Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0022331**
Facility Type	**Municipal**	APS ID	**1122769**
Major / Minor	**Major**	Authorization ID	**1501484**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**West Elizabeth Sanitary Authority**	Facility Name	**West Elizabeth STP**
Applicant Address	125 Lower First Street	Facility Address	125 Lower First Street
	West Elizabeth, PA 15088		West Elizabeth, PA 15088
Applicant Contact	Joyce Bucy	Facility Contact	Mike Babjak
Applicant Phone	(412) 384-2322	Facility Phone	(412) 384-2322
Client ID	258584	Site ID	246407
Ch 94 Load Status	Not Overloaded	Municipality	West Elizabeth Borough
Connection Status	No Limitations	County	Allegheny
Date Application Received	October 2, 2024	EPA Waived?	No
Date Application Accepted	October 3, 2024	If No, Reason	Major Facility

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

Summary of Review

West Elizabeth Sanitary Authority has applied for a renewal of NPDES Permit No. PA0022331. PA0022331 was previously issued by the Pennsylvania Department of Environmental Protection (DEP) on March 3, 2020. The permit expired on March 31, 2025. A renewal application was submitted in a timely manner, so the permit was granted an administrative extension.

Sewage from this facility is treated by sequencing batch reactors, UV disinfection, and post treatment aeration. The facility discharges to the Monongahela River, which is classified as a Warm Water Fishery (WWF) in State Water Shed 19-C.

Biosolids generated at this facility are treated by aerobic digestion and disposed of in the Clairton Municipal Authority.

West Elizabeth Sanitary Authority is currently enrolled in and will continue to use eDMR.

The applicant has complied with Act 14 Notifications with a letter dated August 27, 2024, and sent to West Elizabeth Borough as well as a letter dated September 25, 2024 and sent to Allegheny County.

The following changes have been made since the last permit:

- A weekly average mass load limit for ammonia-nitrogen was added to the permit in accordance with the SOPs.
- Average monthly mass loading and weekly average concentration limits for $CBOD_5$ and ammonia-nitrogen, the weekly average mass loading limit for $CBOD_5$, and the weekly average mass loading limit for total suspended solids have all been reduced to be consistent with DEP's rounding guidance.
- Monthly *E. coli* monitoring has been added in accordance with the SOPs.
- Quarterly PFAS monitoring has been added in accordance with the SOPs.
- Total dissolved solids limits have been added in accordance with 25 PA Code Section 95.10.
- Total Zinc limits have been added based on new modeling.

Approve	Deny	Signatures	Date
X		Stephanie Conrad / Environmental Engineering Specialist	September 12, 2025
X		Mahbuba Iasmin, Ph.D. P.E. / Environmental Engineering Manager	October 3, 2025

Summary of Review

- The WET test TIWC and dilution series has changed.

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 or 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.***

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.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	1.06
Latitude	40º 16' 30.5"	Longitude	-79º 52' 21.8"
Quad Name	MCKEESPORT	Quad Code	1607
Wastewater Description:	Sewage Effluent		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408532	RMI	23.02
Drainage Area	5340	Yield (cfs/mi^2)	0.102
Q_{7-10} Flow (cfs)	500	Q_{7-10} Basis	U.S. Army Corp of Engineers
Elevation (ft)	726.9	Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired (Fish Consumption)		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final (4/9/2001)	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 Co. Pittsburgh		
PWS Waters	Monongahela River	Flow at Intake (MGD)	69.0
PWS RMI	4.63	Distance from Outfall (mi)	18.49

Changes Since Last Permit Issuance:

Other Comments:

Treatment Facility Summary

Treatment Facility Name: W Elizabeth STP

WQM Permit No.	Issuance Date	Purpose
0270411	May 8, 1970	Permit approving the construction of an 0.15 MGD extended aeration sewage treatment plant including installation of: • One (1) aerated, mechanical grit removal chamber • One (1) 1" bypass bar screen • One (1) 0.375 MGD comminutor • Two (2) 77,800 extended aeration treatment tanks • Two (2) 21,600-gallon secondary clarifiers • Liquid chlorination • One (1) 6,350-gallon chlorine contact tank • One (1) 5,675- gallon aerobic sludge holding tank
0274425	November 27, 1974	Permit approving construction to expand the existing plant to 0.5 MGD. Construction including: • Expansion of the grit removal chamber • Installation of one (1) 1" bar screen • Installation of one (1) 1.1 MGD comminutor • Installation of Two (2) 17,800-gallon and one (1) 11,250-gallon extended aeration treatment tank • Installation of two (2) 2,560-gallon chlorine contact tanks • Installation of two (2) 15,884-gallon and one (1) 10,128-gallon secondary clarifiers • One (1) 880 cubic foot sludge storage tank
0298402	April 2, 1998	-
0215416	October 18, 2015	Permit issued by PA DEP to West Elizabeth Sanitary Authority approving a plant expansion to a design flow of 1.06 MGD including installation of: • A three-tank sequencing batch reactor • One (1) 3750 gpm grinder pump • One (1) back-up manually cleaned bar screen • A Programmable Logic Controller (PLC) system for plant operation • Two (2) aerated sludge digesters • Sludge pumps • Five (5) 550 SCFM blowers • One (1) 3610 gpm Trojan UV3000 UV disinfection system • One (1) diesel gas powered back-up generator • One (1) new outfall endwall structure • 18-inch outfall sewer • Rip Rap apron from outfall to the river Additionally, demolition of the fourth street pump station, and three extended aeration basins were approved by this permit.
0215416	January 3, 2025	Permit issued by PADEP to West Elizabeth Sanitary Authority approving plant upgrades including: • Replacement of the existing manually cleaned bar screen • Installation of an additional Duperon dual auger grinder pump • Lining and repairs to the concrete DBR tanks • Installation of additional grating and railings

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	UV disinfection	0.327
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
1.06	1,395	Not Overloaded	Aerobic Digestion	Landfill

Changes Since Last Permit Issuance: Since the last permit was issued, WQM Permit No. 0215416 A-1 approved minor maintenance actions at the plant.

Other Comments:

Compliance History

Operations Compliance Check Summary Report

Facility: W ELIZABETH STP

NPDES Permit No.: PA0022331

Compliance Review Period: 6/1/20-6/2/25

Inspection Summary:

INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC
04/11/2023	Compliance Evaluation	County Health Dept	No Violations Noted
04/05/2023	Compliance Evaluation	County Health Dept	No Violations Noted
03/17/2022	Compliance Evaluation	County Health Dept	No Violations Noted
03/10/2021	Compliance Evaluation	County Health Dept	Viol(s) Noted & Immediately Corrected
06/01/2020	Compliance Evaluation	County Health Dept	Violation(s) Noted
06/01/2020	Compliance Evaluation	PA Dept of Environmental Protection	Violation(s) Noted

Violation Summary:

VIOLATION DATE	VIOLATION TYPE	VIOLATION TYPE DESC
03/10/2021	92A.44	NPDES - Violation of effluent limits in Part A of permit
06/01/2020	92A.44	NPDES - Violation of effluent limits in Part A of permit
06/01/2020	92A.41(A)13B	NPDES - Unauthorized bypass occurred
06/01/2020	92A.44	NPDES - Violation of effluent limits in Part A of permit
06/01/2020	92A.61(C)	NPDES - Failure to monitor pollutants as required by the NPDES permit
06/01/2020	CSL201	CSL - Unauthorized, unpermitted discharge of sewage to waters of the Commonwealth

Open Violations by Client ID:

No open violations for Client ID 258584

Enforcement Summary:

ENF TYPE	ENF TYPE DESC	EXECUTED DATE	VIOLATIONS	ENF FINALSTATUS	ENF CLOSED DATE
NOV	Notice of Violation	06/12/2020	92A.44; 92A.61(C); CSL201	Administrative Close Out	12/29/2023

Effluent Violation Summary:

MON PD	PARAMETER	REPORTED VALUE	PERMIT LIMIT	UNIT	STAT_BASE_CODE	FACILITY COMMENTS
Jun-20	Fecal Coliform	1733	1000	No./100 ml	Instantaneous Maximum	Outage tripped breaker

Unauthorized Discharges:

No unauthorized discharges reported in eDMR during review period, but a violation was recorded for a bypass in the inspection record for 6/1/2020.

Compliance Status: Facility is in general compliance with no open violations or pending enforcements.

Completed by: Amanda Illar

Completed date: 6/2/25

Compliance History

DMR Data for Outfall 001 (from May 1, 2024 to April 30, 2025)

Parameter	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24
Flow (MGD) Average Monthly	0.7089	0.3907	0.678	0.374	0.4032	0.3771	0.2956	0.3341	0.3599	0.3369	0.3769	0.6134
Flow (MGD) Daily Maximum	2.3332	0.4809	1.634	1.091	0.6478	0.6407	0.4114	0.5482	0.9074	0.5399	0.4801	1.7379
pH (S.U.) Instantaneous Minimum	6.97	6.89	6.87	6.87	6.91	6.88	6.92	6.91	6.98	6.94	6.99	6.94
pH (S.U.) Instantaneous Maximum	7.08	7.03	7.03	7.04	7.09	7.1	7.09	7.09	7.11	7.11	7.13	7.07
DO (mg/L) Instantaneous Minimum	6.81	6.73	6.79	6.73	6.54	6.62	6.65	6.44	6.42	6.31	6.52	6.31
$CBOD_5$ (lbs/day) Average Monthly	17	9	15	10	11	9	8	8	9	9	9	12
$CBOD_5$ (lbs/day) Weekly Average	26	10	19	12	12	12	7	9	11	11	10	15
$CBOD_5$ (mg/L) Average Monthly	4.0	3.0	3.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
$CBOD_5$ (mg/L) Weekly Average	5.0	3.0	3.0	4.0	4.0	3.0	3.0	3.0	4.0	4.0	3.0	3.0
BOD_5 (lbs/day) Raw Sewage Influent Average Monthly	272	164	196	135	107	90	76	61	70	81	115	86
BOD_5 (lbs/day) Raw Sewage Influent Daily Maximum	715	205	497	229	235	265	161	103	105	148	241	129
BOD_5 (mg/L) Raw Sewage Influent Average Monthly	52	52	37	46	33	29	30	24	25	29	37	22
TSS (lbs/day) Average Monthly	18	10	19	19	15	9	8	9	10	9	10	12

