pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0252603**
Facility Type	**Municipal**	APS ID	**1094925**
Major / Minor	**Minor**	Authorization ID	**1451001**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Cecil Township Municipal Authority**	Facility Name	**Millers Run STP**
Applicant Address	375 Southpointe Boulevard Suite 350	Facility Address	100 Creedmore Road
	Canonsburg, PA 15317-8587		Cecil, PA 15321
Applicant Contact	Michael Zrenchak	Facility Contact	Same as Applicant
Applicant Phone	(724) 746-4848	Facility Phone	Same as Applicant
Client ID	74993	Site ID	627384
Ch 94 Load Status	Not Overloaded	Municipality	Cecil Township
Connection Status	No Limitations	County	Washington
Date Application Received	August 2, 2023	EPA Waived?	Yes
Date Application Accepted	August 16, 2023	If No, Reason	

Purpose of Application: Application for renewal of an NPDES Permit for treated sewage

Summary of Review

The permittee has applied for a renewal of NPDES Permit No. PA0252603. PA0252603 was previously issued by the PA Department of Environmental Protection (DEP) on January 30, 2019 and expired on January 31, 2024. The renewal application was submitted in a timely manner, so the permit was granted administrative extension.

Sewage from this facility is treated by grit removal, flow equalization, extended aeration, alkalinity addition, clarification, UV disinfection, and post disinfection aeration. This facility discharges to Tributary 36836 of Miller's Run, which is classified as a Warm Water Fishery (WWF) in State Watershed No. 20-F.

Millers Run STP accepts hauled in sewage sludge from Cherry Brook STP and Teodori STP. Biosolids are treated by aerated digestion and dewatered using a belt filter press before being disposed of at Arden Landfill.

Cecil Township Municipal Authority is currently enrolled in and will continue to use eDMR.

The applicant has complied with Act 14 Notifications with letters dated July 28, 2023 and sent to Cecil Township and Washington County.

Changes since the last permit include:

- Addition of *E. coli* monitoring in accordance with 25 Pa. Code 93.7(a).
- Reduction of the $CBOD_5$ and TSS mass loading limits to reflect the department's rounding policy
- Reduction of total nitrogen and total phosphorus monitoring frequency
- Reduction of summer and winter ammonia-nitrogen to reflect a reduction in in-stream ammonia-nitrogen criteria

Approve	Deny	Signatures	Date
X		Stephanie Conrad / Environmental Engineering Specialist	August 3, 2024
X		Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineering Manager	August 9, 2024

Summary of Review

Anti-Backsliding

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second situation addressed by Section 402(o) arises when a permittee seeks relaxation of an effluent limitation which is based upon a State treatment standard of water quality standard.

Previous limits can be used pursuant to EPA's anti-backsliding regulation 40 CFR 122.44 ***(l) 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). (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.***

This facility is not seeking to revise the previously permitted effluent limits.

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.

Following includes justifications on development of the permit effluent limits and/or monitoring requirements.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.52
Latitude	40º 20' 4"	Longitude	-80º 11' 32"
Quad Name	Canonsburg	Quad Code	1604
Wastewater Description:	Sewage Effluent		
Receiving Waters	Tributary 36836 to Millers Run (WWF)	Stream Code	36836
NHD Com ID	99690946	RMI	0.54
Drainage Area	3.55	Yield (cfs/mi^2)	0.0109
Q_{7-10} Flow (cfs)	0.0387	Q_{7-10} Basis	USGS Stream Stats
Elevation (ft)	960	Slope (ft/ft)	
Watershed No.	20-F	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	SILTATION, TURBIDITY		
Source(s) of Impairment	HABITAT MODIFICATION - OTHER THAN HYDROMODIFICATION		
TMDL Status	Final, Final	Name	Chartiers Creek, Chartiers Creek Watershed

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake		West View Water Authority	
PWS Waters	Ohio River	Flow at Intake (MGD)	40
PWS RMI	975.9	Distance from Outfall (mi)	24.45

