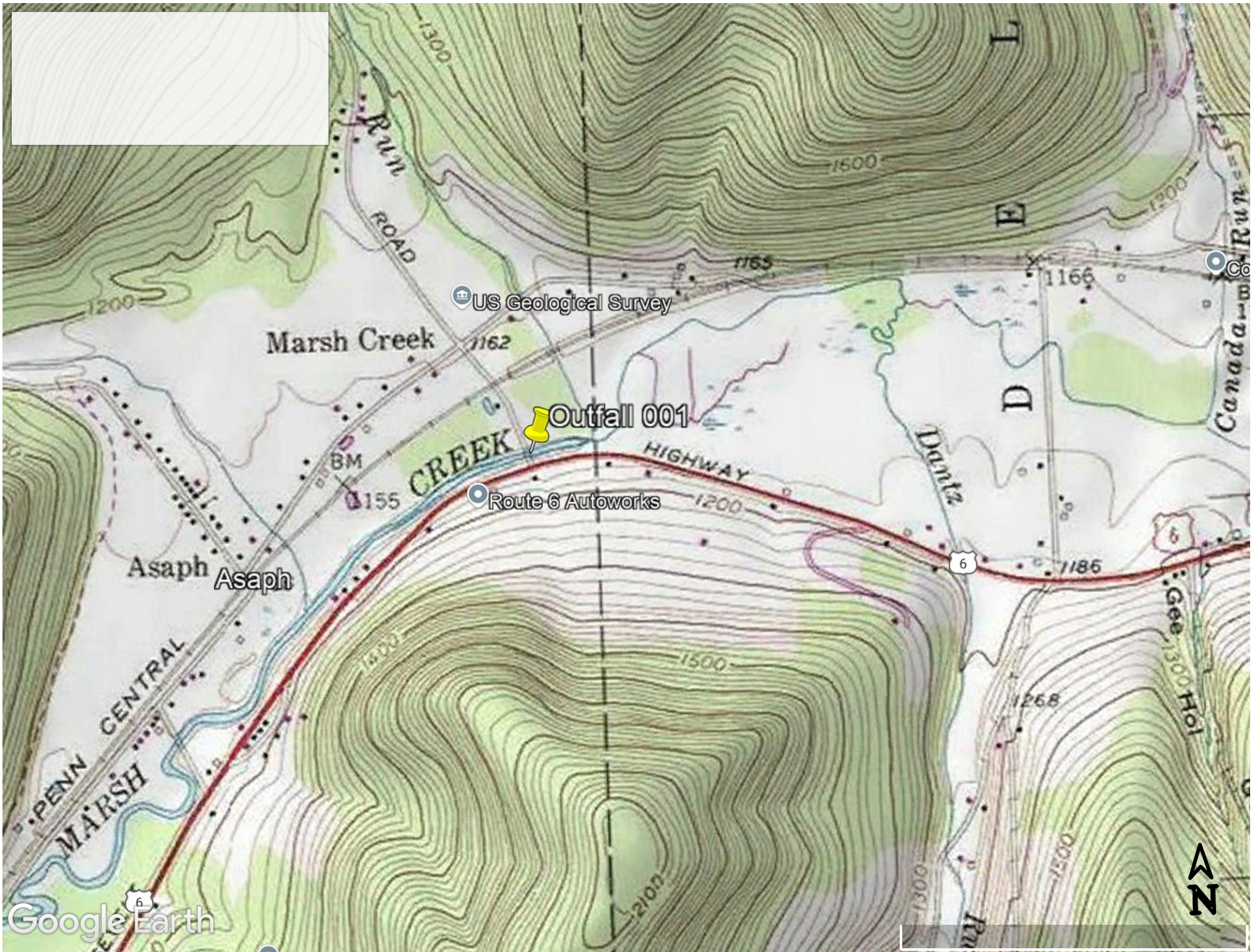
Compliance Sampling Location: Outfall 001

Other Comments: The above limitations are unchanged in this draft NPDES Permit due to the lack of operation and formal discharge at the facility. Nitrogen and Total Phosphorus monitoring have been removed as mentioned above. Should the permittee intend to resume operations at the facility an NPDES permit amendment application will be required with updated production information.

