Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0004081**
Facility Type	**Industrial**	APS ID	**1128301**
Major / Minor	**Minor**	Authorization ID	**1511234**

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

Applicant and Facility Information

Applicant Name	**CP Industries Holdings Inc.**	Facility Name	**Christy Park Works**
Applicant Address	2214 Walnut Street	Facility Address	2214 Walnut Street
	McKeesport, PA 15132-7054		McKeesport, PA 15132-7054
Applicant Contact	Brian Hatala	Facility Contact	Brian Hatala
Applicant Phone	(412) 664-6622	Facility Phone	(412) 664-6622
Client ID	263715	Site ID	252609
SIC Code	3443	Municipality	McKeesport City
SIC Description	Fabricated Plate Work (Boiler Shops)	County	Allegheny
Date Application Received	January 2, 2025	EPA Waived?	Yes
Date Application Accepted	May 21, 2025	If No, Reason	
Purpose of Application	Renewal of NPDES Permit for discharge of hydrostatic test water, ultrasonic test water, and industrial stormwater		

Summary of Review

The Department received an incomplete individual NPDES industrial stormwater permit application for the CP Industries Holdings Inc. Christy Park Works facility on 1/2/2025 and received all missing documents by 5/21/2025. The prior permit was issued on 6/29/2020 with an effective date of 7/1/2020 and an expiration date of 6/30/2025.

Christy Park Works currently manufactures seamless pressurized gas cylinders from purchased steel. Cylinders up to 24” in diameter and 40’ in length are manufactured to DOT, ISO, and ASME standards for many industries including medicine, aerospace, oil & gas, and manufacturing. Drop forging and rotary spin forging processes are used to manufacture the seamless cylinders. Finished cylinders undergo hydrostatic and ultrasonic testing using potable water to check for flaws and consistent wall thickness before being distributed to the end user. Cylinders are thoroughly cleaned prior to testing. Cylinder refurbishment services are also offered.

Shown in Figure 1 on Page 3 of this fact sheet, the approximately 33.9-acre industrial site situated along the Youghiogheny River has been used for cylinder/tube manufacturing since 1898 following completion of the Christy Park Works by the U.S. Seamless Tube Works company. Along with private sales, it saw use as a significant manufacturer for tube-shaped components (pressure vessels, artillery shells, rockets, bombs, large bore gun barrels etc.) for the United States military during the Spanish-American War, WWI, WWII, the Korean War, and the Vietnam War. Prior to industrial use, the land was used for farming.

Cooling water for cylinder forging processes is recirculated and has no connection to the outfalls. Hydrostatic and ultrasonic test water drains to a sump that overflows to Outfall 009 discharging to the Youghiogheny River. Stormwater runoff from the yard and roofs is also discharged from Outfall 009 during rain events. Module 1 of the application states that Outfalls 001, 002, 003, 004, 006, and 007 discharge stormwater only with runoff draining from the yard and roofs. No specific detail of

Approve	Deny	Signatures	Date
x		Jace William Marsh / Environmental Engineering Specialist	July 23, 2025
X		Michael E. Fifth, P.E. / Environmental Engineer Manager	July 24, 2025

Summary of Review

exposed materials or activities were provided, but judging from satellite imagery, industrial exposure to stormwater seems to be minimal. Module 1 states that manholes and drains are raised to encourage ponding and subsequent infiltration of stormwater in the yard. The most recent inspection report from 2/7/2023 notes that no raw materials are stored outdoors, but there are roll-off containers for metals and wood scraps. The Youghiogheny River at the reach along the facility has a 25 PA Code Chapter 93 Warm Water Fishes designated use and is not impaired (source: *2024 Integrated Report*).

A 7/3/2025 phone call with Brian Hatala, Maintenance Superintendent, confirmed that municipal potable water with no additives is used for both the hydrostatic and ultrasonic tests, and that cylinders are thoroughly cleaned prior to testing. Brian also stated there is potential to eliminate the test water discharge in the future. If eliminated, the facility may qualify for a PAG-03 General Stormwater NPDES permit to replace the current Individual Industrial Waste NPDES permit. Mr. Hatala questioned if there could be a reduction in stormwater monitoring for this renewed permit since Christy Park Works has demonstrated consistent achievement of benchmarks. In response to this question, it was recommended to submit a comment during the Draft comment period with justification for representative stormwater outfalls since no outfalls were marked as representative on the application and not enough information was provided to make an independent assessment. If reasonable justification is given, then monitoring may only be required at representative outfalls. For example, if both Outfall “A” and Outfall “B” drain outdoor scrap storage areas with no significant differences in the discharges, then only Outfall “A” may need to be sampled. Or, if Outfall “A” drains an area with outdoor machinery and Outfall “B” drains an empty gravel lot, then Outfall “A” may be representative of potential pollutant risk from the industrial process.

The permittee currently has no open violations and last had a compliance evaluation inspection on 2/7/2023 by Jim Stewart with no violations noted. There have been no effluent limit violations or exceedances of existing benchmarks in at least the past two years.

In the Draft permit, effluent limits for Outfalls 001, 002, 003, 004, 006, and 007 are based on the 2022 PAG-03 General Stormwater Permit and effluent limits for Outfall 009 are based on the prior permit, the 2022 PAG-10 General Permit for Discharges Resulting from Hydrostatic Testing of Tanks and Pipelines, and DEP’s current PFAS monitoring strategy. Draft permit issuance is recommended.

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.

