Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0205753**
Facility Type	**Municipal**	APS ID	**1100096**
Major / Minor	**Minor**	Authorization ID	**1460338**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**East Bethlehem Township Municipal Authority**	Facility Name	**East Bethlehem Township Municipal Authority WWTP**
Applicant Address	PO Box 136	Facility Address	PO Box 136
	Fredericktown, PA 15333-0136		Fredericktown, PA 15333-0136
Applicant Contact	David Rankin, Chairman	Facility Contact	Josh Sphar, Operator
Applicant Phone	(724) 377-2511	Facility Phone	(412) 582-9642
Applicant Email	EBTMA@windstream.net	Facility Email	josh@atlanticbb.net
Client ID	43671	Site ID	253733
Ch 94 Load Status	Not Overloaded	Municipality	East Bethlehem Township
Connection Status		County	Washington
Date Application Received	October 31, 2023	EPA Waived?	Yes
Date Application Accepted	November 1, 2023	If No, Reason	
Purpose of Application	NPDES permit renewal for discharges of treated sewage from a publicly owned treatment works.		

Summary of Review

On behalf of East Bethlehem Township Municipal Authority (EBTMA), Widmer Engineering Inc. submitted an application dated October 24, 2023 to renew NPDES Permit PA0205753 for discharges from EBTMA's Wastewater Treatment Plant (WWTP). The application was received by DEP on October 31, 2023. The permit currently in effect was issued on March 5, 2019 with an effective date of April 1, 2019 and an expiration date of March 31, 2024. The permit was amended on July 7, 2020 to replace effluent limits for Total Residual Chlorine with monitoring requirements for ultraviolet (UV) light transmittance pursuant to EBTMA's replacement of chlorine with UV light for disinfection. The renewal application was not submitted 180 days before the permit expired (*i.e.*, was not submitted on or before October 3, 2023), so the terms and conditions of EBTMA's 2020 permit technically expired on March 31, 2024 in the absence of an approval from DEP to submit a late application. EBTMA is currently operating under an expired permit.

As described in the March 2024 Chapter 94 Report submitted by Widmer Engineering Inc. on behalf of EBTMA, EBTMA serves the communities of Millsboro, Fredericktown, Fredericktown Hill, Milfred Terrace, North Fredericktown, and Vesta Heights in East Bethlehem Township, Washington County. At the end of 2023, there were 756 EDUs tapped into the system and zero new EDUs were added during 2023. Of the 756 EDUs, 641 are residential and 115 are commercial. EBTMA's WWTP also accepts flow from the Vestaburg-New Hill Joint Authority, which provides service to the communities of Vestaburg and Mexico. At the end of 2023, the Vestaburg-New Hill Joint Authority served 275 EDUs. The total EDU count serviced by EBTMA's WWTP at the end of 2023 was 1,031 EDUs.

EBTMA operates approximately 69,000 feet of collection sewers ranging in size from six to sixteen inches in diameter, three (3) remote pump stations, and a 0.35 MGD sequential batch reactor system consisting of a mechanical screen, SBR tanks, a UV disinfection chamber, aerated sludge holding tanks, emergency power, and control building with lab.

Changes for this NPDES permit renewal include the following:

Approve	Return	Deny	Signatures	Date
✓			Ryan C. Decker Ryan C. Decker, P.E. / Environmental Engineer	December 9, 2024
✓			Mahbuba Iasmin Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineer Manager	December 16, 2024

Summary of Review

- A quarterly reporting requirement for *E. Coli* is added to Outfall 001 based on new water quality criteria for *E. Coli* in 25 Pa. Code Chapter 93 (approved by U.S. EPA in March 2021) and related permitting policy updates.

Sludge use and disposal description and location(s): All liquid sludge generated at the EBTMA WWTP is disposed of by Dalton Sanitary Service at either the Franklin Township Municipal Authority (PA0046426) or the Clairton Municipal Authority (PA0026824) or else hauled by Centerville Borough Sanitary Authority to the nearby Center-West Joint Sewer Authority (PA0219461). During operating year 2023, 63,000 gallons of liquid sewage sludge was wasted.

Based on DEP's discussions with EPA pertaining to PFAS, the General Pretreatment Program language in Part B.I.D of the permit has been updated. All POTWs will need to submit to EPA an updated listing of IUs in industrial categories expected or suspected to have PFAS discharges. The updated pretreatment program language is imposed when permits are renewed or amended with the listing submission due within six (6) months of the permit effective date.

