

Application Type Renewal
Facility Type Municipal
Major / Minor Major

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application No. PA0021504
APS ID 1093751
Authorization IC 1448958

Applicant and Facility Information

<p>Applicant Name <u>Western Butler County Authority</u></p> <p>Applicant Address <u>607 Market Street</u> <u>Zelienople, PA 16063-1830</u></p> <p>Applicant Contact <u>Autumn Crawford</u></p> <p>Applicant Phone <u>(724) 452-5500</u></p> <p>Client ID <u>78792</u></p> <p>Ch 94 Load Status <u>Not Overloaded</u></p> <p>Connection Status <u>No Limitations</u></p> <p>Date Application Received <u>June 29, 2023</u></p> <p>Date Application Accepted _____</p> <p>Purpose of Application <u>NPDES permit renewal for discharge of treated sewage.</u></p>	<p>Facility Name <u>Western Butler County Authority STP</u></p> <p>Facility Address <u>607 Market Street</u> <u>Zelienople, PA 16063-1830</u></p> <p>Facility Contact <u>Autumn Crawford</u></p> <p>Facility Phone <u>(724) 452-5500</u></p> <p>Site ID <u>264244</u></p> <p>Municipality <u>Zelienople Borough</u></p> <p>County <u>Butler</u></p> <p>EPA Waived? <u>No</u></p> <p>If No, Reason <u>Major Facility</u></p>
--	---

Summary of Review

1.0 General Discussion

This fact sheet supports the renewal of an existing NPDES permit for discharge of treated domestic wastewater from Western Butler County Authority STP. The Authority owns, operates, and maintains the wastewater treatment plant. The facility services Zelienople Borough (44% flow) Harmony Borough (12% flow), Jackson Township (38% flow) and Lancaster Township (5% flow). The treatment plant has a hydraulic/annual average design capacity of 2.2 MGD and organic design capacity of the facility is 3,706lbs/day- BOD₅. The facility discharges treated sewage to Connoquenessing Creek via Outfall 001, and storm water to UNT to Glade Run (Outfall 005) and Glade Run (Outfalls 006 & 007). The receiving streams are classified for warm water fishes, aquatic life, water supply and recreation. The existing NPDES permit was issued on December 04, 2018, with an effective date of January 1, 2019 and expiration date of December 31, 2023. The applicant submitted a timely NPDES permit renewal application to the Department and is currently operating under the terms and conditions in the existing permit.

A topographic map showing discharge locations is presented in attachment A and the treatment plant process flow diagram is presented in attachment H.

1.1 Sludge use and disposal description and location(s):

Digested sludge is dewatered with filter belt press and hauled out periodically to Seneca Landfill for disposal.

Approve	Deny	Signatures	Date
X		<i>J. Pascal Kwedza</i> J. Pascal Kwedza, P.E. / Environmental Engineer	July 16, 2025
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	July 22, 2025

Summary of Review

1.2 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.

1.3 Discharge, Receiving Waters and Water Supply Information

Outfall No.	<u>001</u>	Design Flow (MGD)	<u>2.2</u>
Latitude	<u>40° 47' 18"</u>	Longitude	<u>-80° 09' 06"</u>
Quad Name	<u>Zelienople</u>	Quad Code	<u>05033</u>
Wastewater Description: <u>Treated domestic sewage</u>			
Receiving Waters	<u>Connoquenessing Creek (WWF)</u>	Stream Code	<u>34025</u>
NHD Com ID	<u>134395522</u>	RMI	<u>20.9 mi</u>
Drainage Area	<u>325.14 mi²</u>	Yield (cfs/mi ²)	<u>0.0334</u>
Q ₇₋₁₀ Flow (cfs)	<u>10.9</u>	Q ₇₋₁₀ Basis	<u>USGS Gage Station #03106000</u>
Elevation (ft)	<u>890</u>	Slope (ft/ft)	<u>0.000</u>
Watershed No.	<u>20-C</u>	Chapter 93 Class.	<u>WWF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u>None</u>	Exceptions to Criteria	<u>None</u>
Assessment Status	<u>Impaired</u>		
Cause(s) of Impairment	<u>Organic Enrichment/Low D.O.</u>		
Source(s) of Impairment	<u>Agriculture</u>		
TMDL Status	<u></u>	Name	<u></u>
Background/Ambient Data		Data Source	
pH (SU)	<u>7.9</u>	<u>Beaver River Priority Waterbody Survey - 1991</u>	
	<u>25 (summer)</u>	<u>Default values</u>	
Temperature (°C)	<u>/ 5 (winter)</u>	<u>Permit Application</u>	
Hardness (mg/L)	<u>192</u>	<u>Default value</u>	
CBOD ₅ (mg/L)	<u>2.0</u>	<u>Default value</u>	
NH ₃ -N (mg/L)	<u>0.0</u>	<u>Default value</u>	
Nearest Downstream Public Water Supply Intake		<u>Beaver Falls Municipal Authority-Eastvale intake</u>	
PWS Waters	<u>Beaver River</u>	Flow at Intake (cfs)	<u></u>
PWS RMI	<u></u>	Distance from Outfall	<u>27 mi</u>

Changes Since Last Permit Issuance: None

1.3.1 Water Supply Intake

The nearest downstream potable water supply is the Beaver Falls Municipal Authority intake on the Beaver River, located at Eastvale, approximately 27 miles below the point of discharge. Due to the distance and dilution, no impact is expected from this discharge on the intake.

1.4 Stormwater Outfalls

Outfall No.	<u>005</u>	Design Flow (MGD)	<u>0</u>
Latitude	<u>40° 47' 18.00"</u>	Longitude	<u>-80° 9' 6.00"</u>
Wastewater Description: <u>Stormwater</u>			
Outfall No.	<u>006</u>	Design Flow (MGD)	<u>0</u>
Latitude	<u>40° 47' 18.00"</u>	Longitude	<u>-80° 8' 6.00"</u>
Wastewater Description: <u>Stormwater</u>			
Outfall No.	<u>007</u>	Design Flow (MGD)	<u>0</u>
Latitude	<u>40° 47' 18.00"</u>	Longitude	<u>-80° 8' 6.00"</u>
Wastewater Description: <u>Stormwater</u>			

1.4.1 Stormwater

The facility has 3 stormwater Outfalls 005,006 and 007. Part C condition in the existing permit for compliance with standard requirements applicable to stormwater outfalls will remain in the permit.

2.0 Treatment Facility Summary				
Treatment Facility Name: Western Butler County Authority STP				
WQM Permit No.		Issuance Date		
1099406		8/23/99		
1099406-A1		10/23/08		
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary With Ammonia And Phosphorus	Activated Sludge	Chlorine With Dechlorination	2.2
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
2.2	3706	Not Overloaded	Aerobic Digestion	Landfill

Changes Since Last Permit Issuance: None

2.1 Treatment System

Comminution, Bar Screen, Grit Chamber, Activated Sludge Treatment (3 aeration basins), (3) Final Clarifiers, (2) High Rate Sand Filtration, Flow Paced Chlorination/Dechlorination (3 tanks), (2) Aerobic sludge digesters, (1) sludge storage tank and a belt filter press. Excess flow pumping station, (2) aerated holding tank and chlorinated holding tank are for High Flow Management.

3.0 Compliance History

3.1 DMR Data for Outfall 001 (from June 1, 2024 to May 31, 2025)

Parameter	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24
Flow (MGD) Average Monthly	1.65	1.72	1.33	2.07	1.22	1.33	1.28	0.89	1.31	1.18	1.11	1.37
Flow (MGD) Weekly Average	2.49	2.56	1.7	2.6	1.78	1.52	2.21	1.05	1.07	1.52	1.67	1.55
pH (S.U.) Instantaneous Minimum	6.2	6.4	6.5	6.5	6.5	6.5	6.4	6.5	6.5	6.4	6.4	6.2
pH (S.U.) Instantaneous Maximum	8.5	7.1	6.9	6.9	7.0	7.0	7.0	6.9	6.9	7.0	6.9	6.8
DO (mg/L) Instantaneous Minimum	5.3	6.8	6.5	6.8	9.2	8.9	7.6	7.4	6.3	6.0	7.2	6.8
TRC (mg/L) Average Monthly	0.08	0.16	0.03	0.06	0.05	0.11	0.11	0.13	0.04	0.05	0.04	0.07
TRC (mg/L) Instantaneous Maximum	0.28	0.40	0.13	0.15	0.14	0.52	0.51	0.25	0.11	0.12	0.06	0.23
CBOD5 (lbs/day) Average Monthly	60	53	42	44	< 43	43	< 30	< 25	< 25	< 34	< 34	< 35
CBOD5 (lbs/day) Weekly Average	66	70	46	56	< 57	51	< 39	28	< 27	< 55	< 60	< 40
CBOD5 (mg/L) Average Monthly	5	5	4	3	< 5	< 4	< 3	< 3	< 3	< 3	< 3	< 3
CBOD5 (mg/L) Weekly Average	6	6	5	4	6	< 5	3	4	< 3	< 3	< 4	< 3
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	1182	1010	926	1099	965	978	953	926	883	1030	810	752
BOD5 (mg/L) Raw Sewage Influent Average Monthly	90	90	82	74	107	84	108	120	108	102	79	65
TSS (lbs/day) Average Monthly	< 82	< 55	< 50	< 62	< 48	< 41	< 30	< 23	< 28	< 35	< 32	< 50