Changes Since Last Permit Issuance: None

Other Comments: None

Treatment Facility Summary

Treatment Facility Name: Millers Run STP

WQM Permit No.	Issuance Date	Purpose

6304402	July 19, 2004	Permit issued to Cecil Township Municipal Authority by Pennsylvania Department of Environmental Protection approving construction of sewer infrastructure and sewage treatment plant infrastructure including:
		• 13,191 LF of 18 to 24-inch PVC gravity sewer
		• 53,218 LF of eight to ten-inch PVC gravity sewer
		• 22,537 LF of eight to eighteen-inch gravity sewer.
		• Klinger Road Pump Station
		  ○ Trash rack
		  ○ Telemetry System
		  ○ Two 150 gpm constant speed submersible pump
		  ○ One (1), 5-ft Pre-cast concrete valve vault
		  ○ Two (2), pre-cast concrete emergency flow storage
		  ○ 836 LF of 4 inch ductile iron force main
		• Main Pump Station
		  ○ Comminutor
		  ○ Back-up bar screen
		  ○ Two (2) 1550 gpm variable speed submersible pump
		  ○ Telemetry System
		  ○ 2,650 LF of 10 inch ductile iron force main
		• Sewage Treatment Plant
		  ○ One (1) 2.2 MGD mechanically cleaned aerated grit chamber
		  ○ Two (2) 362 gpm constant speed submersible sewage pump
		  ○ One (1) 220,000-gallon flow equalization tank
		  ○ Two (2) extended aeration tanks with fine bubble aerators
		  ○ Three (3), 344 scfm blowers
		  ○ Three (3), 775 scfm blowers
		  ○ Two rectangular clarifiers
		  ○ Two (2), 150 gpm constant speed submersible waste sludge pumps
		  ○ Two (2) 135 gpm airlift waste sludge pumps
		  ○ One (1) 1.04 MGD UV disinfection
		  ○ Two (2), 160,000 gallons aerobic digesters with coarse bubble aerators
		  ○ Three (3), 875 scfm centrifugal blowers
		  ○ One (1) belt filter press
		  ○ One (1) 1,000-gallon sodium hydroxide storage tank
		  ○ Two (2) 1 gpm metering pumps for sodium hydroxide addition
		  ○ One emergency generator

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Activated Sludge with Solids Removal	Ultraviolet	0.52
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.52	960	Not Overloaded	Belt Filtration	Landfill

Changes Since Last Permit Issuance: None

Other Comments: None

Compliance History

Operations Compliance Check Summary Report

Facility: MILLERS RUN STP

NPDES Permit No.: PA0252603

Compliance Review Period: 7/1/19-7/25/24

Inspection Summary:

INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC
06/01/2022	Compliance Evaluation	PA Dept of Environmental Protection	Violation(s) Noted

Violation Summary:

VIOLATION TYPE	VIOLATION TYPE DESC	RESOLVED DATE	VIOLATION COMMENT
92A.41(A)10	92a - Failure to retain records required by the NPDES permit	06/13/2022	Failure to use a thermometer
92A.41(A)10	92a - Failure to retain records required by the NPDES permit	06/13/2022	Failure to maintain pH buffers

Open Violations by Client ID:

No open violations for Client ID 74993 with Clean Water Program, but one open violation exists for Air Quality Program as follows:

INSP PROGRAM	PROGRAM SPECIFIC ID	INSP ID	VIOL ID	VIOLDATE	CODE	VIOLATION	SITE ID	INSPECTED SITE
Air Quality	871641	3736181	8181191	05/12/2022	124.3	National Emission Standards for Hazardous Air Pollutants (NESHAPs). Failure to comply with the United States Environmental Protection Agency standards for hazardous air pollutants which are promulgated in 40 CFR Part 61 and adopted by the Department. The affected hazardous air pollutants are asbestos, benzene, beryllium, radon and other radionuclides, arsenic, mercury, and vinyl chloride.	871641	22 MAWHINNEY RD DEMO

Enforcement Summary:

ENF TYPE	ENF TYPE DESC	EXECUTED DATE	VIOLATIONS	ENF FINALSTATUS	ENF CLOSED DATE
NOV	Notice of Violation	09/07/2022	92A.62	Comply/Closed	09/07/2022

Effluent Violation Summary:

MON PD	OUTFALL	PARAMETER	SAMPLE	PERMIT	UNIT		FACILITY_COMMENTS
Mar 23	001	TSS	83.0	45.0	mg/L	Weekly Average	H & H Water Controls notified CTMA on 3/7/2023 that the TSS sample collected on 2/28/2023 results were 83.0 mg/l. CTMA operator stated nothing unusual was noticed at the time the sample was collected. H & H was requested to rerun the sample to see if there was a possible lab error during the analysis, but they could not as the sample was already had been disposed. CTMA inspected the sampler, sampler container, and sampler tubing and found everything to be normal. This seems to have been an isolated incident, but CTMA will monitor to make sure there is not an issue.

Compliance Status: Facility is generally in compliance and has no open violations or pending enforcements with Clean Water Program.