Figure 1. Satellite imagery of Christy Park Works with approximate facility boundary in pink

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0
Latitude	40º 19' 57"	Longitude	-79º 51' 07"
Quad Name	McKeesport	Quad Code	1607
Wastewater Description:	Stormwater		
Receiving Waters	Youghiogheny River (WWF)	Stream Code	37456
NHD Com ID	69911877	RMI	1.72
Drainage Area	1760	Yield (cfs/mi^2)	0.29
Q_{7-10} Flow (cfs)	510	Q_{7-10} Basis	USACE Q7-10 Flows of Major Rivers
Elevation (ft)	716	Slope (ft/ft)	0.14 (mean basin slope)
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Not Assessed		
Cause(s) of Impairment	n/a		
Source(s) of Impairment	n/a		
TMDL Status	n/a	Name	n/a
Nearest Downstream Public Water Supply Intake	Municipal Authority of Westmoreland County—McKeesport		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	510
PWS RMI	1.37	Distance from Outfall (mi)	0.35

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	0
Latitude	40º 19' 58"	Longitude	-79º 51' 08"
Quad Name	McKeesport	Quad Code	1607
Wastewater Description:	Stormwater		
Receiving Waters	Youghiogheny River (WWF)	Stream Code	37456
NHD Com ID	69911877	RMI	1.72
Drainage Area	1760	Yield (cfs/mi^2)	0.29
Q_{7-10} Flow (cfs)	510	Q_{7-10} Basis	USACE Q7-10 Flows of Major Rivers
Elevation (ft)	716	Slope (ft/ft)	0.14 (mean basin slope)
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Not Assessed		
Cause(s) of Impairment	n/a		
Source(s) of Impairment	n/a		
TMDL Status	n/a	Name	n/a
Nearest Downstream Public Water Supply Intake	Municipal Authority of Westmoreland County—McKeesport		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	510
PWS RMI	1.37	Distance from Outfall (mi)	0.35

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	0
Latitude	40º 19' 59"	Longitude	-79º 51' 11"
Quad Name	McKeesport	Quad Code	1607
Wastewater Description:	Stormwater		
Receiving Waters	Youghiogheny River (WWF)	Stream Code	37456
NHD Com ID	69911877	RMI	1.72
Drainage Area	1760	Yield (cfs/mi^2)	0.29
Q_{7-10} Flow (cfs)	510	Q_{7-10} Basis	USACE Q7-10 Flows of Major Rivers
Elevation (ft)	716	Slope (ft/ft)	0.14 (mean basin slope)
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Not Assessed		
Cause(s) of Impairment	n/a		
Source(s) of Impairment	n/a		
TMDL Status	n/a	Name	n/a
Nearest Downstream Public Water Supply Intake	Municipal Authority of Westmoreland County—McKeesport		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	510
PWS RMI	1.37	Distance from Outfall (mi)	0.35

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	004	Design Flow (MGD)	0
Latitude	40º 20' 02"	Longitude	-79º 51' 14"
Quad Name	McKeesport	Quad Code	1607
Wastewater Description:	Stormwater		
Receiving Waters	Youghiogheny River (WWF)	Stream Code	37456
NHD Com ID	69911877	RMI	1.72
Drainage Area	1760	Yield (cfs/mi^2)	0.29
Q_{7-10} Flow (cfs)	510	Q_{7-10} Basis	USACE Q7-10 Flows of Major Rivers
Elevation (ft)	716	Slope (ft/ft)	0.14 (mean basin slope)
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Not Assessed		
Cause(s) of Impairment	n/a		
Source(s) of Impairment	n/a		
TMDL Status	n/a	Name	n/a
Nearest Downstream Public Water Supply Intake	Municipal Authority of Westmoreland County—McKeesport		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	510
PWS RMI	1.37	Distance from Outfall (mi)	0.35

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	006	Design Flow (MGD)	0
Latitude	40º 20' 04"	Longitude	-79º 51' 16"
Quad Name	McKeesport	Quad Code	1607
Wastewater Description:	Stormwater		
Receiving Waters	Youghiogheny River (WWF)	Stream Code	37456
NHD Com ID	69911877	RMI	1.72
Drainage Area	1760	Yield (cfs/mi^2)	0.29
Q_{7-10} Flow (cfs)	510	Q_{7-10} Basis	USACE Q7-10 Flows of Major Rivers
Elevation (ft)	716	Slope (ft/ft)	0.14 (mean basin slope)
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Not Assessed		
Cause(s) of Impairment	n/a		
Source(s) of Impairment	n/a		
TMDL Status	n/a	Name	n/a
Nearest Downstream Public Water Supply Intake	Municipal Authority of Westmoreland County—McKeesport		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	510
PWS RMI	1.37	Distance from Outfall (mi)	0.35

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	007	Design Flow (MGD)	0
Latitude	40º 20' 05"	Longitude	-79º 51' 17"
Quad Name	McKeesport	Quad Code	1607
Wastewater Description:	Stormwater		
Receiving Waters	Youghiogheny River (WWF)	Stream Code	37456
NHD Com ID	69911877	RMI	1.72
Drainage Area	1760	Yield (cfs/mi^2)	0.29
Q_{7-10} Flow (cfs)	510	Q_{7-10} Basis	USACE Q7-10 Flows of Major Rivers
Elevation (ft)	716	Slope (ft/ft)	0.14 (mean basin slope)
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Not Assessed		
Cause(s) of Impairment	n/a		
Source(s) of Impairment	n/a		
TMDL Status	n/a	Name	n/a
Nearest Downstream Public Water Supply Intake	Municipal Authority of Westmoreland County—McKeesport		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	510
PWS RMI	1.37	Distance from Outfall (mi)	0.35

