pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0254169**
Facility Type	**Non-Municipal**	APS ID	**856343**
Major / Minor	**Minor**	Authorization ID	**1299131**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Consol PA Coal Co. LLC**	Facility Name	**Enlow Fork Mine**
Applicant Address	1000 Consol Energy Drive	Facility Address	2041 Pleasant Grove Road
	Canonsburg, PA 15317-6506		Claysville, PA 15323-1037
Applicant Contact	Jaculyn Duke	Facility Contact	Brian Benson
Applicant Phone	(724) 416-8299	Facility Phone	(724) 416-8271
Client ID	259457	Site ID	261173
Ch 94 Load Status		Municipality	East Finley Township
Connection Status		County	Washington
Date Application Received	December 16, 2019	EPA Waived?	Yes
Date Application Accepted	December 17, 2019	If No, Reason	

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

Summary of Review

The permittee has applied for a renewal of NPDES Permit No. PA0254169. NPDES Permit No. PA0254169 was previously issued by the PA Department of Environmental Protection (DEP) on June 23, 2015 and expired on June 30, 2020. The permit was submitted in a timely manner and therefore was granted an administrative extension.

Sewage from this facility is treated with flow equalization, extended aeration, final clarification, chlorination, and dichlorination.

The applicant is currently enrolled in and will continue to use eDMR.

The Act-14 PL 834 Municipal Notification was provided by the November 25, 2019 letters from Jaculyn Duke at Consol Energy and no comments were received.

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*

Approve	Deny	Signatures	Date
X		Stephanie Conrad / Environmental Engineering Specialist	October 4, 2021
X		Christopher Kriley, P.E. / Environmental Program Manager	October 18, 2021

Summary of Review
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)	.0024
Latitude	40º 4' 27"	Longitude	-80º 21' 11"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Templeton Fork (TSF)	Stream Code	32708
NHD Com ID	73867894	RMI	0.44
Drainage Area	0.21	Yield (cfs/mi^2)	0.00609
Q_{7-10} Flow (cfs)	0.00128	Q_{7-10} Basis	USGS Stream Stats
Elevation (ft)	1220	Slope (ft/ft)	
Watershed No.	20-E	Chapter 93 Class.	TSF
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	

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

Nearest Downstream Public Water Supply Intake	None in PA		
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Treatment Facility Summary

Treatment Facility Name: Enlow Fork Mine 3 N 5 Airshaft & Portal Facility

WQM Permit No.	Issuance Date
6309405	June 8, 2010

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage		Extended Aeration	Chlorination	0.024

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal

Changes Since Last Permit Issuance:

Other Comments:

Compliance History	
Summary of DMRs:	**Between September 2016 and September 2021, the facility has generally complied with submittal of Discharge Monitoring Reports. During the review period, no violations were issued. Two effluent violations occurred in November 2016, both for Ammonia-Nitrogen.**
Summary of Inspections:	**No inspections of the facility were completed between September 2016 and September 2021.**

Other Comments: The client has numerous open violations with other programs. As these violations, however, are not with clean water and the individual programs do not oppose the permit, the department is proceeding with issuance.

Compliance History

DMR Data for Outfall 001 (from September 1, 2020 to August 31, 2021)

Parameter	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20
Flow (MGD) Average Monthly	0.002	0.002	0.003	0.002	0.004	0.0035	0.00133	0.00391	0.000652	0.00137	0.0036	0.00374
pH (S.U.) Minimum	7.0	7.0	7.0	7.0	7.0	6.5	7.0	7.0	7.0	7.0	7.0	7.0
pH (S.U.) Maximum	7.5	8.0	8.0	8.0	8.0	8.8	8.0	8.0	8.0	7.5	8.0	8.0
DO (mg/L) Minimum	8.0	8.2	8.1	8.1	8.3	8.2	7.7	7.5	7.9	7.3	7.1	7.7
TRC (mg/L) Average Monthly	0.1	0.2	0.2	< 0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1
TRC (mg/L) Instantaneous Maximum	0.5	0.5	0.5	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CBOD5 (mg/L) Average Monthly	12	8	6	4	5	9	< 10	10	4	6	< 4	21
CBOD5 (mg/L) Instantaneous Maximum	18	11	6	5	6	10	< 12	15	5	8	4	33
TSS (mg/L) Average Monthly	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 7	< 5	< 5	< 5	< 5
TSS (mg/L) Instantaneous Maximum	< 5	< 5	< 5	< 5	< 5	< 5	< 5	9	< 5	< 5	< 5	< 5
Fecal Coliform (CFU/100 ml) Geometric Mean	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	2	< 1	1	< 1	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Total Nitrogen (mg/L) Daily Maximum									11.6			
Ammonia (mg/L) Average Monthly	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Ammonia (mg/L) Instantaneous Maximum	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8

Total Phosphorus (mg/L) Daily Maximum									0.6			

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .024
Latitude 40º 4' 27.00" **Longitude** -80º 21' 11.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Comments:

Water Quality-Based Limitations

The discharge for this facility was modeled using the TRC Spreadsheet, and it was determined that a stricter limit should be imposed. The modeling file is attached in Attachment B.