Completed by: Amanda Illar **Completed date:** 7/25/24

Compliance History

DMR Data for Outfall 001 (from June 1, 2023 to May 31, 2024)

Parameter	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23
Flow (MGD) Average Monthly	0.14368	0.28091	0.16456	0.14325	0.18858	0.15953	0.14491	0.14831	0.13911	0.16834	0.16351	0.14849
Flow (MGD) Daily Maximum	0.20954	0.92135	0.25777	0.25647	0.40415	0.23749	0.25437	0.22764	0.18542	0.3250	0.31106	0.28182
pH (S.U.) Instantaneous Minimum	6.5	6.9	6.5	6.5	6.6	6.4	6.5	6.6	6.9	6.9	7.0	6.9
pH (S.U.) Instantaneous Maximum	7.8	7.6	7.6	7.4	7.3	7.4	7.5	7.6	7.5	8.0	7.5	7.7
DO (mg/L) Instantaneous Minimum	6.54	8.05	5.12	5.43	5.14	6.72	5.81	5.69	5.76	6.13	6.22	7.36
$CBOD_5$ (lbs/day) Average Monthly	17.7	16.0	10.7	7.6	< 5.5	< 2.5	< 4.0	< 3.3	< 3.6	< 7.7	7.2	6.0
$CBOD_5$ (lbs/day) Weekly Average	30.3	21.8	14.7	12.9	8.5	< 2.8	8.0	4.0	5.3	20.8	9.8	9.7
$CBOD_5$ (mg/L) Average Monthly	15.5	9.7	7.9	6.0	< 4.4	< 2.0	< 3.1	< 2.4	< 2.9	< 6.3	4.5	4.7
$CBOD_5$ (mg/L) Weekly Average	27.4	13.9	10.7	8.0	6.5	< 2.0	6.0	3.3	3.8	17.7	5.6	7.0
BOD_5 (lbs/day) Raw Sewage Influent Average Monthly	233	174	255	221	231	240	327	324	277	254	348	458
BOD_5 (lbs/day) Raw Sewage Influent Daily Maximum	368	218	507	357	379	403	471	470	387	294	485	1057
BOD_5 (mg/L) Raw Sewage Influent Average Monthly	185	105	186	166	199	189	258	237	229	201	215	344
TSS (lbs/day) Average Monthly	15.4	< 15.9	10.3	17.4	< 13.6	< 6.3	< 10.0	< 10.1	< 9.7	< 6.8	< 19.6	< 7.0

TSS (lbs/day) Raw Sewage Influent Average Monthly	323	229	424	317	355	228	623	377	471	304	756	449
TSS (lbs/day) Raw Sewage Influent Daily Maximum	442	420	953	457	689	286	1324	701	901	417	1829	870
TSS (lbs/day) Weekly Average	32.1	24.1	14.6	32.8	27.5	< 7.0	21.4	21.9	14.0	7.0	38.7	9.7
TSS (mg/L) Average Monthly	13.5	< 9.9	7.5	12.5	< 11.8	< 5.0	< 7.8	< 7.0	< 7.8	< 5.4	< 12.5	< 5.5
TSS (mg/L) Raw Sewage Influent Average Monthly	262	142	316	241	306	180	491	276	383	237	443	344
TSS (mg/L) Weekly Average	29.0	18.5	12.0	22.0	24.0	< 5.0	16.0	15.0	11.0	6.0	22.0	7.0
Fecal Coliform (No./100 ml) Geometric Mean	< 4	10	14	4.0	< 3	8.0	< 3.0	< 2.0	< 3.0	4.0	< 14	21
Fecal Coliform (No./100 ml) Instantaneous Maximum	19.0	27.0	60	13.0	14	14.0	4.0	3.0	15.0	16.0	48.0	56
UV Intensity (mW/cm²) Instantaneous Minimum	2.2	2.6	2.0	2.4	2.7	2.8	2.0	3.9	3.9	5.0	2.0	1.8
UV Intensity (mW/cm²) Average Monthly	4.2	5.3	3.6	3.6	3.8	3.8	4.0	4.7	5.8	8.0	6.0	3.5
Total Nitrogen (mg/L) Daily Maximum			39.98			42.06			31.007			25.2
Ammonia (lbs/day) Average Monthly	< 0.2	< 0.2	< 0.3	< 0.3	< 0.3	3.9	0.3	0.3	< 0.2	0.5	0.5	0.4
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.2	< 0.2	< 0.2	3.1	0.2	0.2	< 0.2	0.4	0.3	0.3
Total Phosphorus (mg/L) Daily Maximum			5.6			8.6			5.7			5.5
Total Aluminum (mg/L) Daily Maximum			0.166			< 0.03			0.280			0.3
Total Iron (mg/L) Daily Maximum			0.03			< 0.03			0.192			0.3

Total Manganese (mg/L) Daily Maximum			< 0.01			0.018			0.030			0.01

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .52
Latitude 40º 20' 4.00" **Longitude** -80º 11' 32.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations (TBELs)

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
Flow (MGD)	Report	Average Monthly	-	92a.27, 92a.61
$CBOD_5$	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)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)
Ammonia-Nitrogen	25	Average Monthly	-	BPJ
Dissolved Oxygen	4.0	Min	-	BPJ
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Total Nitrogen	Report	Average Monthly	-	92a.61
Total Phosphorus	Report	Average Monthly	-	92a.61
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)

Water Quality-Based Limitations (WQBELs)

Pursuant to EPA's 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 for Outfall 001 are being re-evaluated even though there have been no changes to the treatment plant.