NPDES Permit Fact Sheet
Western Butler County Authority STP

NPDES Permit No. PA0021504

TSS (lbs/day) Raw Sewage Influent Average Monthly	620	489	580	553	759	508	508	496	495	784	516	518
TSS (lbs/day) Weekly Average	106	66	< 62	102	72	< 38	< 39	< 27	< 34	< 55	< 60	< 96
TSS (mg/L) Average Monthly	< 6	< 5	< 5	< 4	< 5	< 3	< 4	< 3	< 3	< 3	< 3	< 4
TSS (mg/L) Raw Sewage Influent Average Monthly	47	44	52	37	82	42	57	63	61	78	49	45
TSS (mg/L) Weekly Average	9	6	6	6	7	< 4	4	< 3	< 5	< 4	< 3	< 8
Fecal Coliform (No./100 ml) Geometric Mean	69	62	336	< 55	< 59	< 31	116	6	51	51	295	121
Fecal Coliform (No./100 ml) Instantaneous Maximum	> 2420	< 24200	4611	2178	2420	1187	> 2420	185	96	366	2420	2420
Total Nitrogen (mg/L) Average Quarterly			19.4			25.6			16.3			12.6
Ammonia (lbs/day) Average Monthly	74	83	167	118	110	30	12	10	10	16	18	11
Ammonia (mg/L) Average Monthly	5.45	7.43	15	8.32	12.82	2.6	1.2	1.34	1.21	1.63	1.86	0.84
Total Phosphorus (lbs/day) Average Monthly	19	12	9	6	11	14	15	13	14	16	18	15
Total Phosphorus (mg/L) Average Monthly	1.47	1.08	0.82	0.43	1.25	1.02	1.72	1.7	1.68	1.53	1.7	1.29

3.2 Compliance History

3.2.1 Effluent Violations for Outfall 001, from: July 1, 2024 To: May 31, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	07/31/24	Geo Mean	295	No./100 ml	200	No./100 ml
Fecal Coliform	11/30/24	IMAX	> 2420	No./100 ml	10000	No./100 ml
Fecal Coliform	04/30/25	IMAX	< 24200	No./100 ml	10000	No./100 ml
Fecal Coliform	07/31/24	IMAX	2420	No./100 ml	1000	No./100 ml
Fecal Coliform	05/31/25	IMAX	> 2420	No./100 ml	1000	No./100 ml

3.2.2 Summary of DMRs:

DMRs review for the facility for the last 12 months of operation, presented on the table above in section 3.1 indicates permit limits have been met most of the time. Fecal Coliform effluent violations noted 5 times during the period reviewed. Insufficient chemical dose was the explanation was given for the violations. The violations appear operations related which should be addressed with operational changes.

3.2.3 Summary of Inspections:

The facility has been inspected a couple of times during the previous permit cycle. No effluent violations were noted.

4.0 Development of Effluent Limitations

Outfall No. 001 Design Flow (MGD) 2.2
Latitude 40° 47' 18.00" Longitude -80° 9' 6.00"
Wastewater Description: Sewage Effluent

4.1 Technology-Based Limitations

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

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

4.2 Mass-Based Limits

The federal regulation at 40 CFR 122.45(f) requires that effluent limits be expressed in terms of mass, if possible. The regulation at 40 CFR 122.45(b) requires that effluent limitations for POTWs be calculated based on the design flow of the facility. The mass-based limits are expressed in pounds per day and are calculated as follows: Mass based limit (lb/day) = concentration limit (mg/L) × design flow (mgd) × 8.34

4.3 Water Quality-Based Limitations

4.3.1 WQM 7.0 Stream Model

WQM 7.0 is a water quality model DEP utilizes to establish appropriate effluent limits for CBOD₅, NH₃-N and DO in permits. The model simulates mixing and degradation of NH₃-N in the stream and compares calculated instream NH₃-N concentrations to NH₃-N water quality criteria and also simulates mixing and consumption of D.O. in the stream due to the degradation of CBOD₅ and NH₃-N and compares calculated instream D.O. concentrations to D.O. water quality criteria and recommends effluent limits

4.3.2 Stream flows

The stream flows are based on USGS Gage Station #03106000 on Connoquenessing Creek near Zelienople, PA. The modelled yield is 0.0334-cfs per square mile. The drainage area at the discharge point taken from the previous factsheet = 325.14mi². The resulting streamflows at the point of discharge are as follows:

$$\begin{aligned}
 Q_{7-10} &= 325.14 \text{ mi}^2 \times 0.0334 \text{ cfs/mi}^2 = 10.90 \text{ cfs} \\
 Q_{30-10} / Q_{7-10} &= 1.36 \\
 Q_{1-10} / Q_{7-10} &= 0.64
 \end{aligned}$$

4.3.3 Input for WQM and TMS Models

The following data were used in the WQM and TMS models for water quality analysis of the stream:

- Discharge pH = 6.4 (DMR median)
- Discharge Temperature = 20 ° C (Default)
- Discharge Hardness = 178 mg/l

4.3.4 CBOD₅

The attached results of WQM 7.0 stream model (attachments B & C) indicate that a monthly average limit (AML) of 13.5mg/L(rounded) CBOD₅ for summer months and an AML of 22mg/L for winter months are required to protect the water quality of the stream. The recommended limits are slightly more stringent than the existing limit, but past DMRs show the facility can meet the recommended limits. Therefore, an AML of 13.5 mg/L, a weekly average limit (AWL) of 20mg/L and instantaneous maximum (IMAX) of 27mg/L is required for summer months and for winter months AML of 22mg/L AWL of 33mg/L and IMAX of 44mg/L is required. Mass limits are calculated for AMLs and AWLs following the formula listed in section 4.2 above.

4.3.5 NH₃-N

The attached results of the WQM 7.0 stream model (attachment B & C) also indicate that a summer AML of mg/l 4.0 NH₃-N and IMAX of 8 mg/L and a winter AML of 8 mg/L NH₃-N and IMAX of 16 mg/L are necessary to protect the aquatic life from toxicity effects. These limits are slightly more stringent than the existing limits, but DMR reports indicate the facility can meet the new limits. Associated mass limits are calculated following the formula listed in section 4.2 above.

4.3.6 Total Suspended Solids (TSS):

There is no water quality criteria for TSS. The existing limit of 30 mg/l AML based on the minimum level of effluent quality attainable by secondary treatment as defined in 40 CFR 133.102b(1) and 25 PA § 92a.47(a)(1) and an AWL of 45mg/L per 40CFR 133.102(b)(2) and 25 PA § 92a.47(a)(2) with their associated mass limit remain in the permit.

4.3.7 Toxics

A reasonable potential (RP) analysis was done for pollutant Groups 1 to 5 submitted with the application. All pollutants presented in the application were analyzed with DEP's Toxics Management Spreadsheet (TMS) to calculate WQBELs. WQBELs recommended by the TMS are presented in attachment D. Monitoring was recommended for Total Aluminum, Total Copper, and Total Zinc. AML of 0.025mg/L recommended for Free Cyanide and AML of 0.001mg/L recommended for Total Thallium. Monthly monitoring of Total Aluminum, Total Copper, and Total Zinc is proposed in the permit. Interim monitoring is proposed for Total Thallium and Free Cyanide with compliance schedule to comply with the new limits. DMR data for Total Lead presented in attachment E indicates it is undetected, but at a less sensitive method of detection, therefore the existing quarterly monitoring will remain in the permit. The permittee should use DEP's target quantitation limits for analysis.

The recommended limits follow the logic presented in DEPs SOP, to establish limits in the permit where the maximum reported concentration exceeds 50% of the WQBEL, or for non-conservative pollutants to establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL, or to establish monitoring requirements for conservative pollutants where the maximum reported concentration is between 10% - 50% of the WQBEL.

4.3.8 Total Residual Chlorine

The attached TRC calculation result utilizes the equations and calculations as presented in the Department's May 1, 2003 Implementation Guidance for Total Residual Chlorine (TRC) (ID No. 391-2000-015) for developing chlorine limitations. The results presented in attachment F indicates that a water quality limit of 0.14 mg/l monthly average and IMAX of 0.45 mg/l

would be needed to prevent toxicity concerns. The recommended limitation is more stringent than the existing permit limit, but facility had dichlorination system and should be able to meet the new limitation.

4.3.9 Phosphorus

The existing phosphorus limitation of 2mg/L to control phosphorus based on Stream Enrichment Risk Analysis (SERA) study on Connoquenessing Creek will remain the permit.

4.3.10 Fecal Coliform and E. Coli

The existing Fecal Coliform limit is consistent with the technology limits recommended in 92a.47(a)(4) and (a)(5) and will remain in the permit. In March of 2021, EPA approved DEP's Triennial Review of Water Quality Standards, which included a new swimming season criterion for E. coli. As a result, DEP is including monitoring requirements for E. Coli in new and renewed sewage permits above 2000gpd. Monitoring frequency is based on annual average flow as follows: 1/month for design flows ≥ 1 MGD, 1/quarter for design flows ≥ 0.05 and < 1 MGD and 1/year for design flows of 0.002 and < 0.05 MGD. Your discharge of 2.2 MGD requires 1/month monitoring as included in the permit.

4.3.11 PFAS Monitoring Strategy:

PFAS, also known as 'forever chemicals,' are prevalent in the environment. They are a category of chemicals used since the 1940s to repel oil and water and resist heat, which makes them useful in everyday products such as nonstick cookware, stain resistant clothing, and firefighting foam. Exposure to certain PFAS over a long period of time can cause cancer, adverse health impacts and other illnesses. EPA categorized the following activities it believes are the main sources of PFAS: organic chemicals, plastics & synthetic fibers; metal finishing; electroplating; electric and electronic components; landfills; pulp, paper & paperboard; leather tanning & finishing; plastics molding & forming; textile mills; paint formulating, and airports. DEP is implementing PFAS monitoring program to investigate and address PFAS discharges and pollution. Under the plan, all industrial and major sewage permit applicants are required to test for 4 of the PFAS parameters, PFOA, PFOS, HFPO-DA and PFBS during permit applications. If the results of the tests are non-detect using screening level at or below DEP's Target QLs, an annual monitoring will be required and if there are detections or non-detects above the TQLs a quarterly monitoring will be required in the permit. Applications received without the tests and applications already received will be drafted with quarterly monitoring if an industrial facility falls under EPA categories or if a major sewage facility receives flow from one of EPA categories. If an industrial facility does not fall under or a major sewage facility does not receive flow any EPA categories, annual monitoring will be required in the draft permit. This sewage facility does not receive any flow from any of EPA categories therefore, annual monitoring of PFOA, PFOS, HFPO-DA, and PFBS is required in the permit. The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 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 shall enter a No Discharge Indicator (NODI) Code of "GG" on DMRs.

