Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0004472**
Facility Type	**Industrial**	APS ID	**782571**
Major / Minor	**Major**	Authorization ID	**1177124**

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

Applicant and Facility Information

Applicant Name	**United States Steel Corporation**	Facility Name	**Mon Valley Works, Clairton Plant**
Applicant Address	400 State Street	Facility Address	400 State Street
	Clairton, PA 15025-1855		Clairton, PA 15025-1855
Applicant Contact	Eric C. Williams	Facility Contact	***same as applicant***
Applicant Phone	(412) 433-5918	Facility Phone	***same as applicant***
Applicant Email	ewilliams@uss.com	Facility Email	***same as applicant***
Client ID	80062	Site ID	241974
SIC Code	3312	Municipality	Clairton City
SIC Description	Steel Works, Blast Furnaces (Including Coke Ovens), and Rolling Mills	County	Allegheny
Date Application Received	April 3, 2017	EPA Waived?	No
Date Application Accepted		If No, Reason	Major Facility
Purpose of Application	Renewal of an NPDES permit for discharges of treated industrial waste, non-contact cooling water, groundwater, storm water, and steam condensate.		

Summary of Review

Administrative Summary

On April 3, 2017, the Pennsylvania Department of Environmental Protection (DEP) received an application (2017 Application) from United States Steel Corporation (USS) to renew NPDES Permit PA0004472 for discharges from USS's Clairton Plant at the Mon Valley Works. The NPDES permit currently in effect was issued on September 28, 2012 with an effective date of October 1, 2012 and an expiration date of September 30, 2017. The permit renewal application was due by April 3, 2017 (180 days before expiration), so USS's application was timely. DEP was unable to reissue the permit before the expiration date, so the terms and conditions of the 2012 permit were automatically continued upon expiration pursuant 25 Pa. Code § 92a.7(b).

The 2012 permit was amended three times on October 5, 2012 (amendment A-1), January 29, 2015 (amendment A-2), and April 7, 2016 (amendment A-3). An amendment application submitted on November 28, 2012 in which USS requested authorization to discharge additional wastewater from Outfall 045 was incorporated into amendment A-2.

On October 5, 2012, DEP issued Amendment A-1—a minor amendment to correct the minimum measurement frequencies for temperature at Outfalls 007, 023, 028, 029, 038, 081, and 084 in the September 28, 2012 renewal. On October 15, 2012, USS appealed aspects of the 2012 permit including temperature limits, storm water requirements, effluent limits on process wastewaters regulated at Internal Monitoring Point 183, and the application of New Source Performance Standards to production at Battery C. Amendment A-2 was DEP's final action to settle Environmental Hearing Board appeals 2012-171-R, 2012-172-R, and 2012-173-R, which were consolidated at EHB Docket No. 2012-171-R. DEP did not act on the November 28, 2012 amendment application at the time it was submitted because USS's appeal prevented any final action on the permit until settlement was reached. The settlement is contained in a January 24, 2014 Consent Order and Agreement entered into by DEP and USS. Amendment A-3 removed effluent limits for hexavalent chromium from Outfall 090 and modified temperature limits for outfalls discharging heated wastewater.

Approve	Deny	Signatures	Date
✓		Ryan C. Decker, P.E. / Environmental Engineer	April 4, 2025
X		Michael E. Fifth, P.E. / Environmental Engineer Manager	April 7, 2025

Summary of Review

By letter dated January 25, 2023, DEP requested USS to submit an updated NPDES permit application owing to the time that had passed since the 2017 application was submitted. On April 27, 2023, USS submitted the requested application (2023 Application Update). Also, on May 7, 2024, DEP requested more detailed production data, which USS provided to DEP on May 31, 2024. The draft permit and this fact sheet are based primarily on data submitted by USS in 2023 and 2024.

Facility Description

The Clairton Plant is part of an integrated steelmaking facility named the Mon Valley Works that consists of three plants along the Monongahela River: the Clairton Plant, the Edgar Thomson Plant, and the Irvin Plant. USS's Fairless Plant in Fairless Hills, PA near Philadelphia also is nominally part of the Mon Valley Works. The Clairton Plant is the largest by-product coke plant in the United States. Metallurgical coke is used in USS's blast furnaces to produce molten iron. A smaller portion of the coke is sold on the open market. By-products produced at the Clairton Plant include coke oven gas, crude coal tar, crude light oil, anhydrous ammonia, and elemental sulfur.

Metallurgical coal is delivered to the facility via barge and stored in a coal yard onsite. Blends of coal are charged to the top of the coke oven batteries and heated to approximately 1,800°F in the absence of air for approximately 18 to 24 hours. The coke is pushed into quench cars and quenched with water to prevent further combustion. Moisture and volatile materials are driven from the coal in the batteries to produce coke oven gas (COG). The COG and associated wastewaters are processed onsite at the byproducts recovery plant to remove by-products of ammonia, light oil, tar, and naphthalene.

Coke oven batteries currently operating at the plant include Battery B, Batteries 13, 14, and 15, Batteries 19 and 20, and Battery C. Batteries 1, 2, and 3 permanently shut down at the end of March 2023. Batteries 7, 8, and 9 permanently shut down in April 2009. Battery 15 is hot-idled, which means the battery is not producing coke, but the ovens are still heated and able to produce coke in the future.

The Clairton Plant has seventy-six (76) outfalls and one (1) Internal Monitoring Point (IMP). Process wastewaters from cokemaking and by-product recovery operations are treated by the Clairton Plant's Contaminated Water Treatment Plant—a physical/chemical and biological treatment system. Discharges from the Contaminated Water Treatment Plant are regulated by 40 CFR Part 420 – Iron and Steel Manufacturing Point Source Category Effluent Limitations Guidelines at IMP 183. Treated wastewaters from IMP 183 combine with non-contact cooling water and storm water associated with industrial activities for discharge through Outfall 038. Outfalls 023, 028, 029, 069A, 081, 084 also discharge non-contact cooling water. Outfall 069A is new to this permit. Outfall 081 also can be used as a bypass discharge location for process wastewaters regulated at IMP 183 and both Outfalls 023 an 081 also discharge storm water associated with industrial activities.

Outfall 018 discharges storm water runoff from the Clairton Plant's coal yard after treatment by the Coal Yard Stormwater Treatment Plant. Three outfalls—Outfalls 009, 010, and 011—are designated for emergency overflows from the coal yard sedimentation basins.

Thirty-eight (38) outfalls discharge uncontaminated stream condensate at average flow rates of less than five gallons per day.

The remaining outfalls primarily discharge miscellaneous non-process wastewaters (*e.g.*, water from floor drains, fire protection water, intake screen backwash water), and/or storm water associated with industrial activities.

Apart from the Clairton Plant proper, the NPDES permit also authorizes discharges of groundwater from a groundwater remediation system (Outfall 090) and storm water (Outfall 091) from USS's Peters Creek Coke Yard Area. The Peters Creek Coke Yard Area is located southwest of State Route 837 (*i.e.*, south of the main Clairton Plant) and consists of approximately 108 acres of land containing the Coke Yard Storage Area and the former Peters Creek Lagoon. The former Peters Creek Lagoon was a man-made, unlined lagoon/impoundment that was used to dispose of materials generated from cokemaking operations. It is believed that the lagoon was formed as a diked area on the original flood plain of Peters Creek and possibly as part of the old creek bed. Active use of the Peters Creek Lagoon ceased in the early 1970s. The Peters Creek Coke Yard is currently used as a sorting and storage area for different sizes of coke produced at the Clairton Plant. For this permit renewal, USS proposes to authorize additional groundwater contributions to the Contaminated Water Treatment Plant from the Peters Creek Coke Yard Area.

A full listing of the Clairton Plant's outfalls and effluent sources is provided following this Summary of Review.

Summary of Review

Permit Requirements

Effluent limits imposed at IMP 183 based on 40 CFR Part 420 are updated to reflect USS's updated rate of coke production following the shutdown of Batteries 1, 2, and 3 and the corresponding reduction in the plant's production capacity. As with the previous permit, mass limits at IMP 183 are increased to account for increased pollutant loadings to the Contaminated Water Treatment Plant from the routing of other wastewaters to that treatment plant. The additional wastewaters include wet coke oven gas desulfurization system wastewater, the ammonia recovery system (USS's PHOSAM process) wastewater, coal tar processing wastewater (formerly of Koppers, Inc.), biological treatment system control water, groundwater from groundwater remediation/extraction systems, and storm water from immediate process areas. The mass increases are allowed under various provisions of Part 420 as discussed later in this fact sheet. Generally, USS's lower coke production results in lower mass limits for most pollutants regulated at IMP 183. As an exception, USS requested to renew its Clean Water Act § 301(g) variances for Ammonia-Nitrogen and Total Phenolics (Phenols (4AAP)), which would maintain mass limits for those pollutants at levels previously imposed at IMP 183. Based on DEP's review of USS's request, DEP recommends that the § 301(g) variances for those pollutants be renewed. The draft permit includes effluent limits for Ammonia-Nitrogen and Total Phenolics (Phenols (4AAP)) at IMP 183 consistent with DEP's recommendation. However, the U.S. Environmental Protection Agency (EPA) has final approval authority for 301(g) variances and must either approve or deny continuation of the variances before the permit is renewed. Concentration-based limits at IMP 183 remain unchanged.

Storm water requirements are modified to align with DEP's standard operating procedures for establishing effluent limits in individual industrial waste permits. The modifications include the addition of more parameters for monitoring, the use of benchmark monitoring with corresponding corrective action plan requirements for consecutive exceedances of the benchmark values, and monitoring frequency reductions based on a request from USS. The previous permit required USS to submit and implement a Storm Water Pollution Prevent Plan (SWPPP) to identify Best Management Practices that have or will be installed or implemented to reduce pollutants in storm water discharges. In combination with the SWPPP, the previous permit identified effluent concentration goals for storm water discharges. For this permit renewal, elements of USS's SWPPP that remain in effect should be incorporated into the facility's PPC Plan as the SWPPP will not be required by the renewed permit. Also, as stated above, the renewed permit establishes benchmark monitoring in place of the previous permit's effluent concentration goals consistent with DEP's current permitting policies for storm water.

Thermal limits for USS's heated wastewaters were imposed in amendment A-3 as aggregate facility-wide heat loads in units of MBTUs/day. The load limits are updated with this permit renewal to reflect updated temperature data for the Monongahela River. The updates result in slightly lower load limits for most of the year, slightly higher load limits from November 16th and 30th, and substantially lower load limits from December 1st through 31st.

Based on a new monitoring initiative that began in February 2024 for per- and polyfluoroalkyl substances (PFAS), new annual monitoring requirements are imposed for Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), Perfluorobutanesulfonic acid (PFBS), and Hexafluoropropylene oxide dimer acid (HFPO-DA) at IMP 183 and Outfalls 038 and 090.

Clean Water Act § 316(b) – Requirements for Cooling Water Intake Structures for Existing Facilities

The Clairton Plant withdraws cooling water from the Braddock Pool of the Monongahela River. There is one cooling water intake structure (CWIS) at the Clairton Plant, located at the Coke Works River Pump House on the west bank of the Monongahela River at approximate river mile 20.1. The pump house contains three forebays with two traveling screens per forebay. The two screens in forebay #1 are dual flow (reconfigured in 1997) and the four screens in forebays #2 and #3 are through-flow screens. The CWIS is regulated pursuant to Section 316(b) of the Clean Water Act (33 U.S.C. § 1326(b)) and implementing regulations under 40 CFR Part 125, Subpart J – Requirements Applicable to Cooling Water Intake Structures for Existing Facilities Under Section 316(b) of the Clean Water Act and 40 CFR Part 122, Subpart B – Permit Application and Special NPDES Program Requirements, § 122.21(r).

By letter dated July 12, 2022, DEP requested USS to provide additional application information relating to the Clairton Plant's cooling water intake structure including one year of entrainment data and an alternative method for complying with impingement BTA pursuant to DEP's determination in the letter that the reported rates of impingement do not represent a *de minimis* rate of impingement. USS appealed the letter to the Environmental Hearing Board. After discussion between the parties, USS's appeal was dismissed on February 22, 2023 without prejudice to the right of USS to raise any and all factual or legal issues that were raised in the appeal docketed at EHB Docket. No 2022-056-B in any future proceeding, and without prejudice to DEP to take any future action based on the issues discussed in the July 12, 2022, letter. In effect, the parties returned to a

Summary of Review

state pre-dating the July 12, 2022 letter where there was a deficiency in supplemental information DEP requires to make a site-specific BTA determination for entrainment.

In the absence of sufficient information, DEP is not making a BTA determination for impingement or entrainment at the Clairton Plant's CWIS. Entrainment BTA may involve changes to the CWIS that impact impingement or there may be an interdependent system of technologies that represent BTA for impingement and entrainment, which are determinations that must be made based on sufficient information. Data developed during the next permit cycle pursuant to 40 CFR § 125.95(a)(2) (regarding alternative schedules for the submission of information) should enable DEP to make BTA determinations for impingement and entrainment with the next permit renewal.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001A (901 in eFACTS; SF 925169)	Design Flow (MGD)	Variable
Latitude	40° 18' 58"	Longitude	-79° 53' 36"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Storm water runoff from the north end of the coal yard		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	134839825	RMI	18.906
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Monongahela River TMDL
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	14.446

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002A (402 in eFACTS; SF 925126)	Design Flow (MGD)	Variable
Latitude	40° 18' 54"	Longitude	-79° 53' 30"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Storm water runoff from the coal wharf (emergency only)		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	134839825	RMI	19.04
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	14.58

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	007 (SF 925170)	Design Flow (MGD)	0.20
Latitude	40° 18' 36"	Longitude	-79° 52' 59"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Air compressor non-contact cooling water		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	134839825	RMI	19.507
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.047

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	009 (SF 925171)	Design Flow (MGD)	Variable
Latitude	40° 18' 47"	Longitude	-79° 53' 25"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Emergency overflow from the coal yard sedimentation basin		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408306	RMI	19.185
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	14.725

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	010 (SF 216284)	Design Flow (MGD)	Variable
Latitude	40° 18' 47"	Longitude	-79° 53' 24"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Emergency overflow from the coal yard sedimentation basin		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	134839825	RMI	19.196
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	14.736

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	011 (SF 216287)	Design Flow (MGD)	Variable
Latitude	40° 18' 46"	Longitude	-79° 53' 24"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Emergency overflow from the coal yard sedimentation basin		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	134839825	RMI	19.206
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	14.746

ischarge, Receiving Waters and Water Supply Information

Outfall No.	018 (SF 216280)	Design Flow (MGD)	0.36 (batch rate)
Latitude	40° 18' 41"	Longitude	-79° 53' 19"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Treated storm water runoff from the coal storage yard and uncontaminated groundwater pumped during pond maintenance and cleanout operations		
Receiving Waters	Monongahela River	Stream Code	37185
NHD Com ID	134839825	RMI	19.456
Drainage Area	5,410	Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)	550	Q_{7-10} Basis	US Army Corps. of Engrs.
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	14.996

Discharge, Receiving Waters and Water Supply Information

Outfall No.	022 (SF 925178)	Design Flow (MGD)	Variable
Latitude	40° 18' 35"	Longitude	-79° 52' 56"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Storm water from the Boiler Feed Water Treatment Plant, the adjacent parking area to the South, and a section of F Roadway and the riverfront area adjacent to the No. 2 Boiler House		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408312	RMI	19.642
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.182

Discharge, Receiving Waters and Water Supply Information

Outfall No.	022A (922 in eFACTS; SF 577405)	Design Flow (MGD)	Variable
Latitude	40° 18' 35"	Longitude	-79° 52' 56"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	BTX Trench (emergency only)		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408312	RMI	19.626
Drainage Area		Yield (cfs/mi^2)	
All Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.166

Discharge, Receiving Waters and Water Supply Information

Outfall No.	023 (SF 925180)	Design Flow (MGD)	14.13
Latitude	40° 18' 35"	Longitude	-79° 52' 55"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Non-contact cooling water, boiler blowdown, steam condensate, boiler feed water treatment plant wastes, storm water		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408312	RMI	19.630
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.17

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	028 (SF 518301)	Design Flow (MGD)	1.07
Latitude	40° 18' 34"	Longitude	-79° 52' 54"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Non-contact cooling water and boiler blowdown from the no. 2 boiler house		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408312	RMI	19.659
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.199

