Pennsylvania Department of Environmental Protection

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0252662**
Facility Type	**Industrial**	APS ID	**1092906**
Major / Minor	**Minor**	Authorization ID	**1447440**

NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

Applicant and Facility Information

Applicant Name	**Central Indiana County Water Authority**	Facility Name	**Central Indiana County Water Authority**
Applicant Address	30 E Wiley Street	Facility Address	30 E Wiley Street
	Homer City, PA 15748-1543		Homer City, PA 15748-1543
Applicant Contact	Robert Nymick	Facility Contact	
Applicant Phone	(724) 479-8005	Facility Phone	
Client ID	51998	Site ID	249978
SIC Code	4941	Municipality	Center Township
SIC Description	Trans. & Utilities - Water Supply	County	Indiana
Date Application Received	June 23, 2023	EPA Waived?	Yes
Date Application Accepted		If No, Reason	
Purpose of Application	Permit renewal for discharge of treated industrial waste.		

Summary of Review

1. General Discussion

This factsheet supports the renewal of an existing NPDES permit for a discharge of treated industrial wastewater from Central Indiana County Water Authority (Authority) water treatment plant. The Authority owns and operates the water treatment plant that treats raw water to supply potable water. The wastewater generated from the water treatment process consists of filter backwash water, clarifier sludge and filter-to-waste water. The generated wastewater is treated utilizing a sludge dewatering system. Residual sludge generated by the sludge dewatering system (gravity thickener) is removed periodically and discharged into the sanitary sewer system. Treated effluent is discharged to Yellow Creek through Outfall 001. The existing permit limits were based on a wastewater flow of 0.0754mgd and will be continued during permit renewal. Yellow Creek is classified for Trout Stocking (TSF). The facility is not covered by ELG, but technology-based treatment limits developed by the Department are applicable. See technology limits section of the report for details. The existing permit was issued on December 18, 2018, with effective date of January 1, 2019, and expiration date of December 31, 2023. The permittee submitted a timely renewal application to the Department and has been operating under the terms and conditions in the existing permit pending permit renewal. Topographical map showing discharge location is attached as attachment A.

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.

Approve	Deny	Signatures	Date
X		*J. Pascal Kwedza* J. Pascal Kwedza, P.E. / Environmental Engineer	April 8, 2025
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	April 14, 2025

1.4 Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.0754
Latitude	40º 32' 52.44"	Longitude	-79º 9' 30.27"
Quad Name		Quad Code	
Wastewater Description:	IW Process Effluent without ELG		
Receiving Waters	Yellow Creek (TSF)	Stream Code	44118
NHD Com ID	123720042	RMI	0.76
Drainage Area	66	Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)	5.11	Q_{7-10} Basis	StreamStats
Elevation (ft)	1042	Slope (ft/ft)	
Watershed No.	18-D	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Metals, pH		
Source(s) of Impairment	Acid Mine Drainage		
TMDL Status	Final	Name	Kiskiminetas-Conemaugh River Watersheds TMDL

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

Nearest Downstream Public Water Supply Intake		Saltsburg Municipal Water Authority	
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	>35

Changes Since Last Permit Issuance: None

Comments: The nearest downstream water supply intake is approximately 35 miles downstream by Saltsburg Municipal Water Authority. Due to the distance and dilution, no impact is expected from this discharge on the intake.

2.0 Existing Effluent Limitations and Monitoring Requirements

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0	XXX	2/month	Grab
TRC	XXX	XXX	XXX	0.5	1.0	XXX	2/month	Grab
TSS	XXX	XXX	XXX	30.0	60.0	XXX	2/month	Grab
Total Aluminum	XXX	XXX	XXX	0.75	1.5	XXX	2/month	Grab
Total Iron	XXX	XXX	XXX	1.5	3.0	XXX	2/month	Grab
Total Manganese	XXX	XXX	XXX	1.0	2.0	XXX	2/month	Grab

