Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0081361**
Facility Type	**Non-Municipal**	APS ID	**1099327**
Major / Minor	**Minor**	Authorization ID	**1471506**

Applicant and Facility Information

Applicant Name	**The York Water Co.**	Facility Name	**Memphord Estates STP**
Applicant Address	130 E Market Street	Facility Address	596 West Siddonsburg Road
	York, PA 17401-1219		Dillsburg, PA 17019
Applicant Contact	Matthew Scarpato	Facility Contact	Fred Walton
Applicant Phone	(717) 845-3601	Facility Phone	(484) 643-0024
Client ID	69800	Site ID	258250
Ch 94 Load Status	Not Overloaded	Municipality	Monaghan Township
Connection Status		County	York
Date Application Received	January 30, 2024	EPA Waived?	Yes
Date Application Accepted	February 8, 2024	If No, Reason	

Purpose of Application: Renewal of existing NPDES Permit

Summary of Review

The York Water Company has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit for the Memphord Estates STP. The permit was last reissued to The Memphord Estates Sewerage Company on July 18, 2019, and transferred to The York Water Company on January 31, 2024. The permit expired on July 31, 2024, but the terms and conditions of the permit have been administratively extended since that time.

Based on the review outlined in this fact sheet, it is recommended that the permit be drafted, and a notice of the draft permit be published in the *Pennsylvania Bulletin* for public comments for 30 days. A file review of documents associated with the discharge or permittee may be available at the PA DEP southcentral regional office (SCRO), 909 Elmerton Avenue, Harrisburg, PA 17110. To make an appointment for file reviews, contact the SCRO file review coordinator at 717.705.4700.

Sludge use and disposal description and location(s): Hauled offsite by Walters Environmental Services.

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
X		*Aaron Baar* Aaron Baar / Project Manager	February 5, 2025
X		*Daniel W. Martin* Daniel W. Martin, P.E. / Environmental Engineer Manager	February 6, 2025

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	.05
Latitude	40º 8' 14.56"	Longitude	-76º 59' 57.34"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Stony Run (CWF)	Stream Code	63124
NHD Com ID	56407369	RMI	1.82
Drainage Area	11.9 mi^2	Yield (cfs/mi^2)	0.0587
Q_{7-10} Flow (cfs)	0.698	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	466.46	Slope (ft/ft)	
Watershed No.	7-E	Chapter 93 Class.	CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	FLOW REGIME MODIFICATION, SILTATION		
Source(s) of Impairment	SOURCE UNKNOWN, SOURCE UNKNOWN		
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	United Water PA, Inc.		
PWS Waters	Yellow Breaches Creek	Flow at Intake (cfs)	
PWS RMI	8.21	Distance from Outfall (mi)	13.67

Changes Since Last Permit Issuance:

The permits associated with the Memphord Estates STP were transferred to The York Water Company on January 31, 2042.

Drainage Area

The discharge is to Stony Run at RMI 1.82. A drainage area upstream of the discharge point is determined to be 11.9 sq.mi. according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Stream Flow

According to StreamStats, the watershed has a Q_{7-10} of 0.698 cfs. This information was used to obtain a LFY, a chronic 30-day (Q_{30-10}) and acute (Q_{1-10}) exposure stream flows for the discharge point as follows (Guidance No. 391-2000-023).

Q_{7-10} = 0.698 cfs
Q_{30-10} = 1.36 * 0.698 cfs = 0.9493 cfs
Q_{1-10} = 0.64 * 0.698 cfs = 0.4467 cfs
LFY = 0.698 cfs/1.63 mi^2 = 0.0587 cfs/mi^2

Stony Run

25 Pa Code §93.9 classifies the receiving water, Stony Run, with a CWF existing use designation. No special protection waters are impacted by this discharge. The discharge is in a stream segment listed as impaired due to flow regime modification and siltation (source unknown) and as supporting recreational uses in the 2024 Integrated Report. 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.

Local Watershed Total Maximum Daily Loads (TMDLs)

According to PA's 2024 Integrated Water Quality Monitoring and Assessment Report, Stony Run in the vicinity of the point of discharge is listed as impaired for aquatic life due to flow regime modification with a Category 4c designation, indicating that the waters are impaired for one or more uses not needing a TMDL because the impairment is not caused by a pollutant. The water way is listed as impaired for aquatic life due to siltation with a Category 5 designation, indicating that the waters are impaired for one or more uses by a pollutant that requires the development of a TMDL. The water way is listed as supporting recreation with a Category 2 classification, indicating that some but not all uses are met.