WQM 7.0 Water Quality Modeling

DEP's WQM 7.0 version 1.1 model is a Microsoft Access Program used for sewage dischargers to determine whether TBELs are sufficient to meet in-stream water quality criteria for ammonia-nitrogen, carbonaceous biochemical oxygen demand ($CBOD_5$), and dissolved oxygen (DO). To accomplish this, the model simultaneously simulates mixing and degradation of ammonia-nitrogen and mixing and consumption of DO through $CBOD_5$ and ammonia-nitrogen degradation. WQM 7.0 determines the highest pollutant loadings that the stream can assimilate while still meeting water quality criteria under design conditions.

The model is a two-step process. The discharge is first modeled for the summer period (May through October) because warm temperatures are more likely to result in critical loading conditions. Reduced DO levels likely also play a role in ammonia toxicity and solubility of DO decreases at increased water temperature. If summer modeling determines that WQBELs are appropriate for the summer period, then modeling is completed for the winter period (November through April). This is in accordance with DEP's *Implementation Guidance of Section 93.7 Ammonia Criteria* [Do. No. 391-2000-013] (Ammonia Guidance).

River Mile Index (RMI) was measured in eMAP PA as the distance from the facility's outfall to the mouth of Tributary 36836 of Miller's Run. Elevation was read by applying a topo map in eMAP PA. Discharge point and downstream

drainage areas as well as Q_{7-10} were generated by USGS Stream Stats. USGS Stream Stats output files are included in Attachment A. In the absence of site-specific data, discharge temperature, stream temperature, and stream pH were assumed to be 20, 25, and 7 in accordance with the Ammonia Guidance. Stream width to depth was assumed to be 10 in accordance with DEP's *Technical Reference Guide (TRG) WQM 7.0 for Windows Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen Version 1* [Doc. No. 391-2000-007].

WQM 7.0 modeling inputs are documented in the table below:

Discharge Characteristics		Basin/Stream Characteristics	
Parameter	**Value**	**Parameter**	**Value**
River Mile Index (RMI)	0.54	Drainage Area	3.55
Discharge Flow (MGD)	0.52	Q_{7-10} (cfs)	0.0387
Discharge Temp (°C)	20	Low-flow yield (cfs/mi^2)	0.0109
Summer Ammonia-Nitrogen (mg/L)	2.0	Elevation (ft)	960
Winter Ammonia-Nitrogen (mg/L)	4.5	Stream Width/Depth	10
Summer $CBOD_5$ (mg/L)	20	Stream Temp (°C)	25
Winter $CBOD_5$ (mg/L)	25	Stream pH (s.u.)	7

The discharge was modeled using WQM 7.0 to evaluate the ammonia-nitrogen, $CBOD_5$, and DO parameters. The modeling confirmed that water quality-based effluent limits are necessary for ammonia-nitrogen, $CBDO_5$, and DO. In accordance with DEP's SOP for *Establishing Effluent Limitations for Individual Sewage Permits* [SOP No. BCW-PMT-033 revised March 24, 2021 Version 1.9], winter ammonia-nitrogen limits are assessed by comparing winter WQM 7.0 output value with one calculated by multiplying the summer limit b a multiplier of three. The more restrictive limit is then imposed. For this facility, the more restrictive limit comes from the winter model. WQM 7.0 output files are included in Attachment B.

Permit Limits

The limits imposed, which are provided below, represent the most stringent limitations between the TBELs and WQBELs.

Parameter	Limit (mg/l)	SBC	Model	Basis
Dissolved Oxygen	5.0	Instantaneous Minimum	WQM 7.0	WQBEL
$CBOD_5$ (Summer)	20	Average Monthly	WQM 7.0	WQBEL
$CBOD_5$ (Winter)	25	Average Monthly	WQM 7.0	WQBEL
Ammonia-Nitrogen (Summer)	1.97	Average Monthly	WQM 7.0	WQBEL
Ammonia-Nitrogen (Winter)	3.17	Average Monthly	WQM 7.0	WQBEL
Total Suspended Solids	25	Average Monthly	N/A	TBEL

Please note that both the summer and winter ammonia-nitrogen limits are becoming more restrictive. This is based on new WQM 7.0 modeling and a result of the lower ammonia-nitrogen standard approved during Pennsylvania's 2017 Triennial Review of Water Quality Standards. Based on eDMR data, Miller Run STP should be able to meet the new, more restrictive limits.