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	029 (SF 925182)	Design Flow (MGD)	1.01
Latitude	40° 18' 34"	Longitude	-79° 52' 54"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Non-contact cooling water from the no. 2 powerhouse		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408312	RMI	19.687
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.227

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	030B (830 in eFACTS; SF 925121)	Design Flow (MGD)	Variable
Latitude	40° 18' 34"	Longitude	-79° 52' 51"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Emergency discharges from the plant's fire protection system		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408334	RMI	19.715
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.255

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	035D (635 in eFACTS; SF 925122)	Design Flow (MGD)	Variable
Latitude	40° 18' 25"	Longitude	-79° 52' 34"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Emergency discharges from the plant's fire protection system		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408334	RMI	19.715
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.255

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	038 (SF 925184)	Design Flow (MGD)	47.2 (avg.); 117 (max)
Latitude	40° 18' 22"	Longitude	-79° 52' 30"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Sources monitored at Internal Monitoring Point 183, non-contact cooling water, cooling tower blowdown, barometric and steam condensate, and storm water		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408334	RMI	20.076
Drainage Area	5,350	Yield (cfs/mi^2)	0.195
Q_{7-10} Flow (cfs)	550	Q_{7-10} Basis	US Army Corps. of Engrs.
Elevation (ft)	718.7	Slope (ft/ft)	0.0001
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.616

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	044 (SF 925185)	Design Flow (MGD)	0.0288
Latitude	40° 18' 20"	Longitude	-79° 52' 29"
Quad Name	McKeesport	Quad Code	1607
Wastewater Description:	Water intake screen backwash		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408334	RMI	20.118
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.658

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	Outfall 045 (SF 925152)	Design Flow (MGD)	0.016
Latitude	40° 18' 20"	Longitude	-79° 52' 28"
Quad Name	McKeesport	Quad Code	1607
Wastewater Description:	Uncontaminated steam condensate, pump seal water, and strainer backwash		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408334	RMI	20.126
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.666

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	045A (945 in eFACTS; SF 518336)	Design Flow (MGD)	0.0144
Latitude	40° 18' 20"	Longitude	-79° 52' 28"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Drain from strainers		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408334	RMI	20.126
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.666

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	046 (SF 925186)	Design Flow (MGD)	240
Latitude	40° 18' 19"	Longitude	-79° 52' 28"
Quad Name	McKeesport	Quad Code	1607
Wastewater Description:	Standpipe overflow consisting solely of river water		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408334	RMI	20.141
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.681

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	049A (949 in eFACTS; SF 925191)	Design Flow (MGD)	Variable
Latitude	40° 18' 16"	Longitude	-79° 52' 22"
Quad Name	McKeesport	Quad Code	1607
Wastewater Description:	Storm water from plant areas		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408334	RMI	20.249
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.789

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	053 (SF 925123)	Design Flow (MGD)	Variable
Latitude	40° 18' 14"	Longitude	-79° 52' 21"
Quad Name	McKeesport	Quad Code	1607
Wastewater Description:	Emergency discharges from the plant's fire protection system		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408334	RMI	20.289
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.829

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	054A (954 in eFACTS; SF 925192)	Design Flow (MGD)	Variable
Latitude	40° 18' 13"	Longitude	-79° 52' 20"
Quad Name	McKeesport	Quad Code	1607
Wastewater Description:	Storm water from plant areas and downspouts		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408334	RMI	20.305
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.845

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	057 (SF 925120)	Design Flow (MGD)	Variable
Latitude	40° 18' 24"	Longitude	-79° 52' 33"
Quad Name	McKeesport	Quad Code	1607
Wastewater Description:	Surge bin floor drains		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408334	RMI	20.016
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.556

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	062 (SF 925124)	Design Flow (MGD)	Variable
Latitude	40° 18' 07"	Longitude	-79° 52' 13"
Quad Name	McKeesport	Quad Code	1607
Wastewater Description:	Emergency discharges from the plant's fire protection system		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408334	RMI	20.521
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	16.061

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	067 (SF 925125)	Design Flow (MGD)	Variable
Latitude	40° 18' 10"	Longitude	-79° 52' 14"
Quad Name	McKeesport	Quad Code	1607
Wastewater Description:	Emergency discharges from the plant's fire protection system		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408334	RMI	20.415
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.955

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	068 (SF 925193)	Design Flow (MGD)	Variable
Latitude	40° 18' 00"	Longitude	-79° 52' 11"
Quad Name	McKeesport	Quad Code	1607
Wastewater Description:	Storm water from the quench sump dust pile		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408468	RMI	20.661
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	16.201

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	069A (969 in eFACTS; SF 1427187)	Design Flow (MGD)	0.0055
Latitude	40° 17' 45"	Longitude	-79° 52' 17"
Quad Name	McKeesport	Quad Code	1607
Wastewater Description:	Non-contact cooling tower blowdown from a cooling tower for an air compressor		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408468	RMI	20.891
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	16.431

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	073 (SF 518374)	Design Flow (MGD)	Variable
Latitude	40° 17' 24"	Longitude	-79° 52' 16"
Quad Name	McKeesport	Quad Code	16067
Wastewater Description:	Storm water from the plant and the City of Clairton		
Receiving Waters	Monongahela River	Stream Code	37185
NHD Com ID	99408468	RMI	21.47
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.		Chapter 93 Class.	
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	17.01

Discharge, Receiving Waters and Water Supply Information

Outfall No.	081 (SF 925194)	Design Flow (MGD)	21.0
Latitude	40° 18' 34"	Longitude	-79° 52' 54"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Non-contact cooling water, steam condensate, emergency bypass for Internal Monitoring Point 183, plant fire suppression water, and storm water runoff		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408312	RMI	19.675
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.215

Discharge, Receiving Waters and Water Supply Information

Outfall No.	083 (SF 925128)	Design Flow (MGD)	Variable
Latitude	40° 18' 30"	Longitude	-79° 52' 56"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Inactive storm water outfall (emergency only; rerouted to Outfall 081)		
Receiving Waters	Peters Creek (TSF)	Stream Code	39425
NHD Com ID	99408322	RMI	0.06
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Aquatic Life, Recreation, PWS: Impaired; Fish Consumption: Unknown		
Cause(s) of Impairment	1. Metals, Other Than Mercury (Aquatic Life); 2. Cause Unknown (Aquatic Life); 3. Pathogens (Recreation); 4. Pathogens (Potable Water Supply)		
Source(s) of Impairment	1. Acid Mine Drainage; 2. Source Unknown; 3. Source Unknown; 4. Source Unknown		
TMDL Status	1. Final, 4/7/2009; 2,3,4. Pending	Name	1. Peters Creek Watershed TMDL
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.27

Discharge, Receiving Waters and Water Supply Information

Outfall No.	084 (SF 925195)	Design Flow (MGD)	1.54
Latitude	40° 18' 35"	Longitude	-79° 52' 55"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Non-contact cooling water		
Receiving Waters	Monongahela River (WWF)	Stream Code	39425
NHD Com ID	99408312	RMI	19.663
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Fish Consumption: Impaired; Recreation: Attaining; Aquatic Life, PWS: Unknown		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBs) (Fish Consumption)		
Source(s) of Impairment	Source Unknown		
TMDL Status	Final	Name	Final TMDL for Monongahela River
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.203

Discharge, Receiving Waters and Water Supply Information

Outfall No.	085 (SF 925196)	Design Flow (MGD)	Variable
Latitude	40° 18' 22"	Longitude	-79° 52' 56"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Storm water from catch basins west of former Battery 22 pusher pad and a section of B Roadway along the perimeter of the former Koppers plant, and fire protection water		
Receiving Waters	Peters Creek (TSF)	Stream Code	39425
NHD Com ID	99408326	RMI	0.198
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired (Aquatic Life, Recreation, PWS); Unknown (Fish Consumption)		
Cause(s) of Impairment	1. Metals, Other Than Mercury (Aquatic Life); 2. Cause Unknown (Aquatic Life); 3. Pathogens (Recreation); 4. Pathogens (Potable Water Supply)		
Source(s) of Impairment	1. Acid Mine Drainage; 2. Source Unknown; 3. Source Unknown; 4. Source Unknown		
TMDL Status	1. Final, 4/7/2009; 2,3,4. Pending	Name	1. Peters Creek Watershed TMDL
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.408

Discharge, Receiving Waters and Water Supply Information

Outfall No.	085A (985 in eFACTS; SF 1079617)	Design Flow (MGD)	Variable
Latitude	40° 18' 23"	Longitude	-79° 52' 56"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Groundwater treated by the Mendelssohn sewer treatment facility		
Receiving Waters	Peters Creek (TSF)	Stream Code	39425
NHD Com ID	99408326	RMI	0.198
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired (Aquatic Life, Recreation, PWS); Unknown (Fish Consumption)		
Cause(s) of Impairment	1. Metals, Other Than Mercury (Aquatic Life); 2. Cause Unknown (Aquatic Life); 3. Pathogens (Recreation); 4. Pathogens (Potable Water Supply)		
Source(s) of Impairment	1. Acid Mine Drainage; 2. Source Unknown; 3. Source Unknown; 4. Source Unknown		
TMDL Status	1. Final, 4/7/2009; 2,3,4. Pending	Name	1. Peters Creek Watershed TMDL
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.408

Discharge, Receiving Waters and Water Supply Information

Outfall No.	086 (SF 925197)	Design Flow (MGD)	Variable
Latitude	40° 18' 20"	Longitude	-79° 52' 54"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Storm water from catch basins west of former Battery 21 pusher pad and a section of B Roadway along the perimeter of the former Koppers plant, and fire protection water		
Receiving Waters	Peters Creek (TSF)	Stream Code	39425
NHD Com ID	99408326	RMI	0.260
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired (Aquatic Life, Recreation, PWS); Unknown (Fish Consumption)		
Cause(s) of Impairment	1. Metals, Other Than Mercury (Aquatic Life); 2. Cause Unknown (Aquatic Life); 3. Pathogens (Recreation); 4. Pathogens (Potable Water Supply)		
Source(s) of Impairment	1. Acid Mine Drainage; 2. Source Unknown; 3. Source Unknown; 4. Source Unknown		
TMDL Status	1. Final, 4/7/2009; 2,3,4. Pending	Name	1. Peters Creek Watershed TMDL
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.47

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	087 (SF 925198)	Design Flow (MGD)	Variable
Latitude	40° 18' 18"	Longitude	-79° 52' 53"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Storm water from the Coke Works Office Building and parking lot		
Receiving Waters	Peters Creek (TSF)	Stream Code	39425
NHD Com ID	99408328	RMI	0.303
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired (Aquatic Life, Recreation, PWS); Unknown (Fish Consumption)		
Cause(s) of Impairment	1. Metals, Other Than Mercury (Aquatic Life); 2. Cause Unknown (Aquatic Life); 3. Pathogens (Recreation); 4. Pathogens (Potable Water Supply)		
Source(s) of Impairment	1. Acid Mine Drainage; 2. Source Unknown; 3. Source Unknown; 4. Source Unknown		
TMDL Status	1. Final, 4/7/2009; 2,3,4. Pending	Name	1. Peters Creek Watershed TMDL
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	088 (SF 925199)	Design Flow (MGD)	Variable
Latitude	40° 18' 18"	Longitude	-79° 52' 53"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Steam condensate and storm water from catch basins west of former Battery 20 pusher pad and a section of B Roadway along the perimeter of the former Koppers plant		
Receiving Waters	Peters Creek (TSF)	Stream Code	39425
NHD Com ID	99408328	RMI	0.308
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired (Aquatic Life, Recreation, PWS); Unknown (Fish Consumption)		
Cause(s) of Impairment	1. Metals, Other Than Mercury (Aquatic Life); 2. Cause Unknown (Aquatic Life); 3. Pathogens (Recreation); 4. Pathogens (Potable Water Supply)		
Source(s) of Impairment	1. Acid Mine Drainage; 2. Source Unknown; 3. Source Unknown; 4. Source Unknown		
TMDL Status	1. Final, 4/7/2009; 2,3,4. Pending	Name	1. Peters Creek Watershed TMDL
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.518

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	089 (SF 925200)	Design Flow (MGD)	Variable
Latitude	40° 18' 15"	Longitude	-79° 52' 54"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Storm water from areas near the Battery 19 pusher pad and adjacent section of B Roadway, the No. 1 Power House, and adjacent sections of C Roadway, and steam condensate		
Receiving Waters	Peters Creek (TSF)	Stream Code	39425
NHD Com ID	99408364	RMI	0.356
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired (Aquatic Life, Recreation, PWS); Unknown (Fish Consumption)		
Cause(s) of Impairment	1. Metals, Other Than Mercury (Aquatic Life); 2. Cause Unknown (Aquatic Life); 3. Pathogens (Recreation); 4. Pathogens (Potable Water Supply)		
Source(s) of Impairment	1. Acid Mine Drainage; 2. Source Unknown; 3. Source Unknown; 4. Source Unknown		
TMDL Status	1. Final, 4/7/2009; 2,3,4. Pending	Name	1. Peters Creek Watershed TMDL
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.566

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	090 (SF 925201)	Design Flow (MGD)	0.018 (avg.); 0.022 (max)
Latitude	40° 18' 20"	Longitude	-79° 52' 55"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Treated ground water and storm water from the Peters Creek Lagoon Area		
Receiving Waters	Peters Creek (TSF)	Stream Code	39425
NHD Com ID	99408326	RMI	0.4578
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired (Aquatic Life, Recreation, PWS); Unknown (Fish Consumption)		
Cause(s) of Impairment	1. Metals, Other Than Mercury (Aquatic Life); 2. Cause Unknown (Aquatic Life); 3. Pathogens (Recreation); 4. Pathogens (Potable Water Supply)		
Source(s) of Impairment	1. Acid Mine Drainage; 2. Source Unknown; 3. Source Unknown; 4. Source Unknown		
TMDL Status	1. Final, 4/7/2009; 2,3,4. Pending	Name	1. Peters Creek Watershed TMDL
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.646

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	091 (SF 925202)	Design Flow (MGD)	Variable
Latitude	40° 18' 20"	Longitude	-79° 52' 55"
Quad Name	Glassport	Quad Code	1606
Wastewater Description:	Storm water from the Peters Creek lagoon area		
Receiving Waters	Peters Creek (TSF)	Stream Code	39425
NHD Com ID	99408326	RMI	0.4578
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired (Aquatic Life, Recreation, PWS); Unknown (Fish Consumption)		
Cause(s) of Impairment	1. Metals, Other Than Mercury (Aquatic Life); 2. Cause Unknown (Aquatic Life); 3. Pathogens (Recreation); 4. Pathogens (Potable Water Supply)		
Source(s) of Impairment	1. Acid Mine Drainage; 2. Source Unknown; 3. Source Unknown; 4. Source Unknown		
TMDL Status	1. Final, 4/7/2009; 2,3,4. Pending	Name	1. Peters Creek Watershed TMDL
Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company – Pittsburgh		
PWS ID	5020039	PWS Withdrawal (MGD)	69.0 (60 MGD safe yield)
PWS Waters	Monongahela River	Flow at Intake (cfs)	1,230
PWS RMI	4.46	Distance from Outfall (mi)	15.646

Discharge, Receiving Waters and Water Supply Information			
Internal Monitoring Point	183 (SF 925183)	Design Flow (MGD)	0.719 (avg.); 1.12 (max)
Wastewater Description:	Process wastewaters, contaminated groundwater, and contaminated storm water treated by the Contaminated Water Treatment Plant (CWTP)		