TSS (lbs/day) Raw Sewage Influent Average Monthly	141	69	162	112	66	49	77	53	108	147	198	126
TSS (lbs/day) Raw Sewage Influent Daily Maximum	295	127	653	181	150	84	199	102	153	405	682	548
TSS (lbs/day) Weekly Average	34	13	27	27	24	12	8	11	13	11	13	15
TSS (mg/L) Average Monthly	4.0	3.0	4.0	6.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
TSS (mg/L) Raw Sewage Influent Average Monthly	29	22	26	38	21	16	30	21	38	51	63	33
TSS (mg/L) Weekly Average	6.0	4.0	5.0	10.0	8.0	3.0	4.0	4.0	5.0	3.0	4.0	3.0
Total Dissolved Solids (lbs/day) Average Monthly	5558	3947	6239	3772	3126	2921	2894	2401	3039	2944	3196	3282
Total Dissolved Solids (lbs/day) Daily Maximum	12186	4165	10996	5030	3621	3534	3363	2823	3862	4413	3847	4801
Total Dissolved Solids (mg/L) Average Monthly	1103	1255	1225	1264	920	1006	1199	918	1066	1020	1044	808
Total Dissolved Solids (mg/L) Daily Maximum	1240	1290	1380	1690	1040	1420	1420	1120	1320	1200	1150	1200
Fecal Coliform (No./100 ml) Geometric Mean	8.0	4.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	49	29.0	5.0	1.0	29	1.0	1.0	1.0	2.0	1.0	1.0	6.0
UV Transmittance (%) Daily Minimum	91	91	91	91	91	91	91	91	91	91	91	91
Total Nitrogen (mg/L) Daily Maximum		1.95			40.3			1.04			1.07	
Ammonia (lbs/day) Average Monthly	3	1	2	3	3	7	0.4	0.3	1	0.3	0.3	0.5

Ammonia (mg/L) Average Monthly	0.82	0.31	0.32	0.91	0.88	2.31	0.15	0.12	0.36	0.1	0.1	0.13
Ammonia (mg/L) Weekly Average	1.53	0.58	0.47	1.76	1.35	3.11	0.17	0.13	0.79	0.1	0.1	0.2
Total Phosphorus (mg/L) Daily Maximum		1.63			2.42			2.38			1.99	

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 1.06
Latitude 40º 16' 30.50" **Longitude** -79º 52' 21.80"
Wastewater Description: Sewage Effluent

Technology-Based Limitations (TBELs)

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

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
Flow (MGD)	Report	Average Monthly	-	92a.27, 92a.61
$CBOD_5$	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	3*0	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)
Ammonia-Nitrogen	25	Average Monthly	-	BPJ
Dissolved Oxygen	4.0	Min	-	BPJ
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Total Nitrogen	Report	Average Monthly	-	92a.61
Total Phosphorus	Report	Average Monthly	-	92a.61
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)

Best Professional Judgment (BPJ) Limitations

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

Water Quality-Based Limitations (WQBELs)

WQM 7.0 Water Quality Modeling

Pursuant to EPA's approval of Pennsylvania's 2017 Triennial Review of Water Quality Standards and corresponding regulatory changes published in the *Pennsylvania Bulletin* on July 11, 2020, new water quality criteria for ammonia-nitrogen apply to waters of the commonwealth. Therefore, conventional WQBELs for outfall 001 are being re-evaluated during this renewal.

DEP's WQM 7.0 version 1.1 model is a Microsoft Access Program used for sewage dischargers to determine whether TBELs are sufficient to meet in-stream water quality criteria for ammonia-nitrogen, carbonaceous biochemical oxygen demand ($CBOD_5$), and dissolved oxygen (DO). To accomplish this, the model simultaneously simulates mixing and degradation of ammonia-nitrogen and mixing and consumption of DO through $CBOD_5$ and ammonia-nitrogen degradation. WQM 7.0 determines the highest pollutant loadings that the stream can assimilate whole still meeting water quality criteria under design conditions.

The model is a two-step process. The discharge is first modeled for the summer period (May through October) because warm temperatures are more likely to result in critical loading conditions. Reduced DO levels likely also play a role in ammonia toxicity and solubility of DO decreases at increased water temperature. If summer modeling determines that WQBELs are appropriate for the summer period, then modeling is completed for the winter period (November through April).

This is in accordance with DEP's *Implementation Guidance of Section 93.7 Ammonia Criteria* [Doc. No. 391-2000-013] (Ammonia Guidance).

River Mile Index (RMI) was measured in eMAP PA as the distance between the point of discharge and the mouth of the Monongahela River. Discharge and downstream elevation were measured in Google Earth Pro. Discharge point and downstream drainage area were generated using USGS Stream Stats. USGS Stream Stats output files are provided in Attachment A. Q_{7-10} flow is regulated in the vicinity of the outfall at 550 cfs by the US Army Corps of Engineers. In the absence of site-specific data, discharge temperature, stream temperature, and stream pH are assumed to be 20 ^{o}C, 25 ^{o}C, and 7 S.U. in accordance with the Ammonia Guidance. Stream width to depth was assumed to be 10 in accordance with DEP's *Technical Reference Guide (TRG) WQM 7.0 for Windows Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen Version 1* [Doc. No. 391-2000-007]. The effluent $CBOD_5$, ammonia-nitrogen, and dissolved oxygen discharge concentrations were set equal to the previous permit limits. The DO goal was set equal to the 7-day average instream DO criteria defined for WWF in 25 PA Code Section 93.7.

WQM 7.0 summer inputs are documented in the table below:

Discharge Characteristics		**Basin/Stream Characteristics**	
Parameter	**Value**	**Parameter**	**Value**
River Mile Index (RMI)	23.02	Drainage Area	5340
Discharge Flow (MGD)	1.06	Q_{7-10} (cfs)	550
Discharge Temp (^{o}C)	20	Low-flow yield (cfs/mi^2)	0.205
Ammonia-Nitrogen (mg/L)	25	Elevation (ft)	726.9
$CBOD_5$ (mg/L)	25	Stream Width	844.8
Dissolved Oxygen (mg/L)	4.0	Stream Depth	10
DO Goal	5.5	Stream Temp (^{o}C)	25
		Stream pH (s.u.)	7

The discharge was modeled using WQM 7.0 to evaluate water quality-based limits for ammonia-nitrogen, $CBOD_5$, and DO. Modeling confirmed that TBELS for ammonia-nitrogen and $CBOD_5$ and a BPJ limit for DO are adequate to protect in-stream quality. WQM 7.0 output files are provided in Attachment B.

DEP's SOP for *Establishing Effluent Limitations for Individual Sewage Permits* [SOP No. BCW-PMT-033 revised March 24, 2021, Version 1.9], when modeling an existing discharge, if WQM modeling results for summer indicate that an average monthly limit of 25 mg/L, then year- round monitoring will generally be imposed. Federal regulations do not allow for reducing limitations unless the permit meets the requirements defined in 40 CFR 122.44. A TBEL of 25 mg/L will therefore again be imposed for this facility.

Based on WQM 7.0 modeling, the following effluent limitations will be imposed:

Parameter	**Limit (mg/l)**	**SBC**	**Basis**
Ammonia-Nitrogen (mg/L)	25	Average Monthly	TBEL
$CBOD_5$ (mg/L)	25	Average Monthly	TBEL
Dissolved Oxygen	4.0	Average Monthly	BPJ

The Department's *Technical Guidance for the Development and Specification of Effluent Limitations* [Doc No.362-0400-001] stipulates that for sewage related pollutants average weekly and instantaneous maximum limits be calculated by multiplying the average monthly limit by a conversion factor of 1.5 and 2.0, respectively.

The effluent limitations for ammonia-nitrogen, $CBOD_5$, and DO are not changing as a result of modeling.

Toxic Management Spreadsheet (TMS) Water Quality Modeling for Toxic Pollutants

DEP's Toxics Management Spreadsheet Version 1.3 (TMS) is a Microsoft Excel ® spreadsheet that facilitates the evaluation of a single discharger and performs the calculations necessary to complete a reasonable potential analysis and determine WQBELs for dischargers of toxic unconventional pollutants.

The TMS evaluates each pollutant by computing a wasteload allocation for each applicable criterion, determining the most stringent governing WQBEL, and comparing that governing WQBEL to the input discharge concentration to determine whether permit requirements should apply. That decision is made using the following reasonable potential thresholds as documented in the Department's SOP for Establishing Water Quality-Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers [SOP No. BCW-PMT-037]:

- Establish limits in the permit where the maximum reported effluent concentration or calculated, average monthly effluent concentration exceeds 50% of the WQBEL. Use the average monthly, maximum daily, and instantaneous maximum (IMAX) limits for the permit as recommended by the TMS.

- For non-conservative pollutants, establish monitoring requirements where the maximum reported effluent concentration or calculated average monthly effluent concentration is between 25-50% of the WQBEL.

- For conservative pollutants, establish monitoring requirements where the maximum reported effluent concentration or calculated average monthly concentration is between 10-50% of the WQBEL.

TMS requires input data including stream code, RMI, elevation, drainage area, Q7-10 stream flow, discharge hardness and pH, and stream hardness and pH. The same discharge and basin characteristic values are used as for WQM 7.0. Discharge pH and hardness input values were taken from the effluent sample results reported in the application. In the absence of site-specific data, a stream pH default of 7.0 and hardness default of 100 were used in accordance with DEP's *DEP Toxic Management Spreadsheet (TMS) Instructions*.

Discharge Characteristics		**Basin/Stream Characteristics**	
Parameter	**Value**	**Parameter**	**Value**
River Mile Index (RMI)	23.02	Drainage Area	5340
Discharge pH	6.6	Q_{7-10} (cfs)	550
Discharge Hardness	461	Stream pH	7.0
Design Flow (MGD)	1.06	Elevation (ft)	726.9
		Stream Width (ft)	844.8
		Stream Depth (ft)	10

A Preliminary Reasonable Potential Analysis was conducted using TMS. The model suggested a WQBEL for total zinc. TMS output files are provided in Attachment C. A pre-draft letter was sent on August 7, 2025. West Elizabeth Sanitary Authority's pre-draft survey response is provided in Attachment D.

Parameter	**Limit (mg/l)**	**SBC**	**Basis**
Total Zinc	1.76	Average Monthly	TMS Model

In accordance with DEP's SOP for *Establishing Water Quality-based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers* [SOP No. BCW-PMT-037], daily maximum and instantaneous maximum effluent limitations for total zinc were also calculated using TMS. Table 6.3 and 6.4 of the Department's *Technical Guidance for the Development and Specification of Effluent Limitations* [Doc No.362-0400-001], documents that when imposing limits and/or monitoring for metal pollutants, weekly monitoring should be imposed.

In accordance with DEP's SOP for *Establishing Water Quality-based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers* [SOP No. BCW-PMT-037], compliance schedules for new toxic limitations are generally assigned based on the permittee's pre-draft response. In their pre-draft survey, West Elizabeth Sanitary Authority documented that they need two years to comply with the new total zinc limit. A compliance schedule of two years is being imposed and monitoring for total zinc will be required until the end of the compliance schedule.

Section III.4. of DEP's SOP for *Establishing Water Quality-based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers* [SOP No. BCW-PMT-037], requires permittees to conduct site specific studies when default data was used for modeling. Part C.IV.B. has therefore been added to the permit. Section III.5.a. of the same SOP requires the permittee to conduct a TRE if they document in the pre-draft survey that they are unaware of the source of the pollutant. Part C.IV.C. has therefore been added to the permit.