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.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.35
Latitude	40° 0' 38.0"	Longitude	-79° 59' 37.0"
Quad Name	California	Quad Code	1806
Wastewater Description:	Treated sewage effluent		
Receiving Waters	Fishpot Run (WWF)	Stream Code	40268
NHD Com ID	99412028	RMI	0.01
Drainage Area	5.22	Yield (cfs/mi^2)	0.01159
Q_{7-10} Flow (cfs)	0.0605	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	763.1	Slope (ft/ft)	0.0001
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5260005	PWS Withdrawal (MGD)	3.0
PWS Waters	Monongahela River	Flow at Intake (cfs)	530
PWS RMI	57.0	Distance from Outfall (mi)	6.4

Changes Since Last Permit Issuance: None

Other Comments:

Waterbody Report for Fishpot Run

Fishpot Run-99412020
Assessment Unit ID: PA-SCR-99412020

Waterbody Condition: Good

Existing Plans for Restoration: No

303(d) Listed: No

Year Reported: 2024

Other Years Reported: 2016, 2018, 2020, 2022 (opens new browser tab)

Organization Name (ID): Pennsylvania (21PA)

What type of water is this?
Stream/creek/river (0.8929 Miles)

Where is this water located?
EAST BETHLEHEM TWP, 15333 (county: Washington)

Advanced Filtering (opens new browser tab)

Download Waterbody Data (2024)

Assessment Information from 2024

State or Tribal Nation specific designated uses:

Information on Water Quality Standards — Expand All

Warm Water Fishes — Good

Probable sources contributing to impairment from 2024:

No probable sources of impairment identified for this waterbody.

Assessment Documents

No documents are available

Plans to Restore Water Quality

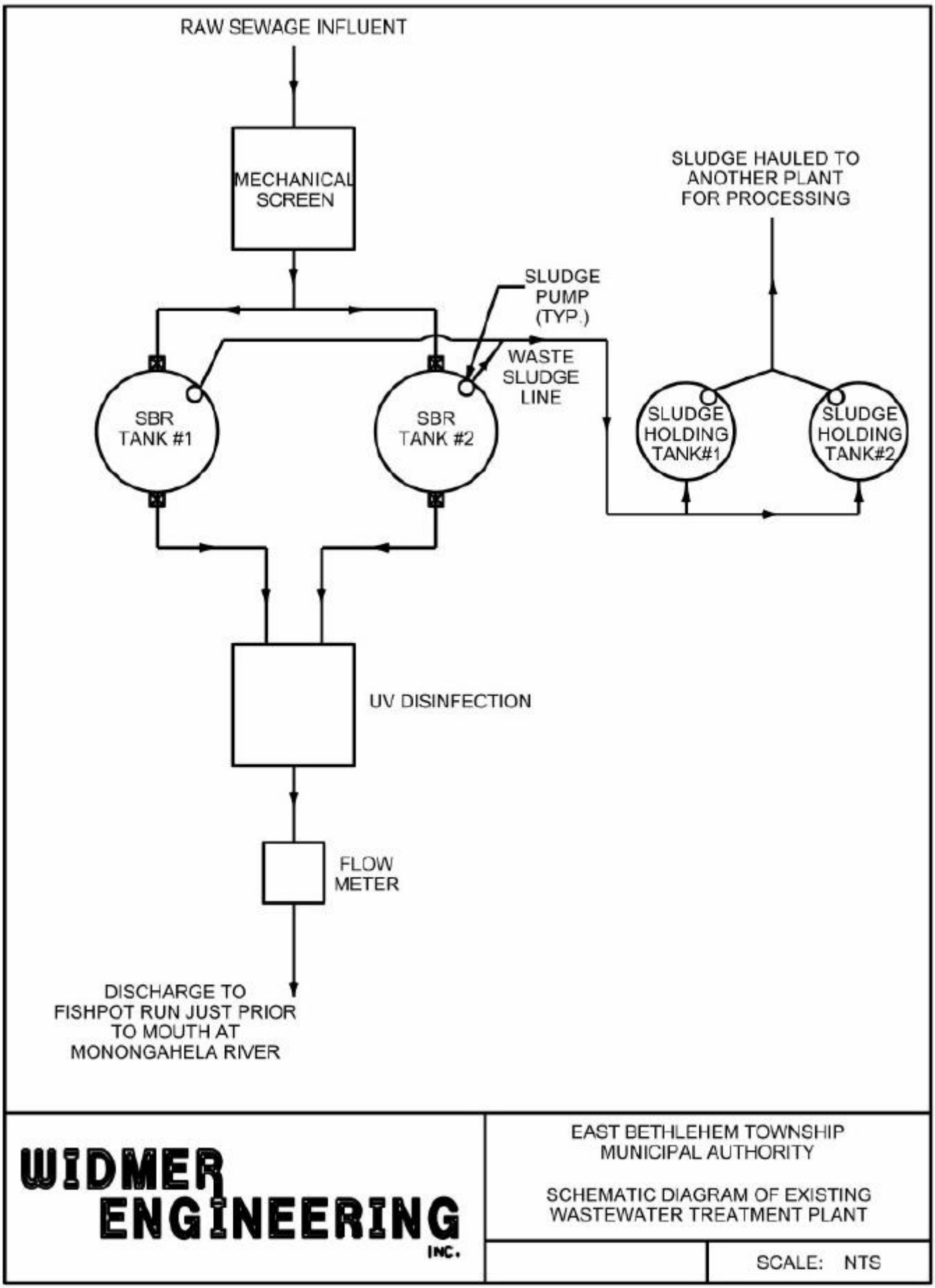
What plans are in place to protect or restore water quality?