2.1 Compliance History

2.1.1 DMR Data for Outfall 001 (from February 1, 2024 to January 31, 2025)

Parameter	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24
Flow (MGD) Average Monthly	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Flow (MGD) Daily Maximum	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
pH (S.U.) Daily Minimum	6.9	6.9	7.1	7.4	7.4	7.1	7.4	7.5	7.2	6.8	7.5	7.0
pH (S.U.) Daily Maximum	7.0	7.1	7.6	7.6	7.4	7.5	7.4	7.5	7.4	7.6	7.5	7.6
TRC (mg/L) Average Monthly	0.15	0.16	0.03	0.04	0.07	0.02	0.04	0.02	0.03	0.06	0.02	0.09
TRC (mg/L) Daily Maximum	0.18	0.19	0.03	0.04	0.09	0.03	0.04	0.03	0.03	0.06	0.02	0.11
TSS (mg/L) Average Monthly	6.0	5.0	3.0	7.0	7.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
TSS (mg/L) Daily Maximum	8.0	6.0	3.0	10.0	9.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Total Aluminum (mg/L) Average Monthly	0.80	0.35	0.40	0.49	0.85	0.28	0.25	0.23	0.24	0.21	0.40	0.17
Total Aluminum (mg/L) Daily Maximum	0.94	0.47	0.46	0.87	1.09	0.30	0.26	0.25	0.27	0.26	0.55	0.19
Total Iron (mg/L) Average Monthly	0.08	0.08	0.05	0.12	0.14	0.14	0.04	0.02	0.04	0.06	0.06	0.04
Total Iron (mg/L) Daily Maximum	0.10	0.08	0.06	0.20	0.18	0.15	0.04	0.02	0.05	0.09	0.08	0.05
Total Manganese (mg/L) Average Monthly	0.44	0.13	0.16	0.17	0.34	0.16	0.38	0.60	0.52	0.24	0.22	0.07
Total Manganese (mg/L) Daily Maximum	0.77	0.18	0.17	0.19	0.42	0.19	0.55	0.64	0.71	0.31	0.22	0.10

2.1.2 Effluent Violations for Outfall 001, from: March 1, 2024 To: January 31, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Total Aluminum	01/31/25	Avg Mo	0.80	mg/L	.75	mg/L
Total Aluminum	09/30/24	Avg Mo	0.85	mg/L	.75	mg/L

2.1.3 Summary of DMRs:

Discharge Monitoring Reports (DMRs) review for the facility for the last 12 months of operation presented on the table above indicate permit limits have been met most of the time. Two Total Aluminum violations were noted on DMRs during the period reviewed and presented in section 2.1.2. The violations appear to be operations related.

2.1.4 Summary of Inspections:

The facility was last inspected on 6/3/2021 during the past permit cycle. No violation was found during the inspection.

3.0 Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .0754
Latitude 40º 32' 52.00" **Longitude** -79º 9' 30.00"
Wastewater Description: IW Process Effluent without ELG

3.1 Technology-Based Limitation

Technology based (BPT) effluent limits for water treatment plant wastewater discharges are presented in the Department's October 1997 guidance document entitled "Technology-based control requirements for water treatment plant wastes DEP Document number 362-2183-003, 10-01-1997 as follows:

Parameter	Monthly Average (mg/l)	Daily Max (mg/l)
Suspended Solids	30	60
Iron (total)	2	4
Aluminum (total)	4	8
Manganese (total)	1	2
Flow	Monitor	
pH	6-9 at all time	
Total Residual Chlorine*	0.5	1.0

*See TRC section of the report for details

3.2 Water Quality-Based Limitations

3.2.1 Stream flows

The drainage areas upstream and downstream of the discharge location and the Q_{7-10} at discharge were calculated using USGS streamStats and the results are presented in attachments D and E. The calculated drainage area upstream of discharge is 66 sq. mi and the Q_{7-10} flow is 5.11 cfs and the calculated drainage area downstream of the discharge 66.2 sq. mi.

3.2.2 Kiskiminetas-Conemaugh River Watersheds Total Maximum Daily Load (TMDL)

TMDL establishes the amount of a pollutant that a waterbody can assimilate without exceeding its water quality standard for that pollutant. The Kiskiminetas-Conemaugh River Watersheds TMDL was finalized on January 29, 2010, and established wasteload allocation of 0.75mg/L Total Aluminum, 1.0 mg/L Total Manganese, and 1.5mg/L Total Iron for this facility. The TMDLs were based on chapter 93 criteria. Total Aluminum, criterion is expressed as an acute or maximum daily. Therefore, the water quality criterion for Total Aluminum (0.75 mg/L) is imposed as a maximum daily effluent limit (MDL). It is appropriate to set AML equal to MDL where MDL is set at the criterion because water quality concerns have been addressed by setting the MDL equal to the most stringent applicable criterion. The existing MDL of 1.5mg/L will be replaced with 0.75mg/L for this permit renewal. Total Manganese and Total Iron limits in the existing permit are consistent with the requirements of the TMDL.