Public Water Supply Intake

The nearest downstream public water supply intake is the United Water PA, Inc. intake located on the Yellow Breaches Creek approximately 14 miles from the discharge. Considering the distance and nature, the discharge is not expected to significantly affect the water supply.

Class A Wild Trout Streams

The receiving stream is not a Class A Wild Trout stream; therefore, no Class A Wild Trout Fishery is impacted by this discharge.

Treatment Facility Summary

Treatment Facility Name: Memphord Estates

WQM Permit No.	Issuance Date
6788412 T-1	1/31/2024

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Conventional Activated Sludge	Hypochlorite	0.05

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

The York Water Company owns and operates the Memphord Estates sanitary wastewater treatment facility located in Monaghan Township, York County. The facility serves only the Memphord Estates development, all wastes are residential in nature, and all sewer systems are 100% separated. With having both annual average design flow and hydraulic design capacity of 0.050 MGD, this facility consists of a bar screen, a comminutor, an EQ tank, six aeration tanks, two settling tanks, a chlorinator, a chlorine contact tank, a dechlorination tank and the outfall (i.e., Outfall 001). Calcium hypochlorite (disinfection), sodium sulfite (dichlorination), soda ash (pH control) and alum (settling) are all utilized at the facility). Solids are treated onsite in three sludge digesters before being hauled offsite for disposal.

Compliance History	
Summary of DMRs:	DMR results for the past year are presented below.
Summary of Inspections:	Since the last renewal of the facility's NPDES permit, the following inspections have been logged: August 17, 2019: A CEI was conducted by Austen Randecker. A violation was issued for failure to operate and maintain all facilities and systems. November 13, 2019, 2019: A CEI was conducted by Austen Randecker. A violation was issued for failure to operate and maintain all facilities and systems. Recommendations were made to repair the clarifier trough (hole), ensuring the EQ tank splitter box is online, removing screening device over CCT, conducting an electrical evaluation of the pump station and EQ basin pumps, and conducting MLSS and SVI evaluations as part of regular process controls. November 13, 2019, 2019: An incidence inspection was conducted by Kevin Buss. A violation was issued for an unauthorized discharge at the Summer Drive Pumping Station. September 17, 2020: A CEI was conducted by Austen Randecker. No violations were noted. A recommendation was made to complete the transfer of the STP's NODES and WQM permits January 21, 2021: An administrative inspection was conducted by phone by Kevin Buss. No violations were noted. Requests were made for an identification of responsible person in charge of the facility and an Annual Chesapeake Bay Supplemental Report for 2020. August 10, 2021: A NOV was issued for various NPDES discharge violations. May 31, 2023: A CO&A was executed. Corrective actions included completing an evaluation of the STP and submitting a schedule of planned corrective actions. October 31, 2024: A CEI was conducted by Shawn Lesitsky. No violations were noted. Recommendations were made to prioritize the replacement of the EQ tank, provide timelines for future work to be completed in order to satisfy the CO&A, continue to submit quarterly progress reports, provide a summary of collection system work, provide a plan to address I&I, run fecal samples to the permit limit in winter, replace the DO cap and replace the sampler tubing.

Other Comments: As of February 5, 2025, there are no open violations associated with the permittee.

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	Weekly Average	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 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	Report	Report	XXX	25.0	XXX	50.0	2/month	8-Hr Composite
TSS	Report	Report	XXX	30.0	XXX	60.0	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Nitrate-Nitrite (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Nitrogen (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia	Report	XXX	XXX	8.5	XXX	17.0	2/month	8-Hr Composite
Ammonia (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
TKN	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TKN (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation

Outfall 001, Continued (from 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	Weekly Average	Minimum	Average Monthly	Maximum	Instant. Maximum		
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Ammonia (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation

Compliance Sampling Location: Outfall 001

Compliance History

DMR Data for Outfall 001 (from January 1, 2024 to December 31, 2024)