The discharge for this facility was modeled using WQM 7.0 to evaluate the CBOD5, Ammonia Nitrogen, and Dissolved Oxygen parameters. The modeling results show technology based effluent limits for CBOD 5 are appropriate. The modeling results also confirm that Ammonia-Nitrogen and Dissolved Oxygen limitations are necessary to meet in-stream water quality criterion. The modeling output files are attached in Attachment A.

Based on eDMR data, the facility as operating should be able to meet the new, more restrictive Dissolved Oxygen limit. The facility is not, however, able to meet the new, more restrictive TRC limit. A compliance period of one year for TRC will therefore be established. January 1, 2023 is a tentative effective date for the new limit and is subject to change pending final issuance date.

Parameter	Limit (mg/l)	SBC	Model
Ammonia-Nitrogen May-October	3.0	Average Monthly	WQM 7.0
Ammonia-Nitrogen November- April	2.0	Average Monthly	WQM 7.0
Dissolved Oxygen	6.0	Instantaneous Minimum	WQM 7.0
Total Residual Chlorine	0.06	Average Monthly	TRC Spreadsheet

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.**

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

Additional Considerations

Sewage discharges will include monitoring, at a minimum, for E. coli, in new and reissued permits, with a monitoring frequency of 1/year for design flows of 0.002 - 0.05 MGD.

For pH, Dissolved Oxygen (DO) and TRC, a monitoring frequency of 1/day has been imposed. In general, less frequent monitoring may be established only when the permittee demonstrates that there will be no discharge on days were monitoring is not required.

The receiving stream is not impaired for nutrients, therefore, annual sampling for nitrogen and phosphorus will be imposed per 25 PA Code §92a.6.

Monitoring frequency for the proposed effluent limits are based on Table 6-3, Self-Monitoring Requirements for Sewage Dischargers, from the Department's Technical Guidance for the Development and specification of Effluent Limitations. Please note that the Monitoring Requirements were changed for Flow to 1/week to be consistent with the guidance.

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: January 1, 2023 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	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
TRC	XXX	XXX	XXX	0.06	XXX	0.2	1/day	Grab

Compliance Sampling Location: Outfall #001

Other Comments:

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 December 31, 2022.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab

Compliance Sampling Location: Outfall #001

Other Comments:

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	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	0.024	XXX	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	6.0 Inst Min	XXX	XXX	XXX	1/day	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	Grab
TSS	XXX	XXX	XXX	30	XXX	60	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	3.0	XXX	6.0	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	2.0	XXX	4.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Compliance Sampling Location: Outfall #001

Other Comments:

ATTACHMENT A

WQM 7.0 Modeling Results

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
20E	32708	TEMPLETON FORK	0.440	1220.00	0.21	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	0.006	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
Elow Mine 3N5	PA0254169	0.0240	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	4.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Permit No. PA0254169

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
20E	32708	TEMPLETON FORK	0.010	1200.00	0.26	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	0.006	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

Permit No. PA0254169

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
20E	32708	TEMPLETON FORK

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												
0.440	0.00	0.00	0.00	.0371	0.00881	.311	2.47	7.94	0.05	0.525	20.17	7.00
Q1-10 Flow												
0.440	0.00	0.00	0.00	.0371	0.00881	NA	NA	NA	0.05	0.529	20.11	7.00
Q30-10 Flow												
0.440	0.00	0.00	0.00	.0371	0.00881	NA	NA	NA	0.05	0.522	20.22	7.00

Permit No. PA0254169

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

Permit No. PA0254169

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
20E	32708	TEMPLETON FORK

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
0.440	Elow Mine 3N5	9.6	9.81	9.6	9.81	1	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
0.440	Elow Mine 3N5	1.89	1.97	1.89	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)		
0.44	Elow Mine 3N5	25	25	1.97	1.97	6	6	0	0

Permit No. PA0254169

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20E	32708	TEMPLETON FORK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.440	0.024	20.166	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
2.469	0.311	7.940	0.050
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
24.23	1.494	1.91	0.709
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.075	25.420	Owens	6
Reach Travel Time (days)			
0.525			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.053	22.39	1.84	6.64
0.105	20.69	1.77	6.91
0.158	19.12	1.71	7.09
0.210	17.66	1.64	7.24
0.263	16.32	1.58	7.38
0.315	15.08	1.53	7.51
0.368	13.93	1.47	7.62
0.420	12.87	1.42	7.73
0.473	11.90	1.37	7.83
0.525	10.99	1.32	7.92

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WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
20E	32708	TEMPLETON FORK

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)
0.440	Elow Mine 3N5	PA0254169	0.024	CBOD5	25		
				NH3-N	1.97	3.94	
				Dissolved Oxygen			6