Outfalls Discharging Uncontaminated Steam Condensate

Outfall No.	Alternative Outfall No.	eFACTS Subfacility ID	Latitude	Longitude	Wastewater Description	Receiving Water	Design Flow
020		925129	40° 18' 36"	-79° 52' 59"	Uncontaminated steam condensate	Monongahela River	<5 gpd
020A	920	925130	40° 18' 36"	-79° 52' 58"	Uncontaminated steam condensate	Monongahela River	<5 gpd
030		925131	40° 18' 31"	-79° 52' 53"	Uncontaminated steam condensate	Monongahela River	<5 gpd
030A	930	925134	40° 18' 31"	-79° 52' 50"	Uncontaminated steam condensate	Monongahela River	<5 gpd
031		925135	40° 18' 31"	-79° 52' 48"	Uncontaminated steam condensate	Monongahela River	<5 gpd
031A	931	925136	40° 18' 31"	-79° 52' 46"	Uncontaminated steam condensate	Monongahela River	<5 gpd
031B	831	925137	40° 18' 31"	-79° 52' 44"	Uncontaminated steam condensate	Monongahela River	<5 gpd
031C	731	925138	40° 18' 30"	-79° 52' 43"	Uncontaminated steam condensate	Monongahela River	<5 gpd
031D	631	925139	40° 18' 30"	-79° 52' 42"	Uncontaminated steam condensate	Monongahela River	<5 gpd
032		925140	40° 18' 29"	-79° 52' 42"	Uncontaminated steam condensate	Monongahela River	<5 gpd
033		925141	40° 18' 27"	-79° 52' 41"	Uncontaminated steam condensate	Monongahela River	<5 gpd
033A	933	925142	40° 18' 26"	-79° 52' 38"	Uncontaminated steam condensate	Monongahela River	<5 gpd
035A	935	925143	40° 18' 25"	-79° 52' 36"	Uncontaminated steam condensate	Monongahela River	<5 gpd
035B	835	925144	40° 18' 25"	-79° 52' 35"	Uncontaminated steam condensate	Monongahela River	<5 gpd
035C	735	925145	40° 18' 25"	-79° 52' 35"	Uncontaminated steam condensate	Monongahela River	<5 gpd
036		925146	40° 18' 24"	-79° 52' 33"	Uncontaminated steam condensate	Monongahela River	<5 gpd
037		925147	40° 18' 22"	-79° 52' 31"	Uncontaminated steam condensate	Monongahela River	<5 gpd
037A	937	925148	40° 18' 25"	-79° 52' 35"	Uncontaminated steam condensate	Monongahela River	<5 gpd
039		925149	40° 18' 21"	-79° 52' 30"	Uncontaminated steam condensate	Monongahela River	<5 gpd
040		925150	40° 18' 21"	-79° 52' 30"	Uncontaminated steam condensate	Monongahela River	<5 gpd
043		925151	40° 18' 21"	-79° 52' 29"	Uncontaminated steam condensate	Monongahela River	<5 gpd
047		925153	40° 18' 18"	-79° 52' 26"	Uncontaminated steam condensate	Monongahela River	<5 gpd
047A	947	925154	40° 18' 17"	-79° 52' 25"	Uncontaminated steam condensate	Monongahela River	<5 gpd
048		925155	40° 18' 17"	-79° 52' 25"	Uncontaminated steam condensate	Monongahela River	<5 gpd
049		925156	40° 18' 17"	-79° 52' 22"	Uncontaminated steam condensate	Monongahela River	<5 gpd
050		925157	40° 18' 15"	-79° 52' 21"	Uncontaminated steam condensate	Monongahela River	<5 gpd
051		925158	40° 18' 15"	-79° 52' 21"	Uncontaminated steam condensate	Monongahela River	<5 gpd
054B	854	925159	40° 18' 13"	-79° 52' 20"	Uncontaminated steam condensate	Monongahela River	<5 gpd
054C	754	925160	40° 18' 13"	-79° 52' 19"	Uncontaminated steam condensate	Monongahela River	<5 gpd
055		925161	40° 18' 12"	-79° 52' 18"	Uncontaminated steam condensate	Monongahela River	<5 gpd
056		925162	40° 18' 12"	-79° 52' 18"	Uncontaminated steam condensate	Monongahela River	<5 gpd
058		925163	40° 18' 12"	-79° 52' 16"	Uncontaminated steam condensate	Monongahela River	<5 gpd
060		925164	40° 18' 10"	-79° 52' 15"	Uncontaminated steam condensate	Monongahela River	<5 gpd
061		925165	40° 18' 11"	-79° 52' 15"	Uncontaminated steam condensate	Monongahela River	<5 gpd
061A	961	925166	40° 18' 08"	-79° 52' 14"	Uncontaminated steam condensate	Monongahela River	<5 gpd
065		925167	40° 18' 07"	-79° 52' 12"	Uncontaminated steam condensate	Monongahela River	<5 gpd
066		925168	40° 18' 06"	-79° 52' 12"	Uncontaminated steam condensate	Monongahela River	<5 gpd

Aerial Image 1

Image Source and Date: Google Earth Pro, June 15, 2024. Annotations by DEP.

Aerial Image 2

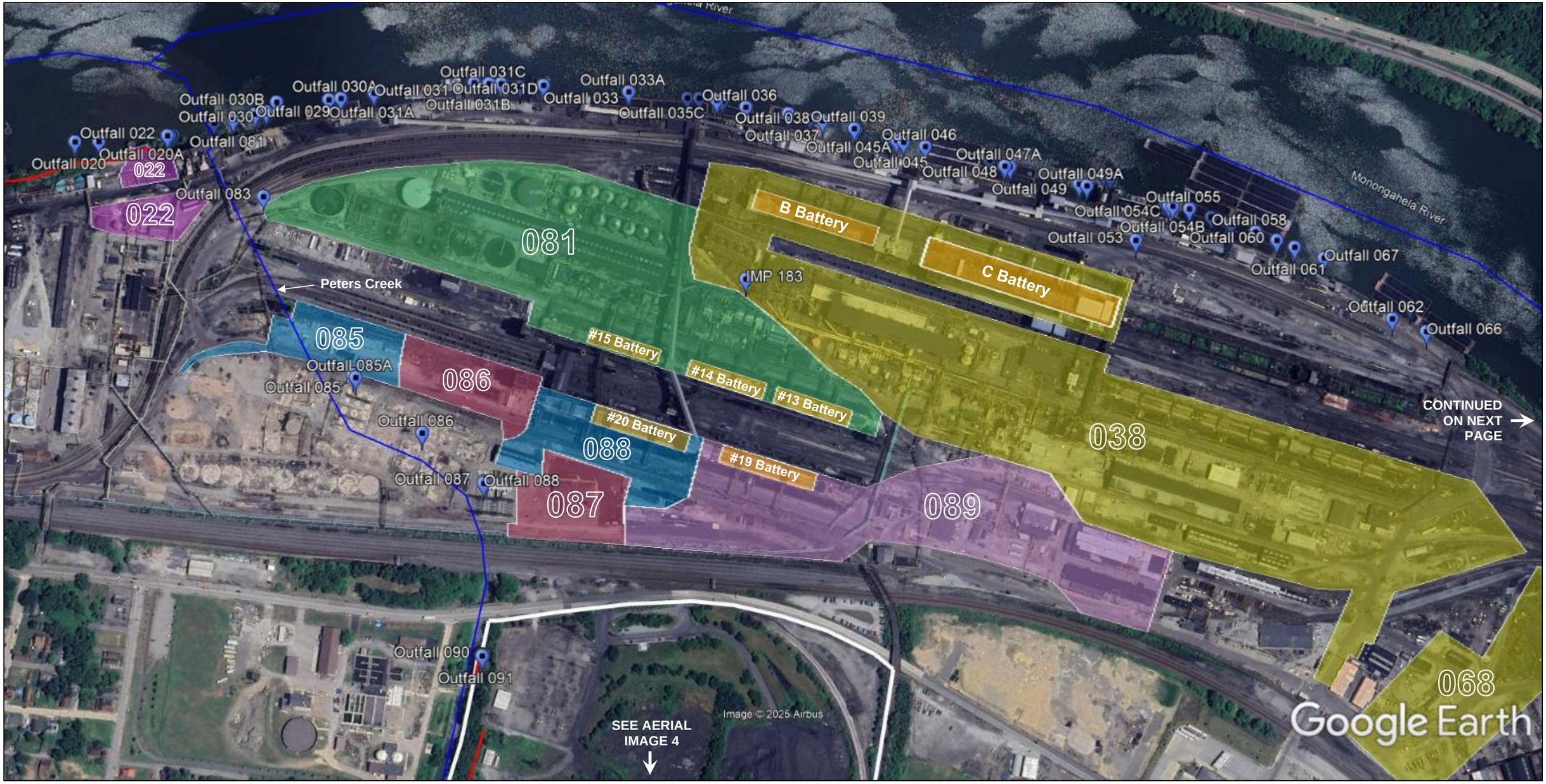


Image Source and Date: Google Earth Pro, June 15, 2024. Annotations by DEP.

Aerial Image 3

Image Source and Date: Google Earth Pro, June 15, 2024. Annotations by DEP.

Aerial Image 4

Image Source and Date: Google Earth Pro, June 15, 2024. Annotations by DEP.

Treatment Facility Summary		
Treatment Facility: Coal Yard Treatment Plant		
WQM Permit No.	**Issuance Date**	**Purpose**
0291205	April 16, 1992	Permit issued to USX Corporation by the Pennsylvania Department of Environmental Resources for a "Phase I Stormwater Runoff Treatment Facility" to treat storm water runoff from the coal wharf area collection channel and coal storage area. The system consists of storm water collection features, two sedimentation basins, and two pump stations (one for the sedimentation basins and one of the coal wharf). The sedimentation basins are designed with a combined capacity for the 10-year, 24-hour storm runoff volume (1.7 million gallons) plus 40,000 ft^3 of sediment storage capacity. The basins are lined with a 36 mil composite liner, a 4" concrete revetment on top of the liner, and an underdrain system. Groundwater from the underdrain system is pumped to the sedimentation basins at a maximum rate of 20 gpm. This permit provided for a 350-gpm submersible pump to discharge from the sedimentation basins to Outfall 011 [later changed to Outfall 018 with upgraded treatment facilities].
0291205 A-1	—	Permit files suggest that a WQM permit amendment was proposed (Amendment No. 1). The Department appears to have not retained documentation relating to the amendment. The application was apparently returned, and the amendment was never issued. The amendment may have been for US Steel's pilot ACTIFLO™ system that was operated on a temporary basis in 2004 to demonstrate the effectiveness of the technology. The pilot ACTIFLO™ system was authorized by a letter approval (a "Temporary Part II Permit") dated May 17, 2004.
0291205 A-2	February 23, 2005	Permit issued to United States Steel Corporation by the Pennsylvania Department of Environmental Protection for the addition of the ACTIFLO™ system to the Coal Yard Treatment Plant.
0291205 A-3	February 28, 2020	Permit issued to United States Steel Corporation by the Pennsylvania Department of Environmental Protection for the addition of one (1) 1,047-gallon storm water collection sump, one (1) 300-gpm sump pump, and approximately 590 linear feet of 4" dia. SCH 10 stainless steel pipe to address the ponding of storm water on F-Roadway.

Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Industrial	Primary	Sedimentation	N/A	

Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
	N/A	N/A	N/A	N/A

Treatment Facility Summary		
Treatment Facility: Contaminated Water Treatment Plant		
WQM Permit No.	**Issuance Date**	**Purpose**
0273212	October 15, 1973	Permit issued to United States Steel Corporation by the Pennsylvania Department of Health (pursuant to an April 20, 1973 Consent Decree) for the construction of a 4.6-MGD industrial wastewater treatment plant for coke and coal chemical by-product production wastes including 2.5 MGD of production wastewaters, 0.4 MGD of condensate from the ammonia stills, and 1.7 MGD of dilution water used to control phenol toxicity. The system consists of an oil removal system, ammonia stills, a clarifier and cooling tower, several holding tanks, an activated sludge system with duplicate aeration and clarification units and filtration, and a sludge thickener.
0275205	June 30, 1975	Permit issued to United States Steel Corporation by the Pennsylvania Department of Environmental Resources for the operation of the treatment facilities authorized by WQM 0273212—except for the proposed filtration units—and to authorize the discharge of treated wastewaters from the treatment plant. This permit pre-dated EPA's delegation of the NPDES permitting program to Pennsylvania; discharges were authorized at the time by state Water Quality Management permits in accordance with the requirements of the Pennsylvania Clean Streams Law.
0275205	July 29, 1975	Permit revised to include interim effluent limitations for the first year of operation of the contaminated water treatment plant.
0275205 A-1	October 24, 1989	Permit issued to USS Division of USX Corporation by the Pennsylvania Department of Environmental Resources for a backup fixed ammonia still.
0275205 A-2	February 28, 2020	Permit issued to United States Steel Corporation by the Pennsylvania Department of Environmental Protection for additions to the Contaminated Water Treatment Plant including one additional belt filter press with a sludge pump and inline mixer and one chemical feed pump for polymer addition to the new belt filter press

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Industrial	Secondary	Sedimentation, oil/water separation, activated sludge	N/A	4.6

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
4.6	N/A	N/A	N/A	N/A

Treatment Facility Summary		
Treatment Facility: Coal Ash Sluice Water Recycle System for Coal Fired Boilers		
WQM Permit No.	**Issuance Date**	**Purpose**
0277211 (Cancelled)	September 30, 1977	Permit issued to United States Steel Corporation by the Pennsylvania Department of Environmental Resources for the construction and operation of a sump for discharges from an ash pit that collects decant water from two hydrobins (ash settling basins), three 2000-gpm pumps, two 40-foot diameter clarifiers, and a vacuum disc filter to dewater clarifier underflow.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Industrial			N/A	

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
	N/A	N/A	N/A	N/A

Treatment Facility Summary		
Treatment Facility: Pitch Prill Plant Nos. 1 and 2		
WQM Permit No.	**Issuance Date**	**Purpose**
0277212 (Cancelled)	October 13, 1977	Permit issued to United States Steel Corporation by the Pennsylvania Department of Environmental Resources for the construction and operation of a recycle system for wastewater from the pitch prill plants where pitch droplets are cooled and solidified in an agitated water bath. The system consists of settling tanks and a multi-cell flotation unit with baffles and frothing agents to enhance removal of oil and suspended solids. Sludge is removed in a launderer, a sludge pump, and two vacuum filters. Treated water is directed to a closed loop cooling tower.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Industrial	Primary	Sedimentation, flotation	N/A	

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
1.728	N/A	N/A	N/A	N/A

Treatment Facility Summary		
Treatment Facility: Hot Rolling Mill Treatment Facility		
WQM Permit No.	**Issuance Date**	**Purpose**
0278205 (Cancelled)	May 18, 1978	Permit issued to United States Steel Corporation by the Pennsylvania Department of Environmental Resources for the construction and operation of collection and treatment facilities for wastewater from primary hot rolling mills (18", 21", and 22") and to discharge treated wastewater to the Monongahela River through Outfall 002. Facilities consisted of scale pit sump pumps, thickener, oil containment baffle with belt skimmer, and decant tank.

