pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0218855**
Facility Type	**Non-Municipal**	APS ID	**750899**
Major / Minor	**Minor**	Authorization ID	**1383484**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Consol PA Coal Co. LLC**	Facility Name	**Enlow Fork Mine 3N2 Portal Bathhouse Facility**
Applicant Address	1000 Consol Energy Drive Suite 100 Canonsburg, PA 15317-6506	Facility Address	920 E Finley Drive West Finley, PA 15377-2200
Applicant Contact	Jaculyn Duke	Facility Contact	Brian Benson
Applicant Phone	(724) 416-8299	Facility Phone	(724) 416-8271
Client ID	259457	Site ID	546972
Ch 94 Load Status		Municipality	East Finley Township
Connection Status		County	Washington
Date Application Received	January 26, 2022	EPA Waived?	Yes
Date Application Accepted		If No, Reason	
Purpose of Application	NPDES permit renewal.		

Summary of Review

The PA Department of Environmental Protection (PADEP/Department) received an NPDES permit renewal application from Consol PA Coal Co. LLC (permittee) on January 26, 2022 for permittee's Enlow Fork Mine 3N2 Portal Bathhouse Facility STP (facility). The facility is a minor STP with an average annual design flow of 0.035 MGD. The treated effluent is discharged into a Rocky Run (TSF) through Outfall 001 in state watershed 20-E. The existing permit was expired on July 31, 2022. The terms and conditions are automatically extended since the renewal application was received at least 180 days of permit expiration date. Renewal NPDES permit applications under Clean Water program are not covered by PADEP's PDG per 021-2100-001.

This fact sheet is developed in accordance with 40 CFR §124.56.

Changes in this renewal: Annual E. Coli monitoring added.

Sludge use and disposal description and location(s): Liquid biosolids are pumped to holding tank and is hauled off.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Approve	Deny	Signatures	Date
√		Reza H. Chowdhury, E.I.T. / Project Manager	November 9, 2022
X		Pravin Patel Pravin C. Patel, P.E. / Environmental Engineer Manager	11/10/2022

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.035
Latitude	40º 1' 22"	Longitude	-80º 23' 17"
Quad Name	Claysville	Quad Code	1802
Wastewater Description:	Sewage Effluent		

Receiving Waters	Rocky Run	Stream Code	32712
NHD Com ID	73869444	RMI	3.21
Drainage Area	3.22 mi^2	Yield (cfs/mi^2)	0.011
Q_{7-10} Flow (cfs)	0.0364	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	1087.27	Slope (ft/ft)	
Watershed No.	20-E	Chapter 93 Class.	TSF
Existing Use	**TSF**	Existing Use Qualifier	Ch. 93
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	HABITAT ALTERATIONS, SILTATION		
Source(s) of Impairment	SUBSURFACE (HARDROCK) MINING, SUBSURFACE (HARDROCK) MINING		
TMDL Status	**None**	Name	**N/A**

Background/Ambient Data		Data Source
pH (SU)	7.0	Default
Temperature (°C)	20	Default
Hardness (mg/L)	100	Default
Other:		

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

Changes Since Last Permit Issuance: None

Other Comments:

Streamflow:

The nearest Streamgage 0311585 is inaccessible. Therefore, USGS's web based watershed delineation tool StreamStats (accessible at https://streamstats.usgs.gov/ss/, accessed on November 3, 2022) was utilized to determine the drainage area and low flow statistics of the receiving stream at discharge point. The StreamStats delineation report shows a drainage area at the Outfall 001 to be 3.22 mi^2 and Q7-10 of 0.0364 cfs. The calculated yield is 0.0364/3.22 or 0.011 cfs/mi^2. A default Q_{1-10}:Q_{7-10} ratio of 0.64 and Q_{30-10}:Q_{7-10} ratio of 1.36 will be used for modeling, if needed.

PWS Intake:

There is no downstream PWS intake before PA-WV border.

Wastewater Characteristics:

A pH of 7.5 from application, default temperature of 20^{0}C (Default per 391-2000-007), and default Hardness value of 100 mg/l will be used for modeling, if needed.