Parameter	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24
Flow (MGD) Average Monthly	0.016	0.018	0.02	0.018	0.030	0.023	0.023	0.021	0.030	0.025	0.021	0.0338
Flow (MGD) Daily Maximum	0.028	0.035	0.032	0.030	0.120	0.035	0.031	0.041	0.130	0.069	0.046	0.1462
pH (S.U.) Instantaneous Minimum	7.38	7.47	7.08	7.11	7.11	7.42	7.21	7.08	7.15	6.82	6.75	7.05
pH (S.U.) Instantaneous Maximum	8.25	8.31	8.12	8.44	8.38	8.39	8.48	8.49	8.13	7.47	7.47	8.32
DO (mg/L) Instantaneous Minimum	8.83	8.62	8.4	7.94	2.03	6.31	5.56	6.13	6.7	6.56	7.40	9.8
TRC (mg/L) Average Monthly	0.19	0.31	0.24	0.18	0.30	0.37	0.31	0.35	0.28	0.37	0.26	0.01

TRC (mg/L) Instantaneous Maximum	0.72	0.68	0.7	0.41	1.36	1.41	0.94	1.11	1.28	1.48	1.56	0.06
CBOD5 (lbs/day) Average Monthly	< 0.2	0.4	0.8	< 0.4	< 0.5	1.8	< 0.3	3.4	0.6	< 1.9	< 0.4	< 0.53
CBOD5 (lbs/day) Weekly Average	< 0.2	0.6	1.0	< 0.4	0.6	2.0	< 0.3	5.1	0.7	2.0	< 0.4	< 0.71
CBOD5 (mg/L) Average Monthly	< 2.4	3.2	4.1	< 2.4	< 2.4	6.5	< 2.4	18.1	3.1	< 5.0	< 2.4	< 3.50
CBOD5 (mg/L) Instantaneous Maximum	< 2.4	4.0	4.8	< 2.4	< 2.4	7.4	< 2.4	27.6	3.5	9.2	2.4	4.6
TSS (lbs/day) Average Monthly	0.2	0.4	1.3	0.3	0.4	6.5	0.3	5.6	0.8	10.6	0.3	0.82
TSS (lbs/day) Weekly Average	0.2	0.6	1.5	0.3	0.7	10.2	0.3	6.43	1.2	18.3	0.5	1.34
TSS (mg/L) Average Monthly	2.0	3.0	6.5	1.5	2.0	23.5	2.0	30.0	4.0	39.7	2.0	9.5
TSS (mg/L) Instantaneous Maximum	2.0	4.0	7.0	2.0	3.0	37.0	2.0	35.0	6.0	105.0	3.0	18.0
Fecal Coliform (No./100 ml) Geometric Mean	< 11	13	37	> 319	< 1	4	< 1	> 2420	387	29	1733	20
Fecal Coliform (No./100 ml) Instantaneous Maximum	129	15	691	> 2420	5	4	< 1	> 24200	> 2420	866	1733	37
Nitrate-Nitrite (mg/L) Average Monthly	4	5	24	19	1	< 1	1	1	6	24	34	< 12.10
Nitrate-Nitrite (lbs) Total Monthly	13	20	149	97	6	< 6	3	5	33	283	142	< 61.54
Total Nitrogen (mg/L) Average Monthly	6.4	< 8.0	< 24.3	< 19.5	4.4	< 9.7	4.2	< 7.7	14.4	32.1	< 34.0	< 12.60
Total Nitrogen (lbs) Total Monthly	18	< 33	< 153	< 99	33	< 84	16	< 45	86	419	< 145	< 64.41
Total Nitrogen (lbs) Total Annual				1540								
Ammonia (lbs/day) Average Monthly	0.11	< 0.23	< 0.03	< 0.02	1.64	1.81	0.20	0.76	1.43	< 0.22	< 0.02	< 0.02
Ammonia (mg/L) Average Monthly	1.2	< 1.7	< 0.2	< 0.1	10.2	6.5	0.2	4.0	7.2	< 0.7	< 0.1	< 0.10
Ammonia (mg/L) Instantaneous Maximum	1.7	3.2	0.2	< 0.1	18.0	8.8	1.5	6.6	12.0	1.8	0.1	< 0.10

Ammonia (lbs) Total Monthly	3.4	< 6.9	< 0.9	< 0.6	50.8	56.0	6.0	23.4	42.9	< 6.7	< 0.4	< 0.57
Ammonia (lbs) Total Annual				188								
TKN (mg/L) Average Monthly	1.9	< 3.1	< 0.8	< 0.6	10.6	9.0	3.1	< 6.8	8.8	8.0	< 0.5	< 0.50
TKN (lbs) Total Monthly	5	< 13	< 5	< 0.09	53	78	13	< 40	52	136	< 2	< 2.87
Total Phosphorus (lbs/day) Average Monthly	0.2	0.8	1.3	1.1	0.5	1.9	0.4	0.5	0.6	1.7	0.7	0.23
Total Phosphorus (mg/L) Average Monthly	2.4	5.5	6.5	6.3	2.8	6.7	3.7	2.4	3.2	4.3	4.9	1.80
Total Phosphorus (lbs) Total Monthly	7	23	41	32	17	57	11	14	19	52	21	7.24
Total Phosphorus (lbs) Total Annual				373								