4.3.12 Best Professional Judgment (BPJ) Limitations

The dissolved oxygen limit of a minimum of 4.0 mg/L and total nitrogen monitoring in the existing permit in accordance with the Department's SOP entitled "Establishing Effluent Limits for Individual Sewage Permits." will remain for the current permit cycle.

4.3.13 Influent BOD and TSS Monitoring

The permit will include influent BOD5 and TSS monitoring at the same frequency as is done for effluent in order to implement Chapter 94.12 and assess percent removal requirements.

4.3.14 Industrial Users

The wastewater treatment plant receives wastewater from the following industries: Billco Manufacturing, Berry Metal Company, Universal Scaffolding, and LabChem. None of the industries are listed as significant industrial users.

4.3.15 Pretreatment Requirements

The design annual average flow of the treatment plant is 2.2 MGD and the facility receives flow from no significant Industrial users. There is no approved pretreatment program for the facility, however, the permit contains standard conditions requiring the permittee to monitor and control industrial users if applicable.

5.0 Other Considerations and Requirements

5.1 The permit contains the following special conditions:

1. Stormwater Prohibition. 2. Approval Contingencies, 3. Proper Waste/solids Management, 4. Restriction on receipt of hauled in waste under certain conditions. 5, WET testing and reporting requirement and 5. Storm water monitoring requirement.

5.2 Anti-Degradation (93.4)

The effluent limits for this discharge have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High-Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

5.3 Class A Wild Trout Fisheries

No Class A Wild Trout Fisheries are impacted by this discharge.

5.4 303d Listed Streams

The discharge is located on a stream segment that is designated on the 303(d) list as impaired, and the impairment is due to organic enrichment/low DO from agricultural activities in the watershed. TMDL is pending, no further action is warranted at this time.

6.0 Whole Effluent Toxicity (WET)

6.1 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:

The dilution series used for the tests was: 100%, 59%, 18%, 9%, and 5%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 18%.

6.2 Summary of Four Most Recent Test Results

6.2.1 TST Data Analysis

WET Summary and Evaluation					
Facility Name	Western Butler County Authority				
Permit No.	PA0021504				
Design Flow (MGD)	2.2				
Q ₇₋₁₀ Flow (cfs)	10.9				
PMF _a	0.276				
PMF _c	1				

Species	Endpoint	Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
		7/2/19	6/30/20	6/28/21	7/4/22
Ceriodaphnia	Reproduction	PASS	PASS	PASS	PASS

Species	Endpoint	Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
		7/2/19	6/20/20	6/28/21	7/4/22
Ceriodaphnia	Survival	PASS	PASS	PASS	PASS

Species	Endpoint	Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
		7/2/19	6/30/20	6/29/21	7/5/22
Pimephales	Survival	PASS	PASS	PASS	PASS

Species	Endpoint	Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
		7/2/19	6/30/20	6/29/21	7/2/22
Pimephales	Growth	PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type Chronic

TIWC 24 % Effluent

Dilution Series 6, 12, 24, 62, 100 % Effluent

Permit Limit None

Permit Limit Species

See attachment G for additional results of DEP WET Analysis Spreadsheet

6.3 Evaluation of Test Type, IWC and Dilution Series for Renewed Permit

Acute Partial Mix Factor (PMFa): **0.276** Chronic Partial Mix Factor (PMFc): **1**

6.3.1. Determine IWC – Acute (IWCa):

$$(Q_d \times 1.547) / ((Q_{7-10} \times PMFa) + (Q_d \times 1.547))$$

$$[(2.2 \text{ MGD} \times 1.547) / ((10.9 \text{ cfs} \times 0.276) + (2.2 \text{ MGD} \times 1.547))] \times 100 = \mathbf{53\%}$$

Is IWCa < 1%? ☐ YES ☒ NO (YES - Acute Tests Required OR NO - Chronic Tests Required)

If the discharge is to the tidal portion of the Delaware River, indicate how the type of test was determined:

Type of Test for Permit Renewal: Chronic

6.3.2a. Determine Target IWCa (If Acute Tests Required)

$$TIWCa = IWCa / 0.3 = \quad \%$$

6.3.2b. Determine Target IWCc (If Chronic Tests Required)

$$(Q_d \times 1.547) / (Q_{7-10} \times PMFc) + (Q_d \times 1.547)$$

$$[(2.2 \text{ MGD} \times 1.547) / ((10.9 \text{ cfs} \times 1) + (2.2 \text{ MGD} \times 1.547))] \times 100 = \mathbf{24\%}$$

6.3.3. Determine Dilution Series

(NOTE – check Attachment C of WET SOP for dilution series based on TIWCa or TIWCc, whichever applies).

Dilution Series = 100%, 62%, 24%, 12%, and 6%.

6.4 WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

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

If WET limits will be established, identify the species and the limit values for the permit (TU).

N/A

If WET limits will not be established, but reasonable potential was determined, indicate the rationale for not establishing WET limits:

N/A

7.0 Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Start of Final Period.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.14	XXX	0.45	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Mar 31	404	606	XXX	22.0	33.0	44	2/week	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	248	367	XXX	13.5	20.0	27	2/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Suspended Solids	551	826	XXX	30.0	45.0	60	2/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	XXX	XXX	Report	XXX	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	XXX	XXX	Report	1/month	Grab

Outfall001 , Continued (from Permit Effective Date through Start of Final Period)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Nitrogen	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Calculation
Ammonia-Nitrogen Nov 1 - Apr 30	147	XXX	XXX	8.0	XXX	16	2/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	73	XXX	XXX	4.0	XXX	8	2/week	24-Hr Composite
Total Phosphorus	37	XXX	XXX	2.0	XXX	4	2/week	24-Hr Composite
Aluminum, Total (ug/L)	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	2/month	24-Hr Composite
Copper, Total (ug/L)	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	2/month	24-Hr Composite
Cyanide, Free (ug/L)	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	2/month	24-Hr Composite
Lead, Total	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Thallium, Total (ug/L)	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	2/month	24-Hr Composite
Zinc, Total (ug/L)	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	2/month	24-Hr Composite
PFOA (ng/L)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
PFOS (ng/L)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
PFBS (ng/L)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
HFPO-DA (ng/L)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab

Compliance Sampling Location: At outfall 001

7.1 Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Start of Final Period 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	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.14	XXX	0.45	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Mar 31	404	606	XXX	22.0	33.0	44	2/week	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	248	367	XXX	13.5	20.0	27	2/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Suspended Solids	551	826	XXX	30.0	45.0	60	2/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	XXX	XXX	Report	XXX	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

Outfall001 , Continued (from Start of Final Period through Permit Expiration Date)

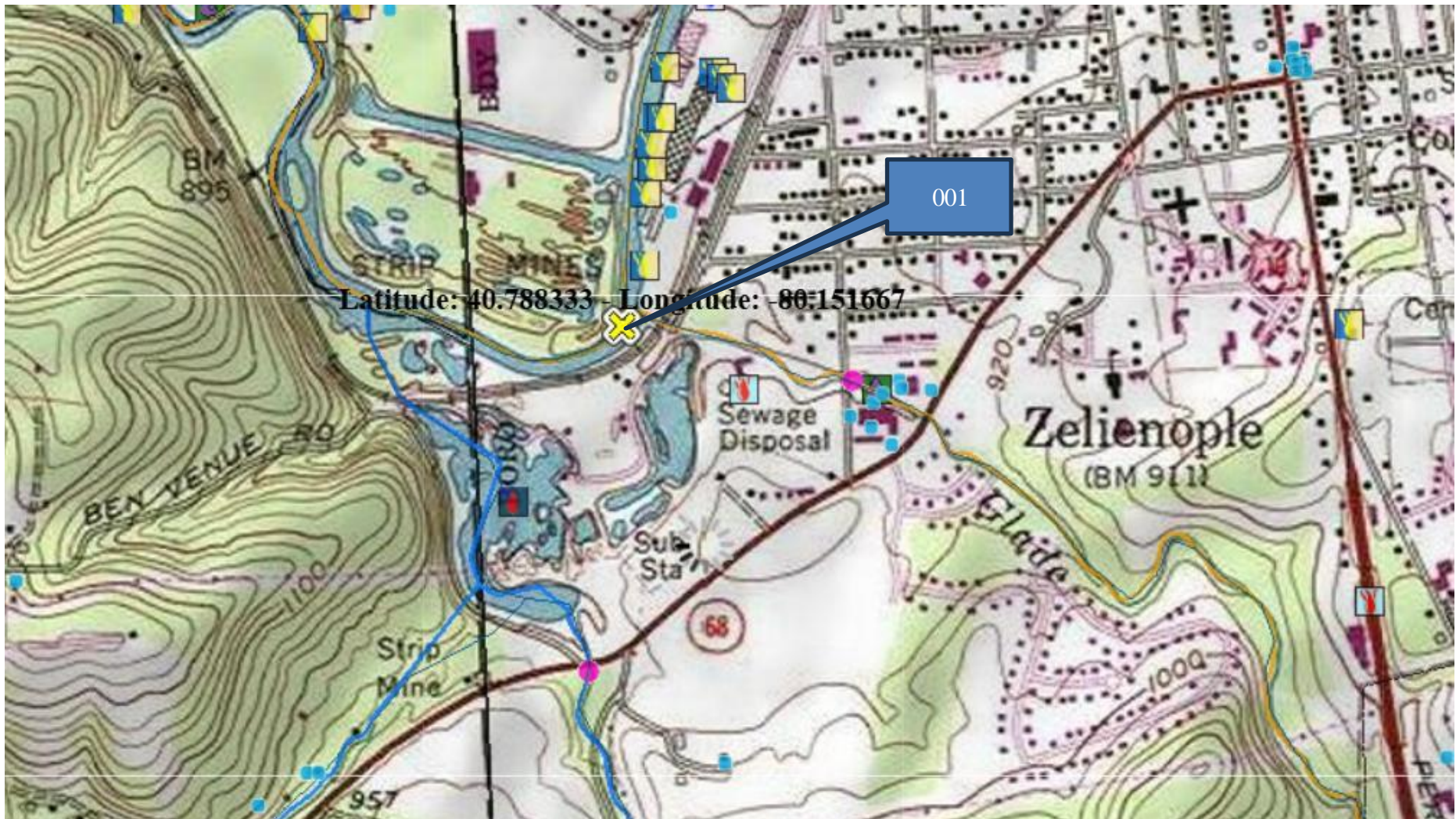
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
Total Nitrogen	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Calculation
Ammonia-Nitrogen Nov 1 - Apr 30	147	XXX	XXX	8.0	XXX	16	2/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	73	XXX	XXX	4.0	XXX	8	2/week	24-Hr Composite
Total Phosphorus	37	XXX	XXX	2.0	XXX	4	2/week	24-Hr Composite
Aluminum, Total (ug/L)	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	2/month	24-Hr Composite
Copper, Total (ug/L)	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	2/month	24-Hr Composite
Cyanide, Free (ug/L)	0.31	0.48 Daily Max	XXX	16.5	26.0 Daily Max	42	2/month	24-Hr Composite
Lead, Total	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Thallium, Total (ug/L)	0.018	0.029 Daily Max	XXX	1.0	1.55 Daily Max	2.5	2/month	24-Hr Composite
Zinc, Total (ug/L)	Report	Report Daily Max	XXX	Report	Report Daily Max	XXX	2/month	24-Hr Composite
PFOA (ng/L)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
PFOS (ng/L)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
PFBS (ng/L)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
HFPO-DA (ng/L)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab

Compliance Sampling Location: At outfall 001

8.0 Tools and References Used to Develop Permit	
<input checked="" type="checkbox"/>	WQM for Windows Model (see Attachment B & C)
<input checked="" type="checkbox"/>	Toxics Management Spreadsheet (see Attachment D)
<input checked="" type="checkbox"/>	TRC Model Spreadsheet (see Attachment F)
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment)
<input checked="" type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input checked="" type="checkbox"/>	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
<input type="checkbox"/>	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
<input type="checkbox"/>	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
<input type="checkbox"/>	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
<input type="checkbox"/>	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
<input type="checkbox"/>	Pennsylvania CSO Policy, 386-2000-002, 9/08.
<input type="checkbox"/>	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
<input type="checkbox"/>	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
<input checked="" type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
<input type="checkbox"/>	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
<input checked="" type="checkbox"/>	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
<input type="checkbox"/>	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
<input type="checkbox"/>	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
<input type="checkbox"/>	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
<input checked="" type="checkbox"/>	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
<input type="checkbox"/>	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
<input checked="" type="checkbox"/>	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
<input type="checkbox"/>	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
<input checked="" type="checkbox"/>	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
<input type="checkbox"/>	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
<input type="checkbox"/>	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
<input type="checkbox"/>	Design Stream Flows, 386-2000-003, 9/98.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
<input type="checkbox"/>	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
<input type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input checked="" type="checkbox"/>	SOP: Establishing effluent limitation for individual sewage permits.
<input type="checkbox"/>	Other:

Attachments

A. Topographical



B. WQM Model Summer

Summer
Results

WQM 7.0 Effluent Limits

<u>SWP Basin</u>		<u>Stream Code</u>	<u>Stream Name</u>				
20C		34025	CONNOQUENESSING CREEK				
RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
20.900	Western Butler	PA0021504	2.200	CBOD5	13.55		
				NH3-N	4.07	8.14	
				Dissolved Oxygen			4

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

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
20C	34025	CONNOQUENESSING CREEK	20.900	890.00	325.14	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary Temp	pH	Stream Temp	pH
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)		(°C)	
Q7-10	0.033	0.00	10.90	0.000	0.000	0.0	0.00	0.00	25.00	7.90	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
Western Butler	PA0021504	2.2000	2.2000	2.2000	0.000	20.00	6.40

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

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

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
20C	34025	CONNOQUENESSING CREEK	11.820	862.00	412.20	0.00000	0.00	<input checked="" type="checkbox"/>

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)	pH	Stream Temp (°C)	pH
Q7-10	0.033	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.90	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	0.00	7.00

Parameter Data

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

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

WQM 7.0 Hydrodynamic Outputs

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>								
20C		34025		CONNOQUENESSING CREEK								
RMI	Stream Flow	PWS With	Net Stream Flow	Disc Analysis Flow	Reach Slope	Depth	Width	W/D Ratio	Velocity	Reach Trav Time	Analysis Temp	Analysis pH
	(cfs)	(cfs)	(cfs)	(cfs)	(ft/ft)	(ft)	(ft)		(fps)	(days)	(°C)	
Q7-10 Flow												
20.900	10.90	0.00	10.90	3.4034	0.00058	.908	72.14	79.49	0.22	2.540	23.81	6.98
Q1-10 Flow												
20.900	6.98	0.00	6.98	3.4034	0.00058	NA	NA	NA	0.18	3.039	23.36	6.86
Q30-10 Flow												
20.900	14.82	0.00	14.82	3.4034	0.00058	NA	NA	NA	0.25	2.217	24.07	7.07

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input checked="" type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	5		

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

WQM 7.0 Wasteload Allocations

<u>SWP Basin</u>		<u>Stream Code</u>	<u>Stream Name</u>						
20C		34025	CONNOQUENESSING CREEK						
NH3-N Acute Allocations									
RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction		
20.900	Western Butler	14.2	43.31	14.2	43.31	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		
20.900	Western Butler	1.41	7.55	1.41	7.55	0	0		
Dissolved Oxygen Allocations									
RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
20.90	Western Butler	13.55	13.55	4.07	4.07	4	4	0	0

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

WQM 7.0 D.O.Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>			
20C	34025	CONNOQUENESSING CREEK			
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>		<u>Analysis pH</u>	
20.900	2.200	23.810		6.982	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>		<u>Reach Velocity (fps)</u>	
72.142	0.908	79.495		0.218	
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>		<u>Reach Kn (1/days)</u>	
4.75	0.286	0.97		0.939	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>		<u>Reach DO Goal (mg/L)</u>	
7.233	0.953	Tsivoglou		5	
<u>Reach Travel Time (days)</u>	<u>Subreach Results</u>				
2.540	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>	<u>D.O. (mg/L)</u>	
	0.254	4.35	0.76	6.16	
	0.508	3.99	0.60	5.54	
	0.762	3.66	0.47	5.24	
	1.016	3.36	0.37	5.14	
	1.270	3.08	0.29	5.18	
	1.524	2.83	0.23	5.32	
	1.778	2.59	0.18	5.50	
	2.032	2.38	0.14	5.72	
	2.286	2.18	0.11	5.94	
	2.540	2.00	0.09	6.16	

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

C. WQM Model Winter

Winter
Results

WQM 7.0 Effluent Limits

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>					
20C	34025	CONNOQUENESSING CREEK					
RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
20.900	Western Butler	PA0021504	2.200	CBOD5	22.09		
				NH3-N	8.02	16.04	
				Dissolved Oxygen			4

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

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
20C	34025	CONNOQUENESSING CREEK	20.900	890.00	325.14	0.00000	0.00	<input checked="" type="checkbox"/>

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)	pH	Stream Temp (°C)	pH
Q7-10	0.033	0.00	10.90	0.000	0.000	0.0	0.00	0.00	5.00	7.90	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
Western Butler	PA0021504	2.2000	2.2000	2.2000	0.000	20.00	6.40

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

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

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
20C	34025	CONNOQUENESSING CREEK	11.820	862.00	412.20	0.00000	0.00	<input checked="" type="checkbox"/>

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)	pH	Stream Temp (°C)	pH
Q7-10	0.033	0.00	0.00	0.000	0.000	0.0	0.00	0.00	5.00	7.90	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	0.00	7.00

Parameter Data

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

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

WQM 7.0 Hydrodynamic Outputs

SWP Basin		Stream Code		Stream Name								
20C		34025		CONNOQUENESSING CREEK								
RMI	Stream Flow	PWS With	Net Stream Flow	Disc Analysis Flow	Reach Slope	Depth	Width	W/D Ratio	Velocity	Reach Trav Time	Analysis Temp	Analysis pH
	(cfs)	(cfs)	(cfs)	(cfs)	(ft/ft)	(ft)	(ft)		(fps)	(days)	(°C)	
Q7-10 Flow												
20.900	10.90	0.00	10.90	3.4034	0.00058	.908	72.14	79.49	0.22	2.540	8.57	6.98
Q1-10 Flow												
20.900	6.98	0.00	6.98	3.4034	0.00058	NA	NA	NA	0.18	3.039	9.92	6.86
Q30-10 Flow												
20.900	14.82	0.00	14.82	3.4034	0.00058	NA	NA	NA	0.25	2.217	7.80	7.07

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input checked="" type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	5		

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

WQM 7.0 Wasteload Allocations

SWP Basin		Stream Code		Stream Name					
20C		34025		CONNOQUENESSING CREEK					
NH3-N Acute Allocations									
RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction		
20.900	Western Butler	26.99	50	26.99	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		
20.900	Western Butler	4.02	21.54	4.02	21.54	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)		
20.90	Western Butler	22.09	22.09	8.02	8.02	4	4	0	0

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

WQM 7.0 D.O.Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>			
20C	34025	CONNOQUESSING CREEK			
<hr/>					
RMI	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>		
20.900	2.200	8.569	6.982		
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>		
72.142	0.908	79.495	0.218		
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>	<u>Reach Kn (1/days)</u>		
6.78	0.737	1.91	0.290		
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>		
7.233	0.664	Tsvoglou	5		
<u>Reach Travel Time (days)</u>	<u>Subreach Results</u>				
2.540	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>	<u>D.O. (mg/L)</u>	
	0.254	6.07	1.77	6.37	
	0.508	5.43	1.65	5.78	
	0.762	4.86	1.53	5.42	
	1.016	4.35	1.42	5.22	
	1.270	3.90	1.32	5.17	
	1.524	3.49	1.23	5.22	
	1.778	3.12	1.14	5.34	
	2.032	2.80	1.06	5.53	
	2.286	2.50	0.98	5.76	
	2.540	2.24	0.91	6.02	