3.2.3 The following input data were used for TMS model:

- Discharge pH = 7.4 (DMR median July – Sept.)
- Stream pH = 7.0 (Default)
- Discharge Hardness = 49 mg/l
- Stream Hardness = 100 mg/l

3.2.4 Toxics

A reasonable potential (RP) analysis was done for pollutant Groups 1 and 2 submitted with the application. DEP Toxics Management Spreadsheet (TMS) was used to calculate WQBELs. WQBELs recommended by the TMS are presented in attachment C. The results of the TMS indicate discharge levels for all pollutants were well below DEP's target quantitation limits and the calculated WQBELs, therefore, no monitoring or limitation was recommended. The existing TMDL limits for Total Manganese, Total Aluminum and Total Iron will remain in the permit.

3.2.5 Total Residual Chlorine

The attached TRC 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 Guidance references Chapter 92a, Section 92a.48 (b) which establishes a standard BAT limit of 0.5 mg/l unless a facility-specific BAT has been developed. The attached results presented in attachment D indicates a technology limit of 0.5 mg/l monthly average and 1.6mg/l IMAX would be needed to prevent toxicity concerns. The existing permit of 0.5 mg/L monthly average and Daily Maximum of 1.0 mg/l based on the TBEL referenced in section 3.1 are protective and will continue in the permit.

3.2.6 Flow and pH

The existing technology limit for pH limit between 6 - 9 S.U, and flow monitoring based on the TBEL referenced in section 3.1 will remain in the permit.

3.2.7 Total Suspended Solids (TSS):

There is no water quality criteria for TSS. The existing TBEL referenced in section 3.2 will remain in the permit with a monitoring frequency of 2/month.

3.3.8 Chemical Additive Reporting Requirement

Currently chemical additives usage are not proposed. Chemical additive reporting requirement are in PART C. II of the permit incase the permittee decides to use chemical additives in the future.

4.0 Other Requirements

4.1 Anti-Backsliding

Not applicable to this discharge

4.2 Antidegradation (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.

4.3 Class A Wild Trout Fisheries:

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

4.4 303d Listed stream:

The discharge is located on a 303d listed stream segment. A TMDL) was developed approved for the Kiskiminetas-Conemaugh River watersheds on January 29, 2010, as discussed in section 3.3.4. The existing permit reflects the requirements specified for Total Aluminum, Total Manganese and Total Iron in the Kiskiminetas-Conemaugh River Watersheds TMDL.

4.5 Cleaning of Sedimentation Basin

Reporting requirements during basin cleaning are in PART C. III of the permit.

5.0 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" (386-0400-001), SOPs and/or BPJ.