Compliance History

Effluent Violations for Outfall 001, from: February 1, 2024 To: December 31, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
DO	08/31/24	Inst Min	2.03	mg/L	5.0	mg/L
DO	08/31/24	Inst Min	2.03	mg/L	5.0	mg/L
TSS	03/31/24	Avg Mo	39.7	mg/L	30.0	mg/L
TSS	03/31/24	IMAX	105.0	mg/L	60.0	mg/L
Fecal Coliform	09/30/24	Geo Mean	> 319	No./100 ml	200	No./100 ml
Fecal Coliform	05/31/24	Geo Mean	> 2420	No./100 ml	200	No./100 ml
Fecal Coliform	04/30/24	IMAX	> 2420	No./100 ml	10000	No./100 ml
Fecal Coliform	09/30/24	IMAX	> 2420	No./100 ml	1000	No./100 ml
Fecal Coliform	05/31/24	IMAX	> 24200	No./100 ml	1000	No./100 ml
Ammonia	08/31/24	Avg Mo	10.2	mg/L	8.5	mg/L
Ammonia	08/31/24	Avg Mo	10.2	mg/L	8.5	mg/L
Ammonia	08/31/24	IMAX	18.0	mg/L	17.0	mg/L
Ammonia	08/31/24	IMAX	18.0	mg/L	17.0	mg/L

Other Comments: The facility is currently covered by a CO&A to address operational issues.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .05
Latitude 40º 8' 15.00" **Longitude** -76º 59' 58.00"
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: These standards apply, subject to water quality analysis and BPJ where applicable.

Water Quality-Based Limitations

CBOD5, NH3-N and Dissolved Oxygen (DO)

WQM 7.0 version 1.0b is a water quality model designed to assist DEP to determine appropriate permit requirements for CBOD5, NH3-N and DO. DEP's guidance no. 391-2000-007 provides the technical methods contained in WQM 7.0 for conducting wasteload allocation and for determining recommended NPDES effluent limits for point source discharges.

The model was utilized, and the model output indicated that existing WQBEL for CBOD5 and ammonia are still appropriate and protective of water quality.

A minimum of 5.0 mg/L for DO is an existing effluent limit and will remain unchanged in the draft permit as recommended by DEP's SOP. This requirement has also been assigned to other sewage facilities in the region. 5.0 mg/L is taken directly from 25 Pa. Code § 93.7(a) and it is also determined to be appropriate according to water quality modeling.

Total Residual Chlorine

Since chlorine is used for disinfection, Total Residual Chlorine (TRC) effluent levels must be regulated in accordance with 25 Pa Code §92a.48(b). DEP's TRC_CALC worksheet is utilized to determine if the existing BAT TBEL is still appropriate. The worksheet indicates that the existing limits of 0.5 mg/L (average monthly) and 1.6 mg/L (IMAX) are still protective of water quality.

Toxics

DEP's NPDES permit application for minor sewages (less than 0.1 MGD) does not require sampling for heavy metals including Total Copper, Total Lead, and Total Zinc.

Best Professional Judgment (BPJ) Limitations

Total Phosphorus & Total Nitrogen

DEP's SOP no. BPNPSM-PMT-033 recommends monitoring requirements for Total Phosphorus and Total Nitrogen for all sewage facilities. Therefore, routine monitoring for TKN, Nitrate-Nitrite, Total Nitrogen and Total Phosphorus are recommended to be continued in this permit renewal twice monthly.

Additional Considerations

Flow Monitoring

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

E. Coli Monitoring

In conformity with the Department's *Establishing Effluent Limitations for Individual Sewage Permits* (SOP No. BCW-PMT-033) and as authorized by § 92a.61 of the PA Code, quarterly E. Coli monitoring has been proposed in this permit. The collection method will be via grab sample.