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	009	Design Flow (MGD)	0
Latitude	40º 20' 06"	Longitude	-79º 51' 20"
Quad Name	McKeesport	Quad Code	1607
Wastewater Description:	Cylinder hydrostatic test water, cylinder ultrasonic test water, and stormwater		
Receiving Waters	Youghiogheny River (WWF)	Stream Code	37456
NHD Com ID	69911877	RMI	1.72
Drainage Area	1760	Yield (cfs/mi^2)	0.29
Q_{7-10} Flow (cfs)	510	Q_{7-10} Basis	USACE Q7-10 Flows of Major Rivers
Elevation (ft)	716	Slope (ft/ft)	0.14 (mean basin slope)
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Not Assessed		
Cause(s) of Impairment	n/a		
Source(s) of Impairment	n/a		
TMDL Status	n/a	Name	n/a
Nearest Downstream Public Water Supply Intake	Municipal Authority of Westmoreland County—McKeesport		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	510
PWS RMI	1.37	Distance from Outfall (mi)	0.35

Changes Since Last Permit Issuance:

Other Comments:

Compliance History

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

Parameter	MAR-25	DEC-24	SEP-24	JUN-24
Flow (MGD) Daily Maximum	0.00003	0.00003	0.00003	0.00003
TSS (mg/L) Daily Maximum		< 5.0		< 5.0
Oil and Grease (mg/L) Daily Maximum		< 5.0		< 5.0
Total Iron (mg/L) Daily Maximum		< 0.0200		< 0.0200
Total Zinc (mg/L) Daily Maximum	< 0.010	< 0.010	< 0.010	< 0.010

DMR Data for Outfall 002 (from June 1, 2024 to May 31, 2025)

Parameter	MAR-25	DEC-24	SEP-24	JUN-24
Flow (MGD) Daily Maximum	0.00003	0.00003	0.00003	0.00003
TSS (mg/L) Daily Maximum		< 5.0		< 5.0
Oil and Grease (mg/L) Daily Maximum		< 5.0		< 5.0
Total Iron (mg/L) Daily Maximum		< 0.0200		< 0.0200
Total Zinc (mg/L) Daily Maximum	< 0.010	< 0.010	< 0.010	< 0.010

DMR Data for Outfall 003 (from June 1, 2024 to May 31, 2025)

Parameter	DEC-24	JUN-24
Flow (MGD) Daily Maximum	0.00019	0.00019
TSS (mg/L) Daily Maximum	< 5.0	< 5.0
Oil and Grease (mg/L) Daily Maximum	< 5.0	< 5.0
Total Iron (mg/L) Daily Maximum	0.0542	< 0.0200
Total Zinc (mg/L) Daily Maximum	< 0.010	< 0.010

DMR Data for Outfall 004 (from June 1, 2024 to May 31, 2025)

Parameter	DEC-24	JUN-24
Flow (MGD) Daily Maximum	0.00019	0.00019
TSS (mg/L) Daily Maximum	< 5.0	< 5.0
Oil and Grease (mg/L) Daily Maximum	< 5.0	< 5.0
Total Iron (mg/L) Daily Maximum	< 0.0200	< 0.0200
Total Zinc (mg/L) Daily Maximum	< 0.010	< 0.010

DMR Data for Outfall 006 (from June 1, 2024 to May 31, 2025)

Parameter	MAR-25	DEC-24	SEP-24	JUN-24
Flow (MGD) Daily Maximum	0.00019	0.00019	0.00019	0.00003
TSS (mg/L) Daily Maximum		< 5.0		< 5.0
Oil and Grease (mg/L) Daily Maximum	< 5.0	< 5.0	< 5.0	< 5.0
Total Iron (mg/L) Daily Maximum		< 0.0200		< 0.0200
Total Zinc (mg/L) Daily Maximum		< 0.010		< 0.010

DMR Data for Outfall 007 (from June 1, 2024 to May 31, 2025)

Parameter	DEC-24	JUN-24
Flow (MGD) Daily Maximum	0.00003	0.00003
TSS (mg/L) Daily Maximum	< 5.0	< 5.0
Oil and Grease (mg/L) Daily Maximum	< 5.0	< 5.0
Total Iron (mg/L) Daily Maximum	< 0.0200	< 0.0200
Total Zinc (mg/L) Daily Maximum	< 0.010	< 0.010

DMR Data for Outfall 009 (from June 1, 2024 to May 31, 2025)

Parameter	APR-25	MAR-25	FEB-25	DEC-24	SEP-24	AUG-24	JUL-24	JUN-24
Flow (MGD) Average Monthly	0.0003	0.0003	0.0004	0.0002	0.0001	0.0001	0.0001	0.0003
Flow (MGD) Daily Maximum	0.0019	0.0011	0.0019	0.00052	0.00019	0.00019	0.00019	0.0011
pH (S.U.) Instantaneous Minimum	7.27	7.6	7.54	7.4	7.2	7.75	7.67	7.76
pH (S.U.) Instantaneous Maximum	7.27	7.72	7.54	7.75	7.2	7.76	7.77	7.76
TSS (lbs/day) Average Monthly	< 0.1173	< 0.0238	< 0.1173	< 0.0348	< 0.0119	< 0.0119	< 0.0238	< 0.0327
TSS (lbs/day) Daily Maximum	< 0.2346	< 0.0238	< 0.2346	< 0.0655	< 0.0238	< 0.0238	< 0.0238	< 0.0655
TSS (mg/L) Average Monthly	< 2.5	< 5.0	< 2.5	< 5.0	< 2.5	< 2.5	< 5.0	< 2.5
TSS (mg/L) Instantaneous Maximum	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Oil and Grease (lbs/day) Daily Maximum	< 0.235	< 0.0238	< 0.0238	< 0.0656	< 0.0238	< 0.0238	0.0238	< 0.0656
Oil and Grease (mg/L) Instantaneous Maximum	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Iron (mg/L) Daily Maximum				0.0576				< 0.0200
Total Zinc (mg/L) Daily Maximum				< 0.010				< 0.010

