Pennsylvania Department of Environmental Protection

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0218723**
Facility Type	**Municipal**	APS ID	**1096018**
Major / Minor	**Minor**	Authorization ID	**1452870**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Blacklick Valley Municipal Authority**	Facility Name	**Blacklick Valley Municipal Authority**
Applicant Address	PO Box 272	Facility Address	100 Wehrum Road
	Twin Rocks, PA 15960		Vintondale, PA 15961
Applicant Contact	Michael Pisarcik	Facility Contact	Michael Pisarcik
Applicant Phone	814-749-8763	Facility Phone	814-749-8763
Client ID	111285	Site ID	541923
Ch 94 Load Status	Not Overloaded	Municipality	Buffington Township
Connection Status	No Limitations	County	Indiana
Date Application Received	August 18, 2023	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: NPDES Renewal

Summary of Review

An application was submitted for an NPDES permit renewal for an existing minor sewage facility discharge. The Blacklick Valley Municipal Authority WWTP is a sequencing batch reactor treatment system with sludge drying facilities.

E. Coli monitoring has been added to the permit.

There are no open violations for the NWRO.

Sludge use and disposal description and locations: Disposed off-site

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
X		Benjamin R. Lockwood Benjamin R. Lockwood / Environmental Engineering Specialist	April 10, 2025
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	April 14, 2025

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.2
Latitude	40º 28' 55"	Longitude	-78º 55' 51"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Blacklick Creek (TSF)	Stream Code	43979
NHD Com ID	123725469	RMI	32.5
Drainage Area	116 mi^2	Yield (cfs/mi^2)	0.085
Q_{7-10} Flow (cfs)	9.9	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	1927	Slope (ft/ft)	
Watershed No.	18-D	Chapter 93 Class.	TSF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	Metals		
Source(s) of Impairment	Acid Mine Drainage		
TMDL Status	Final	Name	Kiskiminetas-Conemaugh River Watersheds TMDL
Nearest Downstream Public Water Supply Intake	Saltsburg Municipal Waterworks		
PWS Waters	Conemaugh River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	48

Changes Since Last Permit Issuance: None

Other Comments: None

Treatment Facility Summary

Treatment Facility Name: Blacklick Valley Munic Authority WWTP

WQM Permit No.	Issuance Date
3200406	November 16, 2001

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Sequencing Batch Reactor	Ultraviolet	0.088

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.2	417	Not Overloaded	Dewatering	Landfill

Changes Since Last Permit Issuance: None

Other Comments: None

Compliance History	
Summary of DMRs:	There were CBOD5 and TSS violations in April 2024.
Summary of Inspections:	June 24, 2022: A routine inspection was conducted, and no violations were noted.

Other Comments: None

Compliance History

DMR Data for Outfall 001 (from March 1, 2024 to February 28, 2025)

Parameter	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24
Flow (MGD) Average Monthly	0.1637	0.0840	0.1148	0.09281	0.07105	0.0684	0.1242	0.0705	0.0733	0.1042	0.1872	0.1125
Flow (MGD) Daily Maximum	0.282	0.1213	0.2614	0.2105	0.1031	0.101	0.3460	0.2005	0.1016	0.1679	0.5459	0.2531
pH (S.U.) Instantaneous Minimum	6.78	6.57	6.88	6.88	6.81	7.25	7.19	7.17	7.11	7.13	7.13	7.19
pH (S.U.) Instantaneous Maximum	7.26	7.09	7.24	7.41	7.40	7.42	7.40	7.27	7.15	7.20	7.50	7.31
DO (mg/L) Instantaneous Minimum	6.2	6.0	8.0	6.0	5.5	7.0	7.9	7.2	7.4	7.6	8.7	6.5
CBOD5 (lbs/day) Average Monthly	5.55	3.42	3.38	2.15	2.14	1.57	4.00	2.79	2.08	2.68	21.68	1.69
CBOD5 (lbs/day) Weekly Average	7.65	6.65	3.91	3.51	3.05	1.87	7.89	5.67	3.22	3.62	78.31	2.19
CBOD5 (mg/L) Average Monthly	5.42	4.81	3.78	2.87	3.53	3.12	3.50	4.43	3.52	3.79	6.53	2.04
CBOD5 (mg/L) Weekly Average	7.38	9.14	5.36	4.91	5.23	4.57	4.98	8.05	5.58	5.40	17.2	2.14
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	115.94	94.35	114.83	90.16	90.47	102.56	124.55	88.38	98.15	103.41	83.63	101.31
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	135.73	128.41	137.87	114.35	109.64	123.93	194.75	138.83	124.21	136.15	107.0	132.00
BOD5 (mg/L) Raw Sewage Influent Average Monthly	112.5	134.73	192	144.55	146.60	206.25	166.95	139.06	165.75	140.40	72.8	127.90
TSS (lbs/day) Average Monthly	5.93	4.97	5.73	4.89	2.45	2.81	5.44	3.38	3.10	3.67	27.27	4.14
TSS (lbs/day) Raw Sewage Influent Average Monthly	76.81	93.88	106.38	61.66	71.61	70.17	155.13	63.09	94.30	116.21	83.63	75.72