Chesapeake Bay TMDL

The Department formulated a strategy in April 2007, to comply with the EPA's and Chesapeake Bay Foundation's requirements to reduce point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP) to the Bay. In the Strategy, sewage dischargers have been prioritized by Central Office based on their delivered TN loadings to the Bay. The highest priority (Phases 1, 2, and 3) dischargers received annual loading caps based on their design flow on August 29, 2005 and concentrations of 6 mg/l TN and 0.8 mg/l TP. Phase 4 (0.2 -0.4mgd) and Phase 5 (below 0.2mdg) facilities were required to monitor and report TN and TP during permit renewal at a monitoring frequency following Table 6-3 of DEP's Technical Guidance for Development and Specification of effluent Limitations (No. 362-0400-001).

EPA published the Chesapeake Bay Total Maximum Daily Load (TMDL) in December of 2010. Despite extensive restoration efforts during the past 25 years, the TMDL was prompted by insufficient progress and continued poor water quality in the Chesapeake Bay and its tidal tributaries.

In order to address the TMDL, Pennsylvania developed, in addition to the Bay Strategy, a Chesapeake Watershed Implementation Plan (WIP) Phase 1 in January 2011, Phase 2 in March 2012 and Phase 3 in December 2019. In accordance with the Phase 3 WIP, re-issuing permits for significant dischargers follow the same phased approach formulated in the original Bay strategy, whilst Phase 4 and Phase 5 will be required to monitor and report TN and TP during permit renewal.

The Phase 3 WIP categorizes this facility as a phase 5 non-significant sewage facility that has a design flow less than 0.2 MGD but greater than 0.002 MGD. The WIP recommends monitoring and reporting for Total Nitrogen and Total Phosphorus throughout the permit term at a frequency no less than annual. As discussed previously, continued twice monthly testing of these pollutants is proposed in this permit.

Monitoring Frequency and Sample Type

Unless discussed otherwise above, the permit's monitoring frequency and sample type for all parameters will remain unchanged from the last permit renewal.

Antidegradation Requirements

All effluent limitations and monitoring requirements have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected.

Anti-backsliding Requirement

All effluent limits proposed in this fact sheet are as stringent as effluent limits specified in the existing permit renewal. This approach is in accordance with 40 CFR §122.44(l(1).

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	Monthly Average	Maximum	Instant. Maximum		
Total Nitrogen (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Ammonia (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation

Compliance Sampling Location: Outfall 001

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.

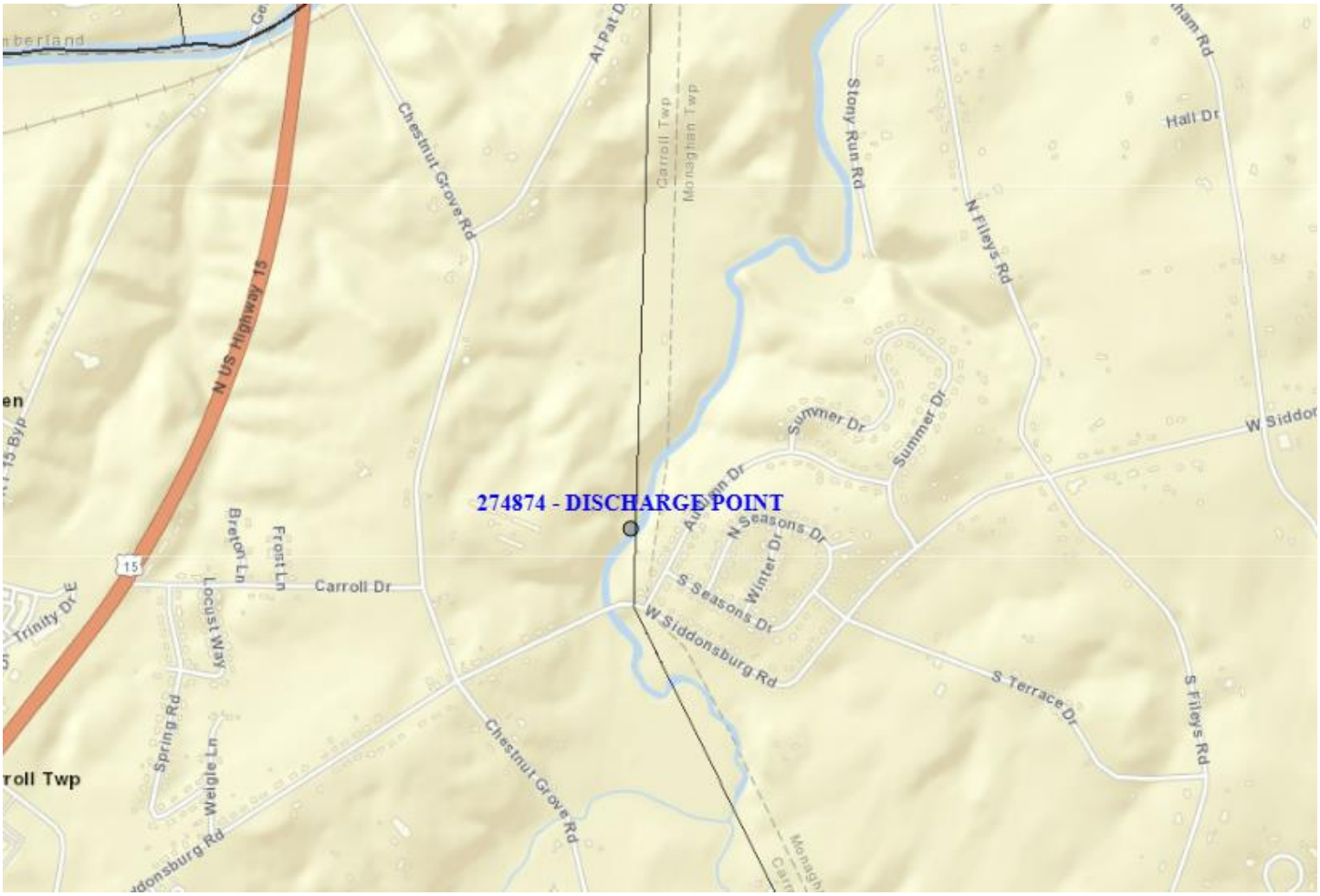
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	Report	Report	XXX	25.0	XXX	50.0	2/month	8-Hr Composite
TSS	Report	Report	XXX	30.0	XXX	60.0	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Nitrate-Nitrite (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Nitrogen (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia	Report	XXX	XXX	8.5	XXX	17.0	2/month	8-Hr Composite

