pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0209058**
Facility Type	**Municipal**	APS ID	**1027309**
Major / Minor	**Minor**	Authorization ID	**1334156**

Applicant and Facility Information

Applicant Name	**Montour Township**	Facility Name	**Montour Township WWTF**
Applicant Address	195 Rupert Drive	Facility Address	195 Rupert Drive
	Bloomsburg, PA 17815-9627		Bloomsburg, PA 17815-9627
Applicant Contact	Lori Ebright	Facility Contact	Alec Engelman
Applicant Phone	570-784-4222	Facility Phone	570-238-2465
Client ID	44706	Site ID	258008
Ch 94 Load Status	Not Overloaded	Municipality	Montour Township
Connection Status	No Limitations	County	Columbia
Date Application Received	November 17, 2020	EPA Waived?	Yes
Date Application Accepted	December 08, 2020	If No, Reason	N/A
Purpose of Application	Renewal of NPDES Permit		

Summary of Review

INTRODUCTION

Lori Ebright, the Township Secretary, applied to renew the existing NPDES permit authorizing the discharge from the Montour Township wastewater treatment facility (WWTF) in Columbia County.

APPLICATION

Ebright submitted the *NPDES Application for Individual Permit to Discharge Sewage Effluent from Minor Sewage Facilities* (DEP #3800-PM-BCW0342b). This application was received by the Department on November 17, 2020 and was considered administratively complete on December 08, 2020. Ebright is the client contact. Her additional contact information is (email) lorie@montourtownship.org. The site contact is Alec Engelman, certified operator with Phoenix Water and Wastewater Operations of Milton, PA. His contact information is (phone) 570-238-2465 and (email) alecengelman@phoenixwawo.com. The engineering consultant who submitted the application on behalf of Montour Township is Raelene Gabriel, Project Engineer with Glace Associates, Inc. of Camp Hill, PA. Her contact information is (phone) 717-731-1579 and (email) raelene@glaceeng.com.

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.

The case file, permit application package and draft permit will be available for public review at Department's Northcentral Regional Office. The address for this office is 208 West Third Street, Suite 101, Williamsport, PA 17701. An appointment can be made to review these materials during the comment period by calling the file coordinator at 570-327-3636.

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Approve	Deny	Signatures	Date
X		Jeffrey J. Gocek, EIT — Project Manager	02/17/2022
X		Nicholas W. Hartranft, PE — Environmental Engineer Manager	02/17/2022

DISCHARGE, RECEIVING WATERS AND WATER SUPPLY INFORMATION

Outfall No.	001	Design Flow (MGD)	0.10
Latitude	40º 58' 52.99"	Longitude	-76º 28' 21.53"
Quad Name	Catawissa, PA	Quad Code	1134
Wastewater Description:	Sewage Effluent		
Receiving Waters	Fishing Creek (WWF)	Stream Code	27623
NHD Com ID	65640875	RMI	0.47
Drainage Area	385	Yield (cfs/mi^2)	0.0871
Q_{7-10} Flow (cfs)	33.55	Q_{7-10} Basis	USGS #01540500
Elevation (ft)	455	Slope (ft/ft)	N/A
Watershed No.	5-C	Chapter 93 Class.	WWF
Existing Use	None	Existing Use Qualifier	None
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	N/A		
Source(s) of Impairment	N/A		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake	Danville Municipal Water Authority		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	975
PWS RMI	137	Distance from Outfall (mi)	10

$Q_{7,10}$ DETERMINATION

The $Q_{7,10}$ is the lowest seven consecutive days of flow in a 10 year period and is used for modeling wastewater treatment plant discharges. 25 PA § 96.1 defines $Q_{7,10}$ as "the actual or estimated lowest seven consecutive day average flow that occurs once in 10 years for a stream with unregulated flow or the estimated minimum flow for a stream with regulated flow".

A nearby stream gage, "Susquehanna River at Danville, PA" (USGS #01540500), is located downstream of the discharge. A $Q_{7,10}$ flow for that gage (978 CFS) was obtained from "Selected Streamflow Statistics for Streamflow Locations in and near Pennsylvania" (USGS Open Files Report 2011-1070). Knowing the drainage area at the discharge (385 mi2) and both the drainage area (11,220 mi2) and $Q_{7,10}$ (978 CFS) at the reference gage, the $Q_{7,10}$ at the discharge was calculated to be 33.55 CFS.

See Attachment 01 for the $Q_{7,10}$ determination.

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TREATMENT FACILITY

The WWTP treats domestic wastewater from the Village of Rupert. Rupert is located to the southwest of Bloomsburg, along Route 42.

The treatment system consists of five pump stations (within the collection system), an influent flow box, an equalization tank, a distribution box, two aeration tanks, two secondary clarifiers, three erosion chlorinators, a chlorine contact tank, and a flow meter prior to the outfall. The treatment system also includes a sludge holding tank and an aerated sludge holding (not in use).

See Attachment 02 for a map of the WWTF location. See Attachment 03 for a process flow diagram.

The WWTF characteristics are as follows.

Waste Type	Degree of Treatment	Process Type	Disinfection	Average Annual Flow (MGD)
Sewage	Secondary with NH3 Reduction	Extended Aeration	Hypochlorite	0.1
Hydraulic Capacity (MGD)	**Organic Capacity (lbs BOD5/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.1	185	Not Overloaded	Aerobic Digestion	Other WWTP

The above design was first approved by Water Quality Management (WQM) permit #1995402, first issued May 11, 1995. This permit was amended by letter on December 17, 2002 for the enhancement of solids handling capabilities. The organic rerate, which should have coincided with the letter amendment, was finally issued September 8, 2003. At this time, the organic loading rate of the plant was rerated to 417 pounds BOD5 per day. A formal permit amendment was issued November 16, 2005 and authorized the construction of a manual bar screen and erosion chlorination.