TSS (lbs/day) Raw Sewage Influent Daily Maximum	102.36	113.98	209.68	98.67	95.02	92.36	266.34	133.04	102.04	165.75	107.0	127.11
TSS (lbs/day) Weekly Average	7.27	6.49	7.18	12.29	4.30	3.04	11.90	3.70	4.05	5.40	95.61	5.48
TSS (mg/L) Average Monthly	5.75	7.0	6.2	6.25	< 5.0	5.5	5.25	5.4	5.0	5.0	9.0	< 5.0
TSS (mg/L) Raw Sewage Influent Average Monthly	74.5	134.0	129.6	101	116	142.5	215.5	103.2	156.5	156	72.8	98.00
TSS (mg/L) Weekly Average	7.0	9.0	10.0	8.0	< 5.0	7.0	6.0	7.0	5.0	5.0	21.0	< 5.0
Fecal Coliform (No./100 ml) Geometric Mean	70.75	12.5	< 10	12.5	< 10.0	10.0	8.75	25.2	7.75	10.0	7.75	< 10.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	253.0	20.0	< 10	20.0	< 10.0	10.0	10.0	86.0	10.0	10.0	< 10.0	< 10.0
Total Nitrogen (mg/L) Daily Maximum			< 0.729									
Ammonia (lbs/day) Average Monthly	10.91	8.64	2.47	0.919	0.264	0.185	17.47	0.874	0.392	0.51	1.01	0.55
Ammonia (mg/L) Average Monthly	2.21	11.97	4.26	1.018	0.438	0.35	9.28	1.56	0.534	0.55	1.01	0.67
Total Phosphorus (mg/L) Daily Maximum			< 0.100									
Total Aluminum (mg/L) Daily Maximum			0.017									
Total Iron (mg/L) Daily Maximum			0.133									
Total Manganese (mg/L) Daily Maximum			0.009									
UV Dosage (mWsec/cm^2) Instantaneous Minimum	100	100	100	100	100	100	100	100	100	100	100	100

Compliance History

Effluent Violations for Outfall 001, from: April 1, 2024 To: February 28, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
CBOD5	04/30/24	Wkly Avg	78.31	lbs/day	62.6	lbs/day
TSS	04/30/24	Wkly Avg	95.61	lbs/day	75.1	lbs/day

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .2
Latitude 40º 28' 55" **Longitude** -78º 55' 51"
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)

Comments: E. Coli monitoring has been added per Chapter 92 requirements.

Water Quality-Based Limitations

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC	Model
NH3-N	25	Avg. Mo.	WQM 7.0
$CBOD_5$	25	Avg. Mo.	WQM 7.0

Comments: DEP's SOP No. BCW-PMT-0033 states that for existing discharges, if an average monthly warm period limit of 25 mg/L is acceptable, a year-round monitoring requirement for ammonia-nitrogen, at a minimum should be established. This is consistent with the existing permit requirements. The water-quality based $CBOD_5$ limit of 25 mg/l is the same as the existing permit limit.

