pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0219461**
Facility Type	**Municipal**	APS ID	**1060381**
Major / Minor	**Minor**	Authorization ID	**1391049**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Center-West Joint Sewer Authority**	Facility Name	**Center-West STP**
Applicant Address	102 East End Road	Facility Address	101 Low Hill Road
	Brownsville, PA 15417-8636		Brownsville, PA 15417
Applicant Contact	Mr. Edward Sukal	Facility Contact	Ms. Liz Hosa
Applicant Phone	724.785.5400	Facility Phone	724.785.5400
Client ID	205813	Site ID	550980
Ch 94 Load Status	Not Overloaded	Municipality	Centerville Borough
Connection Status	No Limitations	County	Washington
Date Application Received	March 22, 2022	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: Application for the Renewal of a NPDES permit for the discharge of treated Sewage.

Summary of Review

The Authority has applied for a renewal of NPDES Permit No. PA0026212, which was previously issued by the Department on July 18, 2017. That permit expired on July 31, 2022.

WQM Permit No. 6304406 A-1 was issued on February 5, 2010 authorizing the construction of an STP to treat an average design flow of 0.42 MGD with a design organic loading of 711 lbs/day.

The STP consists of mechanical screening, 3 SBRs, an aerobic digester and UV disinfection.

Application data indicates that there are no industrial or commercial users in the system and the facility does receive hauled-in wastes.

The receiving stream, Monongahela River, is currently classified as a WWF, located in State Watershed No. 19-C.

The Authority has complied with Act 14 Notifications and no comments were received.

Sludge use and disposal description and location(s): Sludge is aerobically digested, dewatered using a belt filter press, and hauled to Westmoreland Sanitary Landfill.

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-

Approve	Deny	Signatures	Date
X		William C. Mitchell, E.I.T. / Project Manager	June 7, 2024
X		Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineering Manager	June 13, 2024

Summary of Review
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.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.42
Latitude	40º 01' 23.00"	Longitude	-79º 54' 46.00"
Quad Name	California	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99411736	RMI	57.3
Drainage Area	4,980	Yield (cfs/mi^2)	0.106
Q_{7-10} Flow (cfs)	530	Q_{7-10} Basis	US Army Corp of Engineers
Elevation (ft)	744.0	Slope (ft/ft)	0.0001
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use	NONE	Exceptions to Criteria	NONE
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Monongahela River TMDL

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

Nearest Downstream Public Water Supply Intake	PA American Water Company - Brownsville		
PWS Waters	Monongahela River	Flow at Intake (cfs)	530
PWS RMI	57.0	Distance from Outfall (mi)	0.3

Changes Since Last Permit Issuance: None

Other Comments: The discharge is to the Monongahela River which has an EPA Approved TMDL and is impaired by PCBs and Chlordane. No WLAs have been developed for this sewage discharge, as neither PCB nor Chlordane is typically found in sewage, but instead found in legacy sediments.

Treatment Facility Summary

Treatment Facility Name: Center W Joint Sewer Authority STP

WQM Permit No.	Issuance Date
6304406	05/26/2006
6304406 A-1	02/05/2010
6304406 A-2	02/15/2011
6304406 A-3	03/14/2017

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Sequencing Batch Reactor	Ultraviolet	0.42

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.42	771	Not Overloaded	Belt Filtration	Landfill

Changes Since Last Permit Issuance: None

Other Comments: N/A

Compliance History

Operations Compliance Check Summary Report

Facility: Center West JSA WWTP

NPDES Permit No.: PA0219461

Compliance Review Period: 6/1/19-6/3/24

Inspection Summary:

INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC
09/27/2022	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted

Violation Summary:

No violations noted during review period

Open Violations by Client ID:

No open violations for Client ID 205813

Enforcement Summary:

No enforcements executed during review period

Effluent Violation Summary:

MON_PD	PARAMETER	SAMPLE	PERMIT	UNIT	STAT_BASE_CODE
Feb-24	Fecal Coliform	> 2420	10000	No./100 ml	Instantaneous Maximum
Feb-24	Fecal Coliform	> 7	2000	No./100 ml	Geometric Mean
Jan-24	Fecal Coliform	> 2420	10000	No./100 ml	Instantaneous Maximum
Jan-24	Fecal Coliform	> 9	2000	No./100 ml	Geometric Mean
Aug-22	Fecal Coliform	> 2420	1000	No./100 ml	Instantaneous Maximum
Aug-22	Fecal Coliform	> 7	200	No./100 ml	Geometric Mean

Compliance Status: Facility is generally in compliance with no open violations or pending enforcements. Above listed exceedances of Fecal Coliforms occurred since the last Compliance Evaluation Inspection, which should be addressed with an NOV upon the next routine inspection. Assigned inspector has been notified.