Total Dissolved Solids (TDS)

Total Dissolved Solids (TDS) and its major constituents including sulfate, chloride, and bromide have emerged as contaminants of concern throughout the Commonwealth. These solids are conservative in nature, accumulating in surface waters and in the case of drinking water treatment, bromide has been linked with formation of disinfection byproducts. In response to the growing concern, the Department promulgated PA Code 25 Chapter 95.10 on August 21, 2010 which establishes treatment requirements for new and expanding discharges. Chapter 95.10 (a) (ii) defines that POTWs discharges authorized prior to August 21, 2010 are exempt from treatment requirements. West Elizabeth STP was placed in operation in 1973. At the time Chapter 95.10 was promulgated, it had a design flow rate of 0.5 MGD. In 2015, DEP approved a permit expanding the design flow to 1.06 MGD. Section 95.10 (a) (7) states that new and expanding discharge loadings of TDS equal to or less than 5,000 lbs per day, measured as an average monthly discharge over the course of a calendar year, are not subject to the treatment requirements in Chapter 95.10.

Using eDMR data from August 2024 through July 2025, an average monthly TDS discharge concentration over the course of a calendar year, was calculated to be 1106.5. Using that data a TDS load can be estimated using the following equation:

$$estimated\ daily\ mass\ load\ \left(\frac{lbs}{day}\right) = 0.56\ (MGD) * 1106.5\ \left(\frac{mg}{L}\right) * 8.34\ (conversion\ factor)$$

The estimated daily mass load is 5167.8 lbs/day, which is higher than the 5,000 lbs/day threshold defined in Chapter 95.10. It is therefore Conditionally Non-Exempt.

eDMR data was queried from April 1, 2020 through August 1, 2025. There were 64 data points for average monthly concentration, ranging from 754 mg/L and 3686 mg/L. The average of these data points is 1606 mg/L. For 16 months, the average monthly concentration exceeded 2,000 mg/L. There is therefore reasonable potential for the discharge to violate the treatment requirements in Chapter 95.10.

DEP's *Policy and Procedure for NPDES Permitting of Discharges of Total Dissolved Solids (TDS)* [Doc No. 386-2100-002] documents that when expanded flow is conditionally non-exempt, and there is reasonable potential, then a mass balance should be used to calculate a weighted limit based on the existing TDS load and a limit of 2,000 mg/L for the expanded load. In a renewal application submitted in 2010, West Elizabeth Sanitary Authority reported a maximum 30-day TDS concentration of 2,291 mg/L. This is the most readily available data for the existing load before the plant was expanded in 2015. The facility expanded from 0.5 MGD to 1.06 MGD. The existing average monthly mass load was calculated as:

$$existing\ average\ \ monthly\ \ mass\ load\ \left(\frac{lbs}{day}\right) = 0.5\ (MGD) * 2{,}291\ \left(\frac{mg}{L}\right) * 8.34\ (conversion\ factor) = 9553.47\ \frac{lbs}{day}$$

The expanded average monthly mass load was calculated as:

$$expanding\ average\ \ monthly\ mass\ load\ \left(\frac{lbs}{day}\right) = 0.56\ (MGD) * 2{,}000\ \left(\frac{mg}{L}\right) * 8.34\ (conversion\ factor) = 9340.8\ \frac{lbs}{day}$$

The sum of the existing and expanded average monthly mass loads is 18894.27 lbs/day. The average monthly concentration limit was calculated based on the sum of both loads using the following equation:

$$average\ monthly\ concentration\ \left(\frac{mg}{L}\right) = \frac{18894.27\ (\frac{lbs}{day})}{1.06\ (MGD) * 8.34\ (conversion\ factor)} = 2137.26\ \frac{mg}{L}$$

The weighted limit was calculated to be 2,137.26 mg/L. Based on DEP rounding guidance, an average monthly limit of 2,137.2 will be imposed. DEP's SOP for *Establishing Water Quality-based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers* [SOP No. BCW-PMT-037] documents that a permittee will be considered to be able to comply with a WQBEL without a compliance schedule if historic data demonstrates compliance with the proposed WQBEL at least 90% of the time. Based on data from the last permit term, the facility as currently operating is only able to meet that new limit about 84% of the time. Therefore, a two-year compliance period will be provided in this permit.

The existing maximum mass load was calculated as:

$$existing\ daily\ maximum\ \ mass\ load\ \left(\frac{lbs}{day}\right) = 0.5\ (MGD) * 2{,}964\ \left(\frac{mg}{L}\right) * 8.34\ (conversion\ factor) = 12359.88\frac{lbs}{day}$$

The expanded maximum mass load was calculated as:

$$expanding\ daily\ maximum\ \ mass\ load\ \left(\frac{lbs}{day}\right) = 0.5\ (MGD) * 4{,}000\ \left(\frac{mg}{L}\right) * 8.34\ (conversion\ factor) = 16680\frac{lbs}{day}$$

The sum of the existing and expanded maximum mass load is 29039.88. The maximum concentration limit was calculated based on the sum of both loads using the following equation:

$$daily\ maximum\ \ concentration\ \left(\frac{mg}{L}\right) = \frac{29039.88\ (\frac{lbs}{day})}{1.06\ (MGD) * 8.34\ (conversion\ factor)} = 3284.90\ \frac{mg}{L}$$

Permit Effluent Limitations

In accordance with Section III of DEP's SOP for *Establishing Effluent limitations for Individual Sewage Permits*, the limits to be imposed, which are provided below, represent the most stringent limitations between the TBELs, WQBELs, BAT, and BPJs.

Parameter	Limit (mg/l)	SBC	Model
Dissolved Oxygen	4.0	Instantaneous Minimum	BPJ
Ammonia-Nitrogen	25	Average Monthly	TBEL
$CBOD_5$	25	Average Monthly	TBEL
Total Suspended Solids	30	Average Monthly	TBEL
Fecal Coliform (Recreation Season)	200 CFU/mL	Geo Mean	TBEL
Fecal Coliform (Non-Recreation Season)	2,000 CFU/mL	Geo Mean	TBEL
pH	6.0	Instantaneous Minimum	TBEL
pH	9.0	Instantaneous Maximum	TBEL
Total Zinc	1.76	Average Monthly	TMS Model
Total Dissolved Solids	2,137.2	Average Monthly	25 PA Code Chapter 95.10

Per- and Polyfluoroalkyl Substances (PFAS)

In February 2024, DEP implemented a new PFAS monitoring initiative consistent with EPA's memorandum that provides guidance for addressing PFAS in treated effluent discharges permitted under the NPDES program. PFAS are a family of synthetic, organic chemicals containing a chain of strong carbon-fluorine bonds. PFAS are generally highly stable and

water- and oil-resistant and are useful in a variety of consumer products and industrial processes. PFAS are resistant to biodegradation, photooxidation, direct photolysis, and hydrolysis. Because PFAS do not readily degrade by natural processes, it accumulates over time. According to the United States Department of Health and Human Services' Agency for Toxic Substances and Disease Registry (ATSDR). The environmental persistence and mobility of PFAS combined with decades of widespread use have resulted in surface water, groundwater, drinking water, rainwater, soil, sediment, ice caps, outdoor and indoor air, plants, animal tissue, and human blood serum across the globe. ATSDR also reports that exposure to certain PFAS can lead to adverse human health impacts. Due to their durability, toxicity, persistence, and pervasiveness, PFAS have emerged as a potentially significant pollutant of concern for sewage treatment plants.

In accordance with DEP's SOP for *Establishing Effluent Limitations for Individual Sewage Permits* [BCQ-PMT-033] and under the authority of 25 Pa. Code § 92.a.61, DEP is imposing monitoring for a subset of common/well-studied PFAS to help understand the extent of PFAS contamination throughout the Commonwealth and the extent to which point source discharges under the NPDES program contribute. These PFAS include Perfluorooctanoic Acid (PFOA), Perfluoroctanesulfonic Acid (PFOS), Perfluorobutanesulfonic acid (PFBS), and Hexafluoropropylene Oxide Dimer Acid (HFPO-DA).

West Elizabeth STP conducted sampling for PFAS for Outfall 001 prior to submitting their renewal application. All three PFOA and PFAS samples had detections with maximum concentrations of 0.007 and 0.009 µg/L, respectively. One PFBS sample had a detection at a concentration of 0.006 µg/L. HFPO had no detections at a MDL of 0.008.

Section II.G.1. of DEP's SOP for *Establishing Effluent Limitations for Individual Sewage Permits* [BCQ-PMT-033], if PFOA, PFOS, HFPO-DA, or PFBS is detected in the effluent renewal sampling, then quarterly monitoring will be imposed in the permit. Three of the four PFAS samples were detected in at least one effluent sample, therefore, quarterly monitoring is being imposed. Section II.G.3. of DEP's of the same SOP stipulates that a footnote will be added to the permit stating "The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in four consecutive monitoring periods indicate non-detect results at or below Quantitation Limits of 4.0 ng/L for PFOA, 3.7 ng/L for PFOS, 3.5 ng/L for PFBS, and 6.4 ng/L for HFPO-DA. When monitoring is discontinued, permittees must enter a No Discharge Indicator (NODI) Code of "GG" on DMRs.

Monongahela River Total Maximum Daily Load

A Total Maximum Daily Load (TMDL) for PCBs and chlordane in the Monongahela River was finalized on March 1, 1999. This TMDL applies to RMI 420 to 530. In accordance with 40 CFR § 122.44(d)(1)(vii)(B), when developing WQBELs, the permitting authority shall ensure that effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available waste load allocation (WLA) for the discharge prepared by the State and approved by EPA pursuant to 40 CFR § 130.7. The TMDL document states that the production and use of PCBs were banned in the US in July 1979 and the use of chlordane has been banned in the US since April 1988. There are therefore no new point sources for either of these pollutants. Known, existing point sources of PCBs and/or chlordane have obtained NPDES permits with WQBELs for those pollutants. PCBs and chlordane in the Monongahela River are expected to be present primarily in the sediment due to historic use and improper disposal practices. Natural attenuation is expected to reduce PCB and chlordane contamination in the Monongahela River over time. Pennsylvania is monitoring the concentrations of PCBs and chlordane in white bass and carp tissue. West Elizabeth Sanitary Authority is not being assigned limits or monitoring due to the Monongahela River TMDL.