Development of Effluent Limitations

Outfall No.	001	**Design Flow (MGD)**	0
Latitude	40º 19' 57"	**Longitude**	-79º 51' 7"
Wastewater Description:	Stormwater		

Outfall No.	002	**Design Flow (MGD)**	0
Latitude	40º 19' 58"	**Longitude**	-79º 51' 8"
Wastewater Description:	Stormwater		

Outfall No.	003	**Design Flow (MGD)**	0
Latitude	40º 19' 59"	**Longitude**	-79º 51' 11"
Wastewater Description:	Stormwater		

Outfall No.	004	**Design Flow (MGD)**	0
Latitude	40º 20' 2"	**Longitude**	-79º 51' 14"
Wastewater Description:	Stormwater		

Outfall No.	006	**Design Flow (MGD)**	0
Latitude	40º 20' 4"	**Longitude**	-79º 51' 16"
Wastewater Description:	Stormwater		

Outfall No.	007	**Design Flow (MGD)**	0
Latitude	40º 20' 5"	**Longitude**	-79º 51' 17"
Wastewater Description:	Stormwater		

These outfalls discharge stormwater only with no differences between the industrial uses of the drainage areas significant enough to warrant separate analyses so effluent limitations for all are derived together in this section.

001.A Technology-Based Limitations

The outfalls are subject to 2022 PAG-03 General Stormwater permit conditions as a minimum requirement because the outfalls discharge stormwater associated with industrial activity. Since the facility manufactures gas cylinders, the SIC code for the facility is technically 3443—Fabricated Plate Work (Boiler Shops) so the corresponding appendix of the PAG-03 that applies is Appendix U—Fabricated Metal Products. But, since forging and forming tubes is a primary process at the facility similar to SIC Code 3317—Steel Pipes and Tubes, Appendix B is also applied. A combination of Appendix B and Appendix U should capture all the stormwater contamination concerns at the facility through the processes of forging and finishing the completed seamless cylinders. Reporting requirements applicable to stormwater discharges under this appendix are shown in Table 1 below. PAG-03 Appendix B & U best management practices (BMPs) are included in Part C of the Draft Permit.

Table 1. 2022 PAG-03 Appendix B & U monitoring requirements

Parameter	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
Total Nitrogen	XXX	1/6 Months	Grab
Total Phosphorus	XXX	1/6 Months	Grab
pH (S.U.)	9.0	1/6 Months	Grab
Total Suspended Solids (TSS)	100	1/6 Months	Grab
Oil & Grease	30	1/6 Months	Grab
Nitrate + Nitrite-Nitrogen	3.0	1/6 Months	Grab
Total Aluminum	XXX	1/6 Months	Grab
Total Iron	XXX	1/6 Months	Grab
Total Zinc	XXX	1/6 Months	Grab
Total Copper	XXX	1/6 Months	Grab
Total Lead	XXX	1/6 Months	Grab

While all other stormwater sample data submitted with the application and reported recently through eDMR was well within PAG-03 benchmarks, Outfall 004 and Outfall 007 demonstrated abnormally high concentrations of 5-Day Biochemical Oxygen Demand (BOD5) in Module 1 data without accompaniment of any other elevated indicator pollutants like Total Suspended Solids or Chemical Oxygen Demand. Outfall 004 stormwater had a 1660 mg/L BOD5 concentration and Outfall 007 had a 1430 mg/L BOD5 concentration. Given these concentrations, it is reasonable to impose an additional BOD5 reporting and benchmark requirement for Outfall 004 and Outfall 007 consistent with BOD5 in PAG-03 Appendices G & I. **It is recommended to assess sources of organic matter contamination (dumpsters, leaks, spills etc.) within the drainage areas of these outfalls and make changes to control BOD5 concentrations in stormwater.**

Table 2. Additional BOD5 monitoring requirement for Outfalls 004 & 007

Parameter	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
5-Day Biochemical Oxygen Demand (BOD5)	30	1/6 Months	Grab

001.B Water Quality-Based Limitations

Stormwater WQBELs

Water quality analyses are typically performed under low-flow (Q7-10) stream conditions. Stormwater discharges occur at variable rates and frequencies but not however during Q7-10 conditions. Since the discharges from the outfalls are composed entirely of stormwater, a formal water quality analysis cannot be accurately conducted. Accordingly, water quality-based effluent limitations are not proposed.