Background data:

WQN Station 0737 is the nearest WQN station, located 300-ft upstream of West Finley Road/Ackley Creek Road SR4007 Bridge. However, the data was collected only for the years 2015-2019. Since the small number of data may not be

considered as historical (30 years or more), default values will be used There is no nearby WQN station from the discharge point. In absence of site-specific data, a default pH of 7.0 S.U., default stream temperature of 20°C, and default hardness of 100 mg/l will be used, as appropriate.

303-d listing:
The receiving stream is impaired due to habitat alteration and siltation from subsurface mining. No TMDL is proposed for the watershed. The facility is believed not to add to the existing impairment.

Biosolids management: Liquid sludge is pumped to a sludge holding tank and hauled-off site.

Antidegradation (93.4):
The effluent limits for this discharge have been developed to ensure that existing in-stream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. The receiving streams are designated as Trout Stocking (TSF). No High-Quality stream or Exceptional Value water is impacted by this discharge; therefore, no Antidegradation Analysis is performed for the discharge.

Treatment Facility Summary

Treatment Facility Name: Enlow Fork Mine 3N#2 Portal Bathhouse Facility

WQM Permit No.	Issuance Date
6301406	11/05/2001

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Chlorine w/dechlor	0.035

Hydraulic Capacity (MGD)	Organic Capacity (lbs./day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.035	58.4	Not overloaded	Holding Tank	Other WWTP

Changes Since Last Permit Issuance: Potable water supply was declassified to a transient noncommunity system in 2019.

Treatment Plant Description

Enlow Fork Mine 3N#2 Portal Bathhouse Facility is a minor sewage facility with a design flow of 0.035 MGD. Flow to the WWTP has significantly reduced since September 2021. There was no reportable flow since December 2021. The portal is used from time to time for training purposes, therefore, the permittee wants to keep the permit active. The application form indicated the facility consists of flow equalization tank, one aeration basin, two clarifier tanks, one chlorination/dechlorination tank, and discharge through outfall 001. The sludge is pumped to a sludge holding tank and hauled-off.

Compliance History

DMR Data for Outfall 001 (from October 1, 2021 to September 30, 2022)

Parameter	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22	APR-22	MAR-22	FEB-22	JAN-22	DEC-21	NOV-21	OCT-21
Total Nitrogen (mg/L) Daily Maximum										6.92		
Total Phosphorus (mg/L) Daily Maximum										0.80		

Compliance History

There is no eDMR violation noted during last 12 months of review.

Existing Effluent Limitations and Monitoring Requirements								
Parameter	**Effluent Limitations**						**Monitoring Requirements**	
	Mass Units (lbs/day) (1)		**Concentrations (mg/L)**				**Minimum (2) Measurement Frequency**	**Required Sample Type**
	Average Monthly	**Average Weekly**	**Minimum**	**Average Monthly**	**Maximum**	**Instant. Maximum**		
Flow (MGD)	0.035	Report Daily Max	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	9.0	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.04	XXX	0.1	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	XXX	XXX	XXX	25	XXX	50	2/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	XXX	XXX	XXX	20	XXX	40	2/month	Grab
Total Suspended Solids	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
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	6.0	XXX	12.0	2/month	Grab
Ammonia-Nitrogen 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

Inspection Reports:
09/29/2021: CEI conducted. No violation noted. Treatment plant was dry with no flow during the inspection. The associated potable water supply had been inactivated.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.035
Latitude 40º 1' 22.00" **Longitude** -80º 23' 17.00"
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: None

Water Quality-Based Limitations

WQM 7.0:

WQM 7.0 version 1.0b is a water quality model designed to assist DEP to determine appropriate effluent limits for $CBOD_5$, NH_3-N and DO. The model simulates two basic processes. In the NH_3-N module, the model simulates the mixing and degradation of NH_3-N in the stream and compares calculated instream NH_3-N concentrations to NH_3-N water quality criteria. In the D.O. module, the model simulates the mixing and consumption of D.O. in the stream due to the degradation of $CBOD_5$ and NH_3N and compares calculated instream D.O. concentrations to D.O. water quality criteria. The model was utilized for this permit renewal by using updated Q_{7-10} and historic background water quality levels of the river. The following data were used in the attached computer model of the stream:

- Discharge pH 7.5 (Application data)
- Discharge Temperature 20°C (Default)
- Discharge Hardness 100 mg/l (Default)
- Stream pH 7.0 (Default)
- Stream Temperature 20°C (Default)
- Stream Hardness 100 mg/l (Default)

The following nodes were considered in modeling:

Node 1: Outfall 001 at Outfall 001 on Rocky Run (32712)
Elevation: 1087.27 ft (USGS National Map viewer, 11/03/2022)
Drainage Area: 3.22 mi^2 (StreamStat Version 3.0, 11/03/2022)
River Mile Index: 3.21 (PA DEP eMapPA)
Low Flow Yield: 0.011 cfs/mi^2
Discharge Flow: 0.035 MGD

Node 2: At confluence with UNT 32720 to Rocky Run
Elevation: 1082.95 ft (USGS National Map viewer, 11/03/2022)
Drainage Area: 4.15 mi^2 (StreamStat Version 3.0, 11/03/2022)
River Mile Index: 3.11 (PA DEP eMapPA)

	Low Flow Yield:	0.011 cfs/mi^2
	Discharge Flow:	0.0 MGD

Node 3:	At confluence with Templeton Form (32708) at Rocky Run RMI 0.0	
	Elevation:	993.52 ft (USGS National Map viewer, 11/03/2022)
	Drainage Area:	18.4 mi^2 (StreamStat Version 3.0, 11/03/2022)
	River Mile Index:	0.0 (PA DEP eMapPA)
	Low Flow Yield:	0.011 cfs/mi^2
	Discharge Flow:	0.0 MGD

NH_3-N:
WQM 7.0 suggested the existing limits are still protective. Existing limits will be carried over.

$CBOD_5$:
The WQM 7.0 model confirms the existing limits are still protective. Existing limits will be carried over.

Dissolved Oxygen (DO):
The existing permit has a minimum DO of 5.0 mg/l which is supported by WQM output as protective and will be carried over.

Toxics:
Minor facilities with design flow less than 0.1 MGD and facilities without any industrial contributors aren't required to report toxics in the application. In absence of toxics data, an RP analysis couldn't be performed.

Additional Considerations

Fecal Coliform:
The recent coliform guidance in 25 Pa. code § 92a.47.(a)(4) requires a summer technology limit of 200/100 ml as a geometric mean and an instantaneous maximum not greater than 1,000/100ml and § 92a.47.(a)(5) requires a winter limit of 2,000/100ml as a geometric mean and an instantaneous maximum not greater than 10,000/100ml. These are existing limits that will be carried over.

E. Coli:
DEP's SOP titled "Establishing Effluent Limitations for Individual Sewage Permits (BCW-PMT-033, revised March 24, 2021) recommends annual E. Coli monitoring for all sewage dischargers with design flows ≥ 0.002 MGD and < 0.05 MGD. This requirement will be applied from this permit term. This is also supported by Pa Code 25 §92a.61.

pH:
The TBEL for pH is above 6.0 and below 9.0 S.U. (40 CFR §133.102(c) and Pa Code 25 §§ 95.2(1), 92a.47) which are existing limits and will be carried over.

Total Suspended Solids (TSS):
There is no water quality criterion for TSS. The existing limits of 30 mg/L average monthly and 60 mg/L instantaneous maximum will remain in the permit based on the minimum level of effluent quality attainable by secondary treatment, 25 Pa. Code § 92a.47 and 40CFR 133.102(b). Existing limits will be carried over.

Total Residual Chlorine (TRC):
The attached computer printout utilizes the equation and calculations as presented in the Department's 2003 Implementation Guidance for Total Residual Chlorine (TRC) (ID#391-2000-015) for developing chlorine limitations. The attached printout indicates that an average monthly limit of 0.107 mg/l and IMAX limit of 0.35 mg/l will be protective to the receiving stream. However, the current permit has 0.04 mg/l as average monthly and 0.1 mg/l as IMAX which are more stringent and will be carried over to be in compliance with Anti-backsliding policy of 40 CFR 402(o)(2).

Flow Monitoring Requirement:
The requirement to monitor the volume of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii) and Pa Code 25 §§92a.27, 92a.61.