Completed by: Amanda Illar **Completed date:** 6/3/24

Compliance History

DMR Data for Outfall 001 (from May 1, 2023 to April 30, 2024)

Parameter	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23
Flow (MGD) Average Monthly	0.272	0.147	0.122	0.174	0.106	0.105	0.100	0.093	0.109	0.110	0.113	0.101
Flow (MGD) Daily Maximum	1.876	0.716	0.401	0.316	0.214	0.287	0.222	0.144	0.275	0.268	0.398	0.185
pH (S.U.) Minimum	7.0	6.9	7.0	7.0	6.9	7.0	6.9	6.7	7.0	6.9	6.9	6.8
pH (S.U.) Maximum	7.1	7.0	7.2	7.1	7.1	7.2	7.0	7.0	7.0	7.0	7.0	7.1
DO (mg/L) Minimum	6.4	6.3	6.2	6.3	6.1	5.5	6.5	6.5	6.2	6.4	6.6	6.4
CBOD5 (lbs/day) Average Monthly	< 2.9	< 2.6	< 2.4	< 2.3	< 12.4	< 1.3	< 1.4	< 1.3	< 1.7	< 1.7	< 2.2	< 3.4
CBOD5 (lbs/day) Weekly Average	4.5	< 3.3	3.5	< 2.9	42.8	< 1.9	< 1.5	< 2.0	2.3	< 2.2	4.3	9.3
CBOD5 (mg/L) Average Monthly	< 2.6	< 2.0	< 2.4	< 2.0	< 11.4	2.0	< 2.0	< 2.0	< 2.1	< 2.0	< 2.1	< 3.5
CBOD5 (mg/L) Weekly Average	4.5	< 2.0	3.7	< 2.0	39.5	< 2.0	< 2.0	< 2.0	2.6	< 2.0	2.3	6.9
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	159.5	175.5	189.7	209.9	261.9	< 91.0	< 110.4	67.6	81.2	< 107.7	120.0	117.4
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	299.4	286.9	256.2	2770	313.6	168.7	202.0	127.2	106.9	200.6	133.4	203.1
BOD5 (mg/L) Raw Sewage Influent Average Monthly	125.8	137.8	201.2	199.9	233.3	< 148.5	< 154.3	110.4	106.2	< 125.9	138.6	139.2
TSS (lbs/day) Average Monthly	< 6.2	< 6.6	< 5.1	< 5.7	< 9.9	< 3.3	< 3.6	< 3.3	< 3.9	< 4.2	< 5.2	< 4.4
TSS (lbs/day) Raw Sewage Influent Average Monthly	168.5	86.2	112.3	137.8	167.3	84.7	93.6	129.7	86.1	114.3	82.5	107.1
TSS (lbs/day) Raw Sewage Influent Daily Maximum	512.7	148.3	264.9	249.6	290.6	243.1	216.9	255.2	162.1	242.9	142.0	156.0

TSS (lbs/day) Weekly Average	< 11.3	< 8.3	< 8.7	< 7.3	20.6	< 4.7	< 3.8	< 5.0	< 4.4	< 5.4	< 9.3	< 6.8
TSS (mg/L) Average Monthly	< 5.0	< 5.0	< 5.0	< 5.0	< 9.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.3	< 5.2
TSS (mg/L) Raw Sewage Influent Average Monthly	102	71	99	130	151	122	132	188	111	131	83	132
TSS (mg/L) Weekly Average	< 5.0	< 5.0	< 5.0	< 5.0	19.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	6.0	6.0
Fecal Coliform (No./100 ml) Geometric Mean	< 7	< 20	> 7	> 9	< 3	< 1	< 3	< 4	< 6	< 2	< 5	< 18
Fecal Coliform (No./100 ml) Instantaneous Maximum	2420	2420	> 2420	> 2420	54	1	10	16	86	33	184	45
UV Transmittance (%) Minimum	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2	2.0	2.0	2.0	2.0
Total Nitrogen (mg/L) Daily Maximum					4.82							
Ammonia (lbs/day) Average Monthly	< 1.4	< 0.5	< 0.75	7.76	< 11.3	< 0.3	< 0.3	< 0.26	< 0.3	< 0.34	< 0.41	< 0.34
Ammonia (mg/L) Average Monthly	1.9	< 0.4	1.2	6.58	< 9.8	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Total Phosphorus (mg/L) Daily Maximum					3.7							

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.42
Latitude 40º 01' 23.00" **Longitude** -79º 54' 46.00"
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: The discharge was evaluated using WQM 7.0 Version 1.1 (Attachment 2) to evaluate $CBOD_5$, Ammonia Nitrogen, and Dissolved Oxygen. The modeling results show the above technology based effluent limitations are appropriate.

