pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOUTHWEST REGIONAL OFFICE
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0252999**
Facility Type	**Sewage**	APS ID	**1052600**
Major / Minor	**Minor**	Authorization ID	**1377857**

NPDES PERMIT FACT SHEET ADDENDUM

Applicant and Facility Information

Applicant Name	**Unity Township Municipal Authority**	Facility Name	**14 Mile Run STP**
Applicant Address	PO Box 506	Facility Address	Beatty Cnty Road
	Pleasant Unity, PA 15676-0506		Latrobe, PA 15650
Applicant Contact	Douglass Pike	Facility Contact	Same as Applicant
Applicant Phone	(724) 423-6888	Facility Phone	Same as Applicant
Client ID	62039	Site ID	654515
SIC Code	4952	Municipality	Unity Township
SIC Description	Trans. & Utilities - Sewerage Systems	County	Westmoreland
Date Published in PA Bulletin	May 7, 2022	EPA Waived?	Yes
Comment Period End Date	June 7, 2022	If No, Reason	

Purpose of Application: Application for a renewal of an NPDES permit for discharge of treated Sewage

Internal Review and Recommendations

The Department of Environmental Protection (DEP) published notice of draft Authorization to Discharge under the National Pollutant Discharge Elimination System (NPDES) discharge requirements for treated sewage for 14 Mile Run STP in the Pennsylvania Bulletin on May 7, 2022 [52 Pa.B. 2717]. A 30-day comment period was provided during which interested parties were directed to submit comments to DEP. The comment period ended on June 6, 2022. Comments were received from Mr. Douglas Pike with Unity Township Municipal Authority. Due to changes to $CBOD_5$ concentration limits prompted by Mr. Pike's questions, the permit is being re-drafted.

The purpose of this fact sheet addendum is to present the comments received, present DEP's official response to them, explain how they were considered in finalizing the Draft NPDES Permit when applicable, and to address all concerns.

In response to the draft permit, Mr. Douglas Pike with Unity Township Municipal Authority sent a letter dated May 4, 2022. Those comments are listed below. In response to the comments, the $CBOD_5$ limit is changing from 15 mg/L annual limit to a 18 mg/L during summer and 25 mg/L during winter. Additionally, the stream code listed on page 2 of the permit is being changed from 75717 to 43458.

Approve	Return	Deny	Signatures	Date
X			Stephanie Conrad / Environmental Engineering Specialist	June 7, 2022
X			Christopher Kriley, P.E. / Program Manager	June 7, 2022

Internal Review and Recommendations

1. Page 2 lists the river mile index as 0.69 Previous permits list is at 1.5. Please explain the change.

   DEP's Response: River Mile Index is a measurement of the distance from the mouth of the river to the discharge point. In this case, the mouth of the river is the confluence of Fourmile Run and Monastery Run. This distance is 0.69 miles. The RMI listed in the 2017 permit inaccurately documented the distance between the treatment facility and the confluence of Monastery Run and Loyal Hanna Creek.

2. Page 2 lists the stream code as 75717. Previous permits list it as 43458. Please explain the change and confirm the permit limits were calculated using the correct stream code.

   DEP's Response: The incorrect stream code was inadvertently pulled from DEP's eMAP PA database. Stream code is used as an identifying value and has no effect on Water Quality Based Effluent Limits (WQBELs). Regardless, modeling output values with the correct stream code are included in Attachment A. The stream code has been updated in the draft permit documents, but previous draft documents will not be edited as they have already been issued.

3. Page 2 shows a change in monitoring frequency for pH to 1 per day. I request that this be changed back to 1 per weekday. The daily monitoring requires a significant increase in staffing and training costs. The facility is consistently in compliance and adding additional sampling/testing will be burdensome.

4. Page 2 shows a change in monitoring frequency for dissolved oxygen to 1 per day. I request that this be changed back to 1 per weekday. The daily monitoring requires a significant increase in staffing and training costs. The facility is consistently in compliance and adding additional sampling/testing will be burdensome.

   DEP's Response to question 3 and 4: The sampling frequency for pH and Dissolved Oxygen (DO) will not be changed in the final permit. Sampling frequencies for these parameters are consistent with Department policy as stated in Table 6-3 of the Department's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions* (Identification Number 362-0400-001).

   The Authority was informed of this change during the last permit cycle. The Fact Sheet Addendum which accompanied the 2017 Final Permit stated, "at the next renewal 1/day sampling for pH and DO may be imposed and that they should start planning financially for an perceived increased costs they believe may occur."

   Please be aware that daily samples are not required to be taken by a certified operator. DO and pH probes can be used for continuous measurements and these measurements may be used for daily reporting provided that the meter is installed in the appropriate location and meets the requirements of 40 CF 136.