Best Professional Judgement (BPJ):

Total Phosphorus:

PADEP's SOP BCW-PMT-033 suggests monitoring requirement, at a minimum, for facilities with design flow greater than 2,000 GPD. This is supported by Pa Code 25 §92a.61. This requirement is applied for all facilities meeting the flow criteria. This is an existing parameter with monitoring requirement that will be carried over.

Total Nitrogen:

PADEP's SOP BCW-PMT-033 suggests monitoring requirement, at a minimum, for facilities with design flow greater than 2,000 GPD. This is supported by Pa Code 25 §92a.61. This requirement is applied for all facilities meeting the flow criteria. This is an existing parameter with monitoring requirement that will be carried over.

Monitoring Frequency and Sample Types:

Otherwise specified above, the monitoring frequency and sample type of compliance monitoring for existing parameters are recommended by DEP's SOP and Permit Writers Manual and/or on a case-by-case basis using best professional judgment (BPJ).

Anti-Backsliding

The proposed limits are at least as stringent as are in existing permit, unless otherwise stated; therefore, anti-backsliding is not applicable.

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.

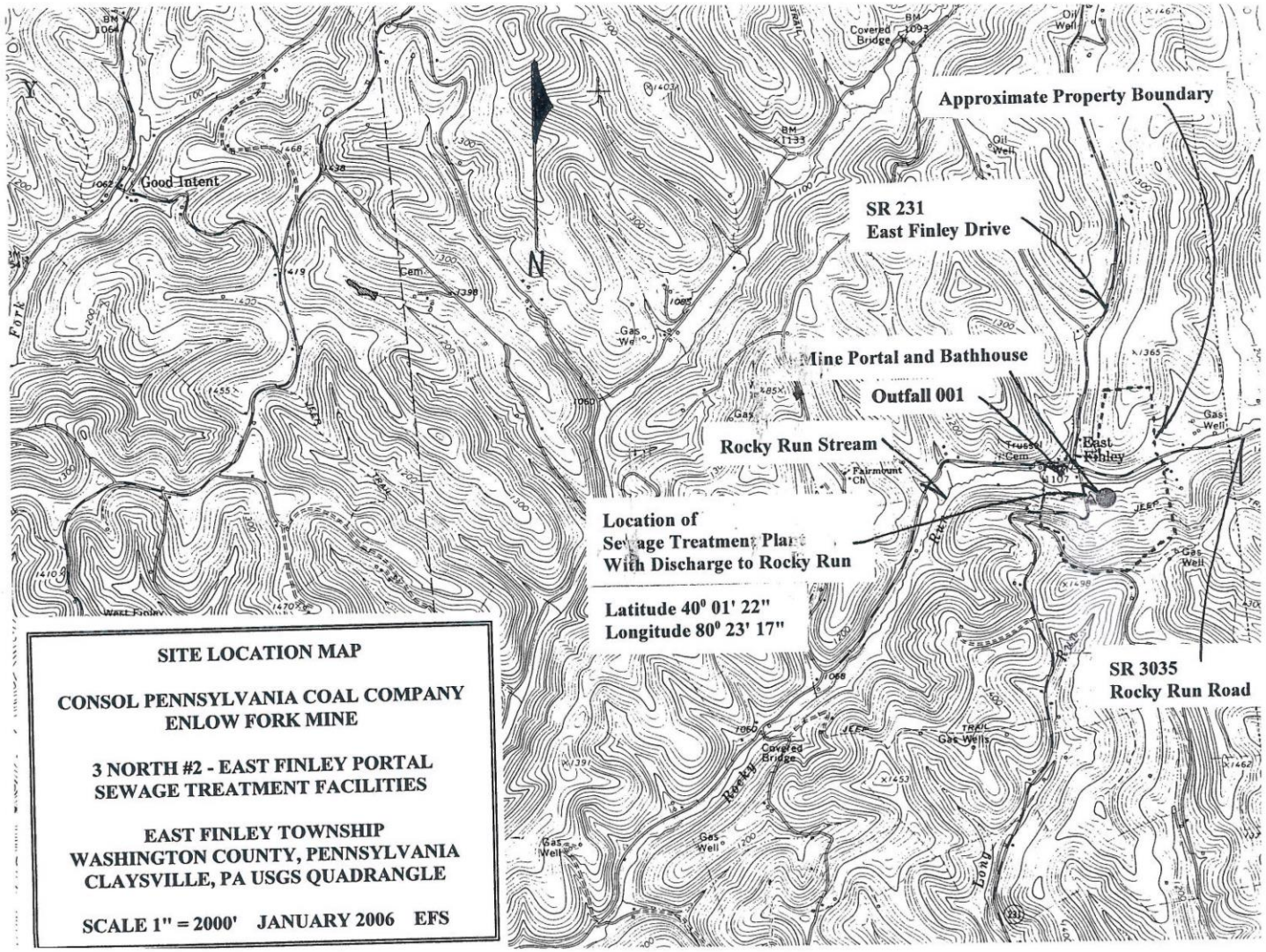
Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