001.C Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l). Previous monitoring requirements, limits, and benchmarks are shown in Tables 2, 3, and 4. This Draft permit renewal proposes to remove the Oil & Grease daily maximum limit for Outfall 006 and replacing it with a benchmark according to two exception cases outlined in 40 CFR 122.44(l)(2)(i):

(i) Exceptions—A permit with respect to which paragraph (l)(2) of this section applies may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant, if—

(A) Material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation;

(B)

(1) Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance; or

The prior Oil & Grease daily maximum limit for Outfall 006 of 10 mg/L was imposed based on a reported Oil & Grease concentration of 108.0 mg/L that originated from a machine leaking oil into an internal catch basin that was tied into the stormwater drainage system to Outfall 006. The catch basin was sealed and disconnected from the stormwater drainage system before prior permit issuance. Monitoring data from the past two years for Outfall 006 have yielded all non-detect results for Oil & Grease at a quantitation limit (QL) of 5.0 mg/L. Material alteration of the catch basin and new data demonstrating consistent compliance with the stringent 10 mg/L Oil & Grease daily maximum limit justifies controlling Oil & Grease through a benchmark consistent with typical stormwater permitting practices for compliant facilities. The 10 mg/L benchmark is carried over from the other outfalls for Outfall 006 in the Draft permit.

Table 3. Monitoring requirements and benchmarks from previous permit for Outfall 001 and Outfall 002

Parameter	Daily Maximum (mg/L)	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
Flow (MGD)	Report	XXX	1/quarter	Estimate
Total Suspended Solids (TSS)	Report	XXX	1/6 months	Grab
Oil & Grease	Report	10.0	1/6 months	Grab
Total Iron	Report	XXX	1/6 months	Grab
Total Zinc	Report	1.0	1/quarter	Grab

Table 4. Monitoring requirements and benchmarks from previous permit for Outfalls 003, 004, and 007

Parameter	Daily Maximum (mg/L)	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
Flow (MGD)	Report	XXX	1/6 months	Estimate
Total Suspended Solids (TSS)	Report	XXX	1/6 months	Grab
Oil & Grease	Report	10.0	1/6 months	Grab
Total Iron	Report	XXX	1/6 months	Grab
Total Zinc	Report	1.0	1/6 months	Grab

Table 5. Monitoring requirements, limits, and benchmarks from previous permit for Outfall 006

Parameter	Daily Maximum (mg/L)	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
Flow (MGD)	Report	XXX	1/quarter	Estimate
Total Suspended Solids (TSS)	Report	XXX	1/6 months	Grab
Oil & Grease	10.0	n/a	1/quarter	Grab
Total Iron	Report	XXX	1/6 months	Grab
Total Zinc	Report	1.0	1/6 months	Grab

001.D <u>Proposed Effluent Limitations and Monitoring Requirements</u>

Effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements as summarized in Table 6 and Table 7. All monitoring has been adjusted to a minimum 1/6 months since the facility has demonstrated consistent achievement of prior limits and benchmarks. As stated above, Oil & Grease concentrations at Outfall 006 have been consistent at <5.0 mg/L over the past two years. Total Zinc concentrations over the past two years at Outfall 001 and Outfall 002 have been below the quantitation limit of 0.010 mg/L. Flow is not typically recorded for stormwater outfalls and given that there are no special stormwater circumstances at this facility to justify flow data collection it has been determined to be an arbitrary monitoring requirement and has been removed.

Benchmark values are not effluent limitations, and an exceedance of the benchmark value is not a violation. An exceedance of the benchmark provides permittees with an indication that the facility's BMPs may not be sufficiently controlling pollutants in stormwater. A Part C condition is included in the Draft Permit requiring a Corrective Action Plan to evaluate site stormwater controls and BMPs when there is an exceedance of the benchmark values.

Table 6. Proposed stormwater monitoring requirements for Outfalls 001, 002, 003, and 006

Parameter	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
Total Nitrogen	XXX	1/6 Months	Grab
Total Phosphorus	XXX	1/6 Months	Grab
pH (S.U.)	9.0	1/6 Months	Grab
Total Suspended Solids (TSS)	100	1/6 Months	Grab
Oil & Grease	10.0	1/6 Months	Grab
Nitrate + Nitrite-Nitrogen	3.0	1/6 Months	Grab
Total Aluminum	XXX	1/6 Months	Grab
Total Iron	XXX	1/6 Months	Grab
Total Zinc	1.0	1/6 Months	Grab
Total Copper	XXX	1/6 Months	Grab
Total Lead	XXX	1/6 Months	Grab

Table 7. Proposed stormwater monitoring requirements for Outfalls 004 & 007

Parameter	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
Total Nitrogen	XXX	1/6 Months	Grab
Total Phosphorus	XXX	1/6 Months	Grab
pH (S.U.)	9.0	1/6 Months	Grab
Total Suspended Solids (TSS)	100	1/6 Months	Grab
Oil & Grease	10.0	1/6 Months	Grab
Nitrate + Nitrite-Nitrogen	3.0	1/6 Months	Grab
Total Aluminum	XXX	1/6 Months	Grab
Total Iron	XXX	1/6 Months	Grab
Total Zinc	1.0	1/6 Months	Grab
Total Copper	XXX	1/6 Months	Grab
Total Lead	XXX	1/6 Months	Grab
5-Day Biochemical Oxygen Demand (BOD5)	30.0	1/6 Months	Grab

Development of Effluent Limitations

Outfall No.	009	**Design Flow (MGD)**	0
Latitude	40º 20' 6"	**Longitude**	-79º 51' 20"

Wastewater Description: Cylinder hydrostatic test water, cylinder ultrasonic test water, and stormwater

009.A Technology-Based Limitations

Federal Effluent Limitation Guidelines (ELGs)

Christy Park Works falls under the definition of a tube mill as provided in 40 CFR 420.71(e) so has been subject to ELGs from 40 CFR Part 420 Subpart G Hot Forming Subcategory in prior permit renewals. 40 CFR 420.70 Applicability; description of the hot forming subcategory states:

> *The provisions of this subpart are applicable to **discharges** and to the introduction of pollutants into publicly owned treatment works **resulting from hot forming operations** conducted in primary, section, flat, and pipe and tube mills.*

Since wastewater from hot forming operations is recirculated and only final cylinder test waters are discharged, this ELG is not applicable. For this renewal the ELG is not applied to this discharge. However, if discharge circumstances at the facility change it may once again come into effect.