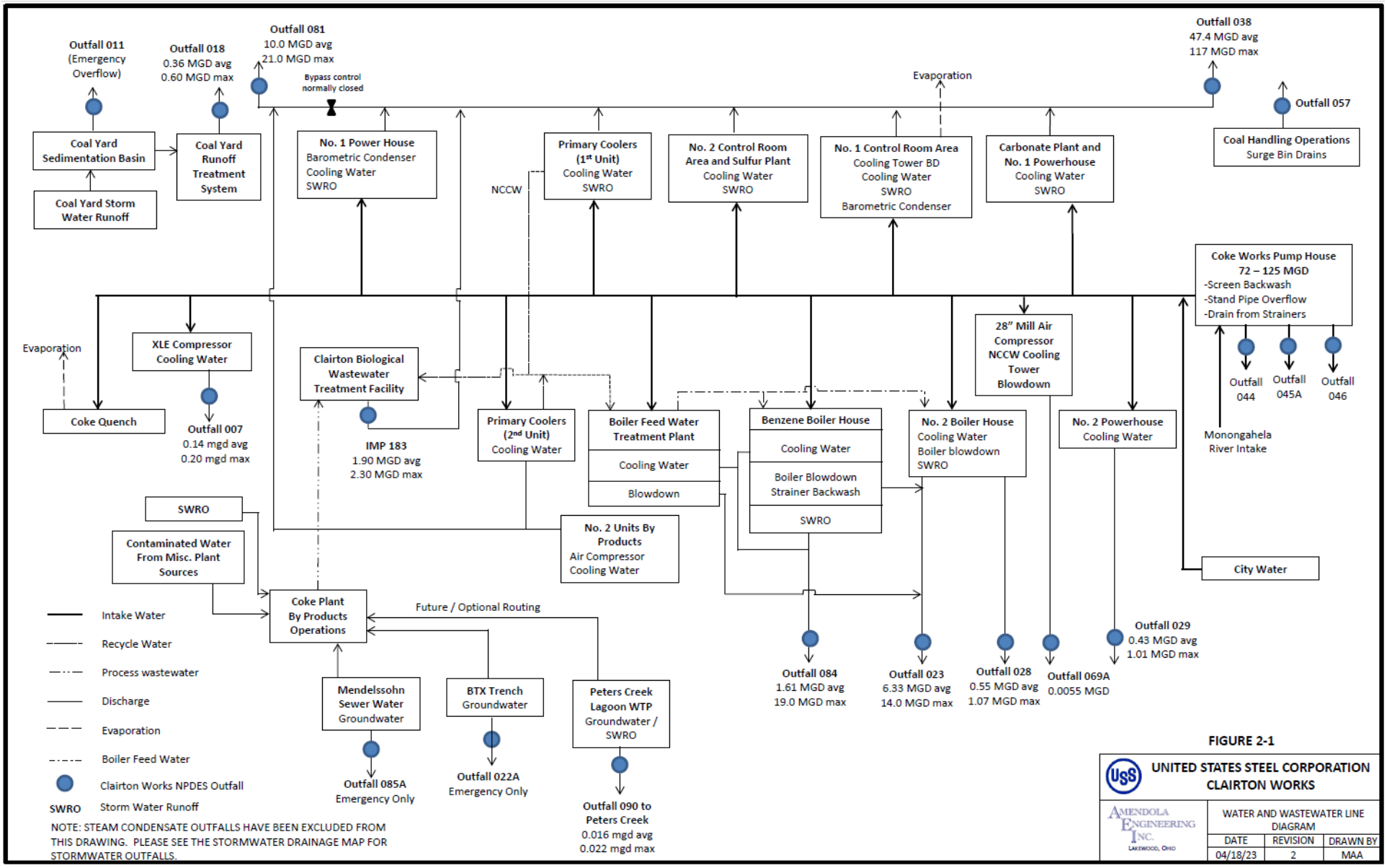
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Industrial	Primary	Sedimentation, oil/water separation	N/A	

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
	N/A	N/A	N/A	N/A

Treatment Facility Summary		
Treatment Facility: Miscellaneous WQM permits		
WQM Permit No.	**Issuance Date**	**Purpose**
1640-IW (Cancelled)	April 27, 1954	Permit issued to United States Steel Corporation by the Sanitary Water Board for discharges from the slag granulating pit. Formally cancelled by the Sanitary Water Board in April 1963 at US Steel's request.
WQM Permit No.	**Issuance Date**	**Purpose**
1641-IW (Cancelled)	July 21, 1954	Construction and operation of the Blast Furnace Flue Dust Thickener. Formally cancelled by the Sanitary Water Board in April 1963 at US Steel's request.
WQM Permit No.	**Issuance Date**	**Purpose**
463I35		Discharge of treated industrial wastewater from 14", 18", 21", and 22" mill scale settling pits.
WQM Permit No.	**Issuance Date**	**Purpose**
464I4	December 22, 1964	Discharge of treated industrial wastewater from No. 2 boilerhouse ash settling basin.
WQM Permit No.	**Issuance Date**	**Purpose**
464I21	June 24, 1965	Discharge of treated industrial wastewater from blast furnace slag settling basin.
WQM Permit No.	**Issuance Date**	**Purpose**
465I26	February 23, 1966	Permit issued to the United States Steel Corporation by the Sanitary Water Board for the construction and operation of a gravity oil separation unit to remove lubrication oils and greases from the floor washings from the three proposed compressor buildings.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Industrial			N/A	

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
	N/A	N/A	N/A	N/A


Outfall 011
(Emergency Overflow)
Outfall 018
0.36 MGD avg
0.60 MGD max
Outfall 081
10.0 MGD avg
21.0 MGD max
Bypass control normally closed
Outfall 038
47.4 MGD avg
117 MGD max
Evaporation
Outfall 057
Coal Handling Operations
Surge Bin Drains
Coal Yard Sedimentation Basin
Coal Yard Storm Water Runoff
Coal Yard Runoff Treatment System
No. 1 Power House
Barometric Condenser
Cooling Water
SWRO
NCCW
Primary Coolers (1st Unit)
Cooling Water
SWRO
No. 2 Control Room Area and Sulfur Plant
Cooling Water
SWRO
No. 1 Control Room Area
Cooling Tower BD
Cooling Water
SWRO
Barometric Condenser
Carbonate Plant and No. 1 Powerhouse
Cooling Water
SWRO
Coke Works Pump House
72 – 125 MGD
-Screen Backwash
-Stand Pipe Overflow
-Drain from Strainers
Evaporation
XLE Compressor Cooling Water
Clairton Biological Wastewater Treatment Facility
28" Mill Air Compressor NCCW Cooling Tower Blowdown
Outfall 044
Outfall 045A
Outfall 046
Coke Quench
Outfall 007
0.14 mgd avg
0.20 mgd max
IMP 183
1.90 MGD avg
2.30 MGD max
Primary Coolers (2nd Unit)
Cooling Water
Boiler Feed Water Treatment Plant
Cooling Water
Blowdown
Benzene Boiler House
Cooling Water
Boiler Blowdown Strainer Backwash
SWRO
No. 2 Boiler House
Cooling Water
Boiler blowdown
SWRO
No. 2 Powerhouse
Cooling Water
Monongahela River Intake
SWRO
Contaminated Water From Misc. Plant Sources
No. 2 Units By Products
Air Compressor
Cooling Water
City Water
Coke Plant By Products Operations
Future / Optional Routing
Intake Water
Recycle Water
Process wastewater
Discharge
Evaporation
Boiler Feed Water
Clairton Works NPDES Outfall
SWRO Storm Water Runoff
Outfall 084
1.61 MGD avg
19.0 MGD max
Outfall 023
6.33 MGD avg
14.0 MGD max
Outfall 028
0.55 MGD avg
1.07 MGD max
Outfall 069A
0.0055 MGD
Outfall 029
0.43 MGD avg
1.01 MGD max
Mendelssohn Sewer Water
Groundwater
BTX Trench
Groundwater
Peters Creek Lagoon WTP
Groundwater / SWRO
Outfall 085A
Emergency Only
Outfall 022A
Emergency Only
Outfall 090 to Peters Creek
0.016 mgd avg
0.022 mgd max
NOTE: STEAM CONDENSATE OUTFALLS HAVE BEEN EXCLUDED FROM THIS DRAWING. PLEASE SEE THE STORMWATER DRAINAGE MAP FOR STORMWATER OUTFALLS.
FIGURE 2-1
UNITED STATES STEEL CORPORATION
CLAIRTON WORKS
AMENDOLA ENGINEERING INC.
LAKEWOOD, OHIO
WATER AND WASTEWATER LINE DIAGRAM
DATE 04/18/23
REVISION 2
DRAWN BY MAA

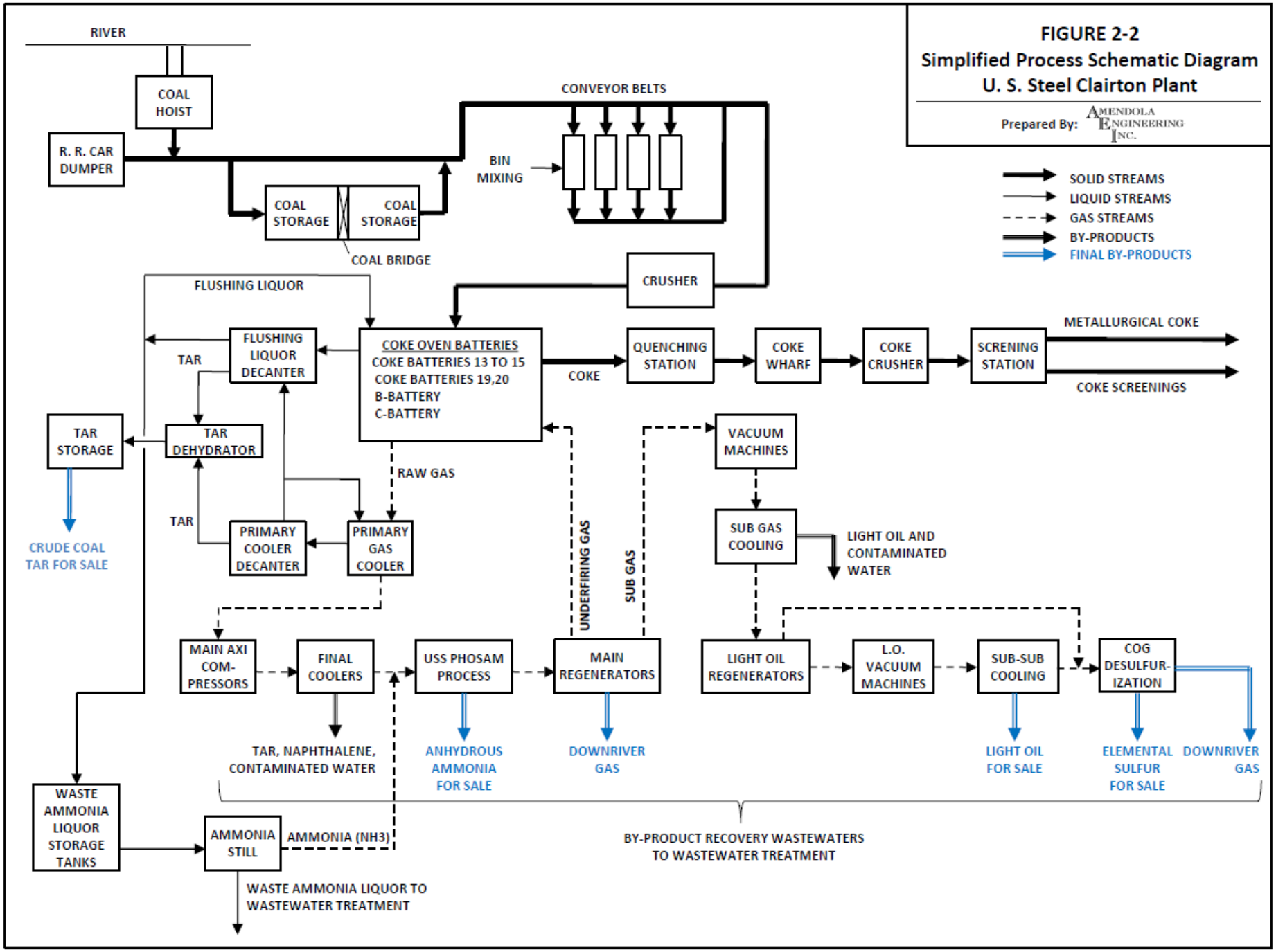
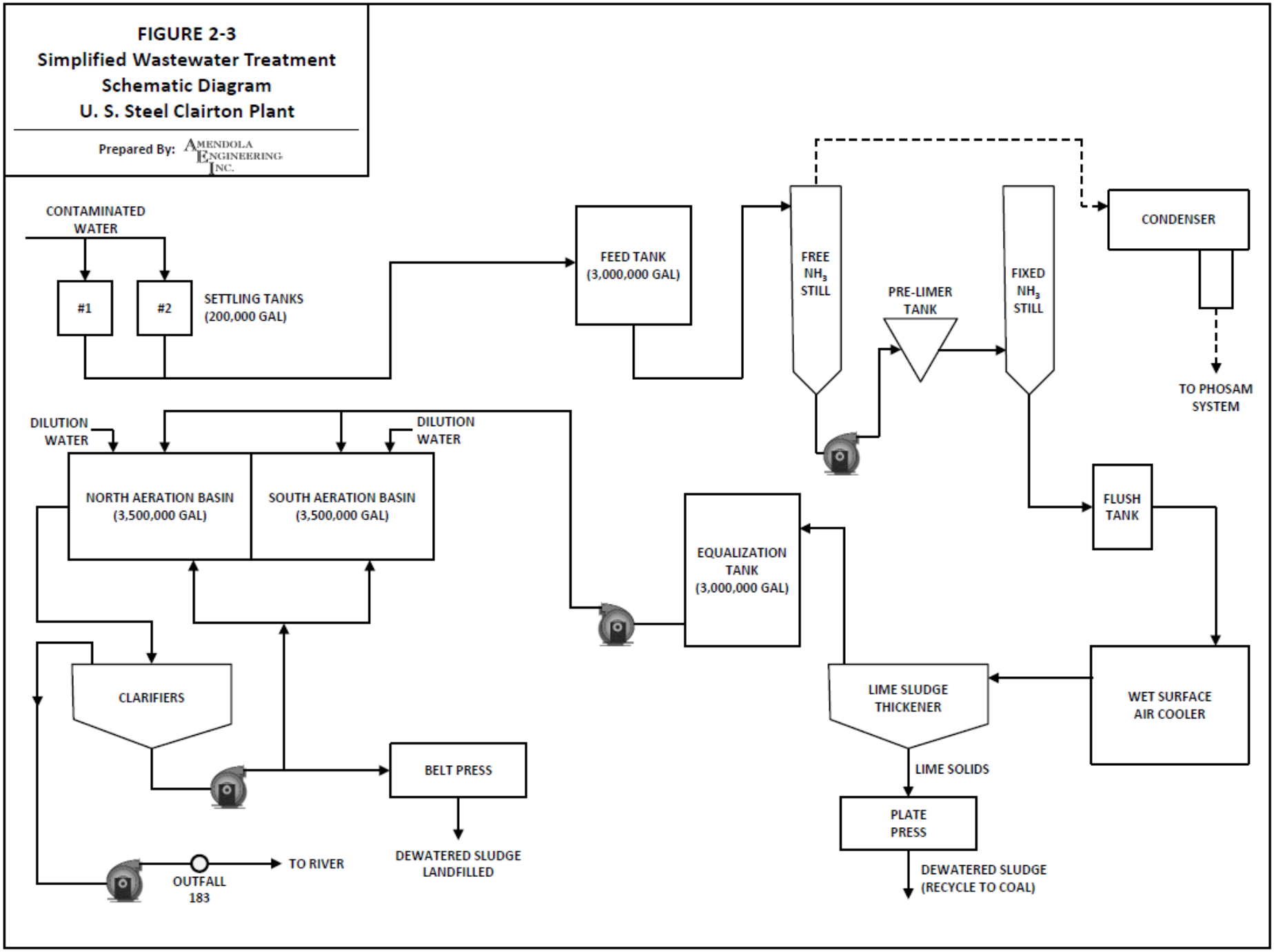