Toxics

Effluent sample results for toxic pollutants reported on the renewal application were entered into DEP's Toxics Management Spreadsheet Version 1.3 to develop appropriate permit requirements for toxic pollutants of concern. The Toxics Management Spreadsheet combines the functions of PENTOXSD and DEP's Toxics Screening Analysis. The TMS spreadsheet did not recommended any monitoring or limitations for Total Aluminum, Total Iron, or Total Manganese.

This data was analyzed based on the guidelines found in DEP's Water Quality Toxics Management Strategy (Document No. 361-0100-003) and DEP's SOP No. BPNPSM-PMT-033. Spreadsheet results are attached to this fact sheet. The Toxics Management Spreadsheet uses the following logic:

a. Establish average monthly and IMAX limits in the draft permit where the maximum reported concentration exceeds 50% of the WQBEL.
b. For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.
c. For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10%-50% of the WQBEL.

Additional Considerations

This facility is a POTW, therefore, the requirement to sample raw sewage BOD and TSS has been incorporated into the permit.

Total Nitrogen and Total Phosphorus will be monitored 1/year per the Departments' SOP.

Ultraviolet disinfection is used; therefore, a monitoring requirement for UV Dosage is included in the permit.

A Dissolved Oxygen minimum limitation of 4.0 mg/L will be implemented based on the standard in 25 PA Code Chapter 93 and best professional judgment.

A TMDL exists for the Kiskiminetas-Conemaugh River Watersheds. The contribution for metals from this type of sewage plant is expected to be less than water quality criteria and therefore not contributing to stream impairment. An aggregate waste load allocation was included in the TMDL for these types of facilities. Monitoring is imposed for Total Aluminum, Total Manganese, and Total Iron for treatment plants rated between 0.002 mgd up to 0.499 mgd to be consistent with the TMDL. These monitoring requirements are included in the existing permit and will remain in the renewal.

Anti-Backsliding

Pursuant to 40 CFR § 122.44(l)(1), all proposed permit requirements addressed in this fact sheet are at least as stringent as the requirements implemented in the existing NPDES 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" (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	Average Monthly	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	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
CBOD5	41.7	62.6	25.0	37.5 Wkly Avg	XXX	50	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	50.1	75.1	30.0	45.0 Wkly Avg	XXX	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
Total Nitrogen	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	8-Hr Composite
Ammonia	Report	XXX	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	8-Hr Composite
Total Aluminum	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	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	Average Monthly	Average Monthly	Maximum	Instant. Maximum		
Total Iron	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	8-Hr Composite
Total Manganese	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	8-Hr Composite
UV Dosage (mWsec/cm²)	XXX	XXX	Report Inst Min	XXX	XXX	XXX	1/day	Measured