No plans specified for this waterbody.

Treatment Facility Summary		
Treatment Facility: East Bethlehem Township Municipal Authority WWTP		
WQM Permit No.	**Issuance Date**	**Purpose**
6397407	June 17, 1998	Permit issued to East Bethlehem Township Municipal Authority for the construction and operation of a sewage treatment plant that consists of a grit channel, a comminutor and manually cleaned bar screen, two 138,000-gallon SBR tanks with coarse bubble aeration systems, two 9,000-gallon chlorine contact tanks and two 59,000-gallon sludge holding tanks. The design flow rate is 0.350 MGD.
6397407 A-1	August 20, 2018	Permit issued to East Bethlehem Township Municipal Authority to modify one of the two existing chlorine contact tanks to contain a new ultraviolet disinfection system with a peak design flow rate capacity of 3.0 MGD (2,082 gpm).
6397407 A-2	October 7, 2024	Permit issued to East Bethlehem Township Municipal Authority for the installation of a mechanically cleaned dual auger screen with roll-off dumpster.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Sequencing batch reactor with solids removal	Ultraviolet light	0.21

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.35	0.25	Not Overloaded	None	Hauled for disposal


RAW SEWAGE INFLUENT
MECHANICAL SCREEN
SLUDGE HAULED TO ANOTHER PLANT FOR PROCESSING
SLUDGE PUMP (TYP.)
WASTE SLUDGE LINE
SBR TANK #1
SBR TANK #2
SLUDGE HOLDING TANK#1
SLUDGE HOLDING TANK#2
UV DISINFECTION
FLOW METER
DISCHARGE TO FISHPOT RUN JUST PRIOR TO MOUTH AT MONONGAHELA RIVER
WIDMER ENGINEERING INC.
EAST BETHLEHEM TOWNSHIP MUNICIPAL AUTHORITY
SCHEMATIC DIAGRAM OF EXISTING WASTEWATER TREATMENT PLANT
SCALE: NTS

Compliance History

DMR Data for Outfall 001 (from October 1, 2023 to September 30, 2024)

Parameter	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23
Flow (MGD) Average Monthly	0.111	0.1195	0.1281	0.1215	1.143	0.2197	0.2336	0.1577	2.367	0.1481	0.139	0.1434
Flow (MGD) Daily Maximum	0.2015	0.1882	0.3492	0.1856	1.765	1.1696	0.2949	0.3765	2.614	0.1898	0.393	0.3765
pH (S.U.) Instantaneous Minimum	8.7	8.3	8.2	8.1	7.8	7.6	7.4	7.4	7.0	7.1	7.0	7.0
pH (S.U.) Instantaneous Maximum	8.8	8.7	8.6	8.4	8.3	8.0	7.9	7.7	8.0	7.3	7.6	7.1
DO (mg/L) Instantaneous Minimum	4.9	4.4	3.2	4.1	4.1	4.8	4.1	1.6	4.1	1.5	4.3	4.3
CBOD5 (lbs/day) Average Monthly	< 2.6	< 3.0	< 3.1	8.3	< 20.5	< 6.6	< 5.1	9.0	< 5.2	< 2.1	< 2.6	< 3.0
CBOD5 (lbs/day) Weekly Average	5.5	5.2	< 5.8	20.4	26.2	< 19.5	12.0	18.5	18.4	< 3.2	< 3.7	< 6.3
CBOD5 (mg/L) Average Monthly	< 3.6	< 2.7	< 2.4	6.8	< 2.1	< 2.0	< 3.4	4.2	< 3.4	< 2.0	< 2.1	< 2.0
CBOD5 (mg/L) Weekly Average	8.3	4.6	3.8	13.2	2.3	< 2.0	7.5	5.9	8.4	< 2.0	2.5	< 2.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	139.3	179.0	156.0	223.7	1423.4	268.1	168.6	224.9	< 39.5	132.9	191.3	< 176.5
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	174.1	242.0	217.0	314.2	2268.3	741.3	228.7	383.1	52.7	387.8	313.8	< 236.1
BOD5 (mg/L) Raw Sewage Influent Average Monthly	176.8	157.0	127.5	208.5	145.9	97.0	119.9	117.4	< 49.1	116.8	154.4	< 138.6
BOD5 (mg/L) Raw Sewage Influent Weekly Average	206.0	181.0	194.0	236.0	211.0	134.0	142.0	163.0	118.0	245.0	179.0	170.0
TSS (lbs/day) Average Monthly	< 3.9	< 5.7	< 6.8	< 5.4	< 49.8	< 16.4	< 7.3	< 13.3	< 5.7	< 5.2	< 6.2	< 9.7
TSS (lbs/day) Raw Sewage Influent Average Monthly	77.4	139.3	81.4	150.4	1018.4	374.4	152.7	214.1	8.6	82.8	186.0	142.0
TSS (lbs/day) Raw Sewage Influent Daily Maximum	103.3	201.0	131.8	178.9	1699.8	1209.6	183.6	464.7	34.9	294.4	469.7	167.9