The NPDES permit was first issued January 18, 1995. The permit was renewed on July 18, 2000, April 18, 2005, July 21, 2010 and June 01, 2016. The annual average design flow for the WWTP is 0.1 MGD.

The annual average flow for the year prior to application submission was 0.07 MGD. The highest month during that year was 0.0889 MGD and occurred in January (2019).

COMPLIANCE HISTORY

The WMS Query *Open Violations by Client* revealed no unresolved violations for the Township.

The most recent Department inspection, a Compliance Evaluation Inspection (CEI), was conducted August 11, 2021. At the time of the inspection, all required treatment units appeared online and operational. The effluent appeared clear and there were no observed problems in the receiving stream downstream of the outfall. Corrosion on some of the metal treatment tank walls was noted, as well as work to renovate these issues. Infiltration and Inflow within the township collection system was also noted.

Recent Discharge Monitoring Report (DMR) data, from December 2020 to November 2021 is below.

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Parameter	NOV-21	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20
Flow (MGD) Average Monthly	0.0721	0.0618	0.0767	0.0583	0.0585	0.0527	0.0414	0.0625	0.075	0.0615	0.0668	0.0624
Flow (MGD) Weekly Average	0.0817	0.0748	0.0828	0.0700	0.0736	0.0578	0.0519	0.0718	0.0859	0.0698	0.0818	0.078
pH (S.U.) Minimum	7.0	6.9	7.0	7.0	6.9	6.6	6.3	6.5	6.9	6.9	7.1	6.7
pH (S.U.) Instantaneous Maximum	7.3	7.5	7.3	7.2	7.2	7.2	7.3	7.2	7.3	7.7	7.6	7.4
DO (mg/L) Minimum	5.2	5.1	5.6	5.5	4.4	4.8	4.2	5.1	9.4	10.9	9.7	7.0
TRC (mg/L) Average Monthly	0.20	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.4	0.30	0.1	0.3
TRC (mg/L) Instantaneous Maximum	0.35	0.46	0.55	0.51	0.51	0.57	0.99	0.95	0.6	0.41	0.36	0.55
CBOD5 (lbs/day) Average Monthly	< 3.0	< 2.0	< 3.0	< 2.0	< 3.0	< 3.0	< 1.0	< 4.0	< 4.0	< 3.0	< 4.0	< 3.0
CBOD5 (lbs/day) Weekly Average	< 4.0	< 3.0	< 4.0	< 2.0	< 3.0	< 3.0	< 3.0	< 5.0	< 5.0	< 3.0	< 5.0	< 3.0
CBOD5 (mg/L) Average Monthly	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0
CBOD5 (mg/L) Weekly Average	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	56	47	45	44	103	73	79	101	117	100.0	113.0	41.0
BOD5 (lbs/day) Raw Sewage Influent Weekly Average	106	85	56	52	142	84	145	147	157	104.0	157.0	41.1
BOD5 (mg/L) Raw Sewage Influent Average Monthly	138	110	86	120	253	160	237	159	170	234.0	164.0	91
TSS (lbs/day) Average Monthly	< 7.0.	3.0	< 3.0	4.0	4.0	9.0	2.0	70	5.0	5.0	5.0	5.0
TSS (lbs/day) Raw Sewage Influent Average Monthly	100	40	73	66	152	134	31	84	105	85.0	98.0	32.0
TSS (lbs/day) Raw Sewage Influent Weekly Average	186	64	98	69	154	183	47	97	146	94.0	107.0	32.0
TSS (lbs/day) Weekly Average	11	4.0	< 3.0	4.0	4.0	11	4.0	10	5.0	8.0	6.0	5.0
TSS (mg/L) Average Monthly	< 11.0	9.0	< 6.0	11.0	9.0	21.0	12.0	11.0	8.0	12.0	9.0	11.0
TSS (mg/L) Raw Sewage Influent Average Monthly	245	97	141	176	343	290	137	145	150	197.0	156.0	72.0
TSS (mg/L) Weekly Average	17.0	9.0	6.1	11.0	12.0	26.0	15.0	13.0	10.0	17.0	10.0	11.0
Fecal Coliform (No./100 ml) Geometric Mean	810	7.0	< 2.0	17	8.0	56	15	7.0	10	< 1.0	< 2.0	> 1.0
Total Nitrogen (lbs/day) Average Monthly												14
Total Nitrogen (lbs/day) Weekly Average												14
Total Nitrogen (mg/L) Average Monthly												28.1
Ammonia (mg/L) Average Monthly	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.20	< 0.2	< 0.2
Total Phosphorus (lbs/day) Average Monthly												1.0
Total Phosphorus (lbs/day) Weekly Average												1.0
Total Phosphorus (mg/L) Average Monthly												2.85

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EXISTING EFFLUENT LIMITATIONS

The following effluent limitations and monitoring requirements were established at the permit issuance/renewal on June 01, 2016.