Outfall 001, Continued (from 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	Weekly Average	Minimum	Average Monthly	Maximum	Instant. Maximum		
Ammonia (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
TKN	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TKN (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation

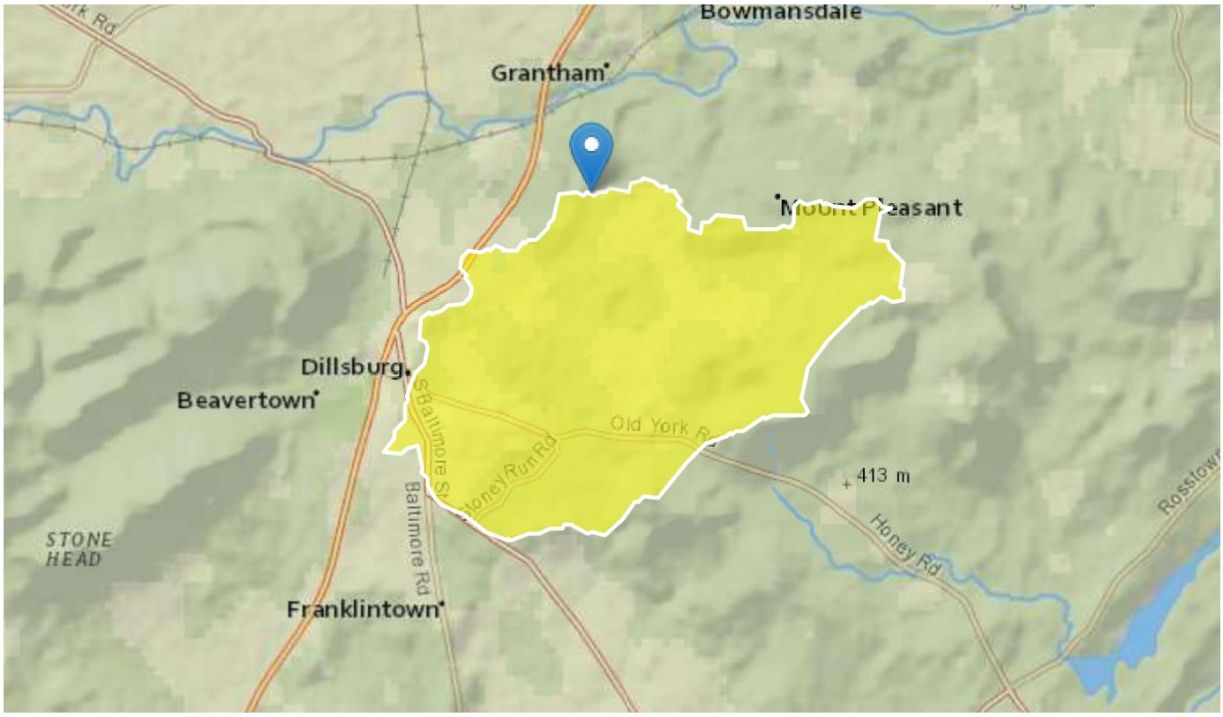
Compliance Sampling Location: Outfall 001