Parameter	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23
TSS (lbs/day) Weekly Average	< 5.1	< 7.0	< 14.6	< 7.7	< 65.6	< 48.8	< 10.0	31.4	< 10.9	7.9	< 9.2	< 15.7
TSS (mg/L) Average Monthly	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 6.3	< 5.0	< 5.0	< 5.0	7.3
TSS (mg/L) Raw Sewage Influent Average Monthly	97	126	68	153	104	87	107	100	20	71	136	121
TSS (mg/L) Raw Sewage Influent Weekly Average	130	200	140	243	178	124	122	148	38	186	256	148
TSS (mg/L) Weekly Average	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	10.0	< 5.0	5.0	< 5.0	14.0
Fecal Coliform (No./100 ml) Geometric Mean	< 6	< 41	179	< 31	22	< 11	< 2	< 10	> 212	< 4	< 1	< 3
Fecal Coliform (No./100 ml) Instantaneous Maximum	120	517	2420	345	291	613	11	488	> 2420	16	1	12
UV Transmittance (%) Instantaneous Minimum	65	65	65	65	65	65	65	65	65	65	65	65
UV Transmittance (%) Instantaneous Maximum	65	65	65	65	65	65	65	65	65	65	65	65
Total Nitrogen (mg/L) Daily Maximum										< 0.729		
Ammonia (lbs/day) Average Monthly	0.13	< 0.35	< 0.49	< 0.14	< 23.8	< 3.86	< 0.6	6.03	< 2.06	< 0.5	< 0.5	< 0.4
Ammonia (mg/L) Average Monthly	0.15	< 0.30	< 0.4	< 0.14	< 2.2	14.14	< 0.4	4.11	< 1.84	< 0.5	0.4	< 0.4
Total Phosphorus (mg/L) Daily Maximum										1.2		

Compliance History

Effluent Violations for Outfall 001, from: November 1, 2023 To: September 30, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
DO	02/29/24	Inst Min	1.6	mg/L	4.0	mg/L
DO	07/31/24	Inst Min	3.2	mg/L	4.0	mg/L
DO	12/31/23	Inst Min	1.5	mg/L	4.0	mg/L
Fecal Coliform	01/31/24	Geo Mean	> 212	No./100 ml	2000	No./100 ml
Fecal Coliform	07/31/24	IMAX	2420	No./100 ml	1000	No./100 ml
Fecal Coliform	01/31/24	IMAX	> 2420	No./100 ml	10000	No./100 ml

Summary of Inspections:

Other Comments:

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.275
Latitude 40° 32' 20.0" **Longitude** -78° 47' 59.0"
Wastewater Description: Treated sewage

Technology-Based Effluent Limitations (TBELs)

25 Pa. Code § 92a.47 – Sewage Permits

Regulations at 25 Pa. Code § 92a.47 specify TBELs and effluent standards that apply to sewage discharges. Section 92a.47(a) requires that sewage be given a minimum of secondary treatment with significant biological treatment that achieves the following:

Table 1. Regulatory TBELs for Sanitary Wastewaters

Parameter	Average Monthly (mg/L)	Average Weekly (mg/L)	Instant. Max (mg/L)	Basis
$CBOD_5$	25	40	50†	25 Pa. Code § 92a.47(a)(1), (a)(2) & 40 CFR § 133.102(a)(4)(i)
Total Suspended Solids	30	45	60†	25 Pa. Code § 92a.47(a)(1), (a)(2) & 40 CFR § 133.102(b)(1)
Fecal Coliform (No./100 mL) May 1 – September 30	200 (Geometric Mean)	N/A	1,000	25 Pa. Code § 92a.47(a)(4)
Fecal Coliform (No./100 mL) October 1 – April 30	2,000 (Geometric Mean)	N/A	10,000	25 Pa. Code § 92a.47(a)(5)
Total Residual Chlorine	0.5 (or facility-specific)	N/A	1.0 (or facility-specific)	25 Pa. Code § 92a.47(a)(8) & § 92a.48(b)(2)
pH (s.u.)	not less than 6.0 and not greater than 9.0			25 Pa. Code § 92a.47(a)(7) & § 95.2(1), & 40 CFR § 133.102(c)

† Value is calculated as two times the monthly average in accordance with Chapter 2 of DEP's "Technical Guidance for the Development and Specification of Effluent Limitations. and Other Permit Conditions in NPDES Permits" [Doc. No. 362-0400-001].

The $CBOD_5$, TSS, and pH limits are the same as those in EPA's secondary treatment regulation (40 CFR § 133.102).

Outfall 001 is currently subject to an average weekly limit for $CBOD_5$ of 38.0 mg/L. However, when originally imposed, the $CBOD_5$ limit was 37.5 mg/L. The limit changed from 37.5 mg/L to 38.0 mg/L when the permit was renewed in 2019. The original limit was calculated using an average-monthly-to-average-weekly multiplier of 1.5 from Chapter 2, Section C of DEP's "Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits". The limit appears to have been rounded up to the nearest 1.0 mg/L for the 2019 permit, but the change was not explained in supporting documentation for the 2019 permit. Also, rounding up contravenes rounding guidelines from Chapter 5 of the same technical guidance, which directs rounding down to the nearest 1.0 for values between 10.0 and 60.0. Therefore, the 37.5 mg/L limit will be reinstated. The limit will not be rounded down to 37.0 mg/L as the guidance would recommend because DEP has consistently imposed 37.5 mg/L in most sewage permits where TBELs control.

Average monthly and maximum daily flow must be reported pursuant to 25 Pa. Code § 92a.61(d)(1). The minimum dissolved oxygen limit of 4.0 mg/L imposed in the previous permit will be reimposed in the new permit pursuant to 25 Pa. Code § 92a.61(b) (regarding reasonable monitoring requirements) and 33 U.S.C. §1342(o) (regarding anti-backsliding).

In accordance with Section I of DEP's "Standard Operating Procedure for Clean Water Program Establishing Effluent Limitations for Individual Sewage Permits" [SOP No. BCW-PMT-033, Version 2.0, February 5, 2024] and under the authority of 25 Pa. Code § 92a.61(b), annual reporting for Total Nitrogen and Total Phosphorus is required for sewage discharges with design flows greater than 2,000 gpd to help evaluate treatment effectiveness and to monitor nutrient loading to the receiving watershed (this reporting was required by the previous permit and will be reimposed in the new permit). Pursuant to that same SOP and under the authority of § 92a.61(b), a quarterly reporting requirement for *E. coli* will be added to Outfall 001. *E. coli* was recently added to the bacteria water quality criteria in 25 Pa. Code § 93.7(a) and the monitoring will be used to determine if *E. coli* concentrations require additional controls.

EBTMA uses UV light for disinfection rather than chlorine, so the TBELs for TRC from 92a.47(a)(8) are replaced with minimum and maximum reporting requirements for UV light transmittance pursuant to § 92a.61(b).

In accordance with Table 5-3 of DEP's "Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits" and Section IV of DEP's "Standard Operating Procedure for Clean Water Program Establishing Effluent Limitations for Individual Sewage Permits", mass limits are calculated for $CBOD_5$ and TSS. Average monthly and average weekly mass limits in units of pounds per day are calculated using applicable concentration limits and the WWTP's 0.35 MGD design flow with the following formula:

Design flow (avg. annual) (MGD) × concentration limit (mg/L) at design flow × conversion factor (8.3454) = mass limit (lb/day)

Table 2. Mass TBELs for Sanitary Wastewaters

Parameter	Average Monthly (pounds/day)	Average Weekly (pounds/day)
$CBOD_5$	73.0	109.5
Total Suspended Solids	87.6	131.4

The current average weekly mass limit for $CBOD_5$, 109.5 lbs/day, was calculated using a flow rate of 0.35 MGD and a discharge concentration limit of 37.5 mg/L. Since the existing mass limit is consistent with the previously imposed and now reimposed average weekly concentration limit for $CBOD_5$, the mass limits will remain unchanged.