5. Page 2 lists new carbonaceous biochemical oxygen demand limits that are approximately 40% lower than the previous permit. Please confirm that the limits were calculated using the correct river mile index and stream code. If the calculations are correct, then please explain what changed to require such a significant change in the limits. Why have the summer/winter limits been replaced with one yearly limit?

   DEP's Response: Stream code and RMI are identifying values and have little or no effect on WQBELs.

   After review of the model information provided with the draft, it was determined that two model input errors were made in the original modeling. A Tributary DO value of 8.24 was used when the correct value for a Warm Water Fishery is 12.51. When re-modeling for an existing discharge, regional policy is to use the existing limit value for the discharge concentration value. The existing limit value was incorrectly documented as 15 mg/L while the correct value is 25 mg/L. These errors were addressed by re-modeling for winter WQBELs and the updated output files are included in Attachment A. In the final permit, a Winter $CBOD_5$ limit of 25 mg/L will be imposed.

   A Summer $CBOD_5$ Limit of 18 mg/L will be imposed in the final permit based on the attached modeling and in accordance with department rounding policy.

6. Page 2 shows minor changes to the total suspended solids mass loading. Please confirm that these values have been calculated correctly.

Internal Review and Recommendations

DEP's Response: Mass loading rates are calculated based on the formula: Design flow (MGD) x concentration limit (mg/L) x conversion factor (8.34).

Mass loading$_{\text{Tss monthly average}}$= 0.95 MGD x 30mg/L x 8.34= 237.69

Mass loading$_{\text{Tss weekly average}=}$ 0.95 MGD x 45 mg/L x 8.34= 356.53

Department rounding policy for values 60.0 or greater is to round down to the nearest five. The values reflected in the draft permit were calculated correctly and rounded in accordance with department rounding guidance.

7. Page 3 lists new ammonia-nitrogen limits that are approximately 40% lower than the previous permit. Please confirm that the limits were calculated using the correct rive mile index and stream code. If the calculations are correct, please explain what changed to require such a significant change in the limits?

   DEP's Response: Stream code and RMI are identifying values and have little or no effect on WQBELs. The ammonia-nitrogen limits in the draft permit were calculated in accordance with the current department policies.

   The previous modeling was conducted in 2005 and uses yield data from Bulletin 12 for the flow of the receiving stream. Department policy has changed since that time and is now to use USGS Stream Stats Data, which is generally accepted as being more accurate. The receiving stream flow in 2005 was estimated to be 0.48 cfs, while USGS Stream Stats the flow to be significantly less at 0.243 cfs.

8. Page 3 lists three new parameters. They are total aluminum, total iron, and total manganese. Why were these three parameters added?

   DEP's Response: 14 Mile Run STP (PA0252999) discharges to the Kiskiminetas-Conemaugh River Watershed, for which a TMDL was finalized on January 29, 2010. The TMDL addresses metals, pH, and sediment impairments associated with abandoned mine drainage. This facility is listed as a negligible discharger in Appendix C of the approved TMDL and is covered under the aggregate WLA for negligible dischargers in Appendix G. The WLA for this facility is based on a flow of 0.95 and the in-stream water quality for each pollutant of concern.

   In accordance with 25 PA Code §92a.61, a 1/year monitoring requirement for iron, manganese, and aluminum is being imposed to verify that the sewage discharge is not contributing to stream impairment.

Mr. Pike submitted two additional comments in an email dated May 23, 2022

1. The copy of the NPDES Permit Fact Sheet you attached lists the average annual flow as 0.95 MGD on page 4. This is not the average flow. The hydraulic capacity is also listed as 0.905 MGD on page 4. This is not the hydraulic capacity. The correct value should be 0.95.

   DEP's Response: The department acknowledges that an incorrect average annual flow and hydraulic capacity were listed in the draft fact sheet. No changes will be made to the draft fact sheet as the document has already been issued.

2. You are proposing a limit of 18mg/L for the $CBOD_5$ summer limit. Why was this rounded down from the calculated value of 18.67 mg/L? I believe it should be rounded up or at least use the value of 18.7 mg/L since the permit will list the value in tenths.

   DEP's Response: Department rounding policy for values 10.0 and 60.0 is to round down to the nearest one. Therefore, a Summer $CBOD_5$ Limit of 18 mg/L will be imposed in the final permit.