Permit No. PA0254169

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
20E	32708	TEMPLETON FORK	0.440	1220.00	0.21	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	0.012	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
Elow Mine 3N5	PA0254169	0.0240	0.0000	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	4.00	12.51	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Permit No. PA0254169

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
20E	32708	TEMPLETON FORK	0.010	1200.00	0.26	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	0.012	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

Permit No. PA0254169

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
20E	32708	TEMPLETON FORK

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												
0.440	0.00	0.00	0.00	.0371	0.00881	.313	2.49	7.96	0.05	0.516	14.35	7.00
Q1-10 Flow												
0.440	0.00	0.00	0.00	.0371	0.00881	NA	NA	NA	0.05	0.523	14.58	7.00
Q30-10 Flow												
0.440	0.00	0.00	0.00	.0371	0.00881	NA	NA	NA	0.05	0.509	14.14	7.00

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WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

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WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
20E	32708	TEMPLETON FORK

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
0.440	Elow Mine 3N5	14.47	15.11	14.47	15.11	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
0.440	Elow Mine 3N5	2.96	3.24	2.96	3.24	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)		
0.44	Elow Mine 3N5	25	25	3.24	3.24	6	6	0	0

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WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20E	32708	TEMPLETON FORK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.440	0.024	14.355	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
2.490	0.313	7.962	0.051
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
23.52	1.489	3.03	0.453
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.420	22.181	Owens	6
Reach Travel Time (days)			
0.516			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.052	22.16	2.96	7.63
0.103	20.89	2.89	8.09
0.155	19.69	2.83	8.30
0.206	18.55	2.76	8.44
0.258	17.49	2.70	8.54
0.309	16.48	2.64	8.64
0.361	15.53	2.58	8.72
0.413	14.64	2.52	8.80
0.464	13.80	2.46	8.87
0.516	13.00	2.40	8.94

Permit No. PA0254169

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
20E	32708	TEMPLETON FORK

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)
0.440	Elow Mine 3N5	PA0254169	0.024	CBOD5	25		
				NH3-N	3.24	6.48	
				Dissolved Oxygen			6

ATTACHMENT B

TRC Modeling Results

Copy of TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.00128	= Q stream (cfs)	0.5	= CV Daily
0.0024	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 0.129	1.3.2.iii	WLA cfc = 0.118
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.048	5.1d	LTA_cfc = 0.069

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.059	AFC
		INST MAX LIMIT (mg/l) = 0.193	

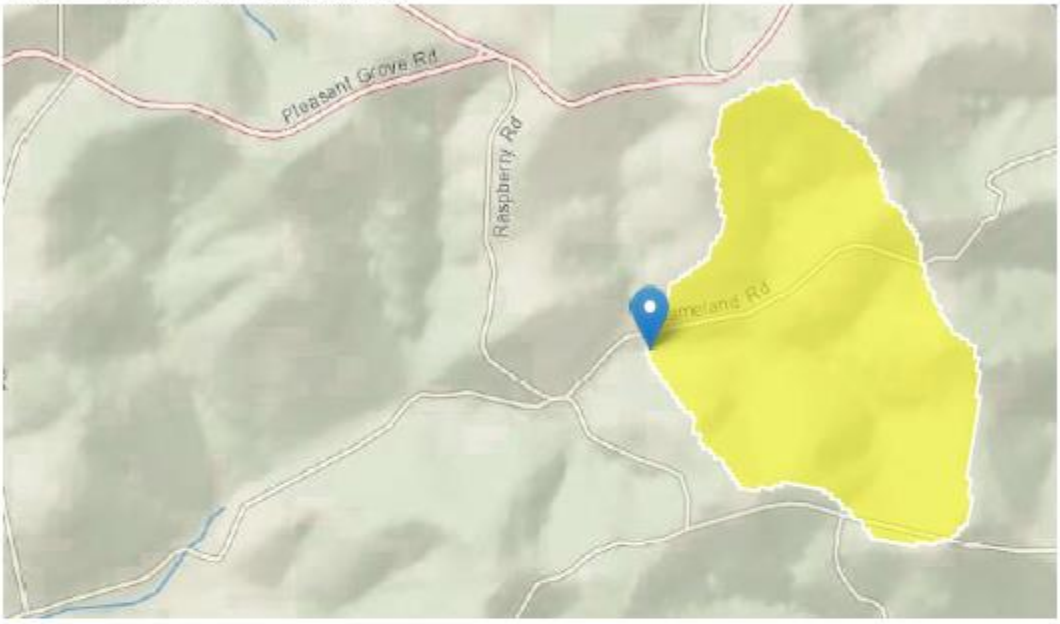
WLA afc	(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...
	...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...
	...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)

ATTACHMENT C

USGS Stream Stats Output

StreamStats Report

Region ID: PA
Workspace ID: PA20210908174502287000
Clicked Point (Latitude, Longitude): 40.07032, -80.35276
Time: 2021-09-08 13:45:23 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.21	square miles
ELEV	Mean Basin Elevation	1341	feet

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.21	square miles	2.26	1400