Water Quality-Based Effluent Limitations (WQBELs)

Pursuant to EPA's March 2021 approval of Pennsylvania's 2017 Triennial Review of Water Quality Standards and corresponding regulatory changes published in the *Pennsylvania Bulletin* on July 11, 2020, new water quality criteria for Ammonia-Nitrogen apply to waters of the Commonwealth. Therefore, WQBELs are re-evaluated even though there have been no changes to the WWTP.

WQM 7.0 Water Quality Modeling Program

WQM 7.0 is a water quality modeling program for Windows that determines Waste Load Allocations ("WLAs") and effluent limitations for carbonaceous biochemical oxygen demand ("$CBOD_5$"), Ammonia-Nitrogen, and dissolved oxygen ("DO") for single and multiple point-source discharge scenarios. To accomplish this, the model simulates two basic processes. In the Ammonia-Nitrogen module, the model simulates the mixing and degradation of Ammonia-Nitrogen in the stream and compares calculated instream Ammonia-Nitrogen concentrations to Ammonia-Nitrogen water quality criteria. In the DO module, the model simulates the mixing and consumption of DO in the stream due to the degradation of $CBOD_5$ and Ammonia-Nitrogen, and compares calculated instream DO concentrations to DO water quality criteria. WQM 7.0 then determines the highest pollutant loadings that the stream can assimilate while still meeting water quality criteria under design conditions.

Table 3. WQM 7.0 Inputs for Outfall 001

Discharge Characteristics		
Parameter		**Value**
Discharge Flow (MGD)		0.35
Discharge pH (s.u.)		7.4
Discharge Temp. (°C)		20
Receiving Stream Characteristics		
Parameter	**Outfall 001**	**End of Segment**
Stream Code	40268	40268
River Mile Index	0.010	0.001
Drainage Area (mi^2)	5.22	5.23
Q_{7-10} (cfs)	0.0605	0.0605
Low-flow Yield (cfs/mi^2)	0.01159	0.01156
Elevation (ft)	763.1	763.0
Slope (ft/ft)	0.0001	0.0001
Stream Temp. (°C)	25.0	See output
Stream pH (s.u.)	7.0	

WQM 7.0 Modeling for Outfall 001

The WQM 7.0 model is run for Outfall 001 to determine whether WQBELs are necessary for $CBOD_5$, Ammonia-Nitrogen, and/or dissolved oxygen. Input values for the WQM 7.0 model for the discharge to Fishpot Run are shown in Table 3.

DEP's modeling for sewage discharges is a conditional two-step process. First, a discharge is modeled for the summer period (May through October) using warm temperatures for the discharge and the receiving stream. Modeling for the summer period is done first because allowable Ammonia-Nitrogen concentrations in a discharge are lower at higher temperatures (*i.e.*, warm temperatures are more likely to result in critical loading conditions). Reduced dissolved oxygen levels also appear to increase ammonia toxicity and the maximum concentration of dissolved oxygen in water is lower at higher temperatures. The second step is to evaluate WQBELs for the winter period, but only if modeling shows that WQBELs are needed for the summer period.

For the summer period, pursuant to DEP's "Implementation Guidance of Section 93.7 Ammonia Criteria" [Doc. No. 391-2000-013] (Ammonia Guidance) and in the absence of site-specific data, the discharge temperature is assumed to be 20°C and the design stream temperature and pH are assumed to be 25°C and 7.0 s.u., respectively, based on the recommendations for free stone warm water streams in DEP's Ammonia Guidance (Fishpot Run is designated for warm water fishes). The flow used for modeling is the average design flow (0.35 MGD). The discharge pH is the median of the pH values reported on EBTMA's DMRs. Input discharge concentrations for CBOD-5 and Ammonia-Nitrogen are the model's defaults: 25 mg/L for both. The input discharge concentration for dissolved oxygen is the 4.0 mg/L minimum dissolved oxygen limit in the current permit. The background dissolved oxygen concentration of Fishpot Run at 25°C is assumed to be 8.38 mg/L based on theoretical dissolved oxygen saturation. The width-to-depth ratio of the stream is assumed to be 10 according to DEP policy.