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

D. TMS Model Results



Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions Discharge Stream

Facility: Western Butler County Authority NPDES Permit No.: PA0021504 Outfall No.: 001
Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: 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
2.2	178	6.4						

				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		558										
	Chloride (PWS)	mg/L		227										
	Bromide	mg/L	<	0.1										
	Sulfate (PWS)	mg/L		79.8										
	Fluoride (PWS)	mg/L	<											
Group 2	Total Aluminum	µg/L		120										
	Total Antimony	µg/L	<	2										
	Total Arsenic	µg/L	<	2										
	Total Barium	µg/L		35.7										
	Total Beryllium	µg/L	<	1										
	Total Boron	µg/L	<	190										
	Total Cadmium	µg/L	<	0.2										
	Total Chromium (III)	µg/L	<	2										
	Hexavalent Chromium	µg/L	<	0.02										
	Total Cobalt	µg/L	<	1										
	Total Copper	µg/L		10										
	Free Cyanide	µg/L		10										
	Total Cyanide	µg/L		4.4										
	Dissolved Iron	µg/L	<	40										
	Total Iron	µg/L		66										
	Total Lead	µg/L		1										
	Total Manganese	µg/L		332										
	Total Mercury	µg/L	<	0.2										
	Total Nickel	µg/L	<	5.26										
	Total Phenols (Phenolics) (PWS)	µg/L	<	5										
	Total Selenium	µg/L	<	5										
	Total Silver	µg/L	<	0.4										
	Total Thallium	µg/L		3										
	Total Zinc	µg/L		54										
	Total Molybdenum	µg/L	<	2										
	Acrolein	µg/L	<	1										
	Acrylamide	µg/L												
	Acrylonitrile	µg/L	<	0.5										
	Benzene	µg/L	<	0.5										
	Bromoform	µg/L	<	0.5										

Discharge Information

7/9/2025

Page 1

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

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	<	0.5																
	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	<	0.2																
	Ethylbenzene	µg/L	<	0.5																
	Methyl Bromide	µg/L	<	0.5																
	Methyl Chloride	µg/L	<	0.5																
	Methylene Chloride	µg/L	<	0.5																
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5																
	Tetrachloroethylene	µg/L	<	0.5																
	Toluene	µg/L	<	0.5																
	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	<	0.21																
	2,4-Dichlorophenol	µg/L	<	0.21																
	2,4-Dimethylphenol	µg/L	<	0.21																
	4,6-Dinitro-o-Cresol	µg/L	<	1.04																
	2,4-Dinitrophenol	µg/L	<	1.04																
	2-Nitrophenol	µg/L	<	0.52																
	4-Nitrophenol	µg/L	<	0.52																
	p-Chloro-m-Cresol	µg/L	<	0.1																
	Pentachlorophenol	µg/L	<	0.52																
	Phenol	µg/L	<	0.2																
	2,4,6-Trichlorophenol	µg/L	<	0.21																
Group 5	Acenaphthene	µg/L	<	0.1																
	Acenaphthylene	µg/L	<	0.1																
	Anthracene	µg/L	<	0.1																
	Benzo(a)Anthracene	µg/L	<	0.1																
	Benzo(a)Pyrene	µg/L	<	1																
	3,4-Benzofluoranthene	µg/L	<	0.1																
	Benzo(ghi)Perylene	µg/L	<	0.1																
	Benzo(k)Fluoranthene	µg/L	<	0.1																
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.1																
	Bis(2-Chloroethyl)Ether	µg/L	<	0.1																
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.1																
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	1.1																
	4-Bromophenyl Phenyl Ether	µg/L	<	0.1																
	Butyl Benzyl Phthalate	µg/L	<	1.04																
	2-Chloronaphthalene	µg/L	<	0.1																
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.1																
	Chrysene	µg/L	<	0.1																
	Dibenzo(a,h)Anthracene	µg/L	<	0.1																
	1,2-Dichlorobenzene	µg/L	<	0.1																
	1,3-Dichlorobenzene	µg/L	<	0.1																
	1,4-Dichlorobenzene	µg/L	<	0.1																
	3,3-Dichlorobenzidine	µg/L	<	0.52																
	Diethyl Phthalate	µg/L	<	1.04																
	Dimethyl Phthalate	µg/L	<	1.04																
	Di-n-Butyl Phthalate	µg/L	<	1.04																
	2,4-Dinitrotoluene	µg/L	<	0.21																

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

Group 6	2,6-Dinitrotoluene	µg/L	<	0.21																			
	Di-n-Octyl Phthalate	µg/L	<	1.04																			
	1,2-Diphenylhydrazine	µg/L	<	0.1																			
	Fluoranthene	µg/L	<	0.1																			
	Fluorene	µg/L	<	0.1																			
	Hexachlorobenzene	µg/L	<	0.1																			
	Hexachlorobutadiene	µg/L	<	0.1																			
	Hexachlorocyclopentadiene	µg/L	<	0.52																			
	Hexachloroethane	µg/L	<	0.1																			
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.1																			
	Isophorone	µg/L		0.21																			
	Naphthalene	µg/L	<	0.1																			
	Nitrobenzene	µg/L	<	0.1																			
	n-Nitrosodimethylamine	µg/L	<	0.1																			
	n-Nitrosodi-n-Propylamine	µg/L	<	0.2																			
	n-Nitrosodiphenylamine	µg/L	<	0.1																			
	Phenanthrene	µg/L	<	0.1																			
	Pyrene	µg/L	<	0.1																			
	1,2,4-Trichlorobenzene	µg/L	<	0.1																			
Group 7	Aldrin	µg/L	<																				
	alpha-BHC	µg/L	<																				
	beta-BHC	µg/L	<																				
	gamma-BHC	µg/L	<																				
	delta BHC	µg/L	<																				
	Chlordane	µg/L	<																				
	4,4-DDT	µg/L	<																				
	4,4-DDE	µg/L	<																				
	4,4-DDD	µg/L	<																				
	Dieldrin	µg/L	<																				
	alpha-Endosulfan	µg/L	<																				
	beta-Endosulfan	µg/L	<																				
	Endosulfan Sulfate	µg/L	<																				
	Endrin	µg/L	<																				
	Endrin Aldehyde	µg/L	<																				
	Heptachlor	µg/L	<																				
	Heptachlor Epoxide	µg/L	<																				
	PCB-1016	µg/L	<																				
	PCB-1221	µg/L	<																				
	PCB-1232	µg/L	<																				
	PCB-1242	µg/L	<																				
	PCB-1248	µg/L	<																				
	PCB-1254	µg/L	<																				
	PCB-1260	µg/L	<																				
	PCBs, Total	µg/L	<																				
	Toxaphene	µg/L	<																				
	2,3,7,8-TCDD	ng/L	<																				
Group 8	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																					
Group 9	Acenaphthene																						

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP



Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Western Butler County Authority, NPDES Permit No. PA0021504, Outfall 001

Instructions Discharge **Stream**

Receiving Surface Water Name: West Br Tunungwant Creek

No. Reaches to Model: 1

- ☐ Statewide Criteria
☒ Great Lakes Criteria
☐ ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi ²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	034025	20.9	890	325.14			Yes
End of Reach 1	034025	11.82	862	412.2			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi ²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	20.9	0.0334										192	7.9		
End of Reach 1	11.82	0.0334													

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	20.9														
End of Reach 1	11.82														

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP



Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Western Butler County Authority, NPDES Permit No. PA0021504, Outfall 001

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

☐ Hydrodynamics

☒ Wasteload Allocations

☒ AFC

CCT (min): 15

PMF: 0.276

Analysis Hardness (mg/l): 184.55

Analysis pH: 6.66

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	1,409	
Total Antimony	0	0		0	1,100	1,100	2,067	
Total Arsenic	0	0		0	340	340	639	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	39,462	
Total Boron	0	0		0	8,100	8,100	15,221	
Total Cadmium	0	0		0	3.652	3.98	7.47	Chem Translator of 0.918 applied
Total Chromium (III)	0	0		0	941.112	2,978	5,596	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	15,730	16.0	30.1	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	179	
Total Copper	0	0		0	23,939	24.9	46.9	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	41.3	
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	124,984	178	335	Chem Translator of 0.702 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1,400	1.65	3.1	Chem Translator of 0.85 applied
Total Nickel	0	0		0	786,315	788	1,481	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	9,229	10.9	20.4	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	122	
Total Zinc	0	0		0	196,940	201	378	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	5.64	

Model Results

7/9/2025

Page 5

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

Acrylonitrile	0	0		0	650	650	1,221	
Benzene	0	0		0	640	640	1,203	
Bromoform	0	0		0	1,800	1,800	3,382	
Carbon Tetrachloride	0	0		0	2,800	2,800	5,262	
Chlorobenzene	0	0		0	1,200	1,200	2,255	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	33,824	
Chloroform	0	0		0	1,900	1,900	3,570	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	28,187	
1,1-Dichloroethylene	0	0		0	7,500	7,500	14,093	
1,2-Dichloropropane	0	0		0	11,000	11,000	20,670	
1,3-Dichloropropylene	0	0		0	310	310	583	
Ethylbenzene	0	0		0	2,900	2,900	5,449	
Methyl Bromide	0	0		0	550	550	1,034	
Methyl Chloride	0	0		0	28,000	28,000	52,615	
Methylene Chloride	0	0		0	12,000	12,000	22,549	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	1,879	
Tetrachloroethylene	0	0		0	700	700	1,315	
Toluene	0	0		0	1,700	1,700	3,195	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	12,778	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	5,637	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	6,389	
Trichloroethylene	0	0		0	2,300	2,300	4,322	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	1,052	
2,4-Dichlorophenol	0	0		0	1,700	1,700	3,195	
2,4-Dimethylphenol	0	0		0	660	660	1,240	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	150	
2,4-Dinitrophenol	0	0		0	660	660	1,240	
2-Nitrophenol	0	0		0	8,000	8,000	15,033	
4-Nitrophenol	0	0		0	2,300	2,300	4,322	
p-Chloro-m-Cresol	0	0		0	160	160	301	
Pentachlorophenol	0	0		0	6.211	6.21	11.7	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	864	
Acenaphthene	0	0		0	83	83.0	156	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	564	
Benzo(a)Anthracene	0	0		0	0.5	0.5	0.94	
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	56,374	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	8,456	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	507	
Butyl Benzyl Phthalate	0	0		0	140	140	263	