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)	0.035	Report Daily Max	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.04	XXX	0.1	1/day	Grab
CBOD5 Nov 1 - Apr 30	XXX	XXX	XXX	25	XXX	50	2/month	Grab
CBOD5 May 1 - Oct 31	XXX	XXX	XXX	20	XXX	40	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
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	6.0	XXX	12.0	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: At Outfall 001
Other Comments: None

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☒	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 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, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 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, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:

Permit No. PA0218855



Permit No. PA0218855

PA0218855 at outfall 001

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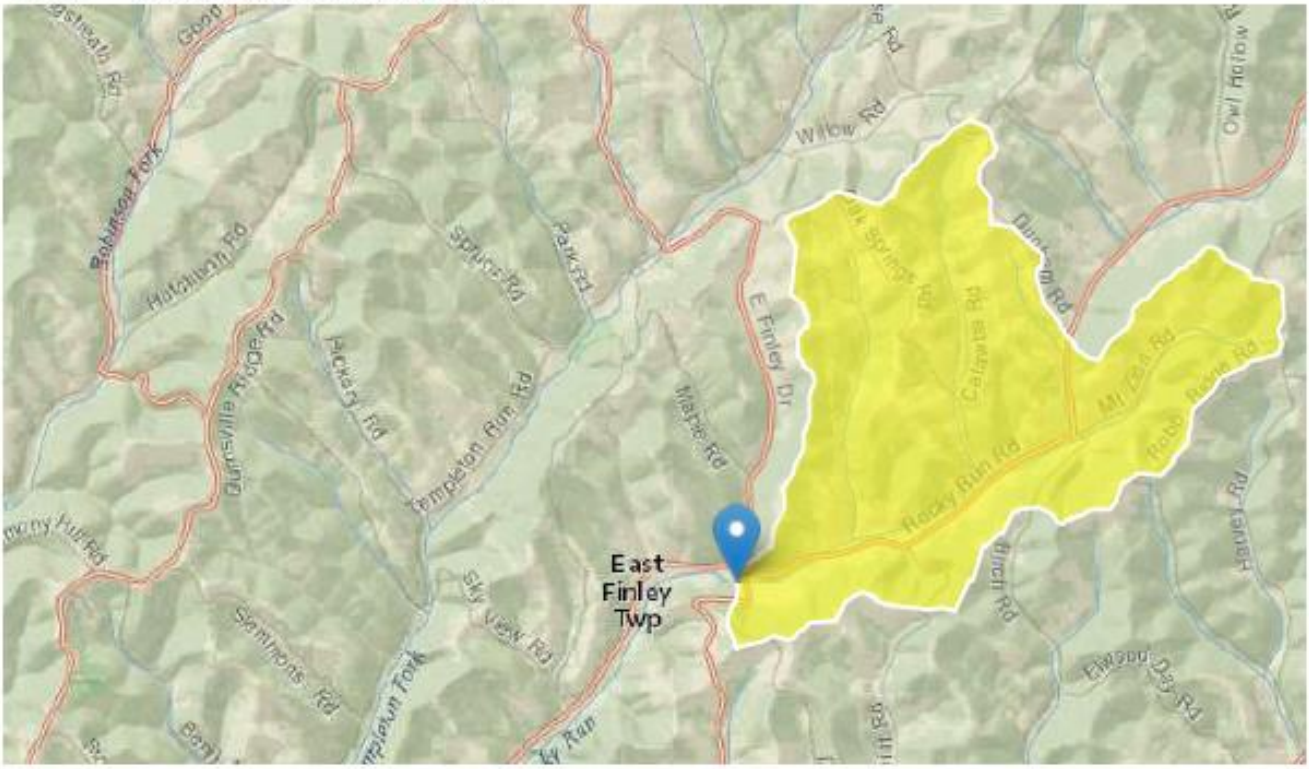