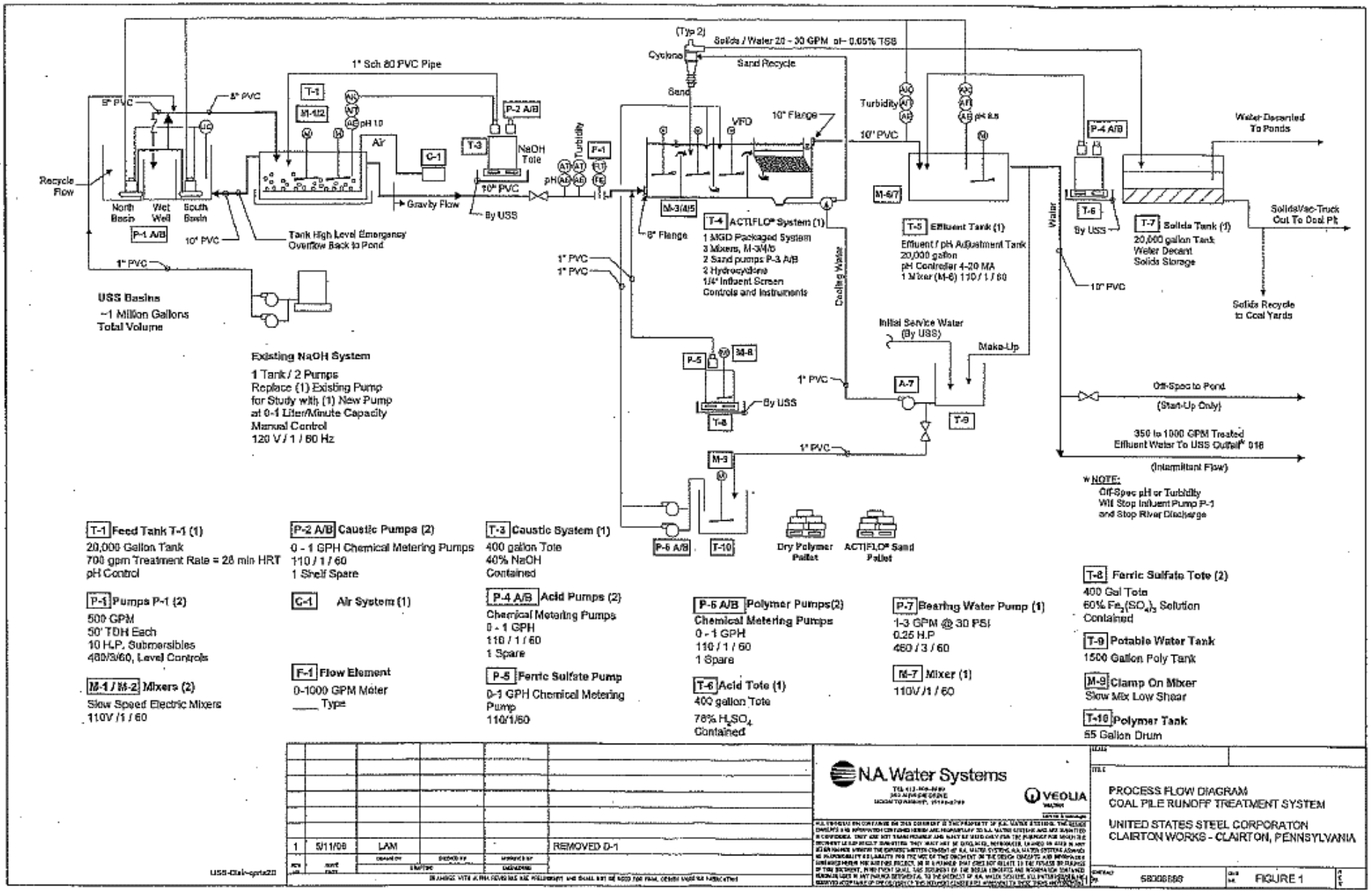
FIGURE 2-2
Simplified Process Schematic Diagram
U. S. Steel Clairton Plant
Prepared By: Amendola Engineering Inc.
SOLID STREAMS
LIQUID STREAMS
GAS STREAMS
BY-PRODUCTS
FINAL BY-PRODUCTS
RIVER
COAL HOIST
R. R. CAR DUMPER
CONVEYOR BELTS
BIN MIXING
COAL STORAGE
COAL STORAGE
COAL BRIDGE
CRUSHER
FLUSHING LIQUOR
FLUSHING LIQUOR DECANTER
TAR
COKE OVEN BATTERIES
COKE BATTERIES 13 TO 15
COKE BATTERIES 19,20
B-BATTERY
C-BATTERY
COKE
QUENCHING STATION
COKE WHARF
COKE CRUSHER
SCRENING STATION
METALLURGICAL COKE
COKE SCREENINGS
TAR STORAGE
TAR DEHYDRATOR
RAW GAS
CRUDE COAL TAR FOR SALE
TAR
PRIMARY COOLER DECANTER
PRIMARY GAS COOLER
UNDERFIRING GAS
SUB GAS
VACUUM MACHINES
SUB GAS COOLING
LIGHT OIL AND CONTAMINATED WATER
MAIN AXI COM-PRESSORS
FINAL COOLERS
USS PHOSAM PROCESS
MAIN REGENERATORS
LIGHT OIL REGENERATORS
L.O. VACUUM MACHINES
SUB-SUB COOLING
COG DESULFUR-IZATION
TAR, NAPHTHALENE, CONTAMINATED WATER
ANHYDROUS AMMONIA FOR SALE
DOWNRIVER GAS
LIGHT OIL FOR SALE
ELEMENTAL SULFUR FOR SALE
DOWNRIVER GAS
WASTE AMMONIA LIQUOR STORAGE TANKS
AMMONIA STILL
AMMONIA (NH3)
BY-PRODUCT RECOVERY WASTEWATERS TO WASTEWATER TREATMENT
WASTE AMMONIA LIQUOR TO WASTEWATER TREATMENT

FIGURE 2-3
Simplified Wastewater Treatment Schematic Diagram
U. S. Steel Clairton Plant

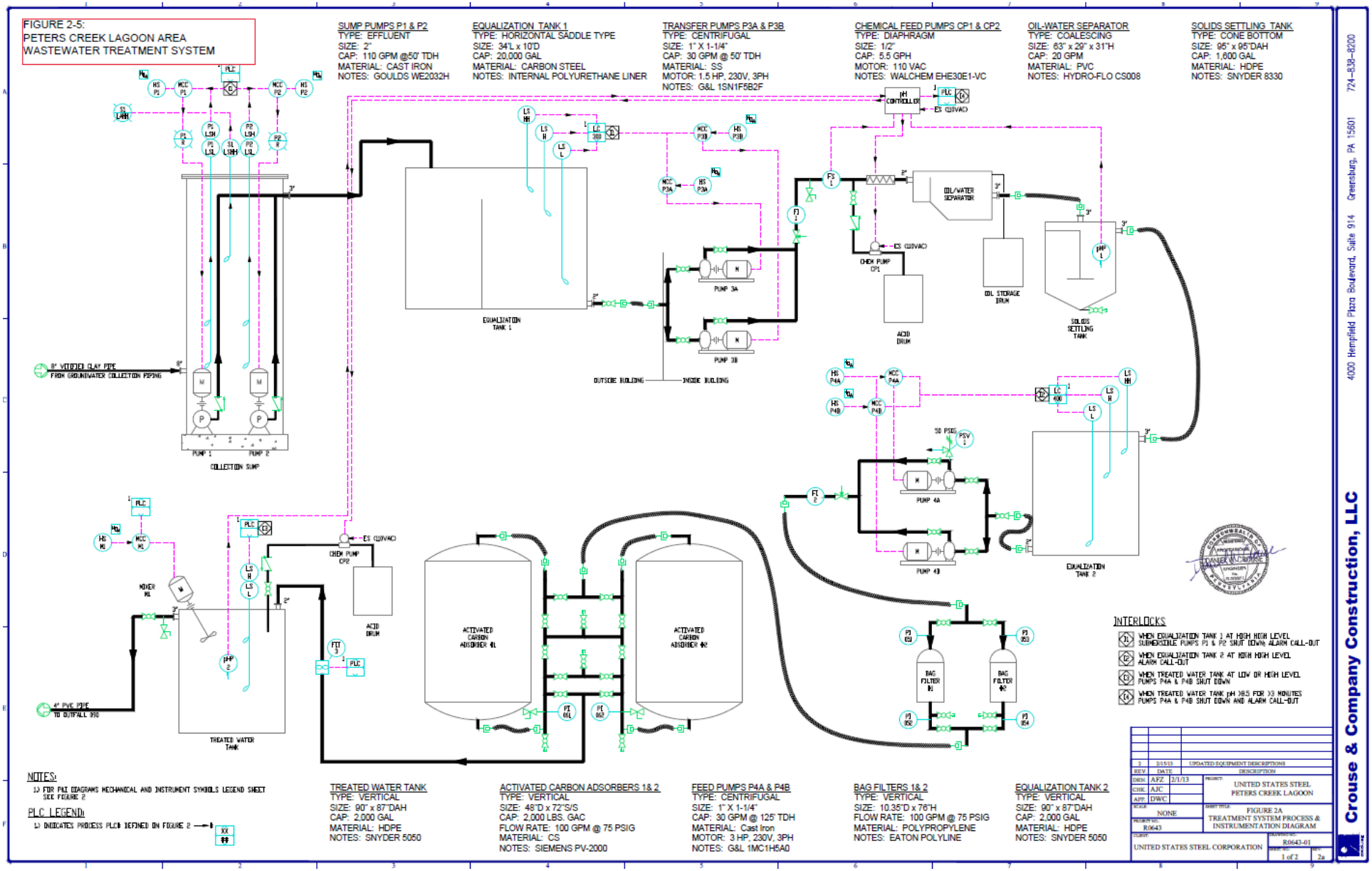
Prepared By: Amendola Engineering Inc.



Coal Yard Treatment Plant



Peters Creek Lagoon Area Wastewater Treatment System



Compliance History

Effluent Violations for Outfall 183, from: January 1, 2024 To: November 30, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Naphthalene	01/31/24	Daily Max	0.02600	mg/L	.02344	mg/L

Summary of Inspections:

Other Comments:

Development of Effluent Limitations for Internal Monitoring Point 183

IMP No. 183 **Design Flow (MGD)** 0.719 (avg.); 1.12 (max)

Wastewater Description: Process wastewaters, contaminated groundwater, and contaminated storm water treated by the Contaminated Water Treatment Plant (CWTP)

Internal Waste Streams

Effluent limits are imposed at IMP 183 rather than another monitoring location because 40 CFR § 125.3(f) prohibits compliance with technology-based treatment requirements using "non-treatment" techniques such as flow augmentation (*i.e.*, dilution). Since the wastewaters monitored at IMP 183 combine with other wastewaters before the next downstream monitoring location (Outfall 038), IMP 183 is the only point at which compliance with applicable effluent limits can be determined without the interference of other wastewaters. This rationale is consistent with 40 CFR § 122.45(h), which allows for the imposition of effluent limitations on internal waste streams in these circumstances.[1]

Current Effluent Limits

Wastewaters regulated at IMP 183 are currently subject to the following effluent limits and monitoring requirements.

Table 1. IMP 183 – Current Effluent Limits and Monitoring Requirements

Parameter	Mass (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Avg. Mo.	Max Daily	Minimum	Avg. Mo.	Max Daily	IMAX		
Flow (MGD)	Report	Report	—	—	—	—	1/week	Measured
pH	—	—	6.0	—	—	9.0	1/week	Grab
Tot. Suspended Solids	3,538	6,903	—	140	270	—	1/week	Composite
Oil and Grease	318	914	—	12	35	—	1/week	Composite
Ammonia-Nitrogen	543	1,841	—	25	85	—	1/week	Composite
Total Cyanide	94.0	134	—	5.5	10	—	1/week	Composite
Benzo(a)Pyrene	0.275	0.494	—	0.01297	0.02325	—	1/week	Composite
Naphthalene	0.277	0.499	—	0.01307	0.02344	—	1/week	Composite
Total Phenolics	1.07	2.13	—	0.05	0.1	—	1/week	Composite

The effluent limits in **Table 1** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

183.A. Technology-Based Effluent Limitations (TBELs)

Federal Effluent Limitations Guidelines (ELGs)

Treated process wastewaters from cokemaking are subject to the Iron and Steel Manufacturing Point Source Category ELGs promulgated under 40 CFR Part 420, Subpart A – Cokemaking Subcategory. USS produces coke at the Clairton Plant in a series of coke oven batteries. Batteries currently operating at the plant include: Battery B, Batteries 13, 14, and 15, Batteries 19 and 20, and Battery C. Batteries 1, 2, and 3 permanently shut down at the end of March 2023. Batteries 7, 8, and 9 permanently shut down in April 2009. Battery 15 is hot-idled, which means the battery is not producing coke, but the ovens are still heated and able to produce coke in the future. The design production capacity of the active coke oven batteries is 4 million tons of coke per year (11,000 tons per day).

The ELG is production-based, which requires a reasonable measure of actual production to calculate allowable pollutant discharge loadings. EPA considers a reasonable measure of actual production to be a single estimate of the long-term average daily production that can reasonably be expected to prevail during the next term of the permit. The value should not be the design production rate. In the 2023 Application Update, USS reported an anticipated production rate of 3.8 million tons/year or 10,411 tons per day. That production rate will be used to calculate production-based mass limits pursuant to 40 CFR Part 420, Subpart A.

[1] 40 CFR § 122.45(h)(1): "When permit effluent limitations or standards imposed at the point of discharge are impractical or infeasible, effluent limitations or standards for discharges of pollutants may be imposed on internal waste streams before mixing with other waste streams or cooling water streams."

Battery C

On October 15, 2012, USS filed an appeal of the Clairton Plant's NPDES permit issued on September 28, 2012. Among other things, USS disputed the classification of Battery C as a "new source" and the attendant imposition of New Source Performance Standards (NSPS) from 40 CFR Part 420 on the portion of the effluent regulated at IMP 183 originating from Battery C's production. On January 24, 2014, USS and DEP entered into a Consent Order and Agreement (2014 COA) to resolve USS's appeal. As a result of the appeal, effluent limitations established based on the identification of Battery C as a "new source" remained in the permit, but the parties agreed USS would preserve its right to appeal the applicability of NSPS to Battery C in any future permitting action by DEP and that DEP would preserve its right to defend such action—excepting claims of administrative finality or issue preclusion (2014 COA, Paragraph 11) (anti-backsliding does not appear to have been addressed). In effect, under the 2014 COA, USS agreed that wastewaters from coke production at Battery C would be subject to NSPS in the amended 2012 permit without identifying Battery C as a new source and DEP agreed that the imposition of NSPS to Battery C in that permit would not establish Battery C as a "new source" in future permit renewals.

Even though Battery C was not identified as a new source for the previous permit and is not identified as a new source for this permit renewal, coke production at Battery C will be subject to NSPS, which USS retains the right to appeal.[2]

To impose NSPS for Battery C (in combination with BAT/BCT for the rest of USS's production), a reasonable measure of Battery C's actual production is needed. On May 31, 2024, at DEP's request, USS provided updated production data that breaks out production at the individual coke oven batteries (or battery groupings). Based on production occurring between May 2023 and April 2024 (*i.e.,* production post-dating the permanent shutdown of Batteries 1, 2, and 3), Battery C's production represents 28.39% of total production. Applying that percentage to USS's anticipated production rate of 10,411 tons per day yields a reasonable measure of Battery C's expected production rate of 2,956 tons per day. The remaining production attributable to Battery B, Batteries 13-15, and Batteries 19-20 is 7,455 tons per day.

Base Flow and Increased Pollutant Loading Credits for Production-Based Mass Limits

By-product recovery coke plants like the Clairton Plant generate a variety of process wastewater streams and non-process wastewater streams with similar characteristics that are commingled for treatment and discharge. Effluent standards for by-product cokemaking in the Iron and Steel ELGs are predicated on load allowances for a base flow of 113 gallons of wastewater per ton of coke produced and optional pollutant loading credits (*i.e.*, discharge load allowances for other co-treated wastewater flows in addition to the loads for base flow) for wet coke oven gas desulfurization systems (up to 25 gallons per ton), indirect ammonia recovery (up to 60 gallons per ton), biological treatment system control water (up to 50 gallons per ton), other wet air pollution control systems (site-specific), coal tar processing operations (site-specific), coke plant groundwater remediation systems (site-specific), and storm water from immediate process areas (site-specific).

The sources for which USS was given increased pollutant loading credits under previous permits include:

- Wet coke oven gas desulfurization system
- Ammonia recovery system (USS's PHOSAM process)
- Coal tar processing (formerly of Koppers)
- Biological treatment system control water
- Groundwater remediation system
- Immediate process area storm water

The bases for the continuation of each of the credits and the calculation of those credits are described in more detail in the following sections.

Base Flow

[2] The model treatment technologies for BAT and NSPS under the 2002 revisions to 40 CFR Part 420 are the same and include the following: emission control scrubber blowdown to coke quench stations, oil and tar removal, flow equalization prior to ammonia distillation (stripping), free and fixed ammonia distillation (stripping), indirect cooling, flow equalization before biological treatment, biological treatment and secondary clarification, and sludge dewatering. The only difference between BAT and NSPS is that NSPS regulate TSS and Oil & Grease and BAT does not. In theory, USS's use of treatment technology equivalent to the model BAT/NSPS treatment technology (with mass credits) would enable it to achieve a level of performance equivalent to NSPS on its entire process wastewater discharge. Part 420 does not require existing sources at cokemaking facilities to achieve a NSPS level of treatment for conventional pollutants (which would have been reflected by revised BCT performance standards in the 2002 ELGs) because EPA did not identify any technologies that achieve greater conventional pollutant removals than the technology basis for the current BPT that also passed the BCT cost test. Data reported by USS between Jan. 2017 and Jun. 2024 demonstrate that discharge loadings have never exceed more than 44.1% of the current limits based on the application of BAT and NSPS as described in this section.

As stated above, the Iron and Steel ELGs allow a base flow of 113 gallons per ton. At a production rate of 10,411 tons per day, the base flow rate at the Clairton Plant would be 817 gpm. The production-based limits for the base flow rate are summarized in the table below.