Additional Considerations

In accordance with Section I.A. of DEP's SOP for *Establishing Effluent Limitations for Individual Sewage Permits* [SOP No. BCW-PMT-033 Version 1.9], pursuant to EPA's approval of Pennsylvania's 2017 Triennial Review of Water Quality Standards and corresponding regulatory changes published in the Pennsylvania Bulletin on July 11, 2020 and under the

authority of 25 Pa. Code § 93.7(a) and § 92.a.61, sewage dischargers will include monitoring for *E. coli*. For new and reissued permit, a monitoring frequency of 1/quarter will be imposed for design flows ≥ 0.05 MGD and < 1MGD.

In accordance with Section I.A of the DEP's SOP for Establishing Effluent Limitations for Individual Sewage Permits [SOP No. BCW-PMT-033 Version 1.9], and under the authority of 25 Pa. Code § 92a.61(b), nutrient monitoring for total nitrogen and total phosphorus will be imposed for sewage facilities with a design flow greater than 2,000 GPD. The intent of this monitoring is to establish the nutrient load of the wastewater and evaluate the impact that load may have on the quality of the receiving stream. During the last permit cycle, total nitrogen monitoring resulted in four samples ranging from 14.07 to 45.44 mg/L. Total phosphorus was sampled weekly and monthly average results ranged from 2.4 to 8.6 mg/L. The SOP states that if the receiving stream is not impaired for nutrients, then discretion may be used in setting the monitoring frequency. Tributary 36836 to Millers Run is not impaired for nitrogen or phosphorus; therefore, a monitoring frequency of 1/year will be imposed. Please note that this frequency is being changed from the previous permit.

Monitoring frequency for the proposed effluent limits are based on Table 6-3, Self -Monitoring Requirements for Sewage Dischargers, from DEP's *Technical Guidance for the Development and Specification of Effluent Limitations* [Doc. No. 362-0400-001]. No changes are being made to sampling frequency during this permit cycle except for total nitrogen and total phosphorus.

Conventional concentration and mass loading limits are rounded in accordance with the guidelines in Chapter 5 Section C.2. of DEP's *Technical Guidance for the Development and Specification of Effluent Limitations* [Doc. No. 362-0400-001]. Please note that mass loading limits for $CBOD_5$ summer, $CBOD_5$ winter, and TSS have all changed to be consistent with the rounding guidance.

Table 5.3 DEP's *Technical Guidance for the Development and Specification of Effluent Limitations* [Doc. No. 362-0400-001] documents that for Publicly Owned Treatment Works (POTWs), conventional pollutants should receive average monthly, weekly average, and instantaneous maximum concentration limits. These limits have been imposed for $CBOD_5$ summer and winter and TSS. No changes have been made to the type of limit imposed for conventional pollutants during this permit renewal.

Mass Loading Limits

Section IV.C of DEP's SOP for Establishing Effluent Limitations for Individual Sewage Permits [SOP No. BCW-PMT-033 Version 1.9] establishes mass loading limits for POTWs at the discretion of the application manager. Mass loading limitations are imposed for POTWs in accordance with the SOP cited above and Table 5.3 of DEP's *Technical Guidance for the Development and Specification of Effluent Limitations* [Doc. No. 362-0400-001]. For the purposes of permitting limits, mass loading limits for ammonia-nitrogen summer and winter, $CBOD_5$ summer and winter, and TSS will continue to be imposed based on the following equation:

$$mass\ loading\ limit\ \left(\frac{lbs}{day}\right) = average\ annual\ flow\ (MGD) * concentration\ limit\ \left(\frac{mg}{L}\right) * 8.34\ (conversion\ factor)$$

The following mass loading limits are being imposed:

Parameter	Average Monthly (lbs/day)	Average Weekly (lbs/day)
Ammonia-Nitrogen Summer (mg/L)	8.54	N/A
Ammonia-Nitrogen Winter (mg/L)	13.75	N/A
$CBOD_5$ Summer (mg/L)	85	130
$CBOD_5$ Winter (mg/L)	105	160
TSS (mg/L)	130	195

Mass loading limits for total nitrogen and total phosphorus are not being imposed at this time because no concentration limits exist for either parameter.

Influent Monitoring

Section IV.F.2 of DEP's SOP for *New and Reissuance Sewage Individual NPDES Permit Applications* [SOP No. BCW-PMT-002 Version 2.0] establishes influent BOD_5 and TSS for POTWs. The intent of influent BOD_5 and TSS monitoring is to verify compliance with the secondary treatment requirement of 85% removal defined in 40 CFR §133.102. No changes have been made to effluent monitoring during this permit renewal.