Discharge Parameter	Mass Limits (lb/day)		Concentration Limits (mg/L)				Monitoring Requirements	
	Monthly Average	Weekly Average	Minimum	Monthly Average	Weekly Average	IMAX	Minimum Measurement Frequency	Required Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Metered
pH (SU)	XXX	XXX	6.0	XXX	XXX	9.0	1/Day	Grab
Dissolved Oxygen	XXX	XXX	Report	XXX	XXX	XXX	1/Day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.5	XXX	1.6	1/Day	Grab
$CBOD_5$	20	33	XXX	25	40	50	2/Month	8 Hour Composite
BOD5 Influent	Report	Report	XXX	Report	XXX	XXX	2/Month	8 Hour Composite
Total Suspended Solids	25	37	XXX	30	45	60	2/Month	8 Hour Composite
TSS Influent	Report	Report	XXX	Report	XXX	XXX	2/Month	8 Hour Composite
Fecal Coliform (CFU/100mL) (05/01-09/30)	XXX	XXX	XXX	200 Geometric Mean	XXX	1,000	2/Month	Grab
Fecal Coliform (CFU /100mL) (10/01-04/30)	XXX	XXX	XXX	2,000 Geometric Mean	XXX	10,000	2/Month	Grab
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/Month	8 Hour Composite
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/Year	8 Hour Composite
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	1/Year	8 Hour Composite

DEVELOPMENT OF EFFLUENT LIMITATIONS (OUTFALL 001)

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)

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Total Residual Chlorine

The Department's TRC_CALC spreadsheet is a model used to evaluate Total Residual Chlorine (TRC) effluent limitations. This model determines applicable acute and chronic wasteload allocations (WLAs) for TRC based on the data supplied by the user and then compares the WLAs to the technology-based average monthly limit using the procedures described in the EPA Technical Support Document for Water Quality-Based Toxics Control.

This model recommended the following limitations.

Parameter	Effluent Limitations (mg/L)	
	Monthly Average	IMAX
Total Residual Chlorine	0.5	1.6

See Attachment 04 for the TRC_CALC model results.

Water Quality-Based Limitations

$CBOD_5$, NH_3-N and DO

WQM 7.0 for Windows (version 1.1) is a DEP computer model used to determine wasteload allocations and effluent limitations for $CBOD_5$, NH_3-N and DO for single and multiple point source discharge scenarios. This model simulates two basic processes. The NH_3-N module simulates the mixing and degradation of NH_3-N in the stream and compares calculated instream NH_3-N concentrations to the water quality criteria. The DO module simulates the mixing and consumption of DO in the stream due to degradation of $CBOD_5$ and NH_3-N and compares the calculated instream DO concentrations to the water quality criteria. The model then determines the highest pollutant loading the stream can assimilate and still meet water quality under design conditions.

This model recommended the following limitations.

Parameter	Effluent Limitations (mg/L)		
	30 Day Average	Maximum	Minimum
CBO D_5	25		
NH_3-N	25	50	
DO			3.0

See Attachment 05 for the WQM model output.

Best Professional Judgment (BPJ) Limitations

In the absence of applicable effluent guidelines for the discharge or pollutant, permit writers must identify and/or develop needed technology-based effluent limitations (TBELs) TBELs on a case-by-case basis, in accordance with the statutory factors specified in the Clean Water Act.

No BPJ limitations have been proposed for this draft.

Anti-Backsliding

In order to comply with 40 CFR § 122.44(l)(1) (anti-backsliding requirements), the Department must issue a renewed permit with limitations as stringent as that the of the previous permit.

No less stringent limitations have been proposed for this draft.

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DEVELOPMENT OF EFFLUENT MONITORING (OUTFALL 001)

Ammonia Nitrogen

Since the *WQM 7.0 for Windows* model recommended a technology-based requirement of 25 mg/L for Ammonia Nitrogen, a continued year-round monitoring requirement will suffice. This is in accordance with the Department's *Standard Operating Procedure for Clean Water Program Establishing Effluent Limitations for Individual Sewage Permits* (SOP #BCW-PMT-033).

Dissolved Oxygen

This permit will require a monitoring requirement for Dissolved Oxygen (DO), to ensure that the effluent is well oxygenated at the point of discharge and ensures adequate operation and maintenance of the WWTF.

Influent Monitoring

In order to adequately characterize the influent wastewater, monitoring of influent Biochemical Oxygen Demand (BOD_5) and Total Suspended Solids (TSS) will be required at the same frequency of effluent CBOD5 and TSS (2/Month). This is in accordance with Department procedure.

E.coli

The Department is requiring the monitoring of Eschericia coli (E. coli), a pathogenic bacterium normally found in the intestines of healthy people and animals which is used as a fecal contamination indicator in freshwater ecosystems. Section 303(c)(1) of the Clean Water Act requires that Pennsylvania periodically review and revise water quality standards, if necessary. The 2017 triennial review final form rulemaking, published in 2020, has revised the Chapter 93 water quality standards regulations for bacteria to include E. coli. To further characterize fecal contamination of surface waters during the swimming season, the Department is requiring the quarterly reporting of effluent E. coli effluent values. In accordance with 25 PA § 92a.61, the Department may impose reasonable monitoring requirements on pollutants which could have impact on the quality of the Commonwealth's waters or the quality of waters in other states.

REMOVAL OF EFFLUENT MONITORING

Chesapeake Bay TMDL for Nutrients and Sediment

Despite 25 years of extensive restoration efforts, the Chesapeake Bay Total Maximum Daily Load (TMDL) was prompted by insufficient progress and continued poor water quality in the Chesapeake Bay and its tidal tributaries. This TMDL, required by the Clean Water Act, is the largest ever developed by the Environmental Protection Agency (EPA). This document identifies the necessary pollution reductions of nitrogen, phosphorus and sediment across Delaware, Maryland, New York, Virginia, West Virginia, District of Columbia and Pennsylvania. It also sets pollution limits necessary to meet applicable water quality standards in the Bay, tidal rivers and embayments.