Table 2. Baseline Production-Based Load Limits

Parameter	Average Monthly (pounds/day)	Maximum Daily (pounds/day)	Basis
Total Suspended Solids	2,036	3,975	1982 BPT/BCT (40 CFR § 420.17(a)) applied to 7,455 tons/day (Non-Battery C Production) + 2002 NSPS (40 CFR § 420.14(a)(2)) applied to 2,956 tons/day (Battery C Production)
Oil and Grease	184	528	
Ammonia-Nitrogen	42.1	61.0	2002 BAT (40 CFR § 420.13(a)) applied to 7,455 tons/day (Non-Battery C Production) + 2002 NSPS (40 CFR § 420.14(a)(2)) applied to 2,956 tons/day (Battery C Production) †
Benzo(a)pyrene	0.13	0.23	
Cyanide	0.13	0.23	
Naphthalene	0.13	0.23	
Phenols (4AAP)	0.50	0.79	

† 2002 BAT Standards = 2002 NSPS Standards for toxic and non-conventional pollutants

Increased Pollutant Loadings for Wet Desulfurization

Sections 420.12(a)(1) (Best Practicable Control Technology Currently Available or "BPT") and 420.17(a)(1) (Best Conventional Pollutant Control Technology or "BCT") of the Iron and Steel ELGs allow for increased pollutant loadings of up to 11% for coke plants that employ wet desulfurization systems, but only to the extent that such systems generate an increased effluent volume. Sections 420.13(a)(1) (Best Available Technology Economically Achievable or "BAT") and 420.14(a)(2)(A) (New Source Performance Standards or "NSPS") of the Iron and Steel ELGs allow for increased pollutant loadings of up to 13.3% for coke plants that employ wet desulfurization systems, but only to the extent that such systems generate an increased effluent volume.

The different wet desulfurization system mass credits between BPT/BCT (up to 11%) and BAT/NSPS (up to 13.3%) are the result of EPA's use of different production-normalized flows between the 1982 ELGs and the 2002 ELGs that result from the different technology bases considered for those ELGs. The BPT/BCT limitations were not modified as part of the 2002 update to the Iron and Steel ELGs, so they are still based on the production normalized flows established in 1982. Even though the model BAT technology will remove conventional pollutants, BAT does not limit conventional pollutants. However, conventional pollutants must still be limited based on BPT/BCT and NSPS. Consequently, conventional pollutants from batteries other than Battery C are only eligible for an increase in mass limits of up to 11% whereas the remaining pollutants limited by BAT and all pollutants limited by NSPS for Battery C are eligible for increases of up to 13.3%.

USS uses a wet desulfurization system for coke oven gas at the Clairton Plant with a flow rate of 66 gpm. The flow includes the following:

- 50 gpm: Live steam stripping
- 2 gpm: Axi sealing steam
- 2 gpm: Soda ash preparation and addition
- 12 gpm: SCOT Plant
    - 7 gpm: moisture from Claus and combustion reactions is condensed in the SCOT plant via the quench column
    - 3 gpm: typical flush on the quench column
    - 2 gpm: collected in the stripping operation

The wet desulfurization system's effluent flow rate of 66 gpm represents an increased effluent volume of about 8.1% above base flow (66 gpm ÷ 817 gpm = 0.08078). Since the increased effluent volume attributable to wet desulfurization is less than 11% and 13.3%, all pollutants under all levels of control are eligible for increased loadings of about 8.1%.

Table 3. Increased Pollutant Loadings for Wet Desulfurization

Parameter	Average Monthly (pounds/day)	Maximum Daily (pounds/day)	Basis
Total Suspended Solids	164	321	40 CFR § 420.12(a)(1); **Table 2** values × 0.08078
Oil and Grease	15	43	
Ammonia-Nitrogen	3.40	4.93	40 CFR § 420.13(a)(1); **Table 2** values × 0.08078
Benzo(a)pyrene	0.010	0.019	
Cyanide	3.50	5.00	
Naphthalene	0.010	0.019	
Phenols (4AAP)	0.040	0.064	

Increased Pollutant Loadings for Ammonia Recovery (PHOSAM Process)

USS provided calculations with its NPDES permit application to support its proposed pollutant loading credits. For credits associated with ammonia recovery by USS's PHOSAM process, USS referenced 40 CFR § 420.12(a)(2), which states:

> Increased loadings, not to exceed 27 percent of the above limitations, are allowed for by-product coke plants which include indirect ammonia recovery systems but only to the extent that such systems generate an increased effluent volume.

Indirect ammonia recovery systems are defined by 40 CFR § 420.11(i) as "systems that recover ammonium hydroxide as a by-product from coke oven gases and waste ammonia liquors."

In the PHOSAM process, ammonia is recovered through absorption in a recycled solution of ammonium phosphate. In a typical absorption cycle, "lean" (40%) phosphate solution is used to absorb ammonia. The enriched phosphate solution is subsequently re-boiled in a distillation tower from which the ammonia vapor is recovered, and the phosphate-type solution is separated for reuse. That process appears to qualify as a semi-direct recovery process, which is a separate process from indirect ammonia recovery. Page 70, Section VII of Volume II of EPA's 1982 "Development Document for Effluent Limitations Guidelines and Standards for the Iron and Steel Manufacturing Point Source Category" (1982 Development Document) explains:

> Ammonia and ammonium compounds – free ammonia is steam stripped from excess ammonia liquors at most plants. Of those plants with ammonia stills, about half also recover fixed ammonia by elevating the pH of the wastewaters with lime slurry or caustic soda solutions. The liberated ammonia is directed into the coke oven gas and removed with ammonia contained in the gas with sprays of sulfuric or phosphoric acid in an absorber (semi-direct recovery, practiced at 46 plans), or by scrubbing ammonia from gas with fresh water, which is recirculated to produce concentrated ammonium hydroxide (indirect recovery, practiced at 6 plants).

USS uses ammonia stills for free and fixed ammonia removal and the liberated ammonia is directed to the coke oven gas stream downstream of the final coolers for recovery of anhydrous ammonia by the PHOSAM process. Based on the description in the 1982 Development Document, it does not appear that USS's PHOSAM process qualifies as an "indirect ammonia recovery system", as that term is defined in the regulations, and that 40 CFR § 420.12(a)(2) is not the correct reference for pollutant loading credits for the PHOSAM process. Also, EPA states in its 2002 "Development Document for Final Effluent Limitations Guidelines and Standards for the Iron and Steel Manufacturing Point Source Category" (2002 Development Document) that indirect ammonia recovery is no longer used by the industry (p.13-6), which is why BAT no longer provides an allowance for that technology even though BPT still does.

Notwithstanding the preceding, pollutant loading credits for the PHOSAM process are allowed under 40 CFR § 420.08, which states:

> Permit and pretreatment control authorities may provide for increased loadings for non-process wastewaters defined at § 420.02 and for storm water from the immediate process area in NPDES permits and pretreatment control mechanisms using best professional judgment, but only to the extent such non-process wastewaters result in an increased flow.

Non-process wastewaters are defined by 40 CFR § 420.02(r) as "utility wastewaters (for example, water treatment residuals, boiler blowdown, and air pollution control wastewaters from heat recovery equipment); treated or untreated wastewaters from groundwater remediation systems; dewatering water for building foundations; and other wastewater streams not associated with a production process." EPA described the intent of § 420.08 in Section 16.5 of the 2002 Development Document (pp.16-12 and 16-13) regarding the application of Best Professional Judgement (BPJ) as follows:

> Section 402(a)(1) of the Clean Water Act (CWA) and the NPDES permit regulations at §122.44(a) and §125.3 allow permit authorities to use BPJ in the absence of categorical effluent limitations to establish NPDES permit limitations. When developing the iron and steel regulation, EPA attempted to minimize the need for BPJ determinations by taking into account process wastewaters commonly generated at each manufacturing process and miscellaneous process-related wastewaters (e.g., those generated in roll shops and from building basement sumps). The Agency recognizes, however, that some sites may generate non-process wastewaters that meet the definition of process wastewater (see §122.2) that were not accounted for in the development of the effluent limitations guidelines and pretreatment standards for existing sources. To assist permit writers in addressing such wastewaters and to minimize the number of requests for fundamentally different factors variances, EPA added a definition of nonprocess wastewaters at §420.02(r) and included at §420.08 a provision that authorizes permit writers to provide

for increased loadings for wastewater sources not included in the development of the regulation, if these sources generate an increased discharge flow.

Pursuant to EPA's description and § 420.08 (to the extent that section provides for increased pollutant loadings from process wastewaters from semi-direct ammonia recovery) or, alternatively, 40 CFR § 125.3(c)(3) and 25 Pa. Code §§ 92a.3(b)(4) & 92a.48(a)(3) (to the extent that § 420.08 does not provide for increased pollutant loadings for process wastewaters from semi-direct ammonia recovery and such recovery represents an aspect of USS's operations that is not considered as part of the Iron and Steel ELGs), pollutant loading credits are included at IMP 183 for wastewaters from the PHOSAM process to the extent that process generates an increased discharge flow.

USS reported a flow rate from the PHOSAM process of 107 gpm including the following:

- 80 gpm: contaminated water generated by 40 mlb/hr stripping steam
- 20 gpm: pump seal water
- 7 gpm: solution moisture pick-up in the Superstill

The PHOSAM process's effluent flow rate of 107 gpm represents an increased effluent volume of about 13.1% above base flow (107 gpm ÷ 817 gpm = 0.13096). Pollutant loadings for all pollutants will be increased by 13.1%.

Table 4. Increased Pollutant Loadings for PHOSAM Process

Parameter	Average Monthly (pounds/day)	Maximum Daily (pounds/day)	Basis
Total Suspended Solids	267	521	40 CFR § 420.08; or 40 CFR § 125.3(c)(3) and 25 Pa. Code §§ 92a.3(b)(4) & 92a.48(a)(3) **Table 2** values × 0.13096
Oil and Grease	24	69	
Ammonia-Nitrogen	5.51	7.99	
Benzo(a)pyrene	0.02	0.03	
Cyanide	5.67	8.10	
Naphthalene	0.017	0.030	
Phenols (4AAP)	0.065	0.104	

Increased Pollutant Loadings for Groundwater Remediation and Coal Tar Processing

Sections 420.13(a)(2) (BAT) and 420.14(a)(2)(B) (NSPS) of the ELG allow for increased pollutant loadings for process wastewaters from coal tar processing operations and coke plant groundwater remediation systems, but only to the extent such systems generate process wastewaters and those wastewaters are co-treated with process wastewaters from by-product cokemaking.

USS reported a groundwater remediation system flow rate of 115 gpm from wells and collection systems at the Clairton Plant (BTX Trench, RW-94 pump, Mendelssohn Sewer, etc.). USS also reported a flow rate of 54 gpm from coal tar processing operations previously conducted by Koppers. Koppers no longer operates at the Clairton Plant after selling its property to USS. USS continues to produce coal tar as a by-product of cokemaking and continues to send coal tar decant water for treatment with by-product cokemaking wastewaters at USS's Contaminated Water Treatment Plant.

The process wastewater flow rate from groundwater remediation systems co-treated with by-product cokemaking wastewaters represents an increased effluent volume of about 14.1% above base flow (115 gpm ÷ 817 gpm = 0.14075). Pollutant loadings for all pollutants will be increased by 14.1%.

The process wastewater flow rate from coal tar processing represents an increased effluent volume of about 6.6% above base flow (54 gpm ÷ 817 gpm = 0.066095). Pollutant loadings for all pollutants will be increased by 6.6%.

Table 5. Increased Pollutant Loadings for Groundwater Remediation and Coal Tar Processing

Parameter	Groundwater Remediation		Coal Tar Processing		Basis
	Average Monthly (pounds/day)	Maximum Daily (pounds/day)	Average Monthly (pounds/day)	Maximum Daily (pounds/day)	
Total Suspended Solids	287	560	135	263	40 CFR § 420.13(a)(2) & 420.14(a)(2)(B); [**Table 2** values × 0.14075] & [**Table 2** values × 0.066095]
Oil and Grease	26	74	12	35	
Ammonia-Nitrogen	5.92	8.59	2.78	4.03	
Benzo(a)pyrene	0.02	0.03	0.008	0.015	
Cyanide	6.10	8.70	2.86	4.09	
Naphthalene	0.018	0.033	0.008	0.015	
Phenols (4AAP)	0.070	0.112	0.033	0.052	

Increased Pollutant Loadings for Control Water for Biological Treatment System Optimization

Sections 420.13(a)(3) (BAT) and 420.14(a)(2)(C) (NSPS) of the ELG allow for increased pollutant loadings of up to 44.2% for control water used to optimize coke plant biological treatment systems. Control water is defined in the 2002 Development Document as "dilution water added to control toxicity prior to biological treatment systems." USS employs a biological treatment system at the Clairton Plant and uses control water for biological treatment system optimization. Therefore, USS is eligible for increased pollutant loadings for control water.

USS reported a control water flow rate of 650 gpm, which represents an increased effluent volume of about 79.6% above base flow (650 gpm ÷ 817 gpm = 0.7956). Since §§ 420.13(a)(3) and 420.14(a)(2)(C) cap the pollutant loading credit for control water at 44.2%, USS's credit for control water will be limited to a 44.2% increase.

The 44.2% allowance excludes credits for conventional pollutants (TSS and Oil & Grease) in wastewaters originating from production at Battery B, Batteries 13-15, and Batteries 19-20, but does include credits for those conventional pollutants in wastewaters originating from production at Battery C. Those exclusions and allowances arise from the following:

1. BPT/BCT performance standards already account for control water as part of the base flow used to derive those standards, so control water is not an additional allowance for those levels of control (see **Attachment A**)
2. BAT does not limit conventional pollutants (TSS and Oil & Grease) so the 44.2% credit under § 420.13(a)(3) does not apply to those pollutants
3. NSPS limits both conventional and toxic pollutants so the 44.2% credit under § 420.14(a)(2)(C) does apply to TSS and Oil & Grease (and toxics) in wastewater originating from production at Battery C

Table 6. Increased Pollutant Loadings for Biological Control Water

Parameter	Average Monthly (pounds/day)	Maximum Daily (pounds/day)	Basis
Total Suspended Solids	36.6	89.6	40 CFR § 420.14(a)(2)(C): Battery C NSPS Base Loading × 0.442
Oil and Grease	9.7	17.7	
Ammonia-Nitrogen	18.6	27.0	40 CFR § 420.13(a)(3) **Table 2** values × 0.442
Benzo(a)pyrene	0.06	0.10	
Cyanide	19.1	27.3	
Naphthalene	0.06	0.10	
Phenols (4AAP)	0.22	0.35	

Increased Pollutant Loadings for Storm Water from Immediate Process Areas

As described above, § 420.08 allows for increased pollutant loadings for storm water from immediate process areas, but only to the extent such non-process wastewaters result in an increased flow.[3] Neither the regulations nor the 2002 Development Document provide guidance on what flow rate or design storm is appropriate to use to calculate increased pollutant loadings for storm water.

USS assumed an annual rainfall of 40.3 inches/year with an immediate process area of 360,700 square feet to calculate an average daily flow for process area storm water. DEP will use USS's values to develop increased pollutant loadings for storm water. The average daily storm water flow rate is calculated as follows:

$$\frac{40.3\text{ in}}{\text{yr}} \times \left[\frac{1\text{ ft}}{12\text{ in}}\right] \times 360{,}700\text{ft}^2 \times \left[\frac{7.48052\text{ gal}}{\text{ft}^3} \times \frac{1\text{ yr}}{365\text{ days}} \times \frac{1\text{ day}}{24\text{ hr}} \times \frac{1\text{ hr}}{60\text{ min}}\right] \approx 17.2\text{ gpm}$$

Since pollutants loadings from storm water are not based on production, the applicable concentration-based limits (see **Table 12**, below) are used with the average daily storm water flow rate to calculate increased pollutant loadings attributable to storm water from immediate process areas.

[3] 40 CFR § 420.02(t): The term *storm water from the immediate process area* means storm water that comes into contact with process equipment located outdoors, storm water collected in process area and bulk storage tank secondary containment structures, and storm water from wastewater treatment systems located outdoors, provided that it has the potential to become contaminated with process wastewater pollutants for the particular subcategory. Storm water from building roofs, plant roadways, and other storm waters that do not have the potential to become contaminated with process wastewater pollutants are not storm water from the immediate process area.

A storm water flow rate of 17.2 gpm represents an increased effluent volume of about 2.11% above base flow (17.2 gpm ÷ 817 gpm = 0.02105). Pollutant loadings for all pollutants will be increased by 2.11%.