Tools and References Used to Develop Permit	
<input checked="" type="checkbox"/>	WQM for Windows Model (see Attachment B)
<input type="checkbox"/>	Toxics Management Spreadsheet (see Attachment)
<input type="checkbox"/>	TRC Model Spreadsheet (see Attachment)
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment)
<input type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input checked="" type="checkbox"/>	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
<input type="checkbox"/>	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
<input checked="" type="checkbox"/>	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
<input type="checkbox"/>	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
<input type="checkbox"/>	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
<input type="checkbox"/>	Pennsylvania CSO Policy, 386-2000-002, 9/08.
<input type="checkbox"/>	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
<input type="checkbox"/>	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
<input checked="" type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
<input type="checkbox"/>	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
<input checked="" type="checkbox"/>	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.
<input type="checkbox"/>	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
<input type="checkbox"/>	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
<input type="checkbox"/>	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
<input checked="" type="checkbox"/>	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
<input type="checkbox"/>	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
<input type="checkbox"/>	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
<input type="checkbox"/>	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
<input type="checkbox"/>	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
<input type="checkbox"/>	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.
<input checked="" type="checkbox"/>	Design Stream Flows, 386-2000-003, 9/98.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
<input checked="" type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input type="checkbox"/>	SOP:
<input type="checkbox"/>	Other:

Attachments:

- A. Discharge Location Map
- B. WQM7.0 Model



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
	09A	21856	MARSH CREEK	3.240	1139.00	60.36	0.00000	0.00	

Stream Data												
Design Cond.	LFY	Trib Flow	Stream Flow	Reh Trav Time	Reh Velocity	WD Ratio	Reh Width	Reh Depth	Tributary		Stream	
	(efsm)	(els)	(cfs)	(days)	(fps)		(ft)	(ft)	Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.100	0.00	2.42	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	Permitted Disc Flow	Design Disc Flow	Reserve Factor	Disc Temp (°C)	Disc pH	
		(mgd)	(mgd)	(mgd)				
US DOI	PA0027677	0.0000	1.8600	1.8600	0.000	25.00	7.00	

Parameter Data					
Parameter Name	Disc Cone	Trib Cone	Stream Cone	Fate Coef	
	(mg/L)	(mg/L)	(mg/L)	(1/days)	
CBOD5	13.00	2.00	0.00	1.50	
Dissolved Oxygen	3.00	8.24	0.00	0.00	
NH3-N	2.00	0.00	0.00	0.70	

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
	09A	21856	MARSH CREEK	1.340	1127.00	78.99	0.00000	0.00	

Stream Data												
Design Cond.	LFY (efsm)	Trib Flow (els)	Stream Flow (els)	Reh Trav Time (days)	Reh Velocity (fps)	WD Ratio	Reh Width (ft)	Reh Depth (ft)	Tributa!Y		Stream	
									Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.100	0.00	3.16	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
				0.0000		0.0000	0.0000