Pennsylvania explains how and when it will meet its pollution allocations in its Watershed Implementation Plan (WIP), which is incorporated into the TMDL. Pennsylvania's permitting strategy for significant dischargers has been outlined in the Phase I WIP and incorporated in the Phase III WIP by reference, and imposes Total Nitrogen (TN) and Total Phosphorus (TP) cap loads on the significant dischargers.

Because the design of this facility is less than 0.2 MGD, the Department considers this an existing Phase 5 sewage facility for the purposes of implementing the Chesapeake Bay TMDL. This system has a design flow of 0.10 MGD. According to the Department's Wastewater Supplement to Phase III WIP (last revised September 13, 2021), renewed Phase 5 facilities are required to contain monitoring and reporting for TN and TP throughout the permit term at a frequency of no less than annually unless the facility has already conducted at least two years of nutrient monitoring.

Nutrient data was collected during the previous permit term. That data is summarized below.

Year	Parameter	Concentration (mg/L)	Loading (lb/day)
2019	Total Nitrogen	24.13	9.0
2019	Total Phosphorus	2.59	1.0
2020	Total Nitrogen	28.10	14
2020	Total Phosphorus	2.85	1.0

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RECEIVING STREAM

Stream Characteristics

The receiving stream is Fishing Creek, a tributary to the Susquehanna River. According to 25 PA § 93.9K, this stream is protected for *Warm Water Fishes (WWF)* and *Migratory Fishes (MF)*. These are the streams *Designated Uses*, which is defined in 25 PA § 93.1 as "those uses specified in §§ 93.9a – 93.9z for each waterbody or segment whether or not the use is being attained". Designated uses are regulations promulgated by the Environmental Quality Board (EQB) throughout the rulemaking process. This stream currently has no *Existing Use*, which is defined in 25 PA § 93.1 as "those uses actually attained in the waterbody on or after November 28, 1975 whether or not they are included in the water quality standards". Fishing Creek is identified by stream code 27623. This stream is in (Chapter 93) drainage list K and State Water Plan watershed 5C (Fishing Creek).

Impairment/TMDL

This section of Fishing Creek is attaining its designated uses aquatic life and fish consumption.

An upstream tributary to Fishing Creek, Montour Run, is impaired for aquatic life due to Turbidity, Total Suspended Solids and Siltation due to non-point sources (crop production). Total Maximum Daily Loads (TMDLs) addressing this impairment were approved by EPA in 2013. The Susquehanna River downstream is impaired for fish consumption by polychlorinated biphenyls (PCBs) from an unknown source. A TMDL addressing this impairment was approved by EPA in 1999.

ADDITIONAL CONSIDERATIONS

Hauled-In Wastes

According to the application materials, the Township does not accept hauled-in wastes.

Mass Limitations

Existing mass limitations for $CBOD_5$ and TSS are calculated by multiplying the concentration (mg/L) by the flow (MGD) by the conversion (8.34).

Rounding of Limitations

Limitations have been rounded down in accordance with the Department's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits* (#362-0400-001).

Limit Multipliers

The instantaneous maximum limitations have been calculated using multipliers of 2.0 (for sewage discharges) for determining the IMAX. This practice is in accordance with the Department's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits* (#362-0400-001).

Sample Frequencies and Types

The sample type and minimum measurement frequencies are in accordance with the Department's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits* (#362-0400-001). The minimum measurement frequencies of the nutrient parameters are in accordance with the Department's *Phase III Watershed Implementation Plan* of the Chesapeake Bay TMDL.

Special Permit Conditions

Stormwater Prohibition
Approval Contingencies
Proper Waste Disposal
Municipal Treatment Availability
Solids Management for Non-Lagoon Treatment Systems

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Supplemental Discharge Monitoring Reports

Daily Effluent Monitoring
Non-Compliance Reporting
Biosolids Production and Disposal
Hauled-in Municipal Waste
Influent and Process Control
Lab Accreditation

PROPOSED EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

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

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

Discharge Parameter	Mass Limits (lb/day)		Concentration Limits (mg/L)				Monitoring Requirements	
	Monthly Average	Weekly Average	Minimum	Monthly Average	Weekly Average	IMAX	Minimum Measurement Frequency	Required Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Metered
pH (SU)	XXX	XXX	6.0 Instantaneous Minimum	XXX	XXX	9.0	1/Day	Grab
Dissolved Oxygen	XXX	XXX	Report Instantaneous Minimum	XXX	XXX	XXX	1/Day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.5	XXX	1.6	1/Day	Grab
$CBOD_5$	20	33	XXX	25	40	50	2/Month	8 Hour Composite
BOD5 Influent	Report	Report	XXX	Report	XXX	XXX	2/Month	8 Hour Composite
Total Suspended Solids	25	37	XXX	30	45	60	2/Month	8 Hour Composite
TSS Influent	Report	Report	XXX	Report	XXX	XXX	2/Month	8 Hour Composite
Fecal Coliform (CFU/100mL) (05/01-09/30)	XXX	XXX	XXX	200 Geometric Mean	XXX	1,000	2/Month	Grab
Fecal Coliform (CFU /100mL) (10/01-04/30)	XXX	XXX	XXX	2,000 Geometric Mean	XXX	10,000	2/Month	Grab
Ammonia-Nitrogen	Report Average Quarterly	XXX	XXX	Report	XXX	XXX	1/Month	Grab
E. coli (No./100mL)	XXX	XXX	XXX	XXX	XXX	Report	1/Quarter	Grab

END of Fact Sheet.