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

2-Chloronaphthalene	0	0		0	N/A	N/A	N/A
Chrysene	0	0		0	N/A	N/A	N/A
Dibenzo(a,h)Anthracene	0	0		0	N/A	N/A	N/A
1,2-Dichlorobenzene	0	0		0	820	820	1,541
1,3-Dichlorobenzene	0	0		0	350	350	658
1,4-Dichlorobenzene	0	0		0	730	730	1,372
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A
Diethyl Phthalate	0	0		0	4,000	4,000	7,516
Dimethyl Phthalate	0	0		0	2,500	2,500	4,698
Di-n-Butyl Phthalate	0	0		0	110	110	207
2,4-Dinitrotoluene	0	0		0	1,600	1,600	3,007
2,6-Dinitrotoluene	0	0		0	990	990	1,860
1,2-Diphenylhydrazine	0	0		0	15	15.0	28.2
Fluoranthene	0	0		0	200	200	376
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	18.8
Hexachlorocyclopentadiene	0	0		0	5	5.0	9.4
Hexachloroethane	0	0		0	60	60.0	113
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A
Isophorone	0	0		0	10,000	10,000	18,791
Naphthalene	0	0		0	140	140	263
Nitrobenzene	0	0		0	4,000	4,000	7,516
n-Nitrosodimethylamine	0	0		0	17,000	17,000	31,945
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A
n-Nitrosodiphenylamine	0	0		0	300	300	564
Phenanthrene	0	0		0	5	5.0	9.4
Pyrene	0	0		0	N/A	N/A	N/A
1,2,4-Trichlorobenzene	0	0		0	130	130	244

☒ CFC

CCT (min): #####

PMF: 1

Analysis Hardness (mg/l): 188.66

Analysis pH: 6.98

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	922	
Total Arsenic	0	0		0	148	148	620	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	17,182	
Total Boron	0	0		0	1,600	1,600	6,705	
Total Cadmium	0	0		0	0.382	0.43	1.82	Chem Translator of 0.882 applied
Total Chromium (III)	0	0		0	124.648	145	607	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	43.6	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	79.6	

Model Results

7/9/2025

Page 7

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

Total Copper	0	0		0	15.405	16.0	67.3	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	21.8	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	6,286	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	4.986	7.14	29.9	Chem Translator of 0.699 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	3.8	Chem Translator of 0.85 applied
Total Nickel	0	0		0	88.978	89.2	374	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	20.9	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	54.5	
Total Zinc	0	0		0	202.291	205	860	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	12.6	
Acrylonitrile	0	0		0	130	130	545	
Benzene	0	0		0	130	130	545	
Bromoform	0	0		0	370	370	1,551	
Carbon Tetrachloride	0	0		0	560	560	2,347	
Chlorobenzene	0	0		0	240	240	1,006	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	14,668	
Chloroform	0	0		0	390	390	1,634	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	12,992	
1,1-Dichloroethylene	0	0		0	1,500	1,500	6,286	
1,2-Dichloropropane	0	0		0	2,200	2,200	9,220	
1,3-Dichloropropylene	0	0		0	61	61.0	256	
Ethylbenzene	0	0		0	580	580	2,431	
Methyl Bromide	0	0		0	110	110	461	
Methyl Chloride	0	0		0	5,500	5,500	23,050	
Methylene Chloride	0	0		0	2,400	2,400	10,058	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	880	
Tetrachloroethylene	0	0		0	140	140	587	
Toluene	0	0		0	330	330	1,383	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	5,867	
1,1,1-Trichloroethane	0	0		0	610	610	2,556	
1,1,2-Trichloroethane	0	0		0	680	680	2,850	
Trichloroethylene	0	0		0	450	450	1,886	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	461	
2,4-Dichlorophenol	0	0		0	340	340	1,425	
2,4-Dimethylphenol	0	0		0	130	130	545	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	67.1	
2,4-Dinitrophenol	0	0		0	130	130	545	
2-Nitrophenol	0	0		0	1,600	1,600	6,705	

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

4-Nitrophenol	0	0		0	470	470	1,970
p-Chloro-m-Cresol	0	0		0	500	500	2,095
Pentachlorophenol	0	0		0	4,765	4.77	20.0
Phenol	0	0		0	N/A	N/A	N/A
2,4,6-Trichlorophenol	0	0		0	91	91.0	381
Acenaphthene	0	0		0	17	17.0	71.2
Anthracene	0	0		0	N/A	N/A	N/A
Benzidine	0	0		0	59	59.0	247
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.42
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	25,145
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	3,814
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	226
Butyl Benzyl Phthalate	0	0		0	35	35.0	147
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A
Chrysene	0	0		0	N/A	N/A	N/A
Dibenzo(a,h)Anthracene	0	0		0	N/A	N/A	N/A
1,2-Dichlorobenzene	0	0		0	160	160	671
1,3-Dichlorobenzene	0	0		0	69	69.0	289
1,4-Dichlorobenzene	0	0		0	150	150	629
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A
Diethyl Phthalate	0	0		0	800	800	3,353
Dimethyl Phthalate	0	0		0	500	500	2,095
Di-n-Butyl Phthalate	0	0		0	21	21.0	88.0
2,4-Dinitrotoluene	0	0		0	320	320	1,341
2,6-Dinitrotoluene	0	0		0	200	200	838
1,2-Diphenylhydrazine	0	0		0	3	3.0	12.6
Fluoranthene	0	0		0	40	40.0	168
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	8.38
Hexachlorocyclopentadiene	0	0		0	1	1.0	4.19
Hexachloroethane	0	0		0	12	12.0	50.3
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A
Isophorone	0	0		0	2,100	2,100	8,801
Naphthalene	0	0		0	43	43.0	180
Nitrobenzene	0	0		0	810	810	3,395
n-Nitrosodimethylamine	0	0		0	3,400	3,400	14,249
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A
n-Nitrosodiphenylamine	0	0		0	59	59.0	247
Phenanthrene	0	0		0	1	1.0	4.19
Pyrene	0	0		0	N/A	N/A	N/A

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

1,2,4-Trichlorobenzene	0	0		0	26	26.0	109	

☒ THH

CCT (min): #####

PMF: 1

Analysis Hardness (mg/l): N/A

Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total 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	23.5	
Total Arsenic	0	0		0	10	10.0	41.9	
Total Barium	0	0		0	2,400	2,400	10,058	
Total Boron	0	0		0	3,100	3,100	12,992	
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	16.8	
Dissolved Iron	0	0		0	300	300	1,257	
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	4,191	
Total Mercury	0	0		0	0.003	0.003	0.013	
Total Nickel	0	0		0	610	610	2,556	
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	1.01	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	12.6	
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	419	
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	23.9	
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	138	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A
Ethylbenzene	0	0		0	68	68.0	285
Methyl Bromide	0	0		0	100	100.0	419
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	239
1,2-trans-Dichloroethylene	0	0		0	100	100.0	419
1,1,1-Trichloroethane	0	0		0	10,000	10,000	41,908
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	126
2,4-Dichlorophenol	0	0		0	10	10.0	41.9
2,4-Dimethylphenol	0	0		0	100	100.0	419
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	8.38
2,4-Dinitrophenol	0	0		0	10	10.0	41.9
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	16,763
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A
Acenaphthene	0	0		0	70	70.0	293
Anthracene	0	0		0	300	300	1,257
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	838
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	0.42
2-Chloronaphthalene	0	0		0	800	800	3,353
Chrysene	0	0		0	N/A	N/A	N/A
Dibenzo(a,h)Anthracene	0	0		0	N/A	N/A	N/A
1,2-Dichlorobenzene	0	0		0	1,000	1,000	4,191
1,3-Dichlorobenzene	0	0		0	7	7.0	29.3
1,4-Dichlorobenzene	0	0		0	300	300	1,257
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A
Diethyl Phthalate	0	0		0	600	600	2,514
Dimethyl Phthalate	0	0		0	2,000	2,000	8,382

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

Di-n-Butyl Phthalate	0	0		0	20	20.0	83.8	
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	83.8	
Fluorene	0	0		0	50	50.0	210	
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	16.8	
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	142	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	41.9	
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	83.8	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.29	

☒ CRL

CCT (min): #####

PMF: 1

Analysis Hardness (mg/l): N/A

Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total 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	

Model Results

7/9/2025

Page 12

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504 Western Butler County Authority STP

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	1.11
Benzene	0	0		0	0.58	0.58	10.8
Bromoform	0	0		0	7	7.0	130
Carbon Tetrachloride	0	0		0	0.4	0.4	7.42
Chlorobenzene	0	0		0	N/A	N/A	N/A
Chlorodibromomethane	0	0		0	0.8	0.8	14.8
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	17.6
1,2-Dichloroethane	0	0		0	9.9	9.9	184
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A
1,2-Dichloropropane	0	0		0	0.9	0.9	16.7
1,3-Dichloropropylene	0	0		0	0.27	0.27	5.01
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	4.7	4.7	87.2
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	3.71
Tetrachloroethylene	0	0		0	10	10.0	186
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	10.2
Trichloroethylene	0	0		0	0.6	0.6	11.1
Vinyl Chloride	0	0		0	0.02	0.02	0.37
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	0.56
Phenol	0	0		0	N/A	N/A	N/A
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	27.8
Acenaphthene	0	0		0	N/A	N/A	N/A
Anthracene	0	0		0	N/A	N/A	N/A