Table 7. Increased Pollutant Loadings for Commingled Storm Water from Immediate Processing Areas

Parameter	Average Monthly (pounds/day)	Maximum Daily (pounds/day)	Basis
Total Suspended Solids	43.0	83.9	40 CFR § 420.08 **Table 2** values × 0.02105
Oil and Grease	3.9	11.1	
Ammonia-Nitrogen	0.89	1.29	
Benzo(a)pyrene	0.003	0.005	
Cyanide	0.914	1.31	
Naphthalene	0.003	0.005	
Phenols (4AAP)	0.010	0.017	

Clean Water Act § 301(g) Variance Request for Ammonia-Nitrogen and Phenols (4AAP)

Section 301(g) of the Clean Water Act (33 U.S.C. 1311(g)) allows dischargers to obtain a variance from BAT requirements for certain nonconventional pollutants if certain environmental criteria are met. The intent of the variance is to allow dischargers relief from unnecessarily stringent performance standards given by an applicable federal ELG (*i.e.*, relief from "treatment for the sake of treatment"). The criteria for granting the variance require that the proposed modified effluent limits (PMELs) comply with all water quality criteria including the protection of aquatic life, human health, recreation, and potable water supplies without imposing additional requirements on other dischargers and provided the PMELs are not less stringent than performance standards representing Best Practicable Technology (BPT).

In accordance with Section 301(g) of the Clean Water Act, USS submitted a request to renew its Section 301(g) variances for Ammonia-Nitrogen and Phenols (4AAP), which would maintain the mass limits for those pollutants at the levels specified in the previous permit. USS performed an evaluation of the facility's continued eligibility for PMELs for Ammonia-Nitrogen and Phenols (4AAP) in the 2017 Application using EPA's Section 301(g) variance guidance document and the checklist for approval provided in that guidance document.[4] USS subsequently reevaluated whether the PMELs comply with water quality criteria in its 2023 Application Update due to changes to Pennsylvania's water quality criteria for Ammonia-Nitrogen in 2020 (see **Attachment B**). DEP normally evaluates WQBELs for Ammonia-Nitrogen using DEP's WQM 7.0 water quality modeling program. However, USS opted to perform calculations using more conservative assumptions including:

1) Instead of assuming "complete mixing" as assumed by DEP's WQM 7.0 model, partial mix factors were used to calculate chronic and acute waste load allocations

2) Ammonia-nitrogen was assumed to be a conservative pollutant with no decay

The PMELs USS requests to renew are the Ammonia-Nitrogen and Phenols (4AAP) mass limits imposed at IMP 183 in the permit renewal that took effect on February 1, 2002. The limits were calculated using 1982 BAT and a production rate of 13,078 tons/day based on USS's production data from January 1994 through December 1998. The limits included increases for Ammonia-Nitrogen from wet desulfurization, the PHOSAM Process, Koppers' Tarben Process (coal tar); and groundwater from groundwater remediation; and increases for Phenols (4AAP) from wet desulfurization and the PHOSAM Process. The calculations from the 2002 permit fact sheet are summarized in **Table 8**.

Table 8. IMP 101 Ammonia-Nitrogen and Phenols (4AAP) PMELs

Parameter	Average Monthly (pounds/day)	Maximum Daily (pounds/day)	Basis
Ammonia-Nitrogen	485	1648	§ 420.13(a) (1982 BAT) + 16% for wet desulfurization
	48.5	164.8	+ 10% for PHOSAM process
	7.2	24.5	+ 24 gpm at 25 mg/L for the Tarben Process
	1.9	3.8	+ 32 gpm at 5 mg/L for recovered groundwater
	543	**1,841**	Total
Phenols (4AAP)	0.97	1.94	§ 420.13(a) (1982 BAT) + 16% for wet desulfurization
	0.097	0.193	+ 10% for PHOSAM process
	1.07	**2.13**	Total

[4] "Technical Guidance Manual for the Regulations Promulgated Pursuant to Section 301(g) of the Clean Water Act of 1977 40 CFR Part 125 (Subpart F)", USEPA, 22 August 1984.

The maintenance of PMELs in the previous permit resulted in the decoupling of mass limits for Ammonia-Nitrogen and Phenols (4AAP) from USS's production (*i.e.*, the limits are no longer production-based). The limits were the last limits in effect for USS's process wastewaters before EPA revised 40 CFR Part 420 in October 2002. The limits also pre-date the replacement of Batteries 7, 8, and 9 with Battery C in April 2009 and the permanent shutdown of Batteries 1, 2, and 3 in March 2023. As such, the maintenance of the pre-2002 mass limits for Ammonia-Nitrogen and Phenols (4AAP) as PMELs in the 2012 permit theoretically allowed for (but did not result in) less efficient treatment of wastewaters from existing sources because Batteries 1, 2, and 3 shut down and production decreased from 13,078 tons per day to 10,411 tons/day since the PMELs were first calculated, but PMELs based on the higher production rate are still in effect.

As a summation of loadings from all coke production batteries, the PMELs are interpreted to regulate Ammonia-Nitrogen and Phenols (4AAP) from Battery C at the level of NSPS with the balance of the PMEL loading reflecting the treatment of wastewaters from existing sources at a level that, at baseline loading, is less effective than 1982 BAT (the basis for the PMELs) but still more effective than 1982 BPT (the limit for relief allowed under Section 301(g)). In short, maintenance of the PMELs does not conflict with other regulatory requirements. DEP's calculation of NSPS-specific loadings for Ammonia-Nitrogen and Phenols (4AAP) are summarized in **Table 9**.

Table 9. Portion of PMELs Attributable to Battery C (NSPS)

Load Allowance	Ammonia-Nitrogen		Phenols (4AAP)	
	Avg. Mo. (pounds/day)	Max Daily (pounds/day)	Avg. Mo. (pounds/day)	Max Daily (pounds/day)
Baseline	11.9	17.3	0.141	0.225
Wet Desulfurization	0.96	1.40	0.011	0.018
PHOSAM	1.56	2.27	0.018	0.029
Groundwater Remediation	1.68	2.44	0.020	0.032
Coal Tar	0.79	1.14	0.009	0.015
Biological Control Water	5.28	7.66	0.062	0.100
Process Area Storm Water	0.25	0.37	0.003	0.005
Total Load Allowance for Battery C	**22.5**	**32.6**	**0.265**	**0.424**

Table 10 compares BPT mass limits (with credits) for existing sources, 1982 and 2002 BAT mass limits (with credits) for existing sources, the portion of the PMELs that apply to existing sources after subtracting mass limits for Battery C's production, and WQBELs calculated by DEP for Outfall 038 (see Section 038.B of this Fact Sheet).

Table 10. BPT, BAT, and PMEL Comparison for Existing Sources

Load Allowance	Ammonia-Nitrogen		Phenols (4AAP)	
	Average Monthly (pounds/day)	Maximum Daily (pounds/day)	Average Monthly (pounds/day)	Maximum Daily (pounds/day)
BPT for Existing Sources	1,519	4,563	25.0	75.1
WQBELs for Outfall 038	1,100	2,210	29.2	45.5
PMEL Loading for Existing Sources (PMEL Load less NSPS Loading)	543 – 22.5 = 520.5	1,841 – 32.6 = 1,808.4	1.07 – 0.265 = 0.805	2.13 – 0.424 = 1.706
1982 BAT for Existing Sources	449	1,524	0.90	1.79
2002 BAT for Existing Sources	56.7	82.2	0.67	1.07

As shown in **Table 10**, the PMELs are not less stringent than BPT limits (one of the criteria for approving a Section 301(g) variance) and are more stringent than WQBELs necessary to protect designated uses of the Monongahela River.

USS evaluated whether the PMELs continue to comply with water quality criteria (among other variance approval requirements) in attachments to the 2017 Application and then reevaluated whether the PMELs comply with water quality criteria in the 2023 Application Update due to changes to water quality criteria for Ammonia-Nitrogen in 2020. Based on USS's evaluation, DEP's review of USS's evaluation (see **Attachment B**), and DEP's own evaluation (see Section 038.B), DEP recommends to EPA that both the Ammonia-Nitrogen and Phenols (4AAP) Section 301(g) variances be renewed.

Production-Based Mass Limits for IMP 183

Except for Ammonia-Nitrogen and Phenols (4AAP), the production-based mass TBELs that apply to wastewaters regulated at IMP 183 are the sum of the baseline pollutant loadings and increased pollutant loadings in Tables 2, 3, 4, 5, 6, and 7. The mass limits for Ammonia-Nitrogen and Phenols (4AAP) are the same as the mass limits from the previous permit based on DEP's recommendation to renew USS's Section 301(g) variances for those pollutants. The mass limits for IMP 183 are summarized in **Table 11**.

Table 11. IMP 183 Technology-Based Mass Limits

Parameter	Average Monthly (pounds/day)	Maximum Daily (pounds/day)	Basis
Total Suspended Solids	2,968	5,813	BPT/BCT Non-Battery C Prod. + NSPS Battery C Prod. + 8.1% (Wet Desulfurization) + 13.1% (PHOSAM) + 14.1% (GW) + 6.6% (Coal Tar) + 44.2% (NSPS Battery C Prod. only) + 2.11% (SW)
Oil and Grease	275	777	BPT/BCT Non-Battery C Prod. + NSPS Battery C Prod. + 8.1% (Wet Desulfurization) + 13.1% (PHOSAM) + 14.1% (GW) + 6.6% (Coal Tar) + 44.2% (NSPS Battery C Prod. only) + 2.11% (SW)
Ammonia-Nitrogen	543	1,841	CWA § 301(g) – Retained PMELs
Benzo(a)pyrene	0.240	0.431	2002 BAT Non-Battery C Prod. + NSPS Battery C Prod. + 8.1% (Wet Desulfurization) + 13.1% (PHOSAM) + 14.1% (GW) + 6.6% (Coal Tar) + 44.2% (NSPS Battery C Prod. only) + 2.11% (SW)
Cyanide	81.5	116	2002 BAT Non-Battery C Prod. + NSPS Battery C Prod. + 8.1% (Wet Desulfurization) + 13.1% (PHOSAM) + 14.1% (GW) + 6.6% (Coal Tar) + 44.2% (NSPS Battery C Prod. only) + 2.11% (SW)
Naphthalene	0.241	0.435	2002 BAT Non-Battery C Prod. + NSPS Battery C Prod. + 8.1% (Wet Desulfurization) + 13.1% (PHOSAM) + 14.1% (GW) + 6.6% (Coal Tar) + 44.2% (NSPS Battery C Prod. only) + 2.11% (SW)
Phenols (4AAP)	1.07	2.13	CWA § 301(g) – Retained PMELs

Notes: BPT=BCT for conventional pollutants; 2002 NSPS = 2002 BAT for toxic pollutants

For a breakdown of the limitations calculated for BPT, BCT, BAT, and NSPS and the selection of the most stringent limitations from those levels of treatment, refer to **Attachment C**.

Concentration-Based Limits for IMP 101

To supplement the production-based mass limits, DEP previously imposed concentration limits under the authority of 40 CFR § 122.45(f)(2) and DEP's BPJ.[5] The concentration limits, which will be maintained in the renewed permit, are based on 1982 BPT/BCT limits, 1982 BAT limits, and/or 2002 BAT limits as summarized in **Table 12**.

Table 12. IMP 183 Technology-Based Concentration Limits

Parameter	Average Monthly (mg/L)	Maximum Daily (mg/L)	Basis
Total Suspended Solids	140.0	270.0	1982 BPT/BCT
Oil and Grease	11.6	34.8	1982 BPT/BCT
Ammonia-Nitrogen	25.0	85.0	1982 BAT
Cyanide	5.5	10.0	1982 BAT
Benzo(a)pyrene	0.01297	0.02325	2002 BAT
Naphthalene	0.01307	0.02344	2002 BAT
Phenols (4AAP)	0.05	0.10	1982 BAT

The concentration limits for Oil and Grease are adjusted to retain the additional significant figures specified in Table II-1 (p.7) of the 1982 Development Document.

The 1982 BPT/BCT concentrations are the model effluent quality values listed on Table II-1 (p.7) of the 1982 Development Document. The 1982 BAT concentrations the model effluent quality values listed on Table II-3 (p.9) of the 1982 Development Document. The 2002 BAT concentrations are the concentration-based limitations listed in Attachment 14-3 (p.E-6) of the 2002 Development Document.

Increased Pollutant Loadings for Peters Creek Lagoon Area (Groundwater Remediation)

In addition to groundwater from existing wells and collection systems, USS requested authorization to direct additional groundwater and storm water sources from the Peters Creek Lagoon Area to the Contaminated Water Treatment Plant for co-treatment with by-product cokemaking wastewaters. The Peters Creek Lagoon Area is discussed in detail in the "Development of Effluent Limitations for Outfall 090" section of this Fact Sheet where Peters Creek Lagoon Area wastewaters are currently authorized to discharge. The Peters Creek Lagoon was a man-made, unlined lagoon/impoundment that was used to dispose of materials generated from cokemaking operations. Groundwater and storm water from that area are compatible with USS's process wastewaters. USS's request is intended to provide treatment

[5] 40 CFR 122.45(f)(2) states: "Pollutants limited in terms of mass additionally may be limited in terms of other units of measurement, and the permit shall require the permittee to comply with both limitations."

options that may be required due to additional remediation collection systems at the Peters Creek Lagoon Area. Under the proposed re-routing scenario, groundwater and storm water would be transferred to the Contaminated Water Treatment Plant by pipeline. The flow rate of contaminated groundwater to the treatment plant would increase by about 65 gpm from 115 gpm to 180 gpm. As a result, USS requests mass limits to be increased to account for that proposed flow increase.

The process wastewater flow rate from groundwater remediation systems co-treated with by-product cokemaking wastewaters would represent an increased effluent volume of about 22.0% above base flow (180 gpm ÷ 817 gpm = 0.2203). Pollutant loadings for all pollutants would be increased by 22.0%.

Table 13. Increased Pollutant Loadings for Expanded Groundwater Remediation

Parameter	Increase for Existing Groundwater Remediation + Peters Creek Lagoon Area Groundwater		Basis	IMP 183 Mass TBELs with Peters Creek Lagoon Area Groundwater	
	Avg. Mo. (pounds/day)	Max Daily (pounds/day)		Avg. Mo. (pounds/day)	Max Daily (pounds/day)
Total Suspended Solids	449	876	40 CFR § 420.13(a)(2) [**Table 2** values × 0.2203]	3,130	6,129
Oil and Grease	41	116		290	819
Ammonia-Nitrogen	9.27	13.44		543	1,841
Benzo(a)pyrene	0.03	0.05		0.250	0.449
Cyanide	9.54	13.63		84.9	121
Naphthalene	0.028	0.051		0.252	0.453
Phenols (4AAP)	0.109	0.175		1.07	2.13

Since USS has not installed the facilities necessary to route groundwater and storm water from the Peters Creek Lagoon Area to the Contaminated Water Treatment Plant, the IMP 183 limits in **Table 13** are for informational purposes.

Regulatory Effluent Standards and Monitoring Requirements

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1).

Effluent standards for pH are imposed on industrial wastes by 25 Pa. Code § 95.2(1); however, the § 95.2(1) pH limits are the same as those imposed by 40 CFR §§ 420.12(a) and 420.14(a)(2).

Per- and Polyfluoroalkyl Substances (PFAS)

In February 2024, DEP implemented a new monitoring initiative for PFAS. PFAS are a family of thousands of synthetic organic chemicals that contain a chain of strong carbon-fluorine bonds. Many PFAS are highly stable, water- and oil-resistant, and exhibit other properties that make them useful in a variety of consumer products and industrial processes. PFAS are resistant to biodegradation, photooxidation, direct photolysis, and hydrolysis and do not readily degrade naturally; thus, many PFAS accumulate over time. According to the United States Department of Health and Human Services, Agency for Toxic Substances and Disease Registry (ATSDR), the environmental persistence and mobility of some PFAS, combined with decades of widespread use, have resulted in their presence in surface water, groundwater, drinking water, rainwater, soil, sediment, ice caps, outdoor and indoor air, plants, animal tissue, and human blood serum across the globe. ATSDR also reported that exposure to certain PFAS can lead to adverse human health impacts.[6] Due to their durability, toxicity, persistence, and pervasiveness, PFAS have emerged as potentially significant pollutants of concern.