Compliance Sampling Location: Outfall 001

Other Comments: None

Blacklick Valley Municipal Authority PA0218723 Outfall 001

Region ID: PA
Workspace ID: PA20250409000905531000
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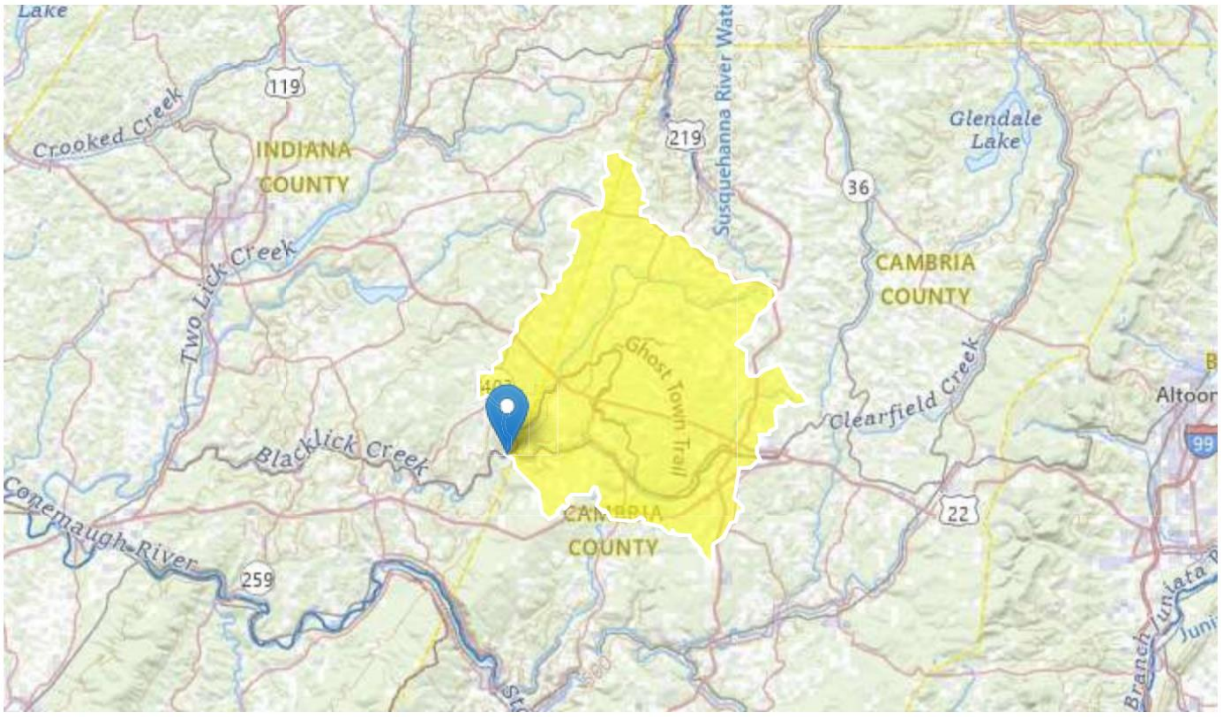
Time: 2025-04-08 20:09:44 -0400



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Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	116	square miles
ELEV	Mean Basin Elevation	1927	feet
PRECIP	Mean Annual Precipitation	46	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	116	square miles	2.33	1720
ELEV	Mean Basin Elevation	1927	feet	898	2700
PRECIP	Mean Annual Precipitation	46	inches	38.7	47.9

Low-Flow Statistics Flow Report [Low Flow Region 3]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	17.7	ft^3/s	43	43
30 Day 2 Year Low Flow	24.2	ft^3/s	38	38
7 Day 10 Year Low Flow	9.9	ft^3/s	54	54
30 Day 10 Year Low Flow	12.4	ft^3/s	49	49
90 Day 10 Year Low Flow	17.4	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/)