Regulatory Effluent Standards and Monitoring Requirements

The pH effluent range for all industrial waste process and non-process discharges pursuant with 25 Pa. Code § 92a.48(a)(2) and 25 Pa. Code § 95.2 is indicated in Table 8 below.

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1) as indicated in Table 8 below.

Since chlorinated potable water is used for testing, technology-based Total Residual Chlorine (TRC) limits from 25 Pa. Code § 92a.48(b) are imposed as indicated in Table 8 below.

Table 8. Regulatory Effluent Standards

Parameter	Monthly Avg	Daily Max	Instantaneous Max, IMAX
Flow (MGD)	Monitor	Monitor	–
pH (S.U.)	Wastes must have a pH of not less than 6.0 nor greater than 9.0		
Total Residual Chlorine	0.5 mg/L	–	1.6

PAG-10 General Permit for Discharges from Hydrostatic Testing of Tanks and Pipelines

The test water discharge is subject to the effluent limitations and monitoring requirements in the 2022 PAG-10 General Permit for Discharges Resulting from Hydrostatic Testing of Tanks and Pipelines. Since the facility manufactures and tests new gas cylinders, the effluent limitations and monitoring for new tanks and pipelines (as opposed to existing) are applied—see Table 9.

Table 9. PAG-10 effluent limitations and monitoring requirements

Parameter	Minimum (mg/L)	Average Monthly (mg/L)	IMAX (mg/L)	Measurement Frequency	Sample Type
Flow (GPM)	XXX	Report	XXX	1/discharge	Measured
Duration of Discharge (Hours)	XXX	Report	XXX	1/discharge	Measured
Total Volume Discharged (Gallons)	XXX	Report Total Monthly	XXX	1/month	Calculated
Dissolved Oxygen	5.0	XXX	XXX	2/discharge	Grab
pH (S.U.)	6.0	XXX	9.0	2/discharge	Grab
Total Residual Chlorine	XXX	Report	0.05	2/discharge	Grab
Total Suspended Solids	XXX	30.0	60.0	1/discharge	Grab
Oil & Grease	XXX	15.0	30.0	1/discharge	Grab
Dissolved Iron	XXX	XXX	7.0	1/discharge	Grab

009.B <u>Water Quality-Based Limitations</u>

<u>Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)</u>

With few exceptions, annual sampling of PFAS, a group of emerging contaminants, is now a minimum requirement for all individual industrial waste discharges regardless of industry. The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 consecutive monitoring periods indicate non-detects at or below Quantitation Limits (QLs) 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 should enter a No Discharge Indicator (NODI) Code of “GG” on DMRs. This monitoring is imposed based on 25 Pa. Code § 92a.61(b) which states:

> *The Department may impose reasonable monitoring requirements on any discharge, including monitoring of the surface water intake and discharge of a facility or activity, other operational parameters that may affect effluent quality, and of surface waters adjacent to or associated with the intake or discharge flow of a facility or activity. The Department may require submission of data related to the monitoring.*

Perfluoroalkyl and polyfluoroalkyl substances (PFAS) are man-made chemicals, are resistant to heat, water and oil, and persist in the environment and the human body. PFAS are not found naturally in the environment, and can be found in air, soil, and water (both groundwater and surface water). They have been used to make cookware, carpets, clothing, fabrics for furniture, paper packaging for food, and other materials that are resistant to water, grease, or stains. They are also used in firefighting foams and in a number of industrial processes.

<u>Toxics Management Spread Sheet</u>

The Department of Environmental Protection has developed the DEP Toxics Management Spreadsheet (“TMS”) to facilitate calculations necessary for completing a reasonable potential (RP) analysis and determining water quality-based effluent limitations for discharges of toxic pollutants. The TMS is a macro-enabled Excel binary file that combines the functions of the PENTOXSD model and the Toxics Screening Analysis spreadsheet to evaluate the reasonable potential for discharges to cause excursions above water quality standards and to determine WQBELs. The TMS is a single discharge, mass-balance water quality calculation spread sheet that includes consideration for mixing, first-order decay and other factors to determine recommended WQBELs for toxic substances and several non-toxic substances. Required input data including stream code, river mile index, elevation, drainage area, discharge name, NPDES permit number, discharge flow rate and the discharge concentrations for parameters in the permit application or in DMRs, which are entered into the spread sheet to establish site-specific discharge conditions. Other data such as low flow yield, reach dimensions and partial mix factors may also be entered to further characterize the conditions of the discharge and receiving water. Discharge concentrations for the parameters are chosen to represent the "worst case" quality of the discharge (i.e., maximum reported discharge concentrations). The spread sheet then evaluates each parameter by computing a Waste Load Allocation for each applicable criterion, determining a recommended maximum WQBEL and comparing that recommended WQBEL with the input discharge concentration to determine which is more stringent. Based on this evaluation, the TMS recommends average monthly and maximum daily WQBELs.