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:
☐	Other:


274874 - DISCHARGE POINT
N US Highway 15
Chestnut Grove Rd
Carroll Twp
Monaghan Twp
Stony Run Rd
Hall Dr
N Filleys Rd
Summer Dr
Auburn Dr
N Seasons Dr
Winter Dr
S Seasons Dr
W Siddonsburg Rd
S Terrace Dr
S Filleys Rd
Carroll Dr
Frost Ln
Breton Ln
Locust Way
Trinity Dr E
Spring Rd
Weigle Ln
15

StreamStats Report

Region ID: PA
Workspace ID: PA20250205122133078000
Clicked Point (Latitude, Longitude): 40.13745, -76.99923
Time: 2025-02-05 07:21:57 -0500



Collapse All

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	11.9	square miles
PRECIP	Mean Annual Precipitation	41	inches
ROCKDEP	Depth to rock	4.9	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.9	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CARBON	Percent Carbonate	0	percent	0	99
DRNAREA	Drainage Area	11.9	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
ROCKDEP	Depth to Rock	4.9	feet	3.32	5.65
STRDEN	Stream Density	1.9	miles per square mile	0.51	3.1

Low-Flow Statistics Flow Report [Low Flow Region 2]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

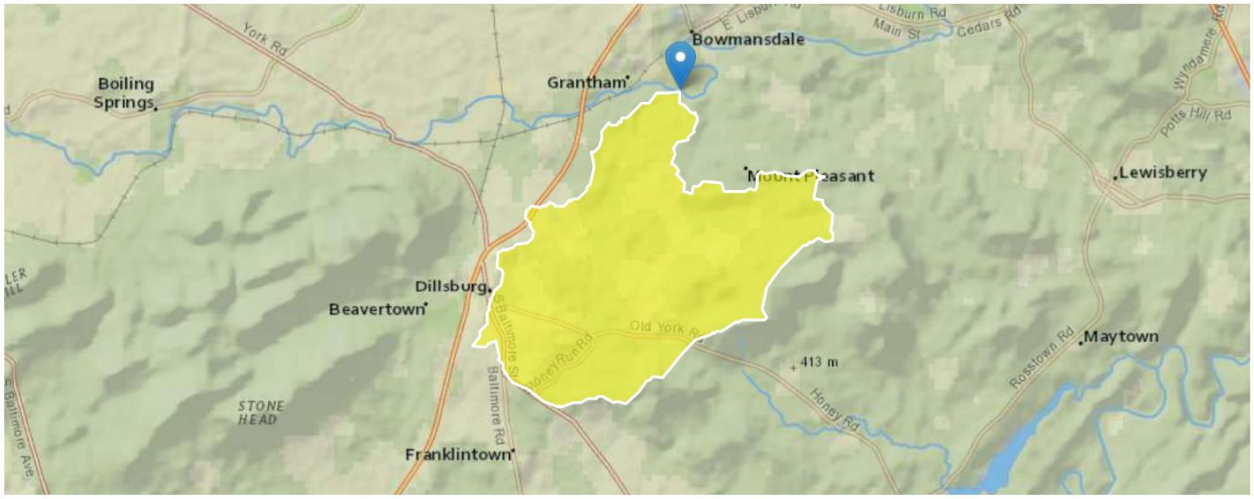
Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	1.36	ft^3/s	38	38
30 Day 2 Year Low Flow	1.8	ft^3/s	33	33
7 Day 10 Year Low Flow	0.698	ft^3/s	51	51
30 Day 10 Year Low Flow	0.9	ft^3/s	46	46
90 Day 10 Year Low Flow	1.36	ft^3/s	36	36

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

StreamStats Report

Region ID: PA
Workspace ID: PA20250205122532029000
Clicked Point (Latitude, Longitude): 40.15369, -76.98167
Time: 2025-02-05 07:25:55 -0500