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

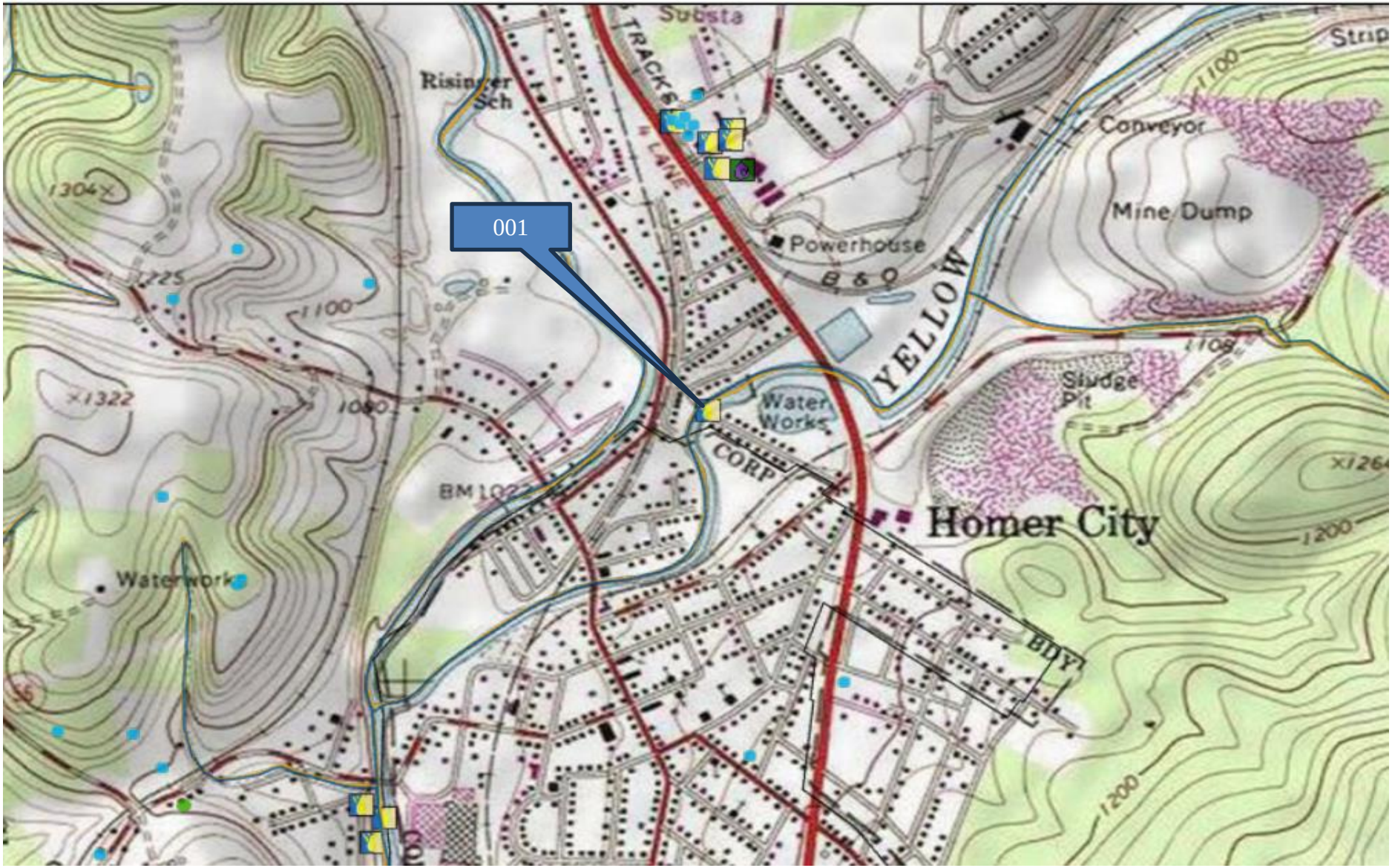
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0	XXX	2/month	Grab
TRC	XXX	XXX	XXX	0.5	1.0	XXX	2/month	Grab
TSS	XXX	XXX	XXX	30.0	60.0	XXX	2/month	Grab
Total Aluminum	XXX	XXX	XXX	0.75	0.75	XXX	2/month	Grab
Total Iron	XXX	XXX	XXX	1.5	3.0	XXX	2/month	Grab
Total Manganese	XXX	XXX	XXX	1.0	2.0	XXX	2/month	Grab

Compliance Sampling Location: At outfall 001

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

Attachments

A. Topographical MAP



B. Toxic Management Spreadsheet Results

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Central Indiana Water Authority** NPDES Permit No.: **PA0252662** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Inudustrial Waste**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.0754	49.2	7.4						