Reasonable Potential Analysis and WQBEL Development for Outfall 009

Discharges from Outfall 009 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are entered into the TMS. The maximum reported value of the parameters from the application form or from previous DMRs is used as the input concentration in the TMS. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion are considered to be pollutants of concern. This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion. The TMS is run with the discharge and receiving stream characteristics shown in Table 10. Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis. All the parameters are evaluated using the model to determine the water quality-based effluent limits applicable to the discharge and the receiving stream. The spreadsheet then compares the reported discharge concentrations to the calculated water quality-based effluent limitations to determine if a reasonable potential exists to exceed the calculated WQBELs. Effluent limitations are established in the draft permit where a pollutant's maximum reported discharge concentration equals or exceeds 50% of the WQBEL. For non-conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 25% - 50% of the WQBEL. For conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 10% - 50% of the WQBEL.

Taken from the application, an average discharge flow of 0.005 MGD was used. No WQBELs were recommended. The Output from the TMS is included in Attachment B.

Table 10. TMS Inputs for Outfall 009

Discharge Information	
Parameter	**Value**
River Mile Index	1.72
Discharge Flow (MGD)	0.005
Basin/Stream Information	
Parameter	**Value**
Drainage Area (mi^2)	1760
Q_{7-10} (cfs)	510
Low-flow yield (cfs/mi^2)	0.29
Elevation (ft)	716

Total Residual Chlorine

To determine if WQBELs are required for discharges containing total residual chlorine (TRC), a discharge evaluation is performed using a DEP program called TRC_CALC created with Microsoft Excel for Windows. TRC_CALC calculates TRC Waste Load Allocations (WLAs) through the application of a mass balance model which considers TRC losses due to stream and discharge chlorine demands and first-order chlorine decay. Input values for the program include flow rates and discharge chlorine demands for the receiving stream, the number of samples taken per month, coefficients of TRC variability, partial mix factors, and an optional factor of safety. The mass balance model calculates WLAs for acute and chronic criteria that are then converted to long term averages using calculated multipliers. The multipliers are functions of the number of samples taken per month and the TRC variability coefficients (normally kept at default values unless site specific information is available). The most stringent limitation between the acute and chronic long-term averages is converted to an average monthly limit for comparison to the BAT average monthly limit of 0.5 mg/L from 25 Pa. Code § 92a.48(b)(2). The more stringent of these average monthly TRC limitations is then proposed. The results of the modeling, included in Attachment C, indicate that average monthly limits of 0.5 mg/L and daily maximum limits of 1.17 mg/L are required for TRC.

Table 11. TRC limits from TRC_CALC

Parameter	Monthly Average (mg/L)	Daily Max (mg/L)
Total Residual Chlorine	0.5	1.17

009.C Anti-Backsliding

Shown in Table 12, previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l). Stormwater from the six other stormwater outfalls is considered appropriately representative of the facility's stormwater, so stormwater monitoring for Total Iron and Total Zinc are removed for this permit renewal.

Table 12. Limits from previous permit for Outfall 009

Parameter	Mass Units (lbs/day)		Concentrations (mg/L)				Measurement Frequency	Sample Type
	Average Monthly	Daily Maximum	Instantaneous Minimum	Average Monthly	Daily Maximum	IMAX		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	2/month	Grab
TSS	1.7	4.5	XXX	15.0	XXX	40.0	2/month	Grab
Oil & Grease (4)	XXX	1.1	XXX	XXX	XXX	10.0	2/month	Grab
Total Iron (5)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Zinc (3, 5)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Footnotes from previous permit:
(3) See Part C III.F.6 of the Permit for the benchmark values and corrective action plan requirements.
(4) One sample per quarter to be collected during a precipitation event.
(5) To be collected during a precipitation event.

009.D Proposed Effluent Limitations and Monitoring Requirements

Effluent limitations imposed at Outfall 009 are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements as summarized in Table 13. To be consistent with typical industrial waste permitting practices, the PAG-10 parameters "Duration of Discharge" and "Total Volume Discharged" have been removed and sampling frequency has been adjusted to 2/month. Sampling is only to be conducted when there is no mixing of stormwater runoff.

Table 13. Proposed effluent limitations and monitoring requirements for Outfall 009

Parameter	Mass Units (lbs/day)		Concentrations (mg/L)				Measurement Frequency	Sample Type
	Average Monthly	Daily Maximum	Instantaneous Minimum	Average Monthly	Daily Maximum	Instantaneous Maximum		
Flow (MGD)	Report	Report	XXX	Report	Report	XXX	2/month	Measured
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	2/month	Grab
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	2/month	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	Report	XXX	0.05	2/month	Grab
Total Suspended Solids	1.7	4.5	XXX	15.0	XXX	40.0	2/month	Grab
Oil & Grease	XXX	1.1	XXX	XXX	XXX	10.0	2/month	Grab
Dissolved Iron	XXX	XXX	XXX	XXX	XXX	7.0	2/month	Grab
PFOA (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
PFOS (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
PFBS (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab
HFPO-DA (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/year	Grab

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 Limits for Individual Industrial Permits (BCW-PMT-032)
☒	Other: USGS StreamStats (see Attachment A)

Attachment A:
USGS StreamStats at Point of Discharge

PA0004081 StreamStats Report

Region ID: PA
Workspace ID: PA20250612195141526000
Clicked Point (Latitude, Longitude): 40.33485, -79.85638
Time: 2025-06-12 15:52:09 -0400

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	7.7593	degrees
DRNAREA	Area that drains to a point on a stream	1760	square miles
ELEV	Mean Basin Elevation	1995	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1760	square miles	2.26	1400
ELEV	Mean Basin Elevation	1995	feet	1050	2580

Low-Flow Statistics Disclaimers [Low Flow Region 4]