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Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	3.22	square miles
ELEV	Mean Basin Elevation	1303	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Permit No. PA0218855

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	3.22	square miles	2.26	1400
ELEV	Mean Basin Elevation	1303	feet	1050	2580

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

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	0.114	ft^3/s	43	43
30 Day 2 Year Low Flow	0.209	ft^3/s	38	38
7 Day 10 Year Low Flow	0.0364	ft^3/s	66	66
30 Day 10 Year Low Flow	0.0719	ft^3/s	54	54
90 Day 10 Year Low Flow	0.142	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: 4.11.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Permit No. PA0218855

PA0218855 at node 2

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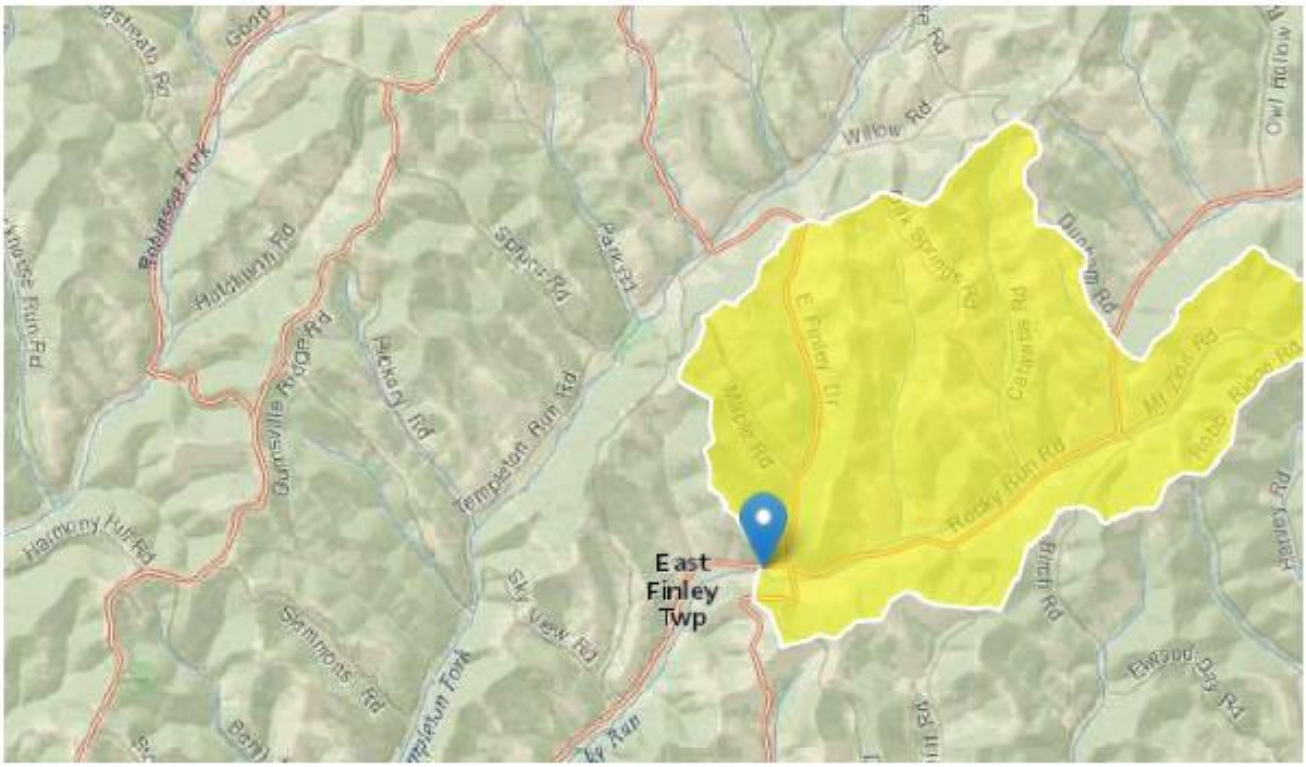