For existing discharges, if WQM modeling results for summer indicates that an average monthly limit of 25 mg/L (ammonia-nitrogen) is acceptable, the application manager will generally establish a year-round monitoring requirement for ammonia-nitrogen (Section I.A, Note 5, SOP No. BCW-PMT-033, Establishing Effluent Limitations for Individual Sewage Permits).

Water Quality-Based Limitations

Comments: Based upon module output files, WQM 7.0 & TMS, NO WQBELs will be established at this time for this facility (Attachments 2 & 3).

Best Professional Judgment (BPJ) Limitations

Comments: A minimum Dissolved Oxygen (DO) limit of 4.0 mg/L will be established based on BPJ to ensure adequate operation and maintenance (Section I.A, Note 6, SOP No. BCW-PMT-033, Establishing Effluent Limitations for Individual Sewage Permits).

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

Monitoring frequency for the proposed effluent limits are based upon Table 6-3, Self-Monitoring Requirements for Sewage Dischargers, from the Departments Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits (Document No. 386-0400-001).

Ultraviolet (UV) disinfection is used, TRC limits are not applicable, but the limits table(s) in Part A will generally contain, at a minimum, routine monitoring of UV transmittance (%), UV dosage (µWs/cm2 or mWs/cm2 or mjoules/cm2) or UV intensity (µW/cm2 or mW/cm2) at the same monitoring frequency that would be used for TRC per Section I.A, Note 4, SOP No. BCW-PMT-033, Establishing Effluent Limitations for Individual Sewage Permits.

For POTWs, mass loading limits will be established for $CBOD_5$, TSS, NH_3-N, and where necessary Total P and Total N. In general, average monthly mass loading limits will be established for $CBOD_5$, TSS, NH_3-N, and where necessary Total P and Total N, and average weekly mass loading limits will be established for $CBOD_5$ and TSS. Mass loading limits for toxic pollutants with effluent concentration limits are also being established at this time per the application managers discretion (Section IV, SOP No. BCW-PMT-033, Establishing Effluent Limitations for Individual Sewage Permits).

For POTWs with design flows greater than 2,000 GPD and for non-municipal sewage facilities that service municipalities or portions thereof, the application manager will establish influent BOD_5 and TSS monitoring in the permit using the same frequency and sample type as is used for other effluent parameters (Section IV.E.8, SOP No BCW-PWT-002, New and Reissuance Sewage Individual NPDES Permit Applications).

Sewage discharges will include monitoring, at a minimum, for *E. Coli*, in new and reissued permits, with a monitoring frequency of 1/quarter for design flows >= 0.05 and < 1 MGD per 25 Pa. Code § 92a.061 and Section I.A, Note 12, SOP No. BCW-PMT-033, Establishing Effluent Limitations for Individual Sewage Permits.

Nutrient monitoring is required to establish the nutrient load from the wastewater treatment facility and the impacts that load may have on the quality of the receiving stream(s). The discharge is to waters not impaired for nutrients. A 1/quarter monitoring requirement for Total N & Total P has been added to the permit per Chapter 92a.61 and Section I.A, Note 7 & 8, SOP No. BCW-PMT-033, Establishing Effluent Limitations for Individual Sewage Permits.

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	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0	XXX	XXX	XXX	1/day	Grab
CBOD5	85.0	140.0	XXX	25.0	40.0	50	1/week	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	1/week	8-Hr Composite
TSS	105.0	155.0	XXX	30.0	45.0	60	1/week	8-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	Report	XXX	1/week	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	8-Hr Composite
Ammonia	Report	XXX	XXX	Report	XXX	XXX	1/week	8-Hr Composite