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

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	214	ft^3/s
30 Day 2 Year Low Flow	300	ft^3/s
7 Day 10 Year Low Flow	110	ft^3/s
30 Day 10 Year Low Flow	141	ft^3/s
90 Day 10 Year Low Flow	225	ft^3/s

Attachment B:
Toxics Management Spreadsheet

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Christy Park Works** NPDES Permit No.: **PA0004081** Outfall No.: **009**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **IW Process Effluent without ELG**

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
0.005	2.07	7.64						

					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	<	2									
	Chloride (PWS)	mg/L	<	0.122									
	Bromide	mg/L	<	0.1									
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L	<	0.05									
Group 2	Total Aluminum	µg/L	<	100									
	Total Antimony	µg/L	<	0.4									
	Total Arsenic	µg/L	<	8									
	Total Barium	µg/L	<	10									
	Total Beryllium	µg/L	<	0.4									
	Total Boron	µg/L	<	100									
	Total Cadmium	µg/L	<	0.1									
	Total Chromium (III)	µg/L	<	5									
	Hexavalent Chromium	µg/L	<	1									
	Total Cobalt	µg/L	<	1									
	Total Copper	µg/L	<	2									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	5									
	Dissolved Iron	µg/L											
	Total Iron	µg/L	<	200									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L	<	20									
	Total Mercury	µg/L											
	Total Nickel	µg/L	<	50									
	Total Phenols (Phenolics) (PWS)	µg/L	<	5									
	Total Selenium	µg/L	<	0.5									
	Total Silver	µg/L	<	0.2									
	Total Thallium	µg/L	<	0.4									
	Total Zinc	µg/L	<	20									
	Total Molybdenum	µg/L	<	0.01									
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										
	Carbon Tetrachloride	µg/L	<										

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

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

Stream / Surface Water Information

Christy Park Works, NPDES Permit No. PA0004081, Outfall 009

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Youghiogheny River**

No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	042122	1.72	716	1760			Yes
End of Reach 1	042122	1.7	715.9	1760.1			Yes

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

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	1.72		510									100	7		
End of Reach 1	1.7		510												

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	1.72														
End of Reach 1	1.7														

Model Results

Christy Park Works, NPDES Permit No. PA0004081, Outfall 009

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 1.502 PMF: 0.052 Analysis Hardness (mg/l): 99.972 Analysis pH: 7.00

Pollutants	Stream Conc	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	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	2,596,669	
Total Antimony	0	0		0	1,100	1,100	3,808,448	
Total Arsenic	0	0		0	340	340	1,177,157	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	72,706,732	
Total Boron	0	0		0	8,100	8,100	28,044,025	
Total Cadmium	0	0		0	2.013	2.13	7,383	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	569.631	1,803	6,241,116	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	56,411	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	328,911	
Total Copper	0	0		0	13.436	14.0	48,455	Chem Translator of 0.96 applied
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	64.561	81.6	282,572	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	468.124	469	1,623,998	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	3.215	3.78	13,096	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	225,045	
Total Zinc	0	0		0	117.152	120	414,732	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 720 PMF: 0.364 Analysis Hardness (mg/l): 99.996 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
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	5,275,836	
Total Arsenic	0	0		0	150	150	3,597,161	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	98,322,397	
Total Boron	0	0		0	1,600	1,600	38,369,716	
Total Cadmium	0	0		0	0.246	0.27	6,490	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.112	86.2	2,066,612	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	249,283	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	455,640	
Total Copper	0	0		0	8.955	9.33	223,709	Chem Translator of 0.96 applied
Total Iron	0	0		0	1,500	1,500	98,902,599	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.517	3.18	76,294	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	52.005	52.2	1,250,882	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	119,645	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	311,754	
Total Zinc	0	0		0	118.135	120	2,873,227	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 720 PMF: 0.364 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	
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	134,294	
Total Arsenic	0	0		0	10	10.0	239,811	
Total Barium	0	0		0	2,400	2,400	57,554,574	
Total Boron	0	0		0	3,100	3,100	74,341,325	
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	

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	23,981,073	
Total Nickel	0	0		0	610	610	14,628,454	
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	5,755	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 720 PMF: 0.544 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	
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	
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 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

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

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	Discharge Conc < TQL
Chloride (PWS)	N/A	N/A	Discharge Conc < TQL
Bromide	N/A	N/A	No WQS
Fluoride (PWS)	N/A	N/A	Discharge Conc < TQL
Total Aluminum	1,664,360	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	239,811	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	46,602,080	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	17,975,088	µg/L	Discharge Conc < TQL
Total Cadmium	4,732	µg/L	Discharge Conc < TQL
Total Chromium (III)	2,066,612	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	36,157	µg/L	Discharge Conc < TQL
Total Cobalt	210,819	µg/L	Discharge Conc < TQL
Total Copper	31,058	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Total Iron	98,902,599	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	76,294	µg/L	Discharge Conc < TQL
Total Manganese	23,981,073	µg/L	Discharge Conc ≤ 10% WQBEL
Total Nickel	1,040,917	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	119,645	µg/L	Discharge Conc < TQL
Total Silver	8,394	µg/L	Discharge Conc < TQL
Total Thallium	5,755	µg/L	Discharge Conc < TQL
Total Zinc	265,826	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS

Attachment C:
TRC Model Spreadsheet

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

510	= Q stream (cfs)	0.5	= CV Daily
0.005	= Q discharge (MGD)	0.5	= CV Hourly
4	= 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)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 21032.986	1.3.2.iii	WLA cfc = ########
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 7837.392	5.1d	LTA_cfc = ########

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.170	

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)**