Mass Loading

Section 1.A of the Department's SOP, *Establishing Effluent Limitations for the Individual Sewage Permits* [SOP No. BCW-PMT-033 Version 1.9] and table 5.3 of the Department's *Technical Guidance for the Development and Specifications of Effluent Limitations* [Doc No. 362-0400-001] establish mass loading limits for Public Owned Treatment Works (POTWs) for $CBOD_5$, TSS, and ammonia-nitrogen. Mass loading limits are calculated according to the following equation:

$$mass\ loading\ limit\ \left(\frac{lbs}{day}\right) = average\ annual\ flow\ (MGD) * concentration\ limit\ \left(\frac{mg}{L}\right) * 8.34\ (conversion\ factor)$$

The following mass loading limits are being imposed:

Parameter	Average Monthly (lbs/day)	Weekly Average (lbs/day)
TSS (mg/L)	265	395
$CBOD_5$ (mg/L)	220	325
Ammonia-Nitrogen (mg/L)	220	325

A weekly average mass load limit for ammonia-nitrogen was added to the permit.

Additional Considerations

In accordance with Section I.A. of DEP's SOP for Establishing Effluent Limitations for Individual Sewage Permits [SOP No. BCW-PMT-033 Version 1.9], pursuant to EPA's approval of Pennsylvania's 2017 Triennial Review of Water Quality Standards and corresponding regulatory changes published in the Pennsylvania Bulletin on July 11, 2020 and under the authority of 25 Pa. Code § 93.7(a) and § 92.a.61, sewage dischargers will include monitoring for *E. coli*. For new and reissued permits, a monitoring frequency of 1/month will be imposed for flows ≥ 1 MGD.

In accordance with Section IV.F.2 of the Department's SOP for *Clean Water Program Establishing Effluent Limitations for Individual Sewage Permits* [SOP No. BCW-PMT-033 Version 1.9], and under the authority of 25 Pa. Code § 92a.61(b), nutrient monitoring for total nitrogen and total phosphorus will be imposed. The intent of this monitoring is to establish the nutrient load of the wastewater and evaluate the impact that load may have on the quality of the receiving stream. The SOP states that a monitoring frequency shall be imposed equivalent to that imposed or conventional pollutants if the facility discharges to a nutrient impaired stream or a lesser frequency if the receiving stream is not nutrient-impaired. The Monongahela River is not impaired for nutrients; therefore, a monitoring frequency of 1/quarter will again be imposed. Since the previous permit became effective, 21 total nitrogen results have ranged from 0.84 to 271 mg/L. During the same time frame, 21 total phosphorus results ranged from 0.64 to 2.7.

Monitoring frequency for the proposed effluent limits are based on Table 6-3, Self-Monitoring Requirements for Sewage Discharges, from the Department's *Technical Guidance for the Development and Specification of Effluent Limitations* [Doc No.362-0400-001]. Sampling frequency is not changing for any pollutant based on Table 6.3.

In accordance with Section IV.F.2 of the Department's SOP for *New and Reissuance Sewage Individual NPDES Permit Applications* [SOP No. BCW-PMT-002 Version 2.0] for POTWs with design flows greater than 2,000 GPD, influent BOD_5 and TSS monitoring must be established in the permit at a frequency and sample type equivalent to that imposed for the effluent parameters. The intent of influent BOD_5 and TSS monitoring is to verify if compliance with the secondary treatment requirement of 85% removal defined in 40 CFR §133.102. No changes have been made to the influent monitoring during this permit renewal.

Conventional concentration and mass loading limits are rounded in accordance with the guidelines in Chapter 5 Section C.2. of DEP's Technical Guidance for the Development and Specification of Effluent Limitations [Doc. No. 362-0400-001]. Please note that the average monthly and weekly average concentration limits for $CBOD_5$ and ammonia-nitrogen, the weekly average mass loading limit for $CBOD_5$, and the weekly average mass loading limit for total suspended solids have all been reduced to be consistent with DEP's rounding guidance.

In accordance with Section I.A. DEP's SOP for *Establishing Effluent Limitations for Individual Sewage Permits* [SOP No. BCW-PMT-033 Version 1.9], when UV disinfection is used, TRC limits are not applicable. Routine UV transmittance (%) monitoring is being imposed at the same monitoring frequency that would be used for TRC.

Whole Effluent Toxicity

The 2020 permit required West Elizabeth Township to perform WET tests to generate chronic survival and reproduction data for *cladoceran* (water flea) *Ceriodaphnia dubia* and chronic survival and growth data for *Pimephales promelas* (fathead minnow). The dilution series for these tests was 1%, 2%, 30%, 60%, and 100%. The Target Instream Waste Concentration (TIWC) used to analyze the results was 2%.

Analysis of the four most recent WET tests, conducted December 2021, November 2022, December 2023, and November 2024 are included in Attachment E. There is no reasonable potential, therefore, no WET limits will be imposed in this permit. An annual monitoring requirement will be added to Part C.V.B. of the permit.

Complete mixing time is calculated as a function of discharge flow rate and receiving stream characteristics (Q7-10 flow, velocity, width, depth, and slope). The TMS model calculated a complete mix time of 4468 minutes. When a complete mix time is greater than 720 minutes, Chronic Partial Mix Factor is calculated using the following equation:

$$PMF_c = \left(\frac{720}{Complete\ mix\ time}\right)^{0.5}$$

The Chronic Partial Mix Factor was calculated to be 40.1%.

Chronic Instream Waste Concentration (IWCc) is calculated as a function of discharge flow, stream flow, and Chronic Partial Mix Factor according to the following equation:

$$IWC_c = \left(\frac{Q_d * 1.547}{Q_{7-10} * PMF_c}\right) + (Q_d * 1.547)$$

The Chronic Instream Waste Concentration was calculated to be 1%. Chronic Tests will again be imposed in the permit.

Target Chronic Instream Waste Concentration is calculated as a function of Chronic Instream Waste Concentration using the following equation:

$$TIWC_c = \frac{IWC_c}{1}$$

Target Chronic Instream Waste Concentration was calculated to be 1 %

The dilution series as determined using Attachment D of the Department's SOP for *Whole Effluent Toxicity (WET)* [SOP No. BPNPSM-PMT-031]. Based on a Target Chronic Instream Waste Concentration of 1%, the dilution series imposed in this permit will be 100%, 60%, 30%, 2%, and 1%. Please note that this is a different TIWC and dilution series than previously imposed.

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: Two Years Following 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		
Total Zinc	15.5	24.2 Daily Max	XXX	1.76	2.74 Daily Max	4.39	1/hour	24-Hr Composite
Total Dissolved Solids	18894.2	29039.8 Daily Max	XXX	2137.2	3284.9 Daily Max	XXX	2/week	Grab

Compliance Sampling Location: Outfall 001

Other Comments: None

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 Three Years Following Permit Effective 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		
Total Zinc	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	1/week	24-Hr Composite
Total Dissolved Solids	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	2/week	Grab

Compliance Sampling Location: Outfall 001

Other Comments: None

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	Daily 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 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
$CBOD_5$	220	325	XXX	25.0	37.0	50	2/week	24-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS	265	395	XXX	30.0	45.0	60	2/week	24-Hr Composite
Total Dissolved Solids	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/month	Grab
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Ammonia-Nitrogen	220	325	XXX	25.0	37.0	50	2/week	24-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	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
PFOA (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
PFOS (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
PFBS (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
HFPO-DA (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab

Compliance Sampling Location: Outfall 001

Other Comments: None

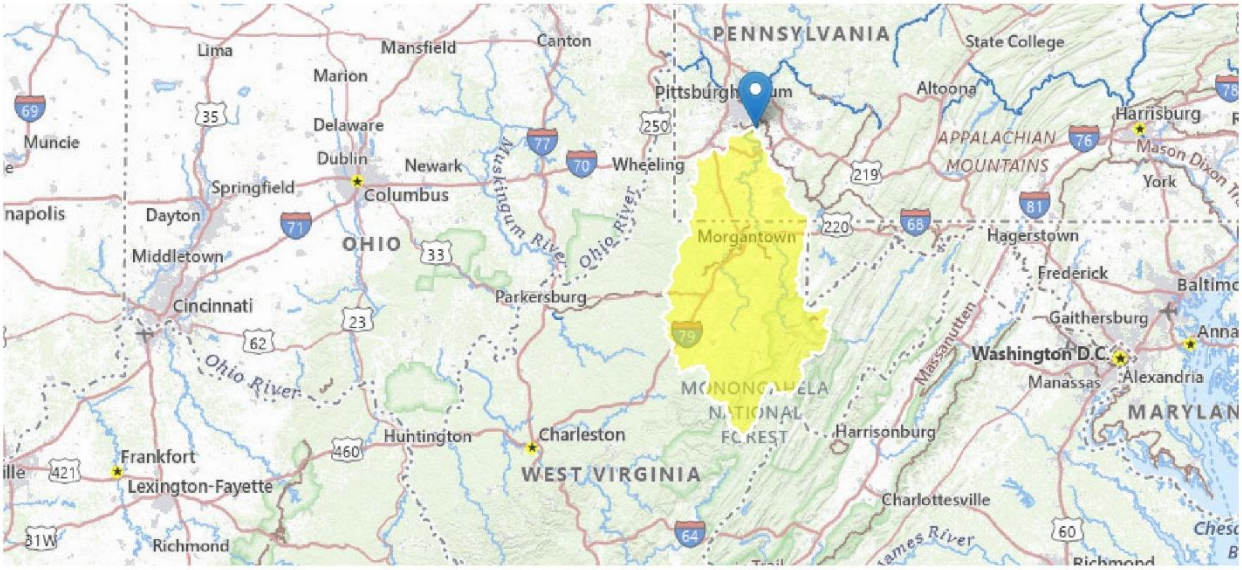
ATTACHMENT A

USGS Stream Stats Output Files

RMI 23.02
Discharge Point Outfall 001

StreamStats Report

Region ID: PA
Workspace ID: PA20250602172939743000
Clicked Point (Latitude, Longitude): 40.27545, -79.88833
Time: 2025-06-02 13:30:10 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	5340	square miles
ELEV	Mean Basin Elevation	1824	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	5340	square miles	2.26	1400
ELEV	Mean Basin Elevation	1824	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	703	ft^3/s
30 Day 2 Year Low Flow	931	ft^3/s
7 Day 10 Year Low Flow	411	ft^3/s
30 Day 10 Year Low Flow	480	ft^3/s
90 Day 10 Year Low Flow	711	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/)