ATTACHMENT 01

Q_{7-10} Analysis	
Facility:	Montour Township
Outfall:	001

NPDES Permit No.:	PA0209058
RMI at Outfall:	0.47

Reference Stream Gage Information	
Stream Name	Fishing Creek
Reference Gage	01540500
Station Name	Susquehanna River at Danville, PA
Gage Drainage Area (sq. mi.)	11,220
Q_{7-10} at gage (cfs)	978
Yield Ratio (cfs/mi^2)	0.0872

Q_{7-10} at Outfall	
Drainage Area at site (sq. mi.)	385.00
Q_{7-10} at discharge site (cfs)	33.559
Q_{7-10} at discharge site (mgd)	21.6896

Table 1. List of U.S. Geological Survey streamgage locations in and near Pennsylvania with updated streamflow statistics.—Continued

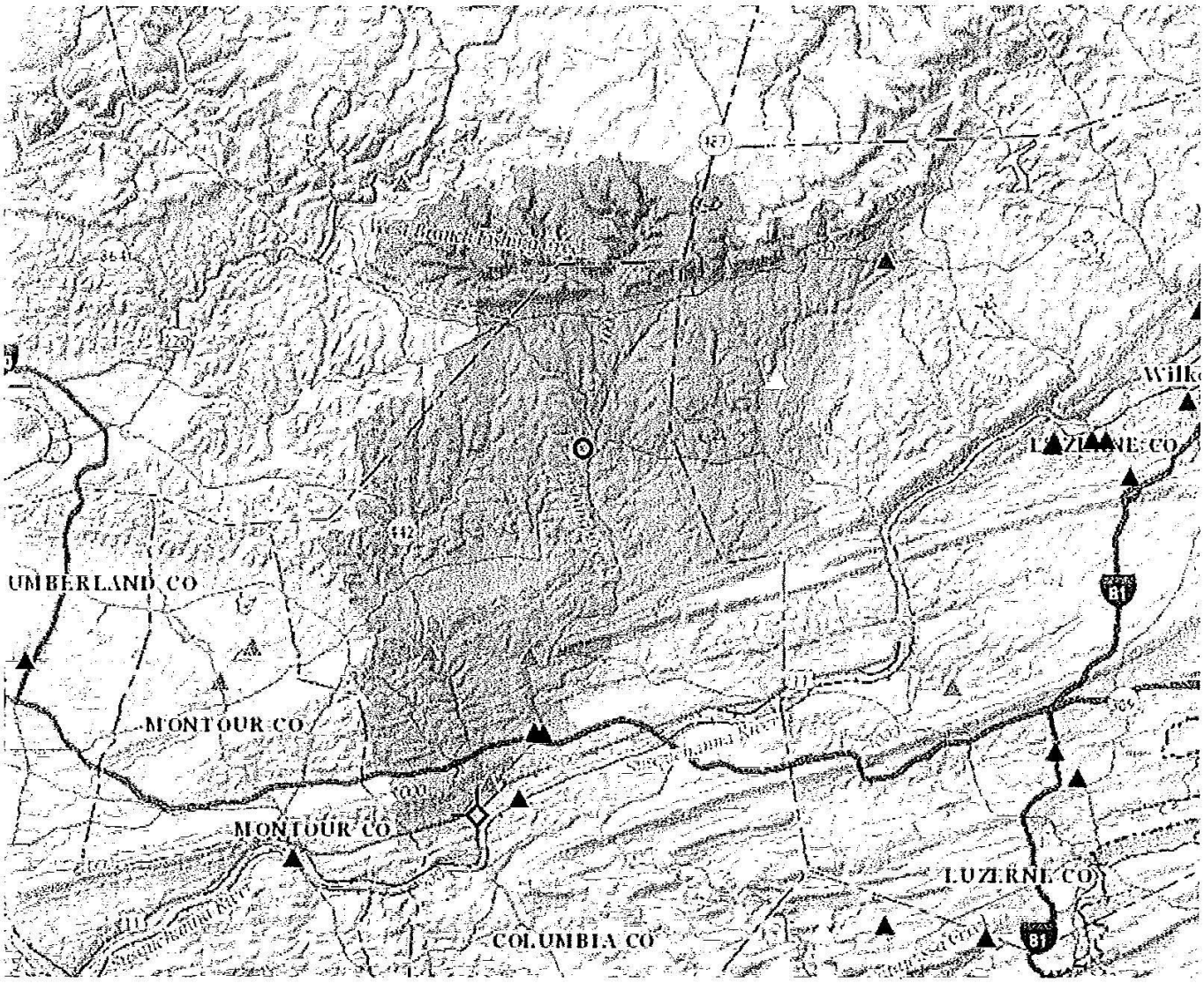
[Latitude and Longitude in decimal degrees; mi², square miles]