	Discharge Pollutant	Units	Max Discharge Conc		0 if left blank: Trib Conc	0 if left blank: Stream Conc	0.5 if left blank: Daily CV	0.5 if left blank: Hourly CV	0 if left blank: Stream CV	0 if left blank: Fate Coeff	0 if left blank: FOS	1 if left blank: Criteria Mod	1 if left blank: Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		90									
	Chloride (PWS)	mg/L		15.2									
	Bromide	mg/L	<	10									
	Sulfate (PWS)	mg/L		28.2									
	Fluoride (PWS)	mg/L	<	10									
Group 2	Total Aluminum	µg/L		492									
	Total Antimony	µg/L	<	2									
	Total Arsenic	µg/L	<	2									
	Total Barium	µg/L		41.3									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L	<	0.1									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L	<	2									
	Hexavalent Chromium	µg/L	<	0.25									
	Total Cobalt	µg/L	<	1									
	Total Copper	µg/L		0.002									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L		0.01									
	Dissolved Iron	µg/L	<	0.03									
	Total Iron	µg/L		0.06									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		107									
	Total Mercury	µg/L	<	0.1									
	Total Nickel	µg/L	<	2									
	Total Phenols (Phenolics) (PWS)	µg/L		6									
	Total Selenium	µg/L	<	0.005									
	Total Silver	µg/L	<	0.4									
	Total Thallium	µg/L	<	0.002									
	Total Zinc	µg/L		5									
	Total Molybdenum	µg/L		2									

Stream / Surface Water Information

Central Indiana Water Authority, NPDES Permit No. PA0252662, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Yellow Creek**

No. Reaches to Model: **1**

- ○ Statewide Criteria
- ◉ Great Lakes Criteria
- ○ ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	044118	0.8	1042	66			Yes
End of Reach 1	044118	0.01	1002	66.2			Yes

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

Location	RMI	LFY (cfs/mi²)*	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	0.8	0.1	5.11									100	7		
End of Reach 1	0.01	0.1													

Q_h

Location	RMI	LFY (cfs/mi²)	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	0.8														
End of Reach 1	0.01														

Model Results

Central Indiana Water Authority, NPDES Permit No. PA0252662, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.772 Analysis Hardness (mg/l): 98.541 Analysis pH: 7.01

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	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	26,114	
Total Antimony	0	0		0	1,100	1,100	38,301	
Total Arsenic	0	0		0	340	340	11,838	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	731,195	
Total Boron	0	0		0	8,100	8,100	282,032	
Total Cadmium	0	0		0	1.985	2.1	73.2	Chem Translator of 0.945 applied
Total Chromium (III)	0	0		0	562.946	1,781	62,029	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	15.730	16.0	558	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	3,308	
Total Copper	0	0		0	13.254	13.8	481	Chem Translator of 0.96 applied
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	63.556	80.1	2,790	Chem Translator of 0.793 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	57.3	Chem Translator of 0.85 applied
Total Nickel	0	0		0	462.450	463	16,134	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	3.136	3.69	128	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	2,263	
Total Zinc	0	0		0	115.730	118	4,120	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 25.171 PMF: 1 Analysis Hardness (mg/l): 98.866 Analysis pH: 7.01

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	
Fluoride (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	9,858	
Total Arsenic	0	0		0	148	148	6,632	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	183,715	
Total Boron	0	0		0	1,600	1,600	71,694	
Total Cadmium	0	0		0	0.244	0.27	12.0	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	73.426	85.4	3,826	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	466	Chem Translator of 0.962 applied

Total Cobalt	0	0		0	19	19.0	851	
Total Copper	0	0		0	8.869	9.24	414	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	67,213	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.486	3.14	141	Chem Translator of 0.793 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	40.6	Chem Translator of 0.85 applied
Total Nickel	0	0		0	51.507	51.7	2,315	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	224	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	583	
Total Zinc	0	0		0	117.003	119	5,317	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 25.171 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	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	251	
Total Arsenic	0	0		0	10	10.0	448	
Total Barium	0	0		0	2,400	2,400	107,541	
Total Boron	0	0		0	3,100	3,100	138,907	
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	
Dissolved Iron	0	0		0	300	300	13,443	
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	44,809	
Total Mercury	0	0		0	0.003	0.003	0.14	
Total Nickel	0	0		0	610	610	27,333	
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	10.8	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 8.066 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	
Fluoride (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	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	

Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

Model Results 4/2/2025 Page

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

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	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
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	16,738	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	107,541	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	71,694	µg/L	Discharge Conc < TQL
Total Cadmium	12.0	µg/L	Discharge Conc < TQL
Total Chromium (III)	3,826	µg/L	Discharge Conc < TQL
Hexavalent Chromium	357	µg/L	Discharge Conc < TQL
Total Cobalt	851	µg/L	Discharge Conc < TQL
Total Copper	308	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	13,443	µg/L	Discharge Conc < TQL
Total Iron	67,213	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	141	µg/L	Discharge Conc < TQL
Total Manganese	44,809	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.003	µg/L	Discharge Conc < TQL
Total Nickel	2,315	µg/L	Discharge Conc < TQL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	224	µg/L	Discharge Conc < TQL
Total Silver	82.4	µg/L	Discharge Conc < TQL
Total Thallium	10.8	µg/L	Discharge Conc < TQL
Total Zinc	2,641	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS

C. TRC Calculation Results

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

5.11	= Q stream (cfs)	0.5	= CV Daily
0.0754	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)	0	=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 13.994	1.3.2.iii	WLA cfc = 13.635
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 5.214	5.1d	LTA_cfc = 7.927

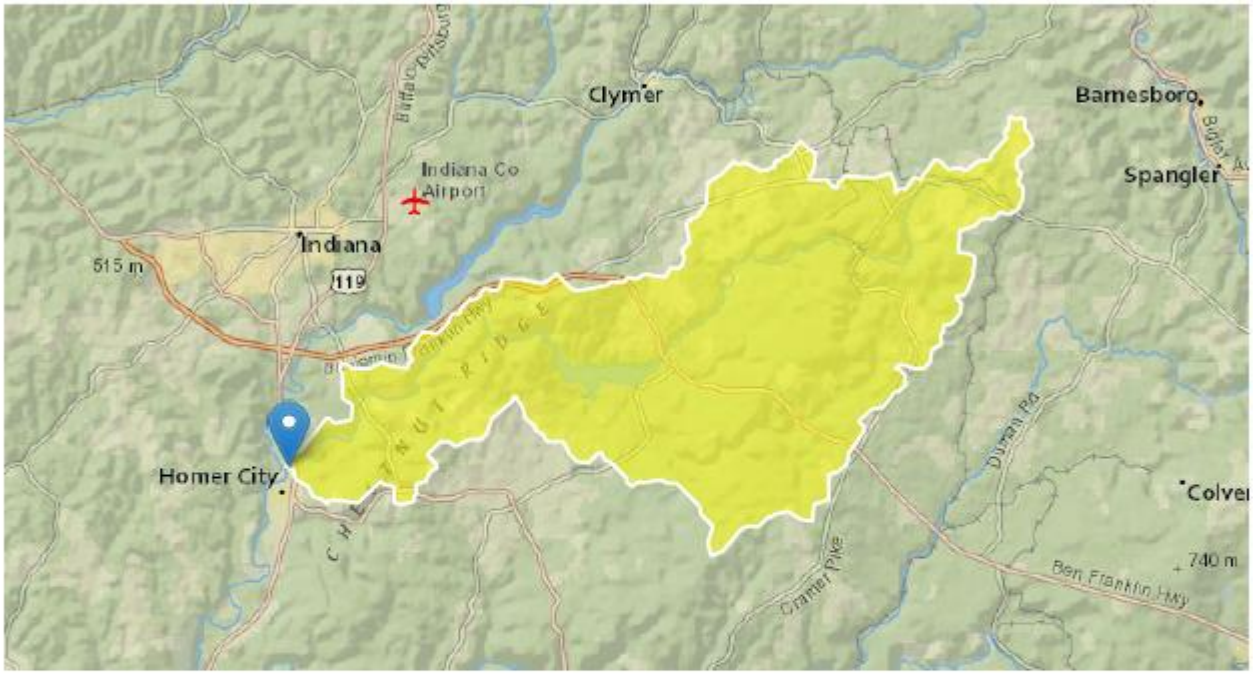
Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.635	

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

D. Upstream of Discharge StreamStats

Discharge location StreamStats Report

Region ID: PA
Workspace ID: PA20250330121316544000
Clicked Point (Latitude, Longitude): 40.54795, -79.15845
Time: 2025-03-30 08:13:45 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	66	square miles
ELEV	Mean Basin Elevation	1636	feet
PRECIP	Mean Annual Precipitation	47	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	66	square miles	2.33	1720
ELEV	Mean Basin Elevation	1636	feet	898	2700
PRECIP	Mean Annual Precipitation	47	inches	38.7	47.9