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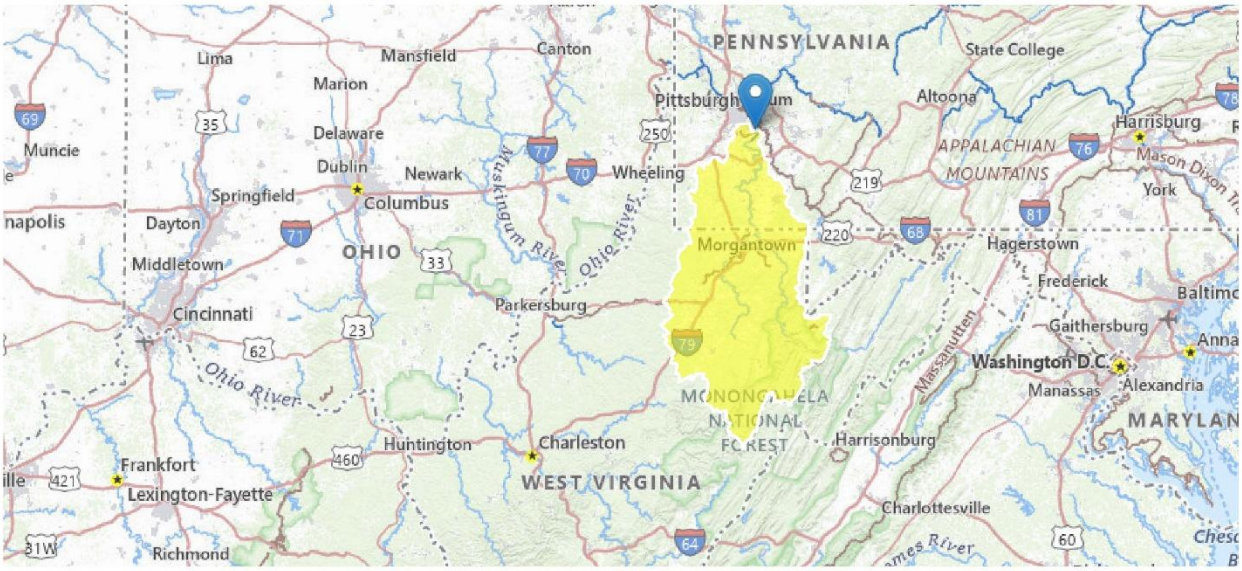
Application Version: 4.29.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

RMI 19.420
Discharge Point Outfall 001

StreamStats Report

Region ID: PA
Workspace ID: PA20250602175325755000
Clicked Point (Latitude, Longitude): 40.31280, -79.88762
Time: 2025-06-02 13:53:59 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	5410	square miles
ELEV	Mean Basin Elevation	1815	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	5410	square miles	2.26	1400
ELEV	Mean Basin Elevation	1815	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	710	ft^3/s
30 Day 2 Year Low Flow	940	ft^3/s
7 Day 10 Year Low Flow	417	ft^3/s
30 Day 10 Year Low Flow	486	ft^3/s
90 Day 10 Year Low Flow	718	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/)

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Application Version: 4.29.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

ATTACHMENT B

WQM 7.0 Modeling Results

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
19A	37185	MONONGAHELA RIVER	**23.020**	726.90	5340.00	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	0.205	0.00	0.00	0.000	0.000	0.0	844.80	10.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
West Elizabeth	PA0022331	0.0000	1.0600	0.0000	0.000	20.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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	**19.420**	726.00	5410.00	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	0.205	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

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												
23.020	1094.70	0.00	1094.70	1.6398	0.00005	10	844.8	84.48	0.13	1.695	24.99	7.00
Q1-10 Flow												
23.020	700.61	0.00	700.61	1.6398	0.00005	NA	NA	NA	0.08	2.647	24.99	7.00
Q30-10 Flow												
23.020	1488.79	0.00	1488.79	1.6398	0.00005	NA	NA	NA	0.18	1.247	24.99	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	5.5		

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
23.020	West Elizabeth	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
23.020	West Elizabeth	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)		
23.02	West Elizabeth	25	25	25	25	4	4	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
23.020	1.060	24.993	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
844.800	10.000	84.480	0.130
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.03	0.008	0.04	1.028
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.237	0.165	O'Connor	5.5
Reach Travel Time (days)			
1.695			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.170	2.03	0.03	7.54
0.339	2.03	0.03	7.54
0.509	2.02	0.02	7.54
0.678	2.02	0.02	7.54
0.848	2.02	0.02	7.54
1.017	2.01	0.01	7.54
1.187	2.01	0.01	7.54
1.356	2.01	0.01	7.54
1.526	2.00	0.01	7.54
1.695	2.00	0.01	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)
23.020	West Elizabeth	PA0022331	0.000	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4

ATTACHMENT C

TMS Modeling Results

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2025

Discharge Information

Instructions | Discharge | Stream

Facility: **West Elizabeth STP** NPDES Permit No.: **PA0022331** 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
1.06	461	6.6						

					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		1090									
	Chloride (PWS)	mg/L		271									
	Bromide	mg/L		0.17									
	Sulfate (PWS)	mg/L		94									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		41.1									
	Total Antimony	µg/L		0.61									
	Total Arsenic	µg/L		1.04									
	Total Barium	µg/L		40.3									
	Total Beryllium	µg/L		0.04									
	Total Boron	µg/L		0.32									
	Total Cadmium	µg/L		0.02									
	Total Chromium (III)	µg/L		1.91									
	Hexavalent Chromium	µg/L		1									
	Total Cobalt	µg/L		0.3									
	Total Copper	mg/L		0.01									
	Free Cyanide	µg/L		5									
	Total Cyanide	µg/L		11									
	Dissolved Iron	µg/L		10									
	Total Iron	µg/L		70									
	Total Lead	µg/L		0.25									
	Total Manganese	µg/L		33.8									
	Total Mercury	µg/L		0.09									
	Total Nickel	µg/L		7.81									
	Total Phenols (Phenolics) (PWS)	µg/L		50									
	Total Selenium	µg/L		5									
	Total Silver	µg/L		0.03									
	Total Thallium	µg/L		2									
	Total Zinc	mg/L		21.6									
	Total Molybdenum	µg/L		3.71									
	Acrolein	µg/L	<	1									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	0.5									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.5									

Group 3	Carbon Tetrachloride	µg/L	<	0.5									
	Chlorobenzene	µg/L	<	0.5									
	Chlorodibromomethane	µg/L	<	0.5									
	Chloroethane	µg/L	<	0.5									
	2-Chloroethyl Vinyl Ether	µg/L	<	5									
	Chloroform	µg/L		0.76									
	Dichlorobromomethane	µg/L	<	0.5									
	1,1-Dichloroethane	µg/L	<	0.5									
	1,2-Dichloroethane	µg/L	<	0.5									
	1,1-Dichloroethylene	µg/L	<	0.5									
	1,2-Dichloropropane	µg/L	<	0.5									
	1,3-Dichloropropylene	µg/L	<	0.5									
	1,4-Dioxane	µg/L		2									
	Ethylbenzene	µg/L	<	0.5									
	Methyl Bromide	µg/L	<	0.5									
	Methyl Chloride	µg/L	<	0.5									
	Methylene Chloride	µg/L		1.78									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5									
	Tetrachloroethylene	µg/L	<	0.5									
	Toluene	µg/L		0.62									
	1,2-trans-Dichloroethylene	µg/L	<	0.5									
	1,1,1-Trichloroethane	µg/L	<	0.5									
	1,1,2-Trichloroethane	µg/L	<	0.5									
	Trichloroethylene	µg/L	<	0.5									
	Vinyl Chloride	µg/L	<	0.5									
Group 4	2-Chlorophenol	µg/L	<	2.02									
	2,4-Dichlorophenol	µg/L	<	0.26									
	2,4-Dimethylphenol	µg/L	<	0.26									
	4,6-Dinitro-o-Cresol	µg/L	<	2.11									
	2,4-Dinitrophenol	µg/L	<	5.26									
	2-Nitrophenol	µg/L	<	0.26									
	4-Nitrophenol	µg/L	<	0.26									
	p-Chloro-m-Cresol	µg/L	<	0.26									
	Pentachlorophenol	µg/L	<	5.26									
	Phenol	µg/L	<	0.26									
	2,4,6-Trichlorophenol	µg/L	<	0.26									
Group 5	Acenaphthene	µg/L	<	0.26									
	Acenaphthylene	µg/L	<	0.26									
	Anthracene	µg/L	<	0.26									
	Benzidine	µg/L	<	0.26									
	Benzo(a)Anthracene	µg/L	<	0.26									
	Benzo(a)Pyrene	µg/L	<	0.26									
	3,4-Benzofluoranthene	µg/L	<	0.26									
	Benzo(ghi)Perylene	µg/L	<	0.26									
	Benzo(k)Fluoranthene	µg/L	<	0.26									
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.26									
	Bis(2-Chloroethyl)Ether	µg/L		0.3									
	Bis(2-Chloroisopropyl)Ether	µg/L		2.99									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	0.26									
	4-Bromophenyl Phenyl Ether	µg/L	<	0.26									
	Butyl Benzyl Phthalate	µg/L	<	0.26									
	2-Chloronaphthalene	µg/L	<	0.26									
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.26									
	Chrysene	µg/L	<	0.26									
	Dibenzo(a,h)Anthrancene	µg/L	<	0.26									
	1,2-Dichlorobenzene	µg/L	<	0.26									
	1,3-Dichlorobenzene	µg/L	<	0.26									
	1,4-Dichlorobenzene	µg/L	<	0.26									
	3,3-Dichlorobenzidine	µg/L	<	0.26									
	Diethyl Phthalate	µg/L		0.47									
	Dimethyl Phthalate	µg/L	<	0.26									
	Di-n-Butyl Phthalate	µg/L	<	0.26									
	2,4-Dinitrotoluene	µg/L	<	0.26									

	2,6-Dinitrotoluene	µg/L	<	0.26									
	Di-n-Octyl Phthalate	µg/L	<	0.26									
	1,2-Diphenylhydrazine	µg/L	<	0.26									
	Fluoranthene	µg/L	<	0.26									
	Fluorene	µg/L	<	0.26									
	Hexachlorobenzene	µg/L	<	0.26									
	Hexachlorobutadiene	µg/L	<	0.53									
	Hexachlorocyclopentadiene	µg/L	<	0.53									
	Hexachloroethane	µg/L	<	0.26									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.26									
	Isophorone	µg/L	<	0.26									
	Naphthalene	µg/L	<	0.26									
	Nitrobenzene	µg/L	<	0.26									
	n-Nitrosodimethylamine	µg/L	<	0.26									
	n-Nitrosodi-n-Propylamine	µg/L	<	0.26									
	n-Nitrosodiphenylamine	µg/L	<	0.26									
	Phenanthrene	µg/L	<	0.26									
	Pyrene	µg/L	<	0.26									
	1,2,4-Trichlorobenzene	µg/L	<	0.26									
Group 6	Aldrin	µg/L	<	0.02									
	alpha-BHC	µg/L	<	0.01									
	beta-BHC	µg/L	<	0.02									
	gamma-BHC	µg/L	<	0.02									
	delta BHC	µg/L	<	0.02									
	Chlordane	µg/L	<	0.5									
	4,4-DDT	µg/L	<	0.02									
	4,4-DDE	µg/L	<	0.02									
	4,4-DDD	µg/L	<	0.01									
	Dieldrin	µg/L	<	0.02									
	alpha-Endosulfan	µg/L	<	0.02									
	beta-Endosulfan	µg/L	<	0.02									
	Endosulfan Sulfate	µg/L	<	0.02									
	Endrin	µg/L	<	0.01									
	Endrin Aldehyde	µg/L	<	0.02									
	Heptachlor	µg/L	<	0.01									
	Heptachlor Epoxide	µg/L	<	0.01									
	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	<	0.5									
	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 2025