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

Benzidine	0	0		0	0.0001	0.0001	0.002
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.019
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.002
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.019
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.19
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.56
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	5.94
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	2.23
Dibenzo(a,h)Anthracene	0	0		0	0.0001	0.0001	0.002
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	0.93
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	0.93
2,6-Dinitrotoluene	0	0		0	0.05	0.05	0.93
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.56
Fluoranthene	0	0		0	N/A	N/A	N/A
Fluorene	0	0		0	N/A	N/A	N/A
Hexachlorobenzene	0	0		0	0.000045	0.00005	0.0008
Hexachlorobutadiene	0	0		0	0.01	0.01	0.19
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A
Hexachloroethane	0	0		0	0.1	0.1	1.86
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.019
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	0.013
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.093
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	61.2
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

☒ Recommended WQBELs & Monitoring Requirements

No. Samples/Month: 4

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504 Western Butler County Authority STP

Pollutants	Mass Limits		Concentration Limits				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			
Total Aluminum	Report	Report	Report	Report	Report	µg/L	903	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	Report	Report	Report	Report	Report	µg/L	30.0	AFC	Discharge Conc > 10% WQBEL (no RP)
Free Cyanide	0.31	0.48	16.8	26.2	41.9	µg/L	16.8	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Thallium	0.018	0.029	1.01	1.57	2.51	µg/L	1.01	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	243	AFC	Discharge Conc > 10% WQBEL (no 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 Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	10,058	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	6,705	µg/L	Discharge Conc < TQL
Total Cadmium	1.82	µg/L	Discharge Conc < TQL
Total Chromium (III)	607	µg/L	Discharge Conc < TQL
Hexavalent Chromium	19.3	µg/L	Discharge Conc < TQL
Total Cobalt	79.6	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	1,257	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	6,286	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	29.9	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	4,191	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.003	µg/L	Discharge Conc < TQL
Total Nickel	374	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	20.9	µg/L	Discharge Conc < TQL
Total Silver	13.1	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	3.61	µg/L	Discharge Conc < TQL
Acrylonitrile	1.11	µg/L	Discharge Conc < TQL
Benzene	10.8	µg/L	Discharge Conc < TQL
Bromoform	130	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	7.42	µg/L	Discharge Conc < TQL

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504 Western Butler County Authority STP

Chlorobenzene	419	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorodibromomethane	14.8	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	14,668	µg/L	Discharge Conc < TQL
Chloroform	23.9	µg/L	Discharge Conc < TQL
Dichlorobromomethane	17.6	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	184	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	138	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	16.7	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	5.01	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	285	µg/L	Discharge Conc < TQL
Methyl Bromide	419	µg/L	Discharge Conc < TQL
Methyl Chloride	23,050	µg/L	Discharge Conc < TQL
Methylene Chloride	87.2	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	3.71	µg/L	Discharge Conc < TQL
Tetrachloroethylene	186	µg/L	Discharge Conc < TQL
Toluene	239	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	419	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	2,556	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	10.2	µg/L	Discharge Conc < TQL
Trichloroethylene	11.1	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.37	µg/L	Discharge Conc < TQL
2-Chlorophenol	126	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	41.9	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	419	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	8.38	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	41.9	µg/L	Discharge Conc < TQL
2-Nitrophenol	6,705	µg/L	Discharge Conc < TQL
4-Nitrophenol	1,970	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	193	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.56	µg/L	Discharge Conc < TQL
Phenol	16,763	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	27.8	µg/L	Discharge Conc < TQL
Acenaphthene	71.2	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	1,257	µg/L	Discharge Conc < TQL
Benzidine	0.002	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.019	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.002	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.019	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.19	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS

NPDES Permit Fact Sheet


NPDES Permit No. PA0021504 Western Butler County Authority STP

Bis(2-Chloroethyl)Ether	0.56	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	838	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	5.94	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	226	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.42	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	3,353	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	2.23	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthracene	0.002	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	671	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	29.3	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	629	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	0.93	µg/L	Discharge Conc < TQL
Diethyl Phthalate	2,514	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	2,095	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	83.8	µg/L	Discharge Conc ≤ 25% WQBEL
2,4-Dinitrotoluene	0.93	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	0.93	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.56	µg/L	Discharge Conc < TQL
Fluoranthene	83.8	µg/L	Discharge Conc < TQL
Fluorene	210	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.00005	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.01	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	4.19	µg/L	Discharge Conc < TQL
Hexachloroethane	1.86	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.019	µg/L	Discharge Conc < TQL
Isophorone	142	µg/L	Discharge Conc ≤ 25% WQBEL
Naphthalene	169	µg/L	Discharge Conc < TQL
Nitrobenzene	41.9	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.013	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.093	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	61.2	µg/L	Discharge Conc < TQL
Phenanthrene	4.19	µg/L	Discharge Conc < TQL
Pyrene	83.8	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.29	µg/L	Discharge Conc < TQL

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

E. DMR Data for Total Lead

MONITORING START DATE	MONITORING END DATE	PARAMETER(mg/L)	CONC 2 VALUE	E FREQUE NCY
01/01/2020	03/31/2020	Lead, Total	< 0.01	1/quarter
04/01/2020	06/30/2020	 Lead, Total	< 0.01	1/quarter
07/01/2020	09/30/2020	Lead, Total	< 0.01	1/quarter
10/01/2020	12/31/2020	Lead, Total	< 0.01	1/quarter
01/01/2021	03/31/2021	Lead, Total	< 0.01	1/quarter
04/01/2021	06/30/2021	Lead, Total	< 0.01	1/quarter
07/01/2021	09/30/2021	Lead, Total	< 0.01	1/quarter
10/01/2021	12/31/2021	Lead, Total	< 0.01	1/quarter
01/01/2022	03/31/2022	Lead, Total	< 0.01	1/quarter
04/01/2022	06/30/2022	Lead, Total	< 0.01	1/quarter
07/01/2022	09/30/2022	Lead, Total	< 0.01	1/quarter
10/01/2022	12/31/2022	Lead, Total	< 0.01	1/quarter
01/01/2023	03/31/2023	Lead, Total	< 0.01	1/quarter
04/01/2023	06/30/2023	Lead, Total	< 0.01	1/quarter
07/01/2023	09/30/2023	Lead, Total	< 0.01	1/quarter
10/01/2023	12/31/2023	Lead, Total	< 0.01	1/quarter
01/01/2024	03/31/2024	Lead, Total	< 0.02	1/quarter
04/01/2024	06/30/2024	Lead, Total	< 0.02	1/quarter
07/01/2024	09/30/2024	Lead, Total	< 0.02	1/quarter
10/01/2024	12/31/2024	Lead, Total	< 0.02	1/quarter

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

F. TRC Calculation

TRC EVALUATION					
Input appropriate values in A3:A9 and D3:D9					
10.9	= Qstream (cfs)	0.5	= CV Daily		
2.2	= Qdischarge (MGD)	0.5	= CV Hourly		
30	= no. samples	0.276	= AFC_Partial Mix Factor		
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor		
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)		
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)		
0	= % Factor of Safety (FOS)	0	= Decay Coefficient (K)		

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2 iii	WLA_afc = 0.301	1.3.2 iii	WLA_cfc = 1.007
PENTOXSD TRG	5.1a	LTAMULT_afc = 0.373	5.1c	LTAMULT_cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc = 0.112	5.1d	LTA_cfc = 0.585

Source	Effluent Limit Calculations
PENTOXSD TRG 5.1f	AML MULT = 1.231
PENTOXSD TRG 5.1g	AVG MON LIMIT (mg/l) = 0.138
	INST MAX LIMIT (mg/l) = 0.451

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

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

G. WET Testing Results

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet					
Type of Test	Chronic	Facility Name			
Species Tested	Ceriodaphnia	Western Butler County Authority			
Endpoint	Reproduction	Permit No.			
TIWC (decimal)	0.24	PA0021504			
No. Per Replicate	1				
TST b value	0.75				
TST alpha value	0.2				

Test Completion Date			Test Completion Date		
Replicate	7/2/2019		Replicate	6/30/2020	
No.	Control	TIWC	No.	Control	TIWC
1	28	40	1	27	21
2	41	33	2	28	22
3	34	42	3	31	3
4	33	42	4	29	24
5	40	35	5	28	26
6	36	38	6	28	18
7	34	38	7	32	30
8	37	40	8	3	27
9	39	38	9	30	34
10	37	40	10	32	28
11			11		
12			12		
13			13		
14			14		
15			15		

Mean	35.900	38.600	Mean	26.800	23.300
Std Dev.	3.843	2.875	Std Dev.	8.548	8.499
# Replicates	10	10	# Replicates	10	10
T-Test Result	9.0690		T-Test Result	0.9505	
Deg. of Freedom	17		Deg. of Freedom	16	
Critical T Value	0.8633		Critical T Value	0.8647	
Pass or Fail	PASS		Pass or Fail	PASS	

Test Completion Date			Test Completion Date		
Replicate	6/28/2021		Replicate	7/4/2022	
No.	Control	TIWC	No.	Control	TIWC
1	28	22	1	21	19
2	3	16	2	26	30
3	25	30	3	26	26
4	28	35	4	25	22
5	24	27	5	23	25
6	29	21	6	19	27
7	26	28	7	22	27
8	27	29	8	23	24
9	26	28	9	19	18
10	22	24	10	17	2
11			11		
12			12		
13			13		
14			14		
15			15		

Mean	23.800	26.000	Mean	22.100	22.000
Std Dev.	7.598	5.375	Std Dev.	3.107	7.944
# Replicates	10	10	# Replicates	10	10
T-Test Result	3.2900		T-Test Result	2.0721	
Deg. of Freedom	17		Deg. of Freedom	12	
Critical T Value	0.8633		Critical T Value	0.8726	
Pass or Fail	PASS		Pass or Fail	PASS	