Streamgage number	Streamgage name	Latitude	Longitude	Drainage area (mi²)	Regulated[1]
01508803	West Branch Tioughnioga River at Homer, N.Y.	42.638	-76.176	71.5	N
01509000	Tioughnioga River at Cortland, N.Y.	42.603	-76.159	292	N
01510000	Otselic River at Cincinnatus, N.Y.	42.541	-75.900	147	N
01512500	Chenango River near Chenango Forks, N.Y.	42.218	-75.848	1,483	N
01515000	Susquehanna River near Waverly, N.Y.	41.985	-76.501	4,773	N
01516350	Tioga River near Mansfield, Pa.	41.797	-77.080	153	N
01516500	Corey Creek near Mainesburg, Pa.	41.791	-77.015	12.2	N
01518000	Tioga River at Tioga, Pa.	41.908	-77.129	282	Y
01518700	Tioga River at Tioga Junction, Pa.	41.953	-77.115	446	Y
01518862	Cowanesque River at Westfield, Pa.	41.923	-77.532	90.6	N
01520000	Cowanesque River near Lawrenceville, Pa.	41.997	-77.140	298	Y
01520500	Tioga River at Lindley, N.Y.	42.029	-77.132	771	Y
01521500	Canisteo River at Arkport, N.Y.	42.396	-77.711	30.6	Y
01523500	Canacadea Creek near Hornell, N.Y.	42.335	-77.683	57.9	Y
01524500	Canisteo River below Canacadea Creek at Hornell, N.Y.	42.314	-77.651	158	Y
01526500	Tioga River near Erwins, N.Y.	42.121	-77.129	1,377	Y
01527000	Cohocton River at Cohocton, N.Y.	42.500	-77.500	52.2	N
01527500	Cohocton River at Avoca, N.Y.	42.398	-77.417	152	N
01528000	Fivemile Creek near Kanona, N.Y.	42.388	-77.358	66.8	N
01529000	Mud Creek near Savona, N.Y.	42.308	-77.197	76.6	Y
01529500	Cohocton River near Campbell, N.Y.	42.253	-77.217	470	N
01529950	Chemung River at Corning, N.Y.	42.146	-77.057	2,006	Y
01530332	Chemung River at Elmira, N.Y.	42.086	-76.801	2,162	Y
01530500	Newtown Creek at Elmira, N.Y.	42.105	-76.798	77.5	Y
01531000	Chemung River at Chemung, N.Y.	42.002	-76.635	2,506	Y
01531500	Susquehanna River at Towanda, Pa.	41.765	-76.441	7,797	Y
01532000	Towanda Creek near Monroeton, Pa.	41.707	-76.485	215	N
01532850	MB Wyalusing Creek near Birchardville, Pa.	41.863	-76.007	5.67	N
01533400	Susquehanna River at Meshoppen, Pa.	41.607	-76.050	8,720	Y
01533500	North Branch Mehoopany Creek near Lovelton, Pa.	41.531	-76.156	35.2	N
01533950	SB Tunkhannock Creek near Montdale, Pa.	41.575	-75.642	12.6	N
01534000	Tunkhannock Creek near Tunkhannock, Pa.	41.558	-75.895	383	N
01534300	Lackawanna River near Forest City, Pa.	41.680	-75.472	38.8	Y
01534500	Lackawanna River at Archbald, Pa.	41.505	-75.542	108	Y
01536000	Lackawanna River at Old Forge, Pa.	41.359	-75.744	332	Y
01536500	Susquehanna River at Wilkes-Barre, Pa.	41.251	-75.881	9,960	Y
01537000	Toby Creek at Luzerne, Pa.	41.281	-75.896	32.4	Y
01537500	Solomon Creek at Wilkes-Barre, Pa.	41.228	-75.904	15.7	N
01538000	Wapwallopen Creek near Wapwallopen, Pa.	41.059	-76.094	43.8	N
01539000	Fishing Creek near Bloomsburg, Pa.	41.078	-76.431	274	N
01539500	Little Fishing Creek at Eyers Grove, Pa.	41.080	-76.511	56.5	N
01540200	Trexler Run near Ringtown, Pa.	40.853	-76.280	1.77	N
01540500	Susquehanna River at Danville, Pa.	40.958	-76.619	11,220	Y
01541000	West Branch Susquehanna River at Bower, Pa.	40.897	-78.677	315	N
01541200	West Branch Susquehanna River near Curwensville, Pa.	40.961	-78.519	367	Y

Table 2. Selected low-flow statistics for streamgage locations in and near Pennsylvania.—Continued

[ft³/s, cubic feet per second; —, statistic not computed; <, less than]