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

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

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	9.24	ft^3/s	43	43
30 Day 2 Year Low Flow	13	ft^3/s	38	38
7 Day 10 Year Low Flow	5.11	ft^3/s	54	54
30 Day 10 Year Low Flow	6.63	ft^3/s	49	49
90 Day 10 Year Low Flow	9.33	ft^3/s	41	41

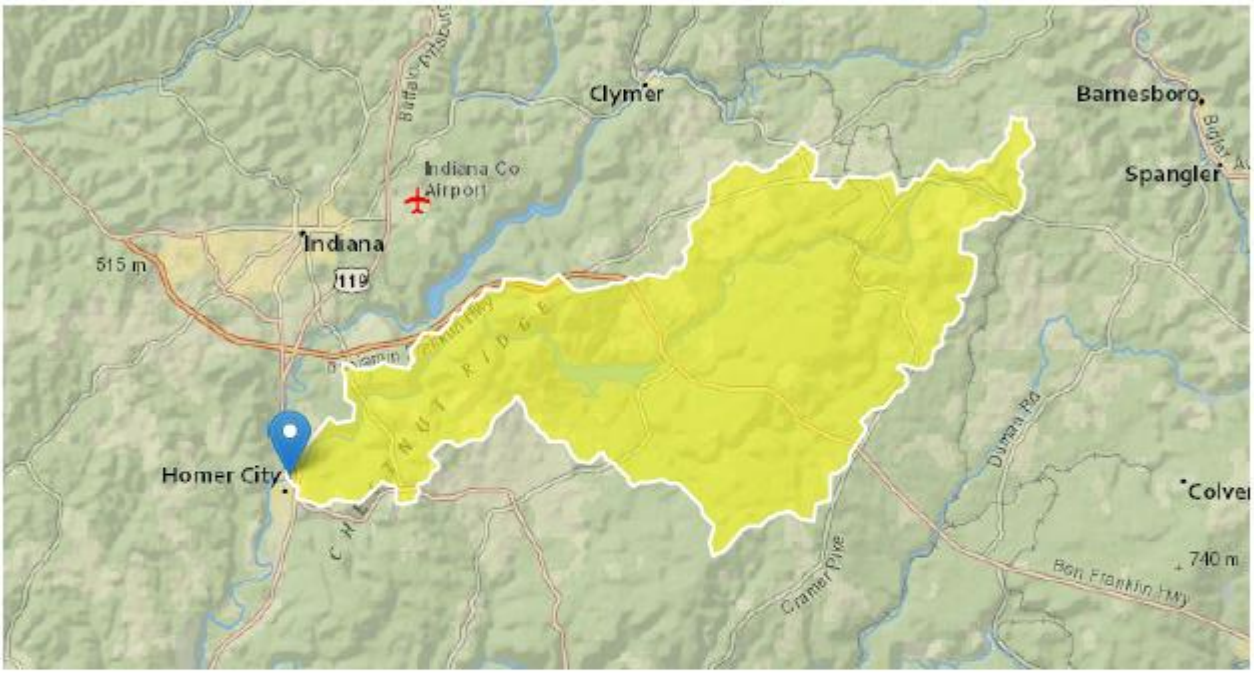
Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

E. Downstream of Discharge StreamStats

Downstream StreamStats Report

Region ID: PA
Workspace ID: PA20250330122124093000
Clicked Point (Latitude, Longitude): 40.54431, -79.15928
Time: 2025-03-30 08:21:49 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	66.2	square miles
ELEV	Mean Basin Elevation	1634	feet
PRECIP	Mean Annual Precipitation	47	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	66.2	square miles	2.33	1720
ELEV	Mean Basin Elevation	1634	feet	898	2700
PRECIP	Mean Annual Precipitation	47	inches	38.7	47.9

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

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

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	9.26	ft^3/s	43	43
30 Day 2 Year Low Flow	13.1	ft^3/s	38	38
7 Day 10 Year Low Flow	5.13	ft^3/s	54	54
30 Day 10 Year Low Flow	6.64	ft^3/s	49	49
90 Day 10 Year Low Flow	9.35	ft^3/s	41	41

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)