Total Maximum Daily Load (TMDL) Considerations

Chartiers Creek TMDL

Section 303(d) of the Clean Water Act and the U.S. Environmental Protection Agency's Water Quality Planning and Management Regulation (codified at Title 40 of the Code of Federal Regulations Part 130) requires states to develop a TMDL for impaired water quality criteria for the pollutant. TMDLs also provide a scientific basis for States to establish water-quality based controls for reducing pollution to both point and non-point sources in order to restore and maintain the quality of the state's water resources (USEPA 1991a). Chartiers Creek was included in the state's 1996 Section 303(d) list because of Polychlorinated Biphenyls (PCBs) and Chlordane which are anticipated to be legacy contaminants as well as a current Industrial Discharger.

In accordance with 40 CFR § 122.44(d)(1)(vii)(B), when developing WQBELs, the permitting authority shall ensure that effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation (WLA) for the discharge prepared by the State and approved by the EPA pursuant to 40 CFR § 130.7.

Miller's Run STP discharges to Tributary 36836 to Millers Run, which is a tributary of Chartiers Creek. A TMDL for Chartiers Creek, *Total Maximum Daily Load – PCB and Chlordane – Chartiers Creek,* was finalized on March 8, 2001. According to the TMDL, the use of both PCB and Chlordane has been banned in the United States, so there will be no new point sources to which controls can be applied. PCB and Chlordane present in the main stem of Chartiers Creek are believed to reside primarily in the sediment due to historical use and improper disposal practices. Long-term natural attenuation coupled with the implementation on the existing source identified in the TMDL (i.e., Cooper Power System) is expected to reduce PCB and Chlordane contamination from the Chartiers Creek sediments over time. Due to this and the fact that the TMDL is currently monitoring the levels of PCBs and chlordane in fish, this facility will not be assigned wasteload allocations. No monitoring of PCBs and Chlordane will also be applied.

Millers Run has no industrial users and sanitary sewage is not anticipated to contribute to PCB impairment of the stream.

Chartiers Watershed TMDL

Section 303(d) of the Clean Water Act and the U.S. Environmental Protection Agency's Water Quality Planning and Management Regulation (codified at Title 40 of the Code of Federal Regulations Part 130) requires states to develop a TMDL for impaired water quality criteria for the pollutant. TMDLs also provide a scientific basis for States to establish water-quality based controls for reducing pollution to both point and non-point sources in order to restore and maintain the quality of the state's water resources (USEPA 1991a) Stream reaches within the Chartiers Watershed, are included in the state's 1996 and 1998 Section 303(d) lists because of pH and metal impairments including aluminum, iron, and manganese.

Millers Run STP dischargers to Chartiers Watershed, for which a TMDL was finalized in April 2003. The TMDL addresses aluminum, iron, and manganese due to acid mine drainage.

The previous permit-imposed monitor and report requirements for aluminum, iron, and manganese. The highest reported value for the last three years of eDMR data is reported below along with the in-stream water quality criteria for each pollutant of concern.

Parameter	Highest Reported Value (mg/l)	Criteria (mg/L)
Aluminum, Total	0.286	0.75
Iron, Total	0.5	1.5
Manganese, Total	0.03	1.0

In accordance with 25 PA Code §92a.61, a quarterly monitoring requirement for iron, manganese, and aluminum will again be imposed in the permit to continue verification that the sewage discharge is not contributing to stream impairment.

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	Average Monthly	Weekly Average	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded
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
CBOD5 Nov 1 - Apr 30	105	160	25.0	37.5	XXX	50	1/week	8-Hr Composite
CBOD5 May 1 - Oct 31	85	130	20.0	30.0	XXX	40	1/week	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	Report	XXX	XXX	XXX	1/week	8-Hr Composite
TSS	130	195	30.0	45.0	XXX	60	1/week	8-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	Report	XXX	XXX	XXX	1/week	8-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
UV Intensity (mW/cm²)	XXX	XXX	Report Inst Min	Report Avg Mo	XXX	XXX	1/day	Recorded
Total Nitrogen	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab

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	Average Monthly	Weekly Average	Maximum	Instant. Maximum		
Ammonia-Nitrogen Nov 1 - Apr 30	13.75	XXX	3.17	XXX	XXX	6.34	1/week	8-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	8.54	XXX	1.97	XXX	XXX	3.94	1/week	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab
Total Aluminum	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/quarter	Grab
Total Iron	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/quarter	Grab
Total Manganese	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/quarter	Grab