Streamgage number	Period of record used in analysis[1]	Number of years used in analysis	1-day, 10-year (ft³/s)	7-day, 10-year (ft³/s)	7-day, 2-year (ft³/s)	30-day, 10-year (ft³/s)	30-day, 2-year (ft³/s)	90-day, 10-year (ft³/s)
01530500	1940–2008	69	5.0	6.1	11.0	7.6	13	9.0
01531000	[2]1981–2008	28	138	147	237	169	296	203
01531000	[3]1905–1979	68	86.3	97.0	175	116	219	161
01531500	[2]1981–2008	28	550	592	1,030	733	1,340	952
01531500	[3]1915–1979	65	539	571	990	675	1,230	928
01532000	1915–2008	94	2.2	2.8	9.7	4.6	14.4	9.4
01532850	1967–1979	13	.1	.2	.4	.3	.8	.7
01533400	[2]1981–2008	28	602	648	1,110	790	1,430	1,060
01533500	1942–1958	17	.4	.6	1.5	.8	2.0	1.7
01533950	1962–1978	17	.2	.3	1.0	.6	1.4	1.0
01534000	1915–2008	94	15.2	17.3	35.9	24.2	51.0	38.7
01534300	1960–2008	49	1.1	1.7	5.1	2.8	7.6	4.8
01534500	[2]1961–2008	48	16.7	18.8	29.2	21.9	35.8	27.6
01534500	[3]1941–1959	19	18.8	23.0	33.3	25.6	39.2	34.9
01536000	[2]1961–2008	48	28.7	32.7	51.7	40.8	68.1	54.3
01536000	[3]1940–1959	20	77.8	93.9	119	105	138	124
01536500	[2]1981–2008	28	828	872	1,450	1,030	1,830	1,350
01536500	[3]1901–1979	79	778	811	1,350	927	1,640	1,260
01537000	1943–1993	51	1.3	2.0	4.9	3.1	6.4	4.7
01537500	1941–1990	50	.2	.3	1.9	.5	3.1	1.6
01538000	1921–2008	88	3.1	3.6	7.1	5.0	9.3	7.5
01539000	1940–2008	69	15.4	16.8	36.8	21.1	51.1	36.8
01539500	1942–1958	17	.1	.3	1.4	1.0	3.3	2.3
01540200	1965–1981	17	0	0	.3	.1	.3	.1
01540500	[2]1981–2008	28	1,080	1,120	1,870	1,320	2,330	1,690
01540500	[3]1906–1979	74	927	978	1,660	1,160	2,050	1,590
01541000	1915–2008	94	25.3	27.9	50.7	35.3	66.6	49.6
01541200	[2]1967–2008	40	34.6	45.2	66.0	63.1	100	92.4
01541200	[3]1957–1965	9	22.9	24.7	44.7	27.7	58.2	36.4
01541303	1980–2008	29	53.4	58.5	94.0	74.4	123	102
01541308	1969–1979	11	1.3	1.3	1.9	1.6	2.4	2.1
01541500	[2]1962–2008	47	39.0	41.9	66.5	51.9	86.3	70.6
01541500	[3]1915–1960	46	14.9	21.3	41.9	28.5	55.0	42.9
01542000	1942–1993	52	8.1	9.1	14.8	11.3	17.8	14.6
01542500	[2]1967–2008	33	216	235	326	285	435	402
01542500	[3]1941–1965	20	—	131	189	152	243	221
01542810	1966–2008	43	.1	.1	.3	.2	.5	.3
01543000	1915–2008	94	2.9	4.2	16.0	9.6	27.4	19.2
01543500	1940–2008	69	10.7	14.5	44.9	26.6	74.9	50.5
01544000	[2]1957–2008	52	3.3	6.9	19.0	11.2	31.1	19.0
01544500	1942–2008	67	4.2	4.9	12.5	7.5	17.4	11.7
01545000	[2]1964–2008	45	6.8	8.2	21.2	12.0	32.7	20.7
01545500	[2]1963–2008	46	217	238	446	306	629	428
01545500	[3]1909–1961	53	125	141	278	190	387	296
01545600	1966–2008	43	1.2	1.5	4.4	2.4	6.7	4.2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MONTOUR CO
MONTOUR CO
COLUMBIA CO
LUZERNE CO
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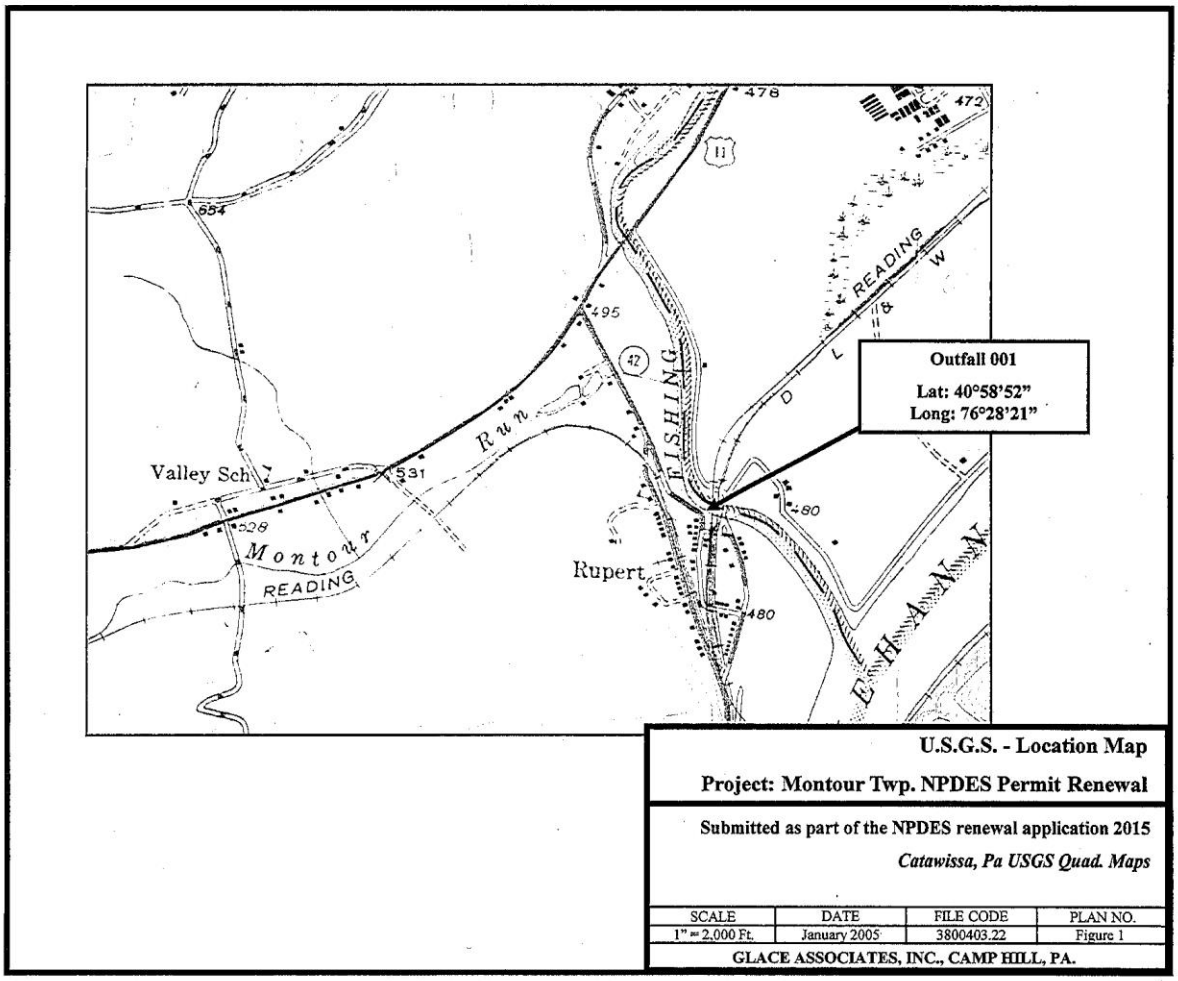
ATTACHMENT 02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Submitted as part of the NPDES renewal application 2015
Catawissa, Pa USGS Quad. Maps
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January 2005
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3800403.22
PLAN NO.
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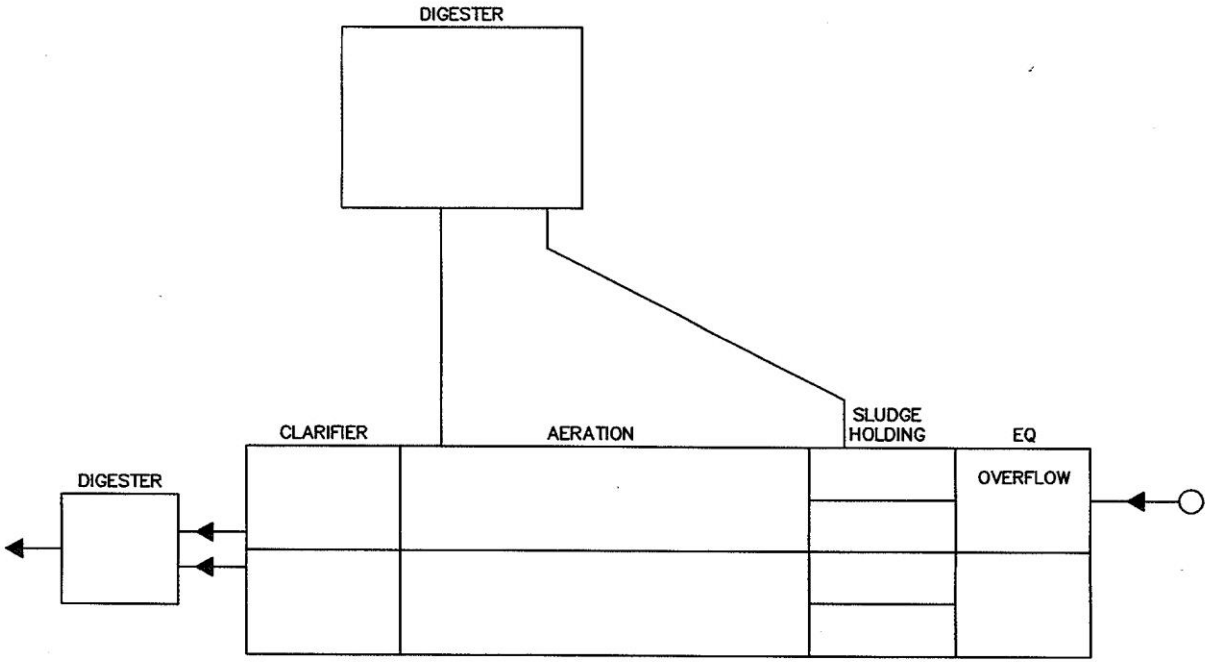
GLACE ASSOCIATES, INC., CAMP HILL, PA.