Blacklick Valley Municipal Authority PA0218723 RMI = 27.2

Region ID: PA
Workspace ID: PA20250409005223390000
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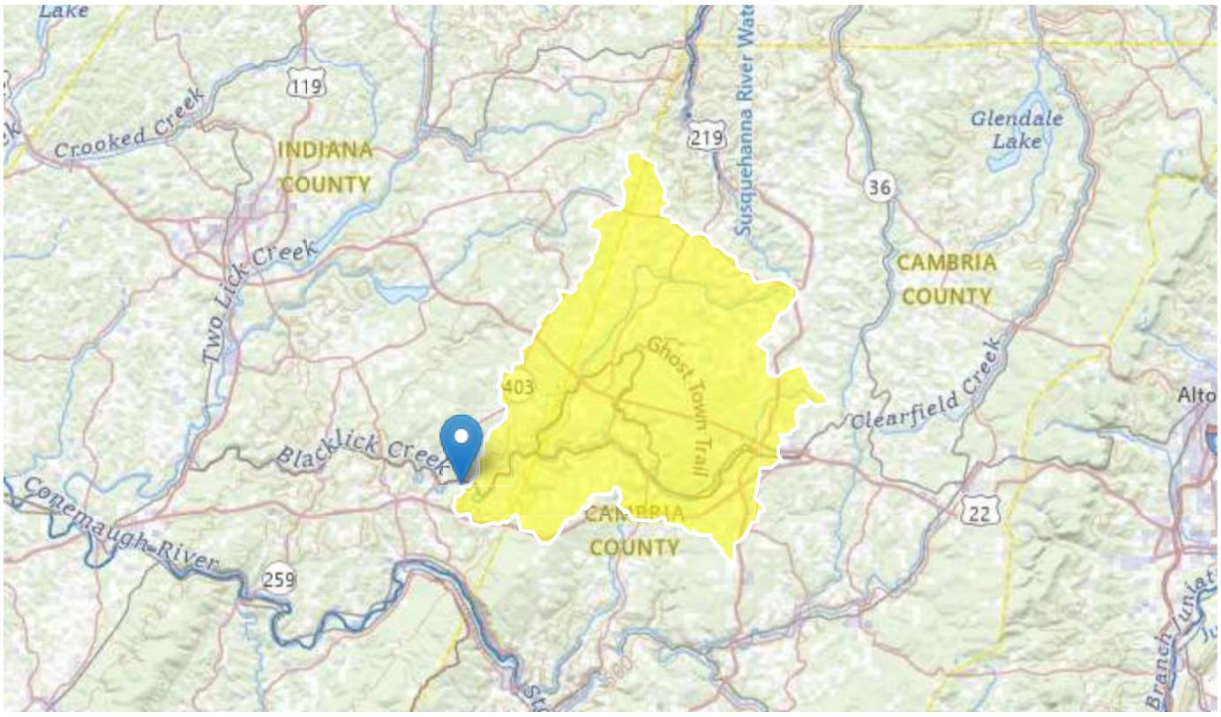
Time: 2025-04-08 20:53:08 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	130	square miles
ELEV	Mean Basin Elevation	1904	feet
PRECIP	Mean Annual Precipitation	46	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	130	square miles	2.33	1720
ELEV	Mean Basin Elevation	1904	feet	898	2700
PRECIP	Mean Annual Precipitation	46	inches	38.7	47.9

Low-Flow Statistics Flow Report [Low Flow Region 3]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	19.7	ft^3/s	43	43
30 Day 2 Year Low Flow	26.9	ft^3/s	38	38
7 Day 10 Year Low Flow	11.1	ft^3/s	54	54
30 Day 10 Year Low Flow	13.9	ft^3/s	49	49
90 Day 10 Year Low Flow	19.5	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/)

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
18D	43979	BLACKLICK CREEK	**32.500**	1927.00	116.00	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	0.100	0.00	9.90	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
Blacklick	PA0218723	0.2000	0.2000	0.2000	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	4.00	8.24	0.00	0.00
NH3-N	25.00	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
18D	43979	BLACKLICK CREEK	**32.500**	1927.00	116.00	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	0.100	0.00	9.90	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
Blacklick	PA0218723	0.2000	0.2000	0.2000	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	4.00	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
18D	43979	BLACKLICK CREEK

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												
32.500	9.90	0.00	9.90	.3094	0.00082	.807	54.22	67.21	0.23	1.387	20.15	7.00
Q1-10 Flow												
32.500	6.34	0.00	6.34	.3094	0.00082	NA	NA	NA	0.18	1.765	20.23	7.00
Q30-10 Flow												
32.500	13.46	0.00	13.46	.3094	0.00082	NA	NA	NA	0.28	1.173	20.11	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
18D	43979	BLACKLICK CREEK

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
32.500	Blacklick	16.44	50	16.44	50	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
32.500	Blacklick	1.87	25	1.87	25	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
32.50	Blacklick	25	25	25	25	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
18D	43979	BLACKLICK CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
32.500	0.200	20.152	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
54.215	0.807	67.210	0.233
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.70	0.202	0.76	0.708
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.114	1.314	Tsivoglou	5
Reach Travel Time (days)			
1.387			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.139	2.62	0.69	7.89
0.277	2.55	0.62	7.72
0.416	2.48	0.56	7.62
0.555	2.41	0.51	7.56
0.694	2.34	0.46	7.53
0.832	2.28	0.42	7.52
0.971	2.21	0.38	7.54
1.110	2.15	0.35	7.57
1.249	2.09	0.31	7.62
1.387	2.03	0.28	7.67