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Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	4.15	square miles
ELEV	Mean Basin Elevation	1298	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	4.15	square miles	2.26	1400
ELEV	Mean Basin Elevation	1298	feet	1050	2580

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

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	0.152	ft^3/s	43	43
30 Day 2 Year Low Flow	0.275	ft^3/s	38	38
7 Day 10 Year Low Flow	0.0497	ft^3/s	66	66
30 Day 10 Year Low Flow	0.0963	ft^3/s	54	54
90 Day 10 Year Low Flow	0.187	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: 4.11.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Permit No. PA0218855

PA0218855 at node 3

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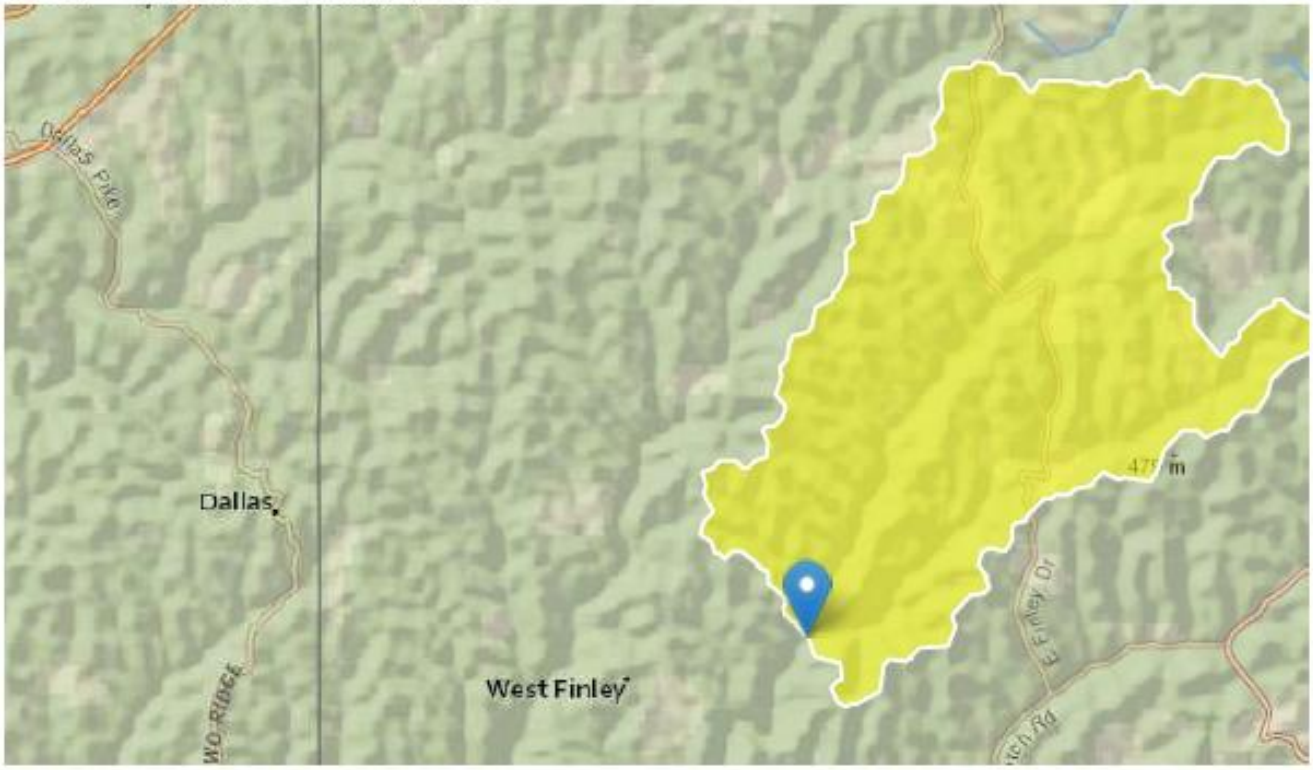
Time: 2022-11-03 21:44:24 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	18.4	square miles
ELEV	Mean Basin Elevation	1271	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	18.4	square miles	2.26	1400
ELEV	Mean Basin Elevation	1271	feet	1050	2580