ATTACHMENT 03


DIGESTER
CLARIFIER
AERATION
SLUDGE HOLDING
EQ
DIGESTER
OVERFLOW

ATTACHMENT 04

TRC_CALC.xls

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

33.55	= Q stream (cfs)	0.5	= CV Daily
0.1	= 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 = 69.201	1.3.2.iii	WLA cfc = 67.458
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 25.786	5.1d	LTA_cfc = 39.217

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.635	

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)**

ATTACHMENT 05

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
05C	27623	FISHING 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)
0.600	Montour Twp	PA0209058	0.100	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			3

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
05C	27623	FISHING CREEK	**0.600**	455.00	385.00	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	0.100	0.00	33.55	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
Montour Twp	PA0209058	0.1000	0.1000	0.1000	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	3.00	8.24	0.00	0.00
NH3-N	25.00	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
05C	27623	FISHING CREEK	**0.100**	448.00	386.00	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	0.100	0.00	33.64	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	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	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
05C	27623	FISHING CREEK

RMI	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												
0.600	33.55	0.00	33.55	.1547	0.00265	.946	92.42	97.74	0.39	0.079	20.02	7.00
Q1-10 Flow												
0.600	21.47	0.00	21.47	.1547	0.00265	NA	NA	NA	0.30	0.102	20.04	7.00
Q30-10 Flow												
0.600	45.63	0.00	45.63	.1547	0.00265	NA	NA	NA	0.46	0.067	20.02	7.00

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		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
05C	27623	FISHING 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
0.600	Montour Twp	16.71	50	16.71	50	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
0.600	Montour Twp	1.88	25	1.88	25	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
0.60	Montour Twp	25	25	25	25	3	3	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
05C	27623	FISHING CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.600	0.100	20.023	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
92.415	0.946	97.736	0.386
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.11	0.077	0.11	0.701
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.219	4.773	Tsivoglou	6
Reach Travel Time (days)			
0.079			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.008	2.10	0.11	8.24
0.016	2.10	0.11	8.24
0.024	2.10	0.11	8.24
0.032	2.10	0.11	8.24
0.040	2.10	0.11	8.24
0.048	2.10	0.11	8.24
0.055	2.10	0.11	8.24
0.063	2.10	0.11	8.24
0.071	2.09	0.11	8.24
0.079	2.09	0.11	8.24