Outfall 001, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	8-Hr Composite

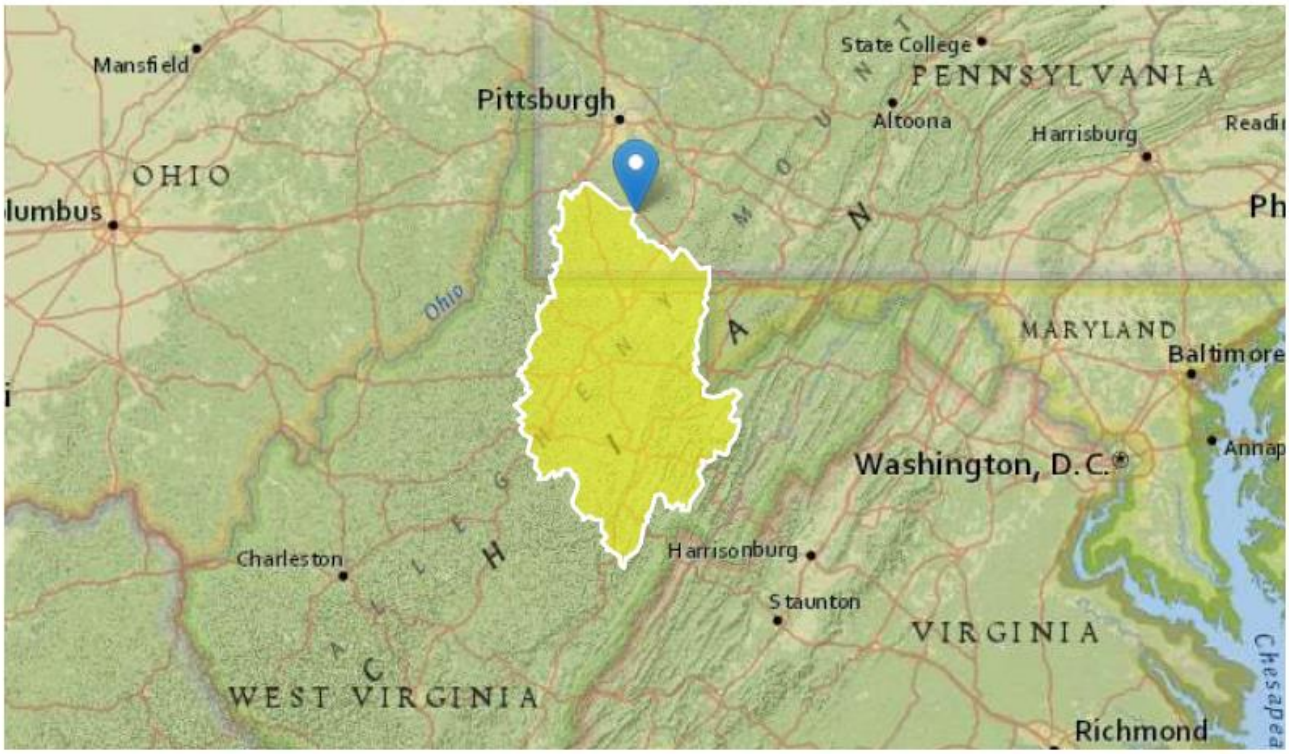
Compliance Sampling Location: Outfall 001

Other Comments: N/A

Attachment 1 – USGS StreamStats Report

StreamStats Report

Region ID: PA
Workspace ID: PA20240528181920223000
Clicked Point (Latitude, Longitude): 40.02199, -79.91198
Time: 2024-05-28 14:19:46 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	4980	square miles
ELEV	Mean Basin Elevation	1875	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	4980	square miles	2.26	1400
ELEV	Mean Basin Elevation	1875	feet	1050	2580

Low-Flow Statistics Disclaimers [Low Flow Region 4]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	664	ft^3/s
30 Day 2 Year Low Flow	884	ft^3/s
7 Day 10 Year Low Flow	383	ft^3/s
30 Day 10 Year Low Flow	451	ft^3/s
90 Day 10 Year Low Flow	674	ft^3/s

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/)

USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.20.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Attachment 2 – WQM 7.0 Version 1.1 – Summer Period

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
	19A	37185	MONONGAHELA RIVER	**57.300**	744.00	4980.00	0.00010	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	0.106	530.00	0.00	0.000	0.000	0.0	707.93	7.50	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
CWJSA WWTP	PA0219461	0.4200	0.4200	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	3.00	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
19A	37185	MONONGAHELA RIVER	**57.000**	743.99	4981.00	0.00010	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	0.106	0.00	0.00	0.000	0.000	0.0	632.46	7.50	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	0.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19A	37185	MONONGAHELA RIVER

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												
57.300	530.00	0.00	530.00	.6497	0.00010	7.5	707.93	94.39	0.10	0.183	24.99	7.00
Q1-10 Flow												
57.300	339.20	0.00	339.20	.6497	0.00010	NA	NA	NA	0.06	0.286	24.99	7.00
Q30-10 Flow												
57.300	720.80	0.00	720.80	.6497	0.00010	NA	NA	NA	0.14	0.135	25.00	7.00