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
18D	43979	BLACKLICK CREEK

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)
32.500	Blacklick	PA0218723	0.200	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Blacklick Valley Municipal Authority** NPDES Permit No.: **PA021872** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Treated sewage**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.2	100	7						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L											
	Chloride (PWS)	mg/L											
	Bromide	mg/L	<										
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L	<										
Group 2	Total Aluminum	mg/L		0.084									
	Total Antimony	µg/L	<										
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L	<										
	Total Boron	µg/L											
	Total Cadmium	µg/L	<										
	Total Chromium (III)	µg/L	<										
	Hexavalent Chromium	µg/L	<										
	Total Cobalt	µg/L	<										
	Total Copper	µg/L	<										
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<										
	Dissolved Iron	µg/L											
	Total Iron	mg/L		0.336									
	Total Lead	µg/L	<										
	Total Manganese	mg/L		0.074									
	Total Mercury	µg/L											
	Total Nickel	µg/L	<										
	Total Phenols (Phenolics) (PWS)	µg/L	<										
	Total Selenium	µg/L	<										
	Total Silver	µg/L	<										
	Total Thallium	µg/L	<										
	Total Zinc	µg/L	<										
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

Group 3	Carbon Tetrachloride	µg/L	<										
	Chlorobenzene	µg/L											
	Chlorodibromomethane	µg/L	<										
	Chloroethane	µg/L	<										
	2-Chloroethyl Vinyl Ether	µg/L	<										
	Chloroform	µg/L	<										
	Dichlorobromomethane	µg/L	<										
	1,1-Dichloroethane	µg/L	<										
	1,2-Dichloroethane	µg/L	<										
	1,1-Dichloroethylene	µg/L	<										
	1,2-Dichloropropane	µg/L	<										
	1,3-Dichloropropylene	µg/L	<										
	1,4-Dioxane	µg/L	<										
	Ethylbenzene	µg/L	<										
	Methyl Bromide	µg/L	<										
	Methyl Chloride	µg/L	<										
	Methylene Chloride	µg/L	<										
	1,1,2,2-Tetrachloroethane	µg/L	<										
	Tetrachloroethylene	µg/L	<										
	Toluene	µg/L	<										
	1,2-trans-Dichloroethylene	µg/L	<										
	1,1,1-Trichloroethane	µg/L	<										
	1,1,2-Trichloroethane	µg/L	<										
	Trichloroethylene	µg/L	<										
	Vinyl Chloride	µg/L	<										
Group 4	2-Chlorophenol	µg/L	<										
	2,4-Dichlorophenol	µg/L	<										
	2,4-Dimethylphenol	µg/L	<										
	4,6-Dinitro-o-Cresol	µg/L	<										
	2,4-Dinitrophenol	µg/L	<										
	2-Nitrophenol	µg/L	<										
	4-Nitrophenol	µg/L	<										
	p-Chloro-m-Cresol	µg/L	<										
	Pentachlorophenol	µg/L	<										
	Phenol	µg/L	<										
	2,4,6-Trichlorophenol	µg/L	<										
Group 5	Acenaphthene	µg/L	<										
	Acenaphthylene	µg/L	<										
	Anthracene	µg/L	<										
	Benzidine	µg/L	<										
	Benzo(a)Anthracene	µg/L	<										
	Benzo(a)Pyrene	µg/L	<										
	3,4-Benzofluoranthene	µg/L	<										
	Benzo(ghi)Perylene	µg/L	<										
	Benzo(k)Fluoranthene	µg/L	<										
	Bis(2-Chloroethoxy)Methane	µg/L	<										
	Bis(2-Chloroethyl)Ether	µg/L	<										
	Bis(2-Chloroisopropyl)Ether	µg/L	<										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<										
	4-Bromophenyl Phenyl Ether	µg/L	<										
	Butyl Benzyl Phthalate	µg/L	<										
	2-Chloronaphthalene	µg/L	<										
	4-Chlorophenyl Phenyl Ether	µg/L	<										
	Chrysene	µg/L	<										
	Dibenzo(a,h)Anthrancene	µg/L	<										
	1,2-Dichlorobenzene	µg/L	<										
	1,3-Dichlorobenzene	µg/L	<										
	1,4-Dichlorobenzene	µg/L	<										
	3,3-Dichlorobenzidine	µg/L	<										
	Diethyl Phthalate	µg/L	<										
	Dimethyl Phthalate	µg/L	<										
	Di-n-Butyl Phthalate	µg/L	<										
	2,4-Dinitrotoluene	µg/L	<										