Compliance Sampling Location: Outfall 001

Other Comments: None

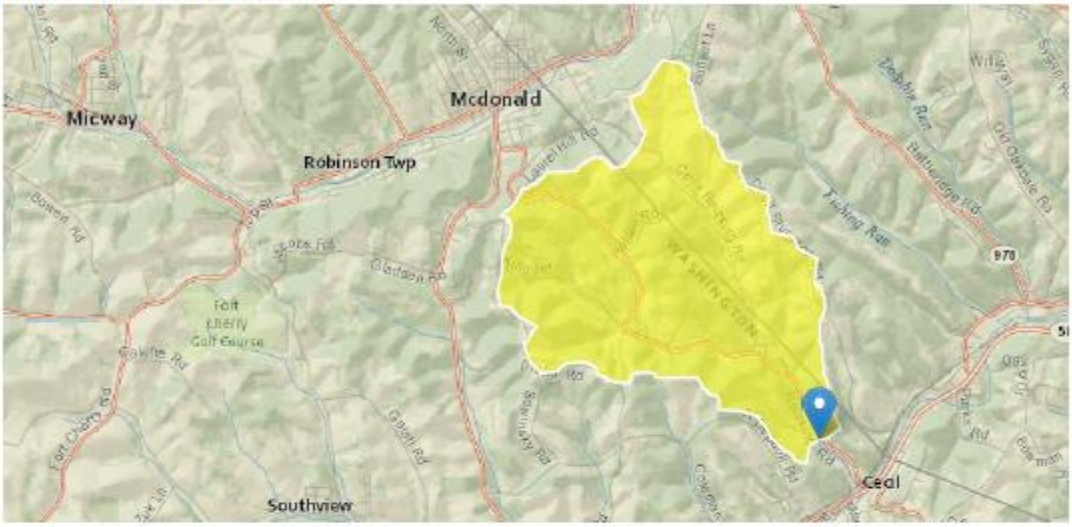
ATTACHMENT A

USGS Stream Stats Output Files

Discharge Point

StreamStats Report

Region ID: PA
Workspace ID: PA20240722152349822000
Clicked Point (Latitude, Longitude): 40.33433, -80.19210
Time: 2024-07-22 11:24:14 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	3.55	square miles
ELEV	Mean Basin Elevation	1171	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	3.55	square miles	2.26	1400
ELEV	Mean Basin Elevation	1171	feet	1050	2580

Low-Flow Statistics Flow Report [Low Flow Region 4]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	0.117	ft^3/s	43	43
30 Day 2 Year Low Flow	0.212	ft^3/s	38	38
7 Day 10 Year Low Flow	0.0387	ft^3/s	66	66
30 Day 10 Year Low Flow	0.0751	ft^3/s	54	54
90 Day 10 Year Low Flow	0.144	ft^3/s	41	41

Low-Flow Statistics Citations

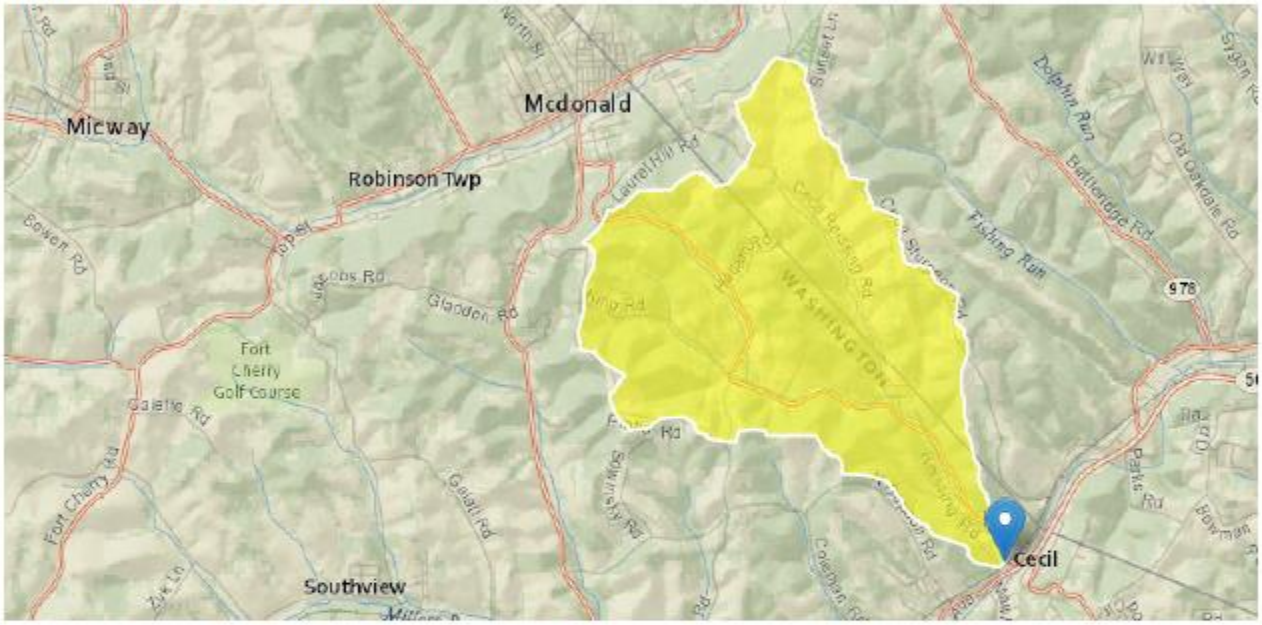
Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.21.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