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19A	37185	MONONGAHELA RIVER

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												
57.300	530.00	0.00	530.00	.6497	0.00010	7.5	707.93	94.39	0.10	0.183	24.99	7.00
Q1-10 Flow												
57.300	339.20	0.00	339.20	.6497	0.00010	NA	NA	NA	0.06	0.286	24.99	7.00
Q30-10 Flow												
57.300	720.80	0.00	720.80	.6497	0.00010	NA	NA	NA	0.14	0.135	25.00	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
19A	37185	MONONGAHELA RIVER

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
57.300	CWJSA WWTP	11.08	50	11.08	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
57.300	CWJSA WWTP	1.37	25	1.37	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)		
57.30	CWJSA WWTP	25	25	25	25	3	3	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19A	37185	MONONGAHELA RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
57.300	0.420	24.994	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
707.930	7.500	94.391	0.100
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.03	0.019	0.03	1.028
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.234	0.224	O'Connor	5
Reach Travel Time (days)			
0.183			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.018	2.03	0.03	7.54
0.037	2.03	0.03	7.54
0.055	2.03	0.03	7.54
0.073	2.02	0.03	7.54
0.092	2.02	0.03	7.54
0.110	2.02	0.03	7.54
0.128	2.02	0.03	7.54
0.147	2.02	0.03	7.54
0.165	2.02	0.03	7.54
0.183	2.02	0.03	7.54

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19A	37185	MONONGAHELA RIVER

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)
57.300	CWJSA WWTP	PA0219461	0.420	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			3

Attachment 4 – TMS Version 1.4

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Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **CWJSA WWTP** NPDES Permit No.: **PA0219461** Outfall No.: **001**

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

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
0.42	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		316									
	Chloride (PWS)	mg/L		142									
	Bromide	mg/L		65									
	Sulfate (PWS)	mg/L		60.6									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	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		5									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L											
	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		79									
	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

CWJSA WWTP, NPDES Permit No. PA0219461, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Monongahela River**

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	037185	57.3	744	4980	0.0001		Yes
End of Reach 1	037185	57	743.9	4981	0.0001	3	Yes

$Q_{7\text{-}10}$

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	57.3	0.106	530			707.93	7.5					100	7		
End of Reach 1	57	0.106				632.46	7.5					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	57.3														
End of Reach 1	57														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

CWJSA WWTP, NPDES Permit No. PA0219461, Outfall 001

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

☑ ***Hydrodynamics***

$Q_{7\text{-}10}$

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
57.3	530		530	0.65	0.0001	7.5	707.93	94.391	0.1	0.183	3336.201
57	530.106	4.641	525.465								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
57.3	1786.51		1786.51	0.65	0.0001	12.797	707.93	55.321	0.197	0.093	1499.497
57	1786.824	4.641	1782.18								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.067 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 Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	13.439	14.0	780	Chem Translator of 0.96 applied
Total Lead	0	0		0	64.581	81.6	4,547	Chem Translator of 0.791 applied
Total Zinc	0	0		0	117.180	120	6,673	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 720 PMF: 0.465 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 Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	

Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	8.956	9.33	3,544	Chem Translator of 0.96 applied
Total Lead	0	0		0	2.517	3.18	1,209	Chem Translator of 0.791 applied
Total Zinc	0	0		0	118.139	120	45,524	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): ###### THH PMF: 0.465 Analysis Hardness (mg/l): N/A Analysis pH: N/A PWS PMF: 0.2814

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 Dissolved Solids (PWS)	0	0		0	500,000	500,000	#########	WQC applied at RMI 57 with a design stream flow of 530.106 cfs
Chloride (PWS)	0	0		0	250,000	250,000	57,643,250	WQC applied at RMI 57 with a design stream flow of 530.106 cfs
Sulfate (PWS)	0	0		0	250,000	250,000	57,643,250	WQC applied at RMI 57 with a design stream flow of 530.106 cfs
Total Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 720 PMF: 0.693 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 Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

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

☑ ***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 Dissolved Solids (PWS)	115,287	mg/L	Discharge Conc ≤ 10% WQBEL
Chloride (PWS)	57,643	mg/L	Discharge Conc ≤ 10% WQBEL
Bromide	N/A	N/A	No WQS

Sulfate (PWS)	57,643	mg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	500	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	N/A	N/A	Discharge Conc < TQL
Total Zinc	4,277	µg/L	Discharge Conc ≤ 10% WQBEL