	2,6-Dinitrotoluene	µg/L	<										
	Di-n-Octyl Phthalate	µg/L	<										
	1,2-Diphenylhydrazine	µg/L	<										
	Fluoranthene	µg/L	<										
	Fluorene	µg/L	<										
	Hexachlorobenzene	µg/L	<										
	Hexachlorobutadiene	µg/L	<										
	Hexachlorocyclopentadiene	µg/L	<										
	Hexachloroethane	µg/L	<										
	Indeno(1,2,3-cd)Pyrene	µg/L	<										
	Isophorone	µg/L	<										
	Naphthalene	µg/L	<										
	Nitrobenzene	µg/L	<										
	n-Nitrosodimethylamine	µg/L	<										
	n-Nitrosodi-n-Propylamine	µg/L	<										
	n-Nitrosodiphenylamine	µg/L	<										
	Phenanthrene	µg/L	<										
	Pyrene	µg/L	<										
	1,2,4-Trichlorobenzene	µg/L	<										
Group 6	Aldrin	µg/L	<										
	alpha-BHC	µg/L	<										
	beta-BHC	µg/L	<										
	gamma-BHC	µg/L	<										
	delta BHC	µg/L	<										
	Chlordane	µg/L	<										
	4,4-DDT	µg/L	<										
	4,4-DDE	µg/L	<										
	4,4-DDD	µg/L	<										
	Dieldrin	µg/L	<										
	alpha-Endosulfan	µg/L	<										
	beta-Endosulfan	µg/L	<										
	Endosulfan Sulfate	µg/L	<										
	Endrin	µg/L	<										
	Endrin Aldehyde	µg/L	<										
	Heptachlor	µg/L	<										
	Heptachlor Epoxide	µg/L	<										
	PCB-1016	µg/L	<										
	PCB-1221	µg/L	<										
	PCB-1232	µg/L	<										
	PCB-1242	µg/L	<										
	PCB-1248	µg/L	<										
	PCB-1254	µg/L	<										
	PCB-1260	µg/L	<										
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<										
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

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Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Blacklick Valley Municipal Authority, NPDES Permit No. PA021872, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Kane Creek**

No. Reaches to Model: **1**

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	043979	32.5	1927	116			Yes
End of Reach 1	043979	27.2	1904	130			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	32.5	0.1	9.9									100	7		
End of Reach 1	27.2	0.1	11.1									100	7		

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	32.5														
End of Reach 1	27.2														

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Toxics Management Spreadsheet
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Model Results

Blacklick Valley Municipal Authority, NPDES Permit No. PA021872, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | ◉ All ○ Inputs ○ Results ○ Limits

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.287 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	750	750	7,632	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	

☑ ***CFC*** CCT (min): ####### PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	49,496	WQC = 30 day average; PMF = 1
Total Manganese	0	0		0	N/A	N/A	N/A	

☑ ***THH*** CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	32,997	

☑ ***CRL*** CCT (min): 62.811 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

Pollutants	Mass Limits		Concentration Limits				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments
Total Aluminum	4.89	mg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	49.5	mg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	33.0	mg/L	Discharge Conc ≤ 10% WQBEL