Collapse All

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	13	square miles
PRECIP	Mean Annual Precipitation	41	inches
ROCKDEP	Depth to rock	4.9	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.91	miles per square mile

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CARBON	Percent Carbonate	0	percent	0	99
DRNAREA	Drainage Area	13	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	41	inches	35	50.4
ROCKDEP	Depth to Rock	4.9	feet	3.32	5.65
STRDEN	Stream Density	1.91	miles per square mile	0.51	3.1

Low-Flow Statistics Flow Report [Low Flow Region 2]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	1.5	ft^3/s	38	38
30 Day 2 Year Low Flow	1.97	ft^3/s	33	33
7 Day 10 Year Low Flow	0.769	ft^3/s	51	51
30 Day 10 Year Low Flow	0.99	ft^3/s	46	46
90 Day 10 Year Low Flow	1.49	ft^3/s	36	36

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.26.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07E	63124	STONY RUN

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)
1.820	MESCO	PA0081361	0.050	CBOD5	25		
				NH3-N	8.5	17	
				Dissolved Oxygen			5

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07E	63124	STONY 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
1.820	MESCO	15.77	17	15.77	17	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
1.820	MESCO	1.84	8.5	1.84	8.5	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)		
1.82	MESCO	25	25	8.5	8.5	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07E	63124	STONY RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.820	0.050	20.499	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
14.283	0.499	28.621	0.109
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
4.29	0.589	0.85	0.727
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.919	17.968	Owens	6
Reach Travel Time (days)			
1.022			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.102	4.04	0.79	8.17
0.204	3.80	0.73	8.17
0.307	3.57	0.68	8.17
0.409	3.36	0.63	8.17
0.511	3.16	0.58	8.17
0.613	2.97	0.54	8.17
0.715	2.79	0.50	8.17
0.818	2.62	0.47	8.17
0.920	2.47	0.43	8.17
1.022	2.32	0.40	8.17

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 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07E	63124	STONY RUN

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												
1.820	0.70	0.00	0.70	.0773	0.00709	.499	14.28	28.62	0.11	1.022	20.50	7.00
Q1-10 Flow												
1.820	0.45	0.00	0.45	.0773	0.00709	NA	NA	NA	0.09	1.273	20.74	7.00
Q30-10 Flow												
1.820	0.95	0.00	0.95	.0773	0.00709	NA	NA	NA	0.13	0.873	20.38	7.00

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
07E	63124	STONY RUN	**1.820**	466.46	11.90	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.000	0.00	0.70	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
MESCO	PA0081361	0.0500	0.0500	0.0500	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	8.50	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
07E	63124	STONY RUN	**0.001**	398.32	13.00	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	0.000	0.00	0.77	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	0.00	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

TRC_CALC

1A	B	C	D	E	F	G
2	**TRC EVALUATION**					
3	**Input appropriate values in B4:B8 and E4:E7**					
4	0.698	**= Q stream (cfs)**		0.5	**= CV Daily**	
5	0.05	**= Q discharge (MGD)**		0.5	**= CV Hourly**	
6	30	**= no. samples**		1	**= AFC_Partial Mix Factor**	
7	0.3	**= Chlorine Demand of Stream**		1	**= CFC_Partial Mix Factor**	
8	0	**= Chlorine Demand of Discharge**		15	**= AFC_Criteria Compliance Time (min)**	
9	0.5	**= BAT/BPJ Value**		720	**= CFC_Criteria Compliance Time (min)**	
	0	**= % Factor of Safety (FOS)**			**=Decay Coefficient (K)**	
10	**Source**	Reference	**AFC Calculations**		**Reference**	**CFC Calculations**
11	**TRC**	**1.3.2.iii**	**WLA afc =**	2.898	**1.3.2.iii**	**WLA cfc =** 2.817
12	**PENTOXSD TRG**	**5.1a**	**LTAMULT afc =**	0.373	**5.1c**	**LTAMULT cfc =** 0.581
13	**PENTOXSD TRG**	**5.1b**	**LTA_afc=**	1.080	**5.1d**	**LTA_cfc =** 1.638
14						
15	**Source**		**Effluent Limit Calculations**			
16	**PENTOXSD TRG**	**5.1f**	**AML MULT =**	1.231		
17	**PENTOXSD TRG**	**5.1g**	**AVG MON LIMIT (mg/l) =**	0.500	**BAT/BPJ**	
18			**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)**