End of Reach

StreamStats Report

Region ID: PA
Workspace ID: PA20240722170512529000
Clicked Point (Latitude, Longitude): 40.32992, -80.18717
Time: 2024-07-22 13:05:36 -0400



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Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	3.66	square miles
ELEV	Mean Basin Elevation	1167	feet

ATTACHMENT B

WQM 7.0 Modeling Results

Summer Modeling

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
20F	36836	Trib 36836 to Millers Run	0.540	960.00	3.55	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	0.011	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
Millers Run STP	PA0252603	0.0000	0.5200	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	20.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	2.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
20F	36836	Trib 36836 to Millers Run	0.090	959.00	3.66	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	0.011	0.00	0.00	0.000	0.000	10.0	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
20F	36836	Trib 36836 to Millers 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												
0.540	0.04	0.00	0.04	.8044	0.00042	.532	13.47	25.31	0.12	0.234	20.23	7.00
Q1-10 Flow												
0.540	0.02	0.00	0.02	.8044	0.00042	NA	NA	NA	0.12	0.236	20.15	7.00
Q30-10 Flow												
0.540	0.05	0.00	0.05	.8044	0.00042	NA	NA	NA	0.12	0.232	20.31	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	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
20F	36836	Trib 36836 to Millers 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
0.540	Millers Run STP	16.55	4	16.55	4	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
0.540	Millers Run STP	1.85	1.97	1.85	1.97	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)		
0.54	Millers Run STP	20	20	1.97	1.97	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20F	36836	Trib 36836 to Millers Run

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.540	0.520	20.229	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
13.466	0.532	25.305	0.118
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
19.17	1.491	1.88	0.712
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.149	16.712	Owens	5
Reach Travel Time (days)			
0.234			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.023	18.51	1.85	5.49
0.047	17.87	1.82	5.76
0.070	17.25	1.79	5.96
0.093	16.65	1.76	6.13
0.117	16.08	1.73	6.27
0.140	15.52	1.70	6.39
0.164	14.98	1.67	6.50
0.187	14.47	1.65	6.60
0.210	13.96	1.62	6.69
0.234	13.48	1.59	6.78

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
20F	36836	Trib 36836 to Millers 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)
0.540	Millers Run STP	PA0252603	0.000	CBOD5	20		
				NH3-N	1.97	3.94	
				Dissolved Oxygen			5

Winter Modeling

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
20F	36836	Trib 36836 to Millers Run	0.540	960.00	3.55	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	0.022	0.00	0.00	0.000	0.000	10.0	0.00	0.00	5.00	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
Millers Run STP	PA0252603	0.0000	0.5200	0.0000	0.000	15.00	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	12.51	0.00	0.00
NH3-N	4.50	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
20F	36836	Trib 36836 to Millers Run	0.090	959.00	3.66	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	0.022	0.00	0.00	0.000	0.000	10.0	0.00	0.00	5.00	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
20F	36836	Trib 36836 to Millers 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												
0.540	0.08	0.00	0.08	.8044	0.00042	.536	13.65	25.48	0.12	0.228	14.12	7.00
Q1-10 Flow												
0.540	0.05	0.00	0.05	.8044	0.00042	NA	NA	NA	0.12	0.232	14.42	7.00
Q30-10 Flow												
0.540	0.11	0.00	0.11	.8044	0.00042	NA	NA	NA	0.12	0.224	13.84	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	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
20F	36836	Trib 36836 to Millers 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
0.540	Millers Run STP	24.1	9	24.1	9	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
0.540	Millers Run STP	2.81	3.17	2.81	3.17	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)		
0.54	Millers Run STP	25	25	3.17	3.17	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20F	36836	Trib 36836 to Millers Run

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.540	0.520	14.122	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
13.645	0.536	25.477	0.121
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
22.98	1.487	2.90	0.445
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.659	14.529	Owens	5
Reach Travel Time (days)			
0.228			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.023	22.39	2.87	6.10
0.046	21.82	2.84	6.44
0.068	21.27	2.81	6.70
0.091	20.72	2.78	6.91
0.114	20.19	2.75	7.08
0.137	19.68	2.72	7.22
0.160	19.17	2.70	7.33
0.182	18.69	2.67	7.44
0.205	18.21	2.64	7.53
0.228	17.74	2.62	7.61

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
20F	36836	Trib 36836 to Millers 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)
0.540	Millers Run STP	PA0252603	0.000	CBOD5	25		
				NH3-N	3.17	6.34	
				Dissolved Oxygen			5