Stream / Surface Water Information

West Elizabeth STP, NPDES Permit No. PA0022331, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name: **Monongahela**

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	23.02	726.9	5340			Yes
End of Reach 1	037185	19.42	726	5410			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	23.02	0.1				844.8	10					100	7		
End of Reach 1	19.42	0.1													

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	23.02														
End of Reach 1	19.42														

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Toxics Management Spreadsheet
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Model Results

West Elizabeth STP, NPDES Permit No. PA0022331, Outfall 001

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

☑ ***Hydrodynamics***

Q_{7-10}

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)
23.02	534		534	1.64	0.00005	10.	844.8	84.48	0.063	3.47	4468.062
19.42	541		541								

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)
23.02	1798.29		1798.29	1.64	0.00005	17.045	844.8	49.562	0.125	1.76	2016.406
19.42	1818.877		1818.88								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.058 Analysis Hardness (mg/l): 118.17 Analysis pH: 6.97

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 Aluminum	0	0		0	750	750	14,901	
Total Antimony	0	0		0	1,100	1,100	21,855	
Total Arsenic	0	0		0	340	340	6,755	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	417,233	
Total Boron	0	0		0	8,100	8,100	160,933	
Total Cadmium	0	0		0	2.369	2.53	50.2	Chem Translator of 0.937 applied
Total Chromium (III)	0	0		0	653.247	2,067	41,072	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	324	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	1,887	
Total Copper	0	0		0	15.728	16.4	326	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	437	

Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	77.418	101	2,006	Chem Translator of 0.767 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	32.7	Chem Translator of 0.85 applied
Total Nickel	0	0		0	539.268	540	10,736	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	4.287	5.04	100	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	1,291	
Total Zinc	0	0		0	134.986	138	2,742	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	59.6	
Acrylonitrile	0	0		0	650	650	12,914	
Benzene	0	0		0	640	640	12,716	
Bromoform	0	0		0	1,800	1,800	35,763	
Carbon Tetrachloride	0	0		0	2,800	2,800	55,631	
Chlorobenzene	0	0		0	1,200	1,200	23,842	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	357,628	
Chloroform	0	0		0	1,900	1,900	37,750	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	298,023	
1,1-Dichloroethylene	0	0		0	7,500	7,500	149,012	
1,2-Dichloropropane	0	0		0	11,000	11,000	218,551	
1,3-Dichloropropylene	0	0		0	310	310	6,159	
Ethylbenzene	0	0		0	2,900	2,900	57,618	
Methyl Bromide	0	0		0	550	550	10,928	
Methyl Chloride	0	0		0	28,000	28,000	556,310	
Methylene Chloride	0	0		0	12,000	12,000	238,419	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	19,868	
Tetrachloroethylene	0	0		0	700	700	13,908	
Toluene	0	0		0	1,700	1,700	33,776	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	135,104	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	59,605	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	67,552	
Trichloroethylene	0	0		0	2,300	2,300	45,697	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	11,126	
2,4-Dichlorophenol	0	0		0	1,700	1,700	33,776	
2,4-Dimethylphenol	0	0		0	660	660	13,113	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	1,589	
2,4-Dinitrophenol	0	0		0	660	660	13,113	
2-Nitrophenol	0	0		0	8,000	8,000	158,946	
4-Nitrophenol	0	0		0	2,300	2,300	45,697	
p-Chloro-m-Cresol	0	0		0	160	160	3,179	
Pentachlorophenol	0	0		0	8.449	8.45	168	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	9,139	

Acenaphthene	0	0		0	83	83.0	1,649	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	5,960	
Benzo(a)Anthracene	0	0		0	0.5	0.5	9.93	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	596,047	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	89,407	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	5,364	
Butyl Benzyl Phthalate	0	0		0	140	140	2,782	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	16,292	
1,3-Dichlorobenzene	0	0		0	350	350	6,954	
1,4-Dichlorobenzene	0	0		0	730	730	14,504	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	79,473	
Dimethyl Phthalate	0	0		0	2,500	2,500	49,671	
Di-n-Butyl Phthalate	0	0		0	110	110	2,186	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	31,789	
2,6-Dinitrotoluene	0	0		0	990	990	19,670	
1,2-Diphenylhydrazine	0	0		0	15	15.0	298	
Fluoranthene	0	0		0	200	200	3,974	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	199	
Hexachlorocyclopentadiene	0	0		0	5	5.0	99.3	
Hexachloroethane	0	0		0	60	60.0	1,192	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	198,682	
Naphthalene	0	0		0	140	140	2,782	
Nitrobenzene	0	0		0	4,000	4,000	79,473	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	337,760	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	5,960	
Phenanthrene	0	0		0	5	5.0	99.3	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	2,583	
Aldrin	0	0		0	3	3.0	59.6	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	0.95	0.95	18.9	
Chlordane	0	0		0	2.4	2.4	47.7	
4,4-DDT	0	0		0	1.1	1.1	21.9	
4,4-DDE	0	0		0	1.1	1.1	21.9	

4,4-DDD	0	0		0	1.1	1.1	21.9	
Dieldrin	0	0		0	0.24	0.24	4.77	
alpha-Endosulfan	0	0		0	0.22	0.22	4.37	
beta-Endosulfan	0	0		0	0.22	0.22	4.37	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	0.086	0.086	1.71	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.52	0.52	10.3	
Heptachlor Epoxide	0	0		0	0.5	0.5	9.93	
Toxaphene	0	0		0	0.73	0.73	14.5	

☑ ***CFC*** CCT (min): 720 PMF: 0.401 Analysis Hardness (mg/l): 102.74 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 Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	28,979	
Total Arsenic	0	0		0	150	150	19,758	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	540,064	
Total Boron	0	0		0	1,600	1,600	210,757	
Total Cadmium	0	0		0	0.251	0.28	36.4	Chem Translator of 0.908 applied
Total Chromium (III)	0	0		0	75.774	88.1	11,606	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	1,369	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	2,503	
Total Copper	0	0		0	9.165	9.55	1,258	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	685	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	489,968	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.592	3.29	434	Chem Translator of 0.787 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	119	Chem Translator of 0.85 applied
Total Nickel	0	0		0	53.210	53.4	7,030	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	657	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	1,712	
Total Zinc	0	0		0	120.877	123	16,148	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	395	
Acrylonitrile	0	0		0	130	130	17,124	
Benzene	0	0		0	130	130	17,124	
Bromoform	0	0		0	370	370	48,737	
Carbon Tetrachloride	0	0		0	560	560	73,765	
Chlorobenzene	0	0		0	240	240	31,614	

Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	461,030	
Chloroform	0	0		0	390	390	51,372	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	408,341	
1,1-Dichloroethylene	0	0		0	1,500	1,500	197,584	
1,2-Dichloropropane	0	0		0	2,200	2,200	289,790	
1,3-Dichloropropylene	0	0		0	61	61.0	8,035	
Ethylbenzene	0	0		0	580	580	76,399	
Methyl Bromide	0	0		0	110	110	14,490	
Methyl Chloride	0	0		0	5,500	5,500	724,476	
Methylene Chloride	0	0		0	2,400	2,400	316,135	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	27,662	
Tetrachloroethylene	0	0		0	140	140	18,441	
Toluene	0	0		0	330	330	43,469	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	184,412	
1,1,1-Trichloroethane	0	0		0	610	610	80,351	
1,1,2-Trichloroethane	0	0		0	680	680	89,572	
Trichloroethylene	0	0		0	450	450	59,275	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	14,490	
2,4-Dichlorophenol	0	0		0	340	340	44,786	
2,4-Dimethylphenol	0	0		0	130	130	17,124	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	2,108	
2,4-Dinitrophenol	0	0		0	130	130	17,124	
2-Nitrophenol	0	0		0	1,600	1,600	210,757	
4-Nitrophenol	0	0		0	470	470	61,910	
p-Chloro-m-Cresol	0	0		0	500	500	65,861	
Pentachlorophenol	0	0		0	6.482	6.48	854	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	11,987	
Acenaphthene	0	0		0	17	17.0	2,239	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	7,772	
Benzo(a)Anthracene	0	0		0	0.1	0.1	13.2	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	790,338	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	119,868	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	7,113	
Butyl Benzyl Phthalate	0	0		0	35	35.0	4,610	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	

Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	21,076	
1,3-Dichlorobenzene	0	0		0	69	69.0	9,089	
1,4-Dichlorobenzene	0	0		0	150	150	19,758	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	105,378	
Dimethyl Phthalate	0	0		0	500	500	65,861	
Di-n-Butyl Phthalate	0	0		0	21	21.0	2,766	
2,4-Dinitrotoluene	0	0		0	320	320	42,151	
2,6-Dinitrotoluene	0	0		0	200	200	26,345	
1,2-Diphenylhydrazine	0	0		0	3	3.0	395	
Fluoranthene	0	0		0	40	40.0	5,269	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	263	
Hexachlorocyclopentadiene	0	0		0	1	1.0	132	
Hexachloroethane	0	0		0	12	12.0	1,581	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	276,618	
Naphthalene	0	0		0	43	43.0	5,664	
Nitrobenzene	0	0		0	810	810	106,696	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	447,858	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	7,772	
Phenanthrene	0	0		0	1	1.0	132	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	3,425	
Aldrin	0	0		0	0.1	0.1	13.2	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	N/A	N/A	N/A	
Chlordane	0	0		0	0.0043	0.004	0.57	
4,4-DDT	0	0		0	0.001	0.001	0.13	
4,4-DDE	0	0		0	0.001	0.001	0.13	
4,4-DDD	0	0		0	0.001	0.001	0.13	
Dieldrin	0	0		0	0.056	0.056	7.38	
alpha-Endosulfan	0	0		0	0.056	0.056	7.38	
beta-Endosulfan	0	0		0	0.056	0.056	7.38	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	0.036	0.036	4.74	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.0038	0.004	0.5	
Heptachlor Epoxide	0	0		0	0.0038	0.004	0.5	
Toxaphene	0	0		0	0.0002	0.0002	0.026	

☑ ***THH*** CCT (min): 720 PMF: 0.401 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	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	738	
Total Arsenic	0	0		0	10	10.0	1,317	
Total Barium	0	0		0	2,400	2,400	316,135	
Total Boron	0	0		0	3,100	3,100	408,341	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	4	4.0	527	
Dissolved Iron	0	0		0	300	300	39,517	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	131,723	
Total Mercury	0	0		0	0.050	0.05	6.59	
Total Nickel	0	0		0	610	610	80,351	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	31.6	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	395	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	13,172	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	751	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	4,347	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	8,957	
Methyl Bromide	0	0		0	100	100.0	13,172	

Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	N/A	N/A	N/A	
1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A	
Tetrachloroethylene	0	0		0	N/A	N/A	N/A	
Toluene	0	0		0	57	57.0	7,508	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	13,172	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	1,317,229	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	30	30.0	3,952	
2,4-Dichlorophenol	0	0		0	10	10.0	1,317	
2,4-Dimethylphenol	0	0		0	100	100.0	13,172	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	263	
2,4-Dinitrophenol	0	0		0	10	10.0	1,317	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	526,892	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	9,221	
Anthracene	0	0		0	300	300	39,517	
Benzidine	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	26,345	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	13.2	
2-Chloronaphthalene	0	0		0	800	800	105,378	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	131,723	
1,3-Dichlorobenzene	0	0		0	7	7.0	922	
1,4-Dichlorobenzene	0	0		0	300	300	39,517	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	79,034	
Dimethyl Phthalate	0	0		0	2,000	2,000	263,446	
Di-n-Butyl Phthalate	0	0		0	20	20.0	2,634	
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A	

1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A	
Fluoranthene	0	0		0	20	20.0	2,634	
Fluorene	0	0		0	50	50.0	6,586	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	527	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	34	34.0	4,479	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	1,317	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	2,634	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	9.22	
Aldrin	0	0		0	N/A	N/A	N/A	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	4.2	4.2	553	
Chlordane	0	0		0	N/A	N/A	N/A	
4,4-DDT	0	0		0	N/A	N/A	N/A	
4,4-DDE	0	0		0	N/A	N/A	N/A	
4,4-DDD	0	0		0	N/A	N/A	N/A	
Dieldrin	0	0		0	N/A	N/A	N/A	
alpha-Endosulfan	0	0		0	20	20.0	2,634	
beta-Endosulfan	0	0		0	20	20.0	2,634	
Endosulfan Sulfate	0	0		0	20	20.0	2,634	
Endrin	0	0		0	0.03	0.03	3.95	
Endrin Aldehyde	0	0		0	1	1.0	132	
Heptachlor	0	0		0	N/A	N/A	N/A	
Heptachlor Epoxide	0	0		0	N/A	N/A	N/A	
Toxaphene	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 720 PMF: 0.598 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 Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	

Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	39.4	
Benzene	0	0		0	0.58	0.58	381	
Bromoform	0	0		0	7	7.0	4,594	
Carbon Tetrachloride	0	0		0	0.4	0.4	263	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	525	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	623	
1,2-Dichloroethane	0	0		0	9.9	9.9	6,497	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	591	
1,3-Dichloropropylene	0	0		0	0.27	0.27	177	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	13,126	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	131	
Tetrachloroethylene	0	0		0	10	10.0	6,563	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	361	
Trichloroethylene	0	0		0	0.6	0.6	394	
Vinyl Chloride	0	0		0	0.02	0.02	13.1	

2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	19.7	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	984	
Acenaphthene	0	0		0	N/A	N/A	N/A	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	0.066	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.66	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.066	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.66	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	6.56	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	19.7	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	210	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	78.8	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.066	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	32.8	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	32.8	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	32.8	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	19.7	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.053	
Hexachlorobutadiene	0	0		0	0.01	0.01	6.56	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	65.6	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.66	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	

Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.46	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	3.28	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	2,166	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	
Aldrin	0	0		0	0.0000008	8.00E-07	0.0005	
alpha-BHC	0	0		0	0.0004	0.0004	0.26	
beta-BHC	0	0		0	0.008	0.008	5.25	
gamma-BHC	0	0		0	N/A	N/A	N/A	
Chlordane	0	0		0	0.0003	0.0003	0.2	
4,4-DDT	0	0		0	0.00003	0.00003	0.02	
4,4-DDE	0	0		0	0.00002	0.00002	0.013	
4,4-DDD	0	0		0	0.0001	0.0001	0.066	
Dieldrin	0	0		0	0.000001	0.000001	0.0007	
alpha-Endosulfan	0	0		0	N/A	N/A	N/A	
beta-Endosulfan	0	0		0	N/A	N/A	N/A	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	N/A	N/A	N/A	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.000006	0.000006	0.004	
Heptachlor Epoxide	0	0		0	0.00003	0.00003	0.02	
Toxaphene	0	0		0	0.0007	0.0007	0.46	

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Zinc	15.5	24.2	1.76	2.74	4.39	mg/L	1.76	AFC	Discharge Conc ≥ 50% WQBEL (RP)

☑ ***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)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	9,551	µg/L	Discharge Conc ≤ 10% WQBEL

Total Antimony	738	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	1,317	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	267,429	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	103,151	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	32.2	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	11,606	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	207	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	1,210	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	0.21	mg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	280	µg/L	Discharge Conc ≤ 25% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	39,517	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	489,968	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	434	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	131,723	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	6.59	µg/L	Discharge Conc ≤ 10% WQBEL
Total Nickel	6,881	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	657	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	64.2	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	31.6	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	38.2	µg/L	Discharge Conc < TQL
Acrylonitrile	39.4	µg/L	Discharge Conc < TQL
Benzene	381	µg/L	Discharge Conc < TQL
Bromoform	4,594	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	263	µg/L	Discharge Conc < TQL
Chlorobenzene	13,172	µg/L	Discharge Conc < TQL
Chlorodibromomethane	525	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	229,225	µg/L	Discharge Conc < TQL
Chloroform	751	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	623	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	6,497	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	4,347	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	591	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	177	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	8,957	µg/L	Discharge Conc < TQL
Methyl Bromide	7,004	µg/L	Discharge Conc < TQL
Methyl Chloride	356,573	µg/L	Discharge Conc < TQL
Methylene Chloride	13,126	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2,2-Tetrachloroethane	131	µg/L	Discharge Conc < TQL

Tetrachloroethylene	6,563	µg/L	Discharge Conc < TQL
Toluene	7,508	µg/L	Discharge Conc ≤ 25% WQBEL
1,2-trans-Dichloroethylene	13,172	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	38,204	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	361	µg/L	Discharge Conc < TQL
Trichloroethylene	394	µg/L	Discharge Conc < TQL
Vinyl Chloride	13.1	µg/L	Discharge Conc < TQL
2-Chlorophenol	3,952	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	1,317	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	8,405	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	263	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	1,317	µg/L	Discharge Conc < TQL
2-Nitrophenol	101,878	µg/L	Discharge Conc < TQL
4-Nitrophenol	29,290	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	2,038	µg/L	Discharge Conc < TQL
Pentachlorophenol	19.7	µg/L	Discharge Conc < TQL
Phenol	526,892	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	984	µg/L	Discharge Conc < TQL
Acenaphthene	1,057	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	39,517	µg/L	Discharge Conc < TQL
Benzidine	0.066	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.66	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.066	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.66	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	6.56	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	19.7	µg/L	Discharge Conc ≤ 25% WQBEL
Bis(2-Chloroisopropyl)Ether	26,345	µg/L	Discharge Conc ≤ 25% WQBEL
Bis(2-Ethylhexyl)Phthalate	210	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	3,438	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	13.2	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	105,378	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	78.8	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.066	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	10,442	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	922	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	9,296	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	32.8	µg/L	Discharge Conc < TQL
Diethyl Phthalate	50,939	µg/L	Discharge Conc ≤ 25% WQBEL
Dimethyl Phthalate	31,837	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	1,401	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	32.8	µg/L	Discharge Conc < TQL

2,6-Dinitrotoluene	32.8	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	19.7	µg/L	Discharge Conc < TQL
Fluoranthene	2,547	µg/L	Discharge Conc < TQL
Fluorene	6,586	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.053	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	6.56	µg/L	Discharge Conc ≤ 25% WQBEL
Hexachlorocyclopentadiene	63.7	µg/L	Discharge Conc < TQL
Hexachloroethane	65.6	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.66	µg/L	Discharge Conc < TQL
Isophorone	4,479	µg/L	Discharge Conc < TQL
Naphthalene	1,783	µg/L	Discharge Conc < TQL
Nitrobenzene	1,317	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.46	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	3.28	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	2,166	µg/L	Discharge Conc < TQL
Phenanthrene	63.7	µg/L	Discharge Conc < TQL
Pyrene	2,634	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	9.22	µg/L	Discharge Conc < TQL
Aldrin	0.0005	µg/L	Discharge Conc < TQL
alpha-BHC	0.26	µg/L	Discharge Conc < TQL
beta-BHC	5.25	µg/L	Discharge Conc < TQL
gamma-BHC	12.1	µg/L	Discharge Conc < TQL
delta BHC	N/A	N/A	No WQS
Chlordane	0.2	µg/L	Discharge Conc < TQL
4,4-DDT	0.02	µg/L	Discharge Conc < TQL
4,4-DDE	0.013	µg/L	Discharge Conc < TQL
4,4-DDD	0.066	µg/L	Discharge Conc < TQL
Dieldrin	0.0007	µg/L	Discharge Conc < TQL
alpha-Endosulfan	2.8	µg/L	Discharge Conc < TQL
beta-Endosulfan	2.8	µg/L	Discharge Conc < TQL
Endosulfan Sulfate	2,634	µg/L	Discharge Conc < TQL
Endrin	1.1	µg/L	Discharge Conc < TQL
Endrin Aldehyde	132	µg/L	Discharge Conc < TQL
Heptachlor	0.004	µg/L	Discharge Conc < TQL
Heptachlor Epoxide	0.02	µg/L	Discharge Conc < TQL
Toxaphene	0.026	µg/L	Discharge Conc < TQL

ATTACHMENT D

West Elizabeth Sanitary Authority
Pre-Draft Letter Response

LSSE
Civil Engineers and Surveyors
Est. 1985

LSSE: (412) 264-4400
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LSI: (724) 287-6865
Rabell: (814) 756-4384
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Fike ● LSI ● LSSE ● Rabell ● Senate

August 29, 2025

S. O. No. 388-021

VIA DEP ONBASE UPLOAD

Pennsylvania Department of Environmental Protection
C/O Stephanie Conrad, Project Manager
Southwest Regional Office
400 Waterfront Drive
Pittsburgh, Pennsylvania 15222

Subject: **West Elizabeth Sanitary Authority**
2024 NPDES Permit Renewal Application – Response Letter
NPDES Permit No. PA0022331

Ladies and Gentlemen:

On behalf of the West Elizabeth Sanitary Authority (WESA), LSSE is transmitting herewith the NPDES Pre-Draft Survey for the renewal of NPDES Permit No. PA0022331 in response to email received on August 7, 2025.

Please note that WESA has limited data regarding Total Zinc sampling at this facility. Based on the sample results for the subject NPDES Renewal at WESA, the influent concentration of Total Zinc was found to be 0.027 mg/L at the 0.005 mg/L detection level.