Parameter Data				
Parameter Name	Disc Cone (mg/L)	Trib Cone (mg/L)	Stream Cone (mg/L)	Fate Coef (1/days)
	CBOD5	25.00	2.00	0.00
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin		Stream Code		Stream Name								
09A		21856		MARSH CREEK								
RMI	Stream Flow (els)	PWS With (els)	Net Stream Flow (els)	Disc Analysis Flow (els)	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												
3.240	2.42	0.00	2.42	2.8774	0.00039	.744	40.56	54.54	0.18	0.167	22.72	7.00
2.760	3.10	0.00	3.10	2.8774	0.00147	.73	41.24	56.48	0.20	0.437	22.41	7.00
Q1-10 Flow												
3.240	2.12	0.00	2.12	2.8774	0.00039	NA	NA	NA	0.17	0.173	22.88	7.00
2.760	2.72	0.00	2.72	2.8774	0.00147	NA	NA	NA	0.19	0.454	22.57	7.00
Q30-10 Flow												
3.240	3.32	0.00	3.32	2.8774	0.00039	NA	NA	NA	0.19	0.153	22.32	7.00
2.760	4.25	0.00	4.25	2.8774	0.00147	NA	NA	NA	0.22	0.396	22.02	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted 01-10 and 030-10 Flows	
WLAMethod	EMPR	Use Inputted W/O Ratio	<input type="checkbox"/>
01-10/07-10 Ratio	0.876	Use Inputted Reach Travel Times	<input type="checkbox"/>
030-10/07-10 Ratio	1.37	Temperature Adjust Kr	
D.O. Saturation	90.00%	Use Balanced Technology	
D.O. Goal	6		

WQM 7.0 Wasteload Allocations

SWP Basin

09A

Stream Code

21856

Stream Name

MARSH 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
3.240US DOI		7.86	4	7.86	4	0	0
2.760		NA	NA	8.03	NA	NA	NA

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
3.240US DOI		1.62	2	1.62	2	0	0
2.760		NA	NA	1.66	NA	NA	NA

Dissolved Oxygen Allocations

RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
3.24US DOI		4.39	4.39	1.32	1.32	5	5	0	0
2.76		NA	NA	NA	NA	NA	NA	NA	NA

WQM 7.0 D.O.Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>		
09A	21856	MARSH CREEK		
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>	
3.240	1.860	22.716	7.000	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>	
40.558	0.744	54.536	0.176	
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>	<u>Reach Kn (1/days)</u>	
3.30	0.361	0.72	0.863	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>	
6.481	0.702	Tsivoglou	6	
<u>Reach Travel Time (days)</u>	<u>Subreach Results</u>			
0.167	<u>TravTime</u>	<u>CBOD5</u>	<u>NH3-N</u>	<u>D.O.</u>
	(days)	(mg/L)	(mg/L)	(mg/L)
	0.017	3.28	0.71	6.43
	0.033	3.25	0.70	6.38
	0.050	3.23	0.69	6.32
	0.067	3.21	0.68	6.27
	0.084	3.19	0.67	6.23
	0.100	3.17	0.66	6.18
	0.117	3.14	0.65	6.13
	0.134	3.12	0.64	6.09
	0.150	3.10	0.63	6.05
	0.167	3.08	0.62	6.01

<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>	
2.760	1.860	22.407	7.000	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>	
41.244	0.730	56.479	0.198	
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>	<u>Reach Kn (1/days)</u>	
2.96	0.314	0.55	0.842	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>	
6.261	2.929	Tsivoglou	6	
<u>Reach Travel Time (days)</u>	<u>Subreach Results</u>			
0.437	<u>TravTime</u>	<u>CBOD5</u>	<u>NH3-N</u>	<u>D.O.</u>
	(days)	(mg/L)	(mg/L)	(mg/L)
	0.044	2.91	0.53	6.41
	0.087	2.87	0.51	6.55
	0.131	2.82	0.49	6.68
	0.175	2.78	0.47	6.79
	0.219	2.74	0.46	6.90
	0.262	2.70	0.44	6.99
	0.306	2.66	0.42	7.08
	0.350	2.62	0.41	7.16
	0.394	2.58	0.39	7.23
	0.437	2.54	0.38	7.30

WQM 7.0 Effluent Limits

<u>SWP Basin</u>		<u>Stream Code</u>	<u>Stream Name</u>				
09A		21856	MARSH 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)
3.240	USDOI	PA0027677	0.000	CBOD5	4.39		
				NH3-N	1.32	2.64	
				Dissolved Oxygen			5