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet					
Type of Test	Chronic		Facility Name		
Species Tested	Ceriodaphnia		Western Butler County Authority		
Endpoint	Survival		Permit No.	PA0021504	
TIWC (decimal)	0.24				
No. Per Replicate	1				
TST b value	0.75				
TST alpha value	0.2				

Test Completion Date			Test Completion Date		
Replicate	7/2/2019		Replicate	6/20/2020	
No.	Control	TIWC	No.	Control	TIWC
1	1	1	1	1	1
2	1	1	2	1	1
3	1	1	3	1	1
4	1	1	4	1	1
5	1	1	5	1	1
6	1	1	6	1	1
7	1	1	7	1	1
8	1	1	8	1	1
9	1	1	9	1	1
10	1	1	10	1	1
11			11		
12			12		
13			13		
14			14		
15			15		

Mean	1.000	1.000	Mean	1.000	1.000
Std Dev.	0.000	0.000	Std Dev.	0.000	0.000
# Replicates	10	10	# Replicates	10	10

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

Test Completion Date			Test Completion Date		
Replicate	6/28/2021		Replicate	7/4/2022	
No.	Control	TIWC	No.	Control	TIWC
1	1	1	1	1	1
2	1	1	2	1	1
3	1	1	3	1	1
4	1	1	4	1	1
5	1	1	5	1	1
6	1	1	6	1	1
7	1	1	7	1	1
8	1	1	8	1	1
9	1	1	9	1	1
10	1	1	10	1	1
11			11		
12			12		
13			13		
14			14		
15			15		

Mean	1.000	1.000	Mean	1.000	1.000
Std Dev.	0.000	0.000	Std Dev.	0.000	0.000
# Replicates	10	10	# Replicates	10	10

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

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet					
Type of Test	Chronic		Facility Name		
Species Tested	Pimephales		Western Butler County Authority		
Endpoint	Survival		Permit No.		
TIWC (decimal)	0.24		PA0021504		
No. Per Replicate	10				
TST b value	0.75				
TST alpha value	0.25				

Test Completion Date			Test Completion Date		
Replicate	7/2/2019		Replicate	6/30/2020	
No.	Control	TIWC	No.	Control	TIWC
1	1	0.9	1	1	1
2	1	1	2	0.9	1
3	0.9	1	3	1	1
4	1	0.9	4	1	1
5			5		
6			6		
7			7		
8			8		
9			9		
10			10		
11			11		
12			12		
13			13		
14			14		
15			15		

Mean	0.975	0.950	Mean	0.975	1.000
Std Dev.	0.050	0.058	Std Dev.	0.050	0.000
# Replicates	4	4	# Replicates	4	4
T-Test Result	12.7913		T-Test Result	26.1497	
Deg. of Freedom	5		Deg. of Freedom	3	
Critical T Value	0.7267		Critical T Value	0.7649	
Pass or Fail	PASS		Pass or Fail	PASS	

Test Completion Date			Test Completion Date		
Replicate	6/29/2021		Replicate	7/5/2022	
No.	Control	TIWC	No.	Control	TIWC
1	0.9	0.9	1	1	0.8
2	0.9	1	2	1	1
3	0.9	0.9	3	1	0.8
4	0.9	0.9	4	1	1
5			5		
6			6		
7			7		
8			8		
9			9		
10			10		
11			11		
12			12		
13			13		
14			14		
15			15		

Mean	0.900	0.925	Mean	1.000	0.900
Std Dev.	0.000	0.050	Std Dev.	0.000	0.115
# Replicates	4	4	# Replicates	4	4
T-Test Result	18.8623		T-Test Result	6.2306	
Deg. of Freedom	3		Deg. of Freedom	3	
Critical T Value	0.7649		Critical T Value	0.7649	
Pass or Fail	PASS		Pass or Fail	PASS	

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504

Western Butler County Authority STP

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet					
Type of Test	Chronic		Facility Name		
Species Tested	Pimephales		Western Butler County Authority		
Endpoint	Growth		Permit No.		
TIWC (decimal)	0.24		PA0021504		
No. Per Replicate	10				
TST b value	0.75				
TST alpha value	0.25				

Test Completion Date			Test Completion Date		
Replicate	7/2/2019		Replicate	8/30/2020	
No.	Control	TIWC	No.	Control	TIWC
1	0.524	0.574	1	0.335	0.353
2	0.447	0.557	2	0.336	0.329
3	0.414	0.377	3	0.344	0.346
4	0.44	0.431	4	0.282	0.432
5			5		
6			6		
7			7		
8			8		
9			9		
10			10		
11			11		
12			12		
13			13		
14			14		
15			15		

Mean	0.456	0.485	Mean	0.324	0.365
Std Dev.	0.047	0.096	Std Dev.	0.028	0.046
# Replicates	4	4	# Replicates	4	4
T-Test Result	2.7840		T-Test Result	4.8225	
Deg. of Freedom	4		Deg. of Freedom	4	
Critical T Value	0.7407		Critical T Value	0.7407	
Pass or Fail	PASS		Pass or Fail	PASS	

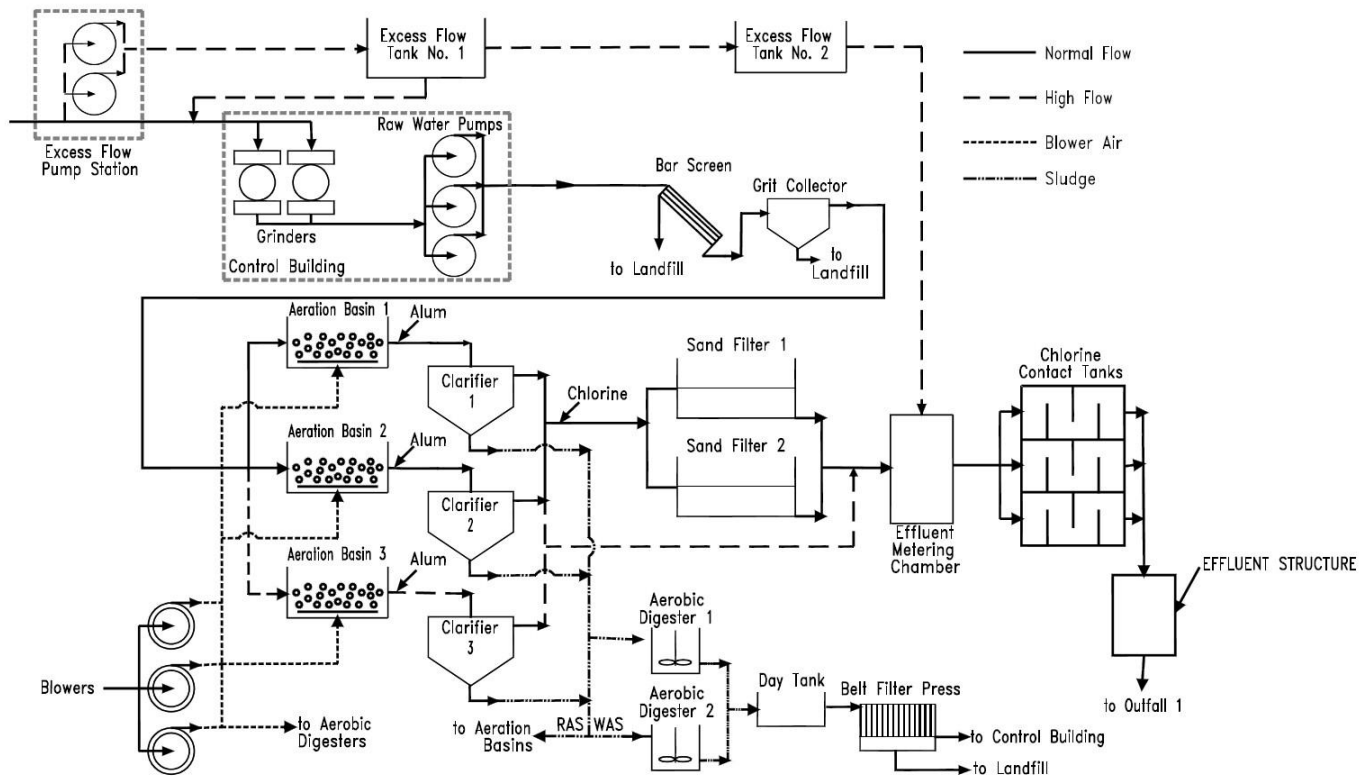
Test Completion Date			Test Completion Date		
Replicate	6/29/2021		Replicate	7/2/2022	
No.	Control	TIWC	No.	Control	TIWC
1	0.278	0.336	1	0.281	0.317
2	0.244	0.352	2	0.346	0.363
3	0.256	0.348	3	0.346	0.178
4	0.263	0.331	4	0.387	0.36
5			5		
6			6		
7			7		
8			8		
9			9		
10			10		
11			11		
12			12		
13			13		
14			14		
15			15		

Mean	0.260	0.342	Mean	0.340	0.305
Std Dev.	0.014	0.010	Std Dev.	0.044	0.087
# Replicates	4	4	# Replicates	4	4
T-Test Result	20.1808		T-Test Result	1.0854	
Deg. of Freedom	5		Deg. of Freedom	4	
Critical T Value	0.7267		Critical T Value	0.7407	
Pass or Fail	PASS		Pass or Fail	PASS	

NPDES Permit Fact Sheet

NPDES Permit No. PA0021504
Western Butler County Authority STP

H. Process Flow



10/02/2019 PM: CEH GIS: JGP QA: EBL R007867.0454

HRG
Engineering & Related Services
AN EMPLOYEE-OWNED COMPANY

200 West Kensinger Drive
Suite 400
Cranberry Township, PA 16066
724.779.4777 (phone)
724.779.4711 (fax)
www.hrg-inc.com

**WWTP PROCESS FLOW DIAGRAM
EXHIBIT 6
ACT 537 PLAN**

Western Butler County Authority
Butler County, Pennsylvania