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
CBOD5 Nov 1 - Apr 30	195	300	XXX	25.0	38.0	50	1/week	8-Hr Composite
CBOD5 May 1 - Oct 31	140.0	210.0	XXX	18.0	27.0	36	1/week	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
TSS	235	355	XXX	30.0	45.0	60	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
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
UV Intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	8-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	35	70	XXX	4.5	6.5	9	1/week	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	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ammonia-Nitrogen May 1 - Oct 31	15	30	XXX	2.0	3.0	4	1/week	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	8-Hr Composite
Total Aluminum	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Total Iron	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Total Manganese	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Compliance Sampling Location: Outfall #001

Other Comments: None

ATTACHMENT A

WQM 7.0 Modeling Results

Summer

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
18C	43458	FOURMILE RUN	0.690	1000.00	7.84	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	0.031	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
14 Mile Run STP	PA0252---	0.0000	0.9500	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	24.00	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
18C	43458	FOURMILE RUN	0.010	980.00	8.29	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	0.031	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	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
18C	43458	FOURMILE 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												
0.690	0.24	0.00	0.24	1.4697	0.00557	.549	17.12	31.18	0.18	0.228	20.71	7.00
Q1-10 Flow												
0.690	0.16	0.00	0.16	1.4697	0.00557	NA	NA	NA	0.18	0.235	20.48	7.00
Q30-10 Flow												
0.690	0.33	0.00	0.33	1.4697	0.00557	NA	NA	NA	0.19	0.222	20.92	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
18C	43458	FOURMILE 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
0.690	14 Mile Run STP	16.11	17.81	16.11	17.81	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
0.690	14 Mile Run STP	1.78	2.18	1.78	2.18	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)		
0.69	14 Mile Run STP	18.67	18.67	2.18	2.18	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
18C	43458	FOURMILE RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.690	0.950	20.710	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
17.124	0.549	31.184	0.182
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
16.30	1.371	1.87	0.739
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.460	9.804	Tsivoglou	5
Reach Travel Time (days)			
0.228			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.023	15.76	1.84	5.35
0.046	15.28	1.81	5.29
0.068	14.80	1.78	5.27
0.091	14.33	1.75	5.27
0.114	13.87	1.72	5.29
0.137	13.43	1.69	5.33
0.160	13.00	1.66	5.39
0.183	12.59	1.63	5.45
0.205	12.19	1.61	5.52
0.228	11.80	1.58	5.59

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
18C	43458	FOURMILE 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)
0.690	14 Mile Run STP	PA0252---	0.000	CBOD5	18.67		
				NH3-N	2.18	4.36	
				Dissolved Oxygen			5

Winter

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
18C	43458	FOURMILE RUN	0.690	1000.00	7.84	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	0.062	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
14 Mile Run STP	PA0252---	0.0000	0.9500	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	7.20	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
18C	43458	FOURMILE RUN	0.010	980.00	8.29	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	0.062	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
18C	43458	FOURMILE 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												
0.690	0.49	0.00	0.49	1.4697	0.00557	.559	17.83	31.88	0.20	0.212	12.51	7.00
Q1-10 Flow												
0.690	0.31	0.00	0.31	1.4697	0.00557	NA	NA	NA	0.19	0.223	13.25	7.00
Q30-10 Flow												
0.690	0.66	0.00	0.66	1.4697	0.00557	NA	NA	NA	0.21	0.202	11.90	7.00

Thursday, May 19, 2022 Version 1.1 Page 1 of 1

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
18C	43458	FOURMILE 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
0.690	14 Mile Run STP	24.1	14.4	24.1	14.4	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
0.690	14 Mile Run STP	3.18	4.61	3.18	4.61	0	0

Dissolved Oxygen Allocations

		CBOD5		NH3-N		Dissolved Oxygen			
RMI	Discharge Name	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Critical Reach	Percent Reduction
0.69	14 Mile Run STP	25	25	4.61	4.61	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
18C	43458	FOURMILE RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.690	0.950	12.515	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
17.826	0.559	31.877	0.196
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
19.28	1.457	3.47	0.393
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.867	8.695	Tsivoglou	5
Reach Travel Time (days)			
0.212			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.021	18.87	3.44	6.81
0.042	18.46	3.41	6.78
0.064	18.06	3.38	6.76
0.085	17.67	3.35	6.77
0.106	17.29	3.32	6.78
0.127	16.91	3.30	6.80
0.148	16.55	3.27	6.83
0.169	16.19	3.24	6.87
0.191	15.84	3.22	6.92
0.212	15.49	3.19	6.96

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
18C	43458	FOURMILE RUN

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Eff. Limit 30-day Ave. (mg/L)	Eff. Limit Maximum (mg/L)	Eff. Limit Minimum (mg/L)
0.690	14 Mile Run STP	PA0252—	0.000	CBOD5	25		
				NH3-N	4.61	9.22	
				Dissolved Oxygen			5

Thursday, May 19, 2022 Version 1.1 Page 1 of 1