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

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	0.813	ft^3/s	43	43
30 Day 2 Year Low Flow	1.37	ft^3/s	38	38
7 Day 10 Year Low Flow	0.308	ft^3/s	66	66
30 Day 10 Year Low Flow	0.533	ft^3/s	54	54
90 Day 10 Year Low Flow	0.958	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: 4.11.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Permit No. PA0218855

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	32712	ROCKY RUN	3.210	1087.27	3.22	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	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Enlow Form Mine	PA0218855	0.0350	0.0350	0.0350	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	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

Permit No. PA0218855

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	32712	ROCKY RUN	3.110	1082.95	4.15	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	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	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. PA0218855

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	32712	ROCKY RUN	0.000	993.52	18.40	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	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	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. PA0218855

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
20E	32712	ROCKY 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												
3.210	0.04	0.00	0.04	.0541	0.00818	.348	5.88	16.92	0.04	0.139	20.00	7.23
3.110	0.05	0.00	0.05	.0541	0.00545	.358	6.55	18.27	0.04	4.465	20.00	7.20
Q1-10 Flow												
3.210	0.02	0.00	0.02	.0541	0.00818	NA	NA	NA	0.04	0.152	20.00	7.29
3.110	0.03	0.00	0.03	.0541	0.00545	NA	NA	NA	0.04	4.939	20.00	7.26
Q30-10 Flow												
3.210	0.05	0.00	0.05	.0541	0.00818	NA	NA	NA	0.05	0.129	20.00	7.20
3.110	0.06	0.00	0.06	.0541	0.00545	NA	NA	NA	0.05	4.100	20.00	7.17

Permit No. PA0218855

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		

Permit No. PA0218855

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
20E	32712	ROCKY 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
3.210	Enlow Form Mine	7.57	4	7.57	4	0	0
3.110		NA	NA	7.81	NA	NA	NA

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
3.210	Enlow Form Mine	1.71	2	1.71	2	0	0
3.110		NA	NA	1.74	NA	NA	NA

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)		
3.21	Enlow Form Mine	20	20	2	2	5	5	0	0
3.11		NA	NA	NA	NA	NA	NA	NA	NA

Permit No. PA0218855

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20E	32712	ROCKY RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
3.210	0.035	20.000	7.232
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
5.880	0.348	16.917	0.044
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
12.88	1.398	1.21	0.700
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.282	18.851	Owens	5
Reach Travel Time (days)			
0.139			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.014	12.63	1.20	6.57
0.028	12.39	1.19	6.80
0.042	12.15	1.17	6.99
0.056	11.91	1.16	7.13
0.070	11.68	1.15	7.25
0.084	11.46	1.14	7.35
0.098	11.24	1.13	7.43
0.112	11.02	1.12	7.50
0.126	10.81	1.11	7.56
0.139	10.60	1.10	7.61

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
3.110	0.035	20.000	7.201
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
6.545	0.358	18.271	0.043
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
9.72	0.354	0.98	0.700
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.676	17.487	Owens	5
Reach Travel Time (days)			
4.465			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.447	8.30	0.72	8.24
0.893	7.08	0.53	8.24
1.340	6.05	0.39	8.24
1.786	5.16	0.28	8.24
2.233	4.41	0.21	8.24
2.679	3.76	0.15	8.24
3.126	3.21	0.11	8.24
3.572	2.74	0.08	8.24
4.019	2.34	0.06	8.24
4.465	2.00	0.04	8.24

Permit No. PA0218855

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
20E	32712	ROCKY 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)
3.210	Enlow Fork Mine	PA0218855	0.035	CBOD5	20		
				NH3-N	2	4	
				Dissolved Oxygen			5

Permit No. PA0218855

TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.0364	= Q stream (cfs)	0.5	= CV Daily
0.035	= 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 =	0.233	1.3.2.iii	WLA cfc =	0.220
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	0.087	5.1d	LTA_cfc =	0.128

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.107	AFC
		INST MAX LIMIT (mg/l) =	0.350	

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)