WESA receives flow from two industrial customers, the Pennsylvania Industrial Chemical Corporation (PICCO) landfill and Synthomer production facility. PICCO landfill reports certain parameters to WESA on a periodic basis; there were two historic Total Zinc results included that were found non-detectable at the 0.015 mg/L detection level. WESA is in the process of pulling a grab sample from the Synthomer discharge to evaluate this waste stream.

A copy of the requested questionnaire is attached. Please note that this is based off the limited data for Total Zinc currently available. For the limited sampling data available for this constituent, the Total Zinc appears to be orders of magnitude below the WQBEL proposed in the letter received from PaDEP. .

It is requested that if Zinc is to be included in NPDES sampling requirements that a "monitor and report" period be provided to allow for WESA to confirm the limited sampling data available and that WESA will remain in compliance with the proposed WQBEL.

Pennsylvania Department of Environmental Protection
C/O Stephanie Conrad, Project Manager
Southwest Regional Office
August 29, 2025
Page 2

Should you have any questions, please contact Ken Parks directly (Ext. 251).

Sincerely,

Lawrence J. Lennon, Jr., P.E. Eric J. Fritz, P.E.

LJLJr/EJF:nwg

Attachments

cc/att: West Elizabeth Sanitary Authority (ewelty@wesapa.org; mbabjak@wesapa.org)

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Pennsylvania
Department of
Environmental Protection

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
PRE-DRAFT PERMIT SURVEY FOR TOXIC POLLUTANTS

Permittee Name: **W Elizabeth Sanitary Authority** Permit No.: **PA0022331**

Pollutant(s) identified by DEP that may require WQBELs: Total Zinc

Is the permittee aware of the source(s) of the pollutant(s)? ☐ Yes ☒ No ☐ Suspected

If Yes or Suspected, describe the known or suspected source(s) of pollutant(s) in the effluent.

WESA has two industrial dischargers. Limited sampling data for one of the dischargers showed Zinc as non-detect. Sampling data not available for second discharger, WESA is going to sample.

Has the permittee completed any studies in the past to control or treat the pollutant(s)? ☐ Yes ☒ No

If Yes, describe prior studies and results:

Does the permittee believe it can achieve the proposed WQBELs now? ☒* Yes ☐ No ☐ Uncertain

If No, describe the activities, upgrades or process changes that would be necessary to achieve the WQBELs, if known.

* - This is based on the limited sampling data for this pollutant. However, this is based on limited sampling data and this is requested to be confirmed through more routine sampling prior to WQBEL being enforceable (request period of Monitor and Report in NPDES Permit)

Estimated date by which the permittee could achieve the proposed WQBELs: 24 month * - see above ☐ Uncertain

Will the permittee conduct additional sampling for the pollutant(s) to supplement the application? ☐ Yes ☒ No

Check the appropriate box(es) below to indicate site-specific data that have been collected by the permittee in the past. If any of these data have <u>not</u> been submitted to DEP, please attach to this survey.

☐	Discharge pollutant concentration coefficient(s) of variability	Year(s) Studied:
☐	Discharge and background Total Hardness concentrations (metals)	Year(s) Studied:
☐	Background / ambient pollutant concentrations	Year(s) Studied:
☐	Chemical translator(s) (metals)	Year(s) Studied:
☐	Slope and width of receiving waters	Year(s) Studied:
☐	Velocity of receiving waters at design conditions	Year(s) Studied:
☐	Acute and/or chronic partial mix factors (mixing at design conditions)	Year(s) Studied:
☐	Volatilization rates (highly volatile organics)	Year(s) Studied:
☐	Site-specific criteria (e.g., Water Effect Ratio or related study)	Year(s) Studied:

Please submit this survey to the DEP regional office that is reviewing the permit application within 30 days of receipt.

ATTACHMENT E

WET Test Results and Summary

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.02
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: West Elizabeth STP

Permit No.: PA0022331

Test Completion Date: 12/7/2021

Replicate No.	Control	TIWC
1	1	1
2	1	0.9
3	1	0.9
4	1	0.8
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	1.000	0.900
Std Dev.	0.000	0.082
# Replicates	4	4

T-Test Result: 8.8407
Deg. of Freedom: 3
Critical T Value: 0.7649
Pass or Fail: **PASS**

Test Completion Date: 11/22/2022

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	4	4

T-Test Result:
Deg. of Freedom:
Critical T Value:
Pass or Fail: **PASS**

Test Completion Date: 12/5/2023

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	0.9	1
4	1	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.975	1.000
Std Dev.	0.050	0.000
# Replicates	4	4

T-Test Result: 26.1497
Deg. of Freedom: 3
Critical T Value: 0.7649
Pass or Fail: **PASS**

Test Completion Date: 11/12/2024

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	4	4

T-Test Result:
Deg. of Freedom:
Critical T Value:
Pass or Fail: **PASS**

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.02
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: West Elizabeth STP

Permit No.: PA0022331

Replicate No.	Test Completion Date: 12/7/2021 Control	TIWC
1	0.48	0.499
2	0.44	0.556
3	0.327	0.464
4	0.512	0.474
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.440	0.498
Std Dev.	0.081	0.041
# Replicates	4	4
T-Test Result	4.5992	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 11/22/2022 Control	TIWC
1	0.435	0.396
2	0.393	0.327
3	0.352	0.39
4	0.375	0.41
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.389	0.381
Std Dev.	0.035	0.037
# Replicates	4	4
T-Test Result	3.9422	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 12/5/2023 Control	TIWC
1	0.372	0.354
2	0.34	0.357
3	0.256	0.315
4	0.307	0.316
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.319	0.336
Std Dev.	0.050	0.023
# Replicates	4	4
T-Test Result	4.4069	
Deg. of Freedom	5	
Critical T Value	0.7267	
Pass or Fail	PASS	

Replicate No.	Test Completion Date: 11/12/2024 Control	TIWC
1	0.422	0.462
2	0.454	0.41
3	0.451	0.422
4	0.457	0.509
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.446	0.451
Std Dev.	0.016	0.045
# Replicates	4	4
T-Test Result	5.0147	
Deg. of Freedom	4	
Critical T Value	0.7407	
Pass or Fail	PASS	

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.02
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: West Elizabeth STP

Permit No.: PA0022331

Test Completion Date: 12/7/2021

Replicate No.	Control	TIWC
1	0	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	0.900	1.000
Std Dev.	0.316	0.000
# Replicates	10	10

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail: **PASS**

Test Completion Date: 11/21/2022

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail: **PASS**

Test Completion Date: 12/5/2023

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail: **PASS**

Test Completion Date: 11/11/2024

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10

T-Test Result
Deg. of Freedom
Critical T Value
Pass or Fail: **PASS**

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.02
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: West Elizabeth STP

Permit No.: PA0022331

Test Completion Date: 12/6/2021

Replicate No.	Control	TIWC
1	3	29
2	24	27
3	21	16
4	24	26
5	23	22
6	20	22
7	25	30
8	25	25
9	27	28
10	28	31
11		
12		
13		
14		
15		
Mean	22.000	25.600
Std Dev.	7.102	4.551
# Replicates	10	10

T-Test Result	4.1074
Deg. of Freedom	17
Critical T Value	0.8633
Pass or Fail	PASS

Test Completion Date: 11/21/2022

Replicate No.	Control	TIWC
1	25	28
2	31	30
3	28	32
4	29	33
5	29	29
6	31	26
7	27	28
8	26	26
9	25	30
10	27	28
11		
12		
13		
14		
15		
Mean	27.800	29.000
Std Dev.	2.201	2.309
# Replicates	10	10

T-Test Result	9.0789
Deg. of Freedom	16
Critical T Value	0.8647
Pass or Fail	PASS

Test Completion Date: 12/5/2023

Replicate No.	Control	TIWC
1	28	28
2	27	23
3	27	22
4	22	29
5	28	25
6	25	19
7	24	26
8	17	23
9	22	26
10	30	19
11		
12		
13		
14		
15		
Mean	25.000	24.000
Std Dev.	3.859	3.432
# Replicates	10	10

T-Test Result	3.6982
Deg. of Freedom	17
Critical T Value	0.8633
Pass or Fail	PASS

Test Completion Date: 11/11/2024

Replicate No.	Control	TIWC
1	26	28
2	26	27
3	30	27
4	31	25
5	25	26
6	23	29
7	29	31
8	25	27
9	23	32
10	25	25
11		
12		
13		
14		
15		
Mean	26.300	27.700
Std Dev.	2.791	2.359
# Replicates	10	10

T-Test Result	7.9958
Deg. of Freedom	17
Critical T Value	0.8633
Pass or Fail	PASS

WET Summary and Evaluation

Facility Name	West Elizabeth STP
Permit No.	PA0022331
Design Flow (MGD)	1.06
Q_{7-10} Flow (cfs)	550
PMF_a	0.058
PMF_c	0.401

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	12/7/21	11/22/22	12/5/23	11/12/24
Pimephales	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	12/7/21	11/22/22	12/5/23	11/12/24
Pimephales	Growth	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	12/7/21	11/21/22	12/5/23	11/11/24
Ceriodaphnia	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	12/6/21	11/21/22	12/5/23	11/11/24
Ceriodaphnia	Reproduction	PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type	**Chronic**
TIWC	**1** % Effluent
Dilution Series	**1, 2, 30, 60, 100** % Effluent
Permit Limit	**None**
Permit Limit Species	

Whole Effluent Toxicity (WET)

For Outfall 001, ☐ **Acute** ☒ **Chronic** WET Testing was completed:

☐ For the permit renewal application (4 tests).
☐ Quarterly throughout the permit term.
☐ Quarterly throughout the permit term and a TIE/TRE was conducted.
☒ Other: **Annually throughout the permit term**

The dilution series used for the tests was: 100%, 60%, 30%, 2%, and 1%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 2%.

Summary of Four Most Recent Test Results

(NOTE – Enter results into one table, depending on which data analysis method was used).

TST Data Analysis

(NOTE – In lieu of recording information below, the application manager may attach the DEP WET Analysis Spreadsheet).

Test Date	***Ceriodaphnia* Results (Pass/Fail)**		***Pimephales* Results (Pass/Fail)**	
	Survival	**Reproduction**	**Survival**	**Growth**
12/6/21 and 12/7/21	PASS	PASS	PASS	PASS
11/21/22 and 11/22/22	PASS	PASS	PASS	PASS
12/5/23	PASS	PASS	PASS	PASS
11/11/24 and 11/12/24	PASS	PASS	PASS	PASS

***** *A "passing" result is that in which the replicate data for the TIWC is not statistically significant from the control condition. This is exhibited when the calculated t value ("T-Test Result") is greater than the critical t value. A "failing" result is exhibited when the calculated t value ("T-Test Result") is less than the critical t value.*

Is there reasonable potential for an excursion above water quality standards based on the results of these tests? (*NOTE – In general, reasonable potential is determined anytime there is at least one test failure in the previous four tests).*

☐ **YES** ☒ **NO**

Comments:

WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

Will WET limits be established in the permit? ☐ YES ☒ NO