Table 4. WQM 7.0 Inputs for Discharge to Mon

Discharge Characteristics		
Parameter		**Value**
Discharge Flow (MGD)		0.35
Discharge pH (s.u.)		7.4
Discharge Temp. (°C)		20
Receiving Stream Characteristics		
Parameter	**Outfall 001**	**End of Segment**
Stream Code	37185	37185
River Mile Index	63.40	61.96
Drainage Area (mi^2)	4,960	4,965
Q_{7-10} (cfs)	530	530
Low-flow Yield (cfs/mi^2)	0.10685	0.1067
Elevation (ft)	763.0	762.9
Slope (ft/ft)	0.0001	0.0001
Stream Temp. (°C)	25.0	See output
Stream pH (s.u.)	7.0	

Using the inputs in Table 3, the WQM 7.0 model indicates that D.O. is still declining at the end of the segment and recommends that one or more reaches be added to observe D.O. recovery. In this case, the end of the modeled stream segment is the mouth of Fishpot Run where it empties into the Monongahela River. Therefore, modeling is conducted again assuming the discharge is a direct discharge to the Monongahela River.

Input values for the WQM 7.0 modeling to the Monongahela River are shown in Table 4. For the Monongahela River, the Q_{7-10} is regulated by the U.S. Army Corps of Engineers to a minimum flow of about 530 cfs and each pool of the river between successive dams has a minimal slope (assumed to be 0.0001 for modeling purposes). The width of the Monongahela River is measured at about 1,400 feet using a topographic map and the depth is assumed to be nine feet (the minimum navigational draft maintained by the U.S. Army Corps of Engineers).

The results of the modeling indicate that WQBELs for $CBOD_5$, Ammonia-Nitrogen, and Dissolved Oxygen are not required. Pursuant to Note 5 of DEP's SOP for Establishing Effluent Limitations for Individual Sewage Permits, for existing facilities, if WQM 7.0 modeling for summer indicates that an average monthly limit of 25 mg/L is acceptable, then a year-round monitoring requirement for Ammonia-Nitrogen is established, at a minimum. EBTMA is currently subject to monitoring and reporting for Ammonia-Nitrogen 1/week using 24-hour composite sampling, which will be maintained in the renewed permit.

Influent Monitoring

Pursuant to Section IV.E.8 of DEP's "Standard Operating Procedure (SOP) for Clean Water Program New and Reissuance Sewage Individual NPDES Permit Applications" [SOP No. BCW-PMT-002, Version 2.0, February 3, 2022], for POTWs with design flows greater than 2,000 GPD, influent BOD5 and TSS monitoring is established in the permit with the same minimum measurement frequency and sample type used for the effluent (1/week, 24-Hr Composite for the EBTMA WWTP). The required influent monitoring will be for BOD5 and TSS including average monthly and average weekly influent loading and average monthly and average weekly influent concentrations.

001.C. Effluent Limits and Monitoring Requirements for Outfall 001

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under either 33 U.S.C. 1342(o) or 40 CFR § 122.44(l)[1] (incorporated by reference in Pennsylvania regulations at 25 Pa. Code § 92a.44), effluent limits and monitoring requirements at Outfall 001 are 1) the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and 2) effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable effluent limits and monitoring requirements are summarized in the table at the end of this section.

[1] *Reissued permits.* (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under § 122.62.)

Monitoring frequencies and sample types are established pursuant to Table 6-3 in DEP's "Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits" and DEP's "Standard Operating Procedure for Clean Water Program Establishing Effluent Limitations for Individual Sewage Permits". Dissolved oxygen, UV transmittance, and pH must be sampled 1/day using grab sampling. $CBOD_5$, TSS, and Ammonia-Nitrogen must be sampled 1/week using 24-hour composite sampling. As discussed in Section 001.A of this Fact Sheet, influent BOD5 and TSS have the same sample frequency and sample type as effluent CBOD and TSS—1/week, 24-hour composite. Fecal coliform must be sampled 1/week using grab sampling. *E. coli* must be sampled 1/quarter using grab sampling. Total nitrogen and total phosphorus must be sampled 1/year using 24-hour composite sampling. Flow must be recorded continuously using a flow meter.

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	Instant. Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	4.0	XXX	XXX	XXX	1/day	Grab
$CBOD_5$	73.0	109.5	XXX	25.0	37.5	50.0	1/week	24-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids	87.6	131.4	XXX	30.0	45.0	60.0	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	Grab
UV Light Transmittance (%)	XXX	XXX	Report	XXX	XXX	Report	1/day	Measured
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	24-Hr Composite
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	24-Hr Composite

Compliance Sampling Location:

Other Comments:

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment A)
☐	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.
☒	Standard Operating Procedure (SOP) for Clean Water Program Establishing Effluent Limitations for Individual Sewage Permits, SOP No. BCW-PMT-033, Version 2.0, February 5, 2024
☒	Standard Operating Procedure (SOP) for Clean Water Program New and Reissuance Sewage Individual NPDES Permit Applications, SOP No. BCW-PMT-002, Version 2.0, February 3, 2022
☐	Other:

ATTACHMENT A

WQM 7.0 Modeling Results

Fishpot Run Analysis

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
19C	40268	FISHPOT RUN	0.010	763.10	5.22	0.00010	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	0.012	0.00	0.00	0.000	0.000	10.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Outfall 001	PA0205753	0.3500	0.0000	0.0000	0.000	20.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.38	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Fishpot Run Analysis

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
19C	40268	FISHPOT RUN	0.001	763.00	5.23	0.00010	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	0.012	0.00	0.00	0.000	0.000	10.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		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

Fishpot Run Analysis

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19C	40268	FISHPOT 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												
0.010	0.08	0.00	0.08	.5414	0.00010	.54	14.02	25.95	0.08	0.007	20.50	7.00
Q1-10 Flow												
0.010	0.04	0.00	0.04	.5414	0.00010	NA	NA	NA	0.08	0.007	20.33	7.00
Q30-10 Flow												
0.010	0.08	0.00	0.08	.5414	0.00010	NA	NA	NA	0.08	0.007	20.66	7.00

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Fishpot Run Analysis

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	Uniform Treatme	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

Fishpot Run Analysis

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19C	40268	FISHPOT 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
0.010	Outfall 001	NA	50	16.3	17.47	1	65

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
0.010	Outfall 001	NA	25	1.81	2.08	1	92

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)		
0.01	Outfall 001	25	25	2.08	2.08	3	5	0	0

Fishpot Run Analysis

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19C	40268	FISHPOT RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.010	0.350	20.503	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
14.022	0.540	25.948	0.079
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
22.69	1.487	1.87	0.728
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.340	12.586	Owens	5
Reach Travel Time (days)			
0.007			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.001	22.66	1.87	5.33
0.001	22.64	1.87	5.32
0.002	22.62	1.87	5.32
0.003	22.59	1.87	5.31
0.003	22.57	1.87	5.30
0.004	22.55	1.87	5.30
0.005	22.52	1.87	5.29
0.006	22.50	1.87	5.28
0.006	22.47	1.87	5.27
0.007	22.45	1.86	5.27

Fishpot Run Analysis

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19C	40268	FISHPOT 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)
0.010	Outfall 001	PA0205753	0.350	CBOD5	25		
				NH3-N	2.08	4.16	
				Dissolved Oxygen			5

Monongahela River Analysis

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
19A	37185	MONONGAHELA RIVER	63.400	763.00	4960.00	0.00010	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	0.107	0.00	530.00	0.000	0.000	0.0	1400.00	9.00	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
Outfall 001	PA0205753-1	0.3500	0.0000	0.0000	0.000	25.00	7.40

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	8.38	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Monongahela River Analysis

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
19A	37185	MONONGAHELA RIVER	61.960	762.90	4965.00	0.00010	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	0.107	0.00	530.00	0.000	0.000	0.0	1400.00	9.00	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

Monongahela River Analysis

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19A	37185	MONONGAHELA RIVER

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												
63.400	530.00	0.00	530.00	.5414	0.00010	9	1400	155.56	0.04	2.090	20.01	7.00
Q1-10 Flow												
63.400	339.20	0.00	339.20	.5414	0.00010	NA	NA	NA	0.03	3.264	20.01	7.00
Q30-10 Flow												
63.400	720.80	0.00	720.80	.5414	0.00010	NA	NA	NA	0.06	1.537	20.00	7.00

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Monongahela River Analysis

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	Uniform Treatme	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

Monongahela River Analysis

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19A	37185	MONONGAHELA RIVER

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
63.400	Outfall 001	NA	50	16.74	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
63.400	Outfall 001	NA	25	1.89	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)		
63.40	Outfall 001	25	25	25	25	3	3	0	0

Monongahela River Analysis

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19A	37185	MONONGAHELA RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
63.400	0.350	20.005	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
1400.000	9.000	155.556	0.042
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.02	0.006	0.03	0.700
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.375	0.098	O'Connor	5
Reach Travel Time (days)			
2.090			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.209	2.02	0.02	8.24
0.418	2.02	0.02	8.24
0.627	2.02	0.02	8.24
0.836	2.01	0.01	8.24
1.045	2.01	0.01	8.24
1.254	2.01	0.01	8.24
1.463	2.01	0.01	8.24
1.672	2.00	0.01	8.24
1.881	2.00	0.01	8.24
2.090	2.00	0.01	8.24

Monongahela River Analysis

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19A	37185	MONONGAHELA RIVER

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)
63.400	Outfall 001	PA0205753-1	0.350	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			3