In accordance with Section II.I of DEP's "Standard Operating Procedure (SOP) for Clean Water Program – Establishing Effluent Limitations for Individual Industrial Permits" [SOP No. BCW-PMT-032] and under the authority of 25 Pa. Code § 92a.61(b), DEP has determined that monitoring for a subset of common/well-studied PFAS including Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), Perfluorobutanesulfonic acid (PFBS), and Hexafluoropropylene oxide dimer acid (HFPO-DA) is necessary to help understand the extent of environmental contamination by PFAS in the Commonwealth and the extent to which point source dischargers are contributors. SOP BCW-PMT-032 directs permit writers to consider special monitoring requirements for PFOA, PFOS, PFBS, and HFPO-DA in the following instances:

a. If sampling that is completed as part of the permit renewal application reveals a detection of PFOA, PFOS, HFPO-DA or PFBS (any of these compounds), the application manager will establish a quarterly monitoring requirement for PFOA, PFOS, HFPO-DA and PFBS (all of these compounds) in the permit.

[6] ATSDR, "Toxicological Profile for Perfluoroalkyls". Patrick N. Breysse, Ph.D., CIH Director, National Center for Environmental Health and Agency for Toxic Substances and Disease Registry Centers for Disease Control and Prevention, May 2021.

b. If sampling that is completed as part of the permit renewal application demonstrates non-detect values at or below the Target QLs for PFOA, PFOS, HFPO-DA and PFBS (all of these compounds in a minimum of 3 samples), the application manager will establish an annual monitoring requirement for PFOA, PFOS, HFPO-DA and PFBS in the permit.

c. In all cases the application manager will include a condition in the permit that the permittee may cease monitoring for PFOA, PFOS, HFPO-DA and PFBS when the permittee reports non-detect values at or below the Target QL for four consecutive monitoring periods for each PFAS parameter that is analyzed. Use the following language: 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 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.

USS collected additional application samples for its 2023 Application Update before the NPDES permit application forms were updated to require sampling for PFOA, PFOS, PFBS, and HFPO-DA. Also, according to EPA's guidance, USS does not operate in one of the industries EPA expects to be a source for PFAS. Therefore, annual reporting of PFOA, PFOS, PFBS, and HFPO-DA will be required consistent with Section II.I.b of SOP BCW-PMT-032. As stated in Section II.I.c of the SOP, if non-detect values at or below DEP's Target QLs are reported for four consecutive monitoring periods (*i.e.*, four consecutive annual results in USS's case), then the monitoring may be discontinued.

To the extent that PFAS reporting is required at other outfalls at the Clairton Plant, the preceding rationale applies to those other outfalls. Application reporting requirements for PFOA, PFOS, PFBS, and HFPO-DA are included in Pollutant Group 1 of DEP's permit application, so all wastewaters that require analyses for parameters in Pollutant Group 1 would theoretically require reporting for PFOA, PFOS, PFBS, and HFPO-DA under a permit. As an exception, the application instructions allow applicants to report results for a shorter list of parameters from Pollutant Group 1 (not including PFOA, PFOS, PFBS, and HFPO-DA) if an outfall only receives non-process wastewater not regulated by an ELG or NSPS. As a result, in addition to IMP 183, PFAS reporting under the permit will be limited to Outfall 038 and Outfall 090. Outfall 081 may be used as a bypass outfall for process wastewaters normally directed to Outfall 038 but is not regularly used in that manner, so PFAS monitoring will not be required at Outfall 081.

183.B. Water Quality-Based Effluent Limitations (WQBELs)

WQBELs generally are not imposed at internal monitoring points because internal waste streams do not need to comply with water quality standards until they discharge to waters of the Commonwealth. Therefore, WQBELs are evaluated for treated cokemaking process wastewaters at the final discharge location to the Monongahela River, Outfall 038.[7]

183.C. Effluent Limitations and Monitoring Requirements for Internal Monitoring Point 183

Effluent limits applicable at IMP 183 are the more stringent of TBELs, WQBELs, regulatory effluent standards and monitoring requirements. Since WQBELs do not apply at IMP 183, effluent limits are based solely on TBELs and regulatory effluent standards and monitoring requirements. IMP 183 limits and monitoring requirements are summarized in **Table 14**.

Table 14. Effluent Limits and Monitoring Requirements for IMP 183

Pollutant	Mass (pounds/day)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code §92a.61(d)(1)
Total Suspended Solids	2,968.0	5,813.0	140.0	270.0	—	40 CFR §§ 420.08, 420.12(a), & 420.14(a)
Oil and Grease	275.0	777.0	11.6	34.8	—	40 CFR §§ 420.08, 420.12(a), & 420.14(a)
Ammonia-Nitrogen	543.0	1,841.0	25.0	85.0	—	CWA § 301(g)
Benzo(a)pyrene	0.240	0.431	0.01297	0.02325	—	40 CFR §§ 420.08, 420.12(a), & 420.14(a)
Cyanide	81.5	116.0	5.5	10.0	—	40 CFR §§ 420.08, 420.12(a), & 420.14(a)

[7] USS's justification for the renewal of its Section 301(g) variances for Ammonia-Nitrogen and Phenols (4AAP) includes an evaluation of water quality impacts to the Monongahela River resulting from the imposition of the PMELs at IMP 183 on Outfall 038's effluent (see **Attachment B**).

Table 14 (continued). Effluent Limits and Monitoring Requirements for IMP 183

Pollutant	Mass (pounds/day)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Naphthalene	0.241	0.435	0.01307	0.02344	—	40 CFR §§ 420.08, 420.12(a), & 420.14(a)
Phenols (4AAP)	1.07	2.13	0.05	0.10	—	CWA § 301(g)
Perfluorooctanoic acid (PFOA) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Perfluorooctanesulfonic acid (PFOS) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Perfluorobutanesulfonic acid (PFBS) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Hexafluoropropylene oxide dimer acid (HFPO-DA) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
pH (standard units)	—	—	6.0 Inst. Min	—	9.0	40 CFR §§ 420.08, 420.12(a), & 420.14(a)

The monitoring frequencies and sample types specified in the current permit will be maintained in the renewed permit including 1/week flow measurements, 1/week grab sampling for pH, 1/week composite (3 grabs/24 hours) sampling for Oil and Grease, and 1/week 24-hour composite sampling for all other parameters except PFAS parameters, which will require grab sampling 1/year.

Development of Effluent Limitations for Uncontaminated Steam Condensate

Outfall No. Various **Design Flow (MGD)** Variable
Wastewater Description: Uncontaminated steam condensate

Steam Condensate

The previous permit authorized USS to discharge uncontaminated steam condensate from Outfalls 020, 020A, 030, 030A, 031, 031A, 031B, 031C, 031D, 032, 033, 033A, 035A, 035B, 035C, 036, 037, 037A, 039, 040, 043, 047, 047A, 048, 049, 050, 051, 054B, 054C, 055, 056, 058, 060, 061, 061A, 065, and 066.

A narrative condition in the NPDES permit requires USS to select one representative outfall and sample it once during the permit term for TSS, Oil & Grease, Surfactants, pH, Total Residual Chlorine, Copper, Hexavalent Chromium, Dissolved Iron and Zinc. USS has sampled one representative steam condensate discharge annually. Annual results reported for the last six years are summarized in **Table 15**. USS did not identify the outfall used to represent all steam condensate outfalls.

Table 15. Annual Sampling Results for Steam Condensate

Parameter	Units	2018	2019	2020	2021	2022	2023
TSS	mg/L	0.600	Not Reported	0.60	<0.59	0.050	3.8
Oil and Grease	mg/L	4.500	—	5.90	<5.8	Not Reported	5.6
pH	S.U.	8.120	—	8.32	0.00	7.56	7.29
Surfactants	mg/L	0.050	—	0.050	<0.10	Not Reported	Not Reported
TRC	mg/L	0.000	—	0.00	8.43	0.00	0
Copper	mg/L	0.025	—	0.005	<0.025	0.020	0.025
Hexavalent Chromium	mg/L	0.010	—	0.010	<0.010	0.010	0.01
Dissolved Iron	mg/L	0.100	—	0.100	<0.10	0.100	0.1
Zinc	mg/L	0.005	—	0.020	<0.020	0.020	0.04

USS also collected one set of samples at Outfall 061A to complete the permit application with Outfall 061A used to represent all steam condensate discharges. Results from that sampling event are summarized below.

Table 16. Analytical Results for Outfall 061A

Parameter	Units	Concentration
BOD5	mg/L	<2.0
TSS	mg/L	0.5
Ammonia-Nitrogen	mg/L	0.43
Temperature	mg/L	190
pH	S.U.	7.6
Oil and Grease	mg/L	0.43 J
TRC	mg/L	<0.01
TDS	mg/L	<10

USS's application sampling was limited to a subset of Pollutant Group 1 (General Chemistry) parameters based on the following exception to required analyses in the NPDES permit application instructions:

> Facilities that discharge only non-process wastewater not regulated by an ELG or new source performance standard can, in lieu of completing three analyses for all Group 1 pollutants, complete three analyses for the following pollutants: 5-Day Biochemical Oxygen Demand (BOD5), Total Suspended Solids (TSS), Total Dissolved Solids (TDS), Fecal Coliform (if believed present or if sanitary waste is or will be discharged), Total Residual Chlorine (TRC) (if chlorine is used), Oil and Grease, Chemical Oxygen Demand (COD) (if non- contact cooling water is or will be discharged), Total Organic Carbon (TOC) (if non-contact cooling water is or will be discharged), Ammonia-Nitrogen, pH, and Temperature (winter and summer).

USS only collected one set of samples instead of three. Apart from the missing results from 2019 and a few from 2022 and 2023, USS collected representative steam condensate samples once per year, which is more frequent than required by the current permit—albeit not for all the parameters required in the application instructions.

In a narrative introduction to the 2017 Permit Application, USS requested to eliminate the once-per-permit-term sampling requirement for steam condensate outfalls indicating that representative samples of steam condensate discharges would continue to be collected for future permit renewal submittals. DEP agrees to the removal of the once-per-permit-term sampling requirement for steam condensate discharges because one sample per permit term is comparable to collecting

samples to characterize a discharge for an NPDES permit renewal application that is due once every five years. However, USS's application sampling of a representative steam condensate discharge must be consistent with the application instructions (*e.g.*, if the instructions in effect at the time of renewal require three samples, then three samples must be collected, not one).

For this renewal, the NPDES permit will continue to authorize discharges of uncontaminated steam condensate from Outfalls 020, 020A, 030, 030A, 031, 031A, 031B, 031C, 031D, 032, 033, 033A, 035A, 035B, 035C, 036, 037, 037A, 039, 040, 043, 047, 047A, 048, 049, 050, 051, 054B, 054C, 055, 056, 058, 060, 061, 061A, 065, and 066 without any effluent limits or monitoring requirements.

Development of Effluent Limitations for Outfall 001A

Outfall No. 001A (901) **Design Flow (MGD)** Variable
Latitude 40° 18' 58" **Longitude** -79° 53' 36"
Wastewater Description: Storm water runoff from the north end of the coal yard

Outfall 001A (901) discharges storm water runoff from a 126,324 sq. ft. area at the north end of the Clairton Plant's coal yard. The area is bordered by the Clairton Plant property fence line to the north, the coal wharf and roadway to the south, the Monongahela River to the east, and the Union Railroad line to the west. Potential pollutant sources include residual coal and coal dust from the roadway and parking lot. Discharges from Outfall 001A are currently subject to the following monitoring requirements.

Table 17. Outfall 001A (901) – Current Effluent Limits and Monitoring Requirements

Parameter	Minimum	Average Monthly	IMAX	Units	Measurement Frequency	Sample Type	Limit Basis
pH	Report	—	Report	s.u.	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Ammonia-N	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Iron, Total	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Manganese, Total	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Zinc, Total	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Benzo(a)Pyrene	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Naphthalene	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)

The monitoring requirements in **Table 17** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

001A.A. Technology-Based Effluent Limitations (TBELs)

40 CFR § 122.44(a)(1) (incorporated by reference at 25 Pa. Code § 92a.44) requires NPDES permits to include conditions meeting technology-based effluent limitations and standards. Except for storm water from immediate process areas that is eligible to be regulated (but not required to be regulated) as process wastewater when combined with process wastewaters for treatment and discharge, USS's industrial storm water discharges are not subject to any Federal ELGs. In the absence of ELGs, case-by-case TBELs, if warranted, are developed based on DEP's Best Professional Judgment (BPJ).

Consistent with 25 Pa. Code § 92a.61(h) and DEP's policy for permitting storm water discharges associated with industrial activities, minimum standards described in DEP's PAG-03 NPDES General Permit for Discharges of Stormwater Associated with Industrial Activity are applied to the Clairton Plant's storm water discharges.[8] Based on the Clairton Plant's SIC Code of 3312, the facility would be classified under Appendix B – Primary Metals Industry Facilities of the PAG-03 General Permit.[9] To ensure there is baseline consistency for all primary metals industry facilities in Pennsylvania that discharge storm water associated with their industrial activities, the monitoring requirements and sector-specific Best Management Practices (BMPs) of Appendix B of the PAG-03 are imposed as baseline requirements. The monitoring requirements of Appendix B are shown in **Table 18**. Monitoring for additional pollutants is considered to the extent the baseline monitoring requirements from Appendix B do not capture the range of analytes present in Outfall 001A's discharges.

Table 18. PAG-03 Appendix B – Minimum Monitoring Requirements

Discharge Parameter	Units	Sample Type	Minimum Measurement Frequency	Benchmark Values
Total Nitrogen †	mg/L	1 Grab	1/6 months	XXX
Total Phosphorus	mg/L	1 Grab	1/6 months	XXX
Total Suspended Solids	mg/L	1 Grab	1/6 months	100
Oil and Grease	mg/L	1 Grab	1/6 months	30
Aluminum, Total	mg/L	1 Grab	1/6 months	XXX
Zinc, Total	mg/L	1 Grab	1/6 months	XXX

[8] Standard Operating Procedure (SOP) for Clean Water Program, Establishing Effluent Limitations for Individual Industrial Permits, Section III.C. (SOP No. BCW-PMT-032, February 5, 2024, Version 1.7): "The applicable appendix of the PAG-03 General Permit should be considered the minimum standards for limits, benchmarks and monitoring requirements for individual industrial stormwater permits. The application manager may include other limits, benchmarks and monitoring requirements as justified in the fact sheet."

[9] The determination of which of the PAG-03 General Permit's appendices applies to a facility is based on a facility's SIC Code.

Table 18 (continued). PAG-03 Appendix B – Minimum Monitoring Requirements

Discharge Parameter	Units	Sample Type	Minimum Measurement Frequency	Benchmark Values
Copper, Total	mg/L	1 Grab	1/6 months	XXX
Iron, Total	mg/L	1 Grab	1/6 months	XXX
Lead, Total	mg/L	1 Grab	1/6 months	XXX

† Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO2+NO3-N), where TKN and NO2+NO3-N are measured in the same sample.

Outfall 001A's discharges are currently subject to different requirements than those specified in **Table 18**. TSS, Total Iron, and Total Zinc are currently monitored at Outfall 001A, but Total Nitrogen, Total Phosphorus, Oil and Grease, Total Aluminum, Total Copper, and Total Lead are not monitored. Reporting also is required at Outfall 001A for pH, Ammonia-Nitrogen, Benzo(a)pyrene, Naphthalene, and Total Manganese. Reporting requirements for those parameters were added to Outfall 001A to determine whether pollutants regulated in other discharges from the Clairton Plant based on 40 CFR Part 420 are present in the facility's storm water (*e.g.*, if storm water from areas other than immediate process areas is contaminated by pollutant sources from USS's industrial processes). Alternatively, the parameters require reporting because they were present in the facility's storm water and warrant continued monitoring. Monitoring frequencies for the newly added parameters (Total Nitrogen, Total Phosphorus, Oil & Grease, Total Aluminum, Total Copper, and Total Lead) will be 1/6 months.

Two years of the most recent analytical results supplemented with data from one sampling event collected on April 19, 2023 for the 2023 Application Update are summarized in **Table 19**. Averages are calculated using a lognormal distribution and, for mixed datasets consisting of detected and non-detect results, a delta-lognormal distribution is used. Where only one application result is available, the "average" concentration is the one reported result.

Table 19. Storm Water Analytical Results for Outfall 001A

Parameter	Average Conc. (mg/L)	Parameter	Average Conc. (mg/L)
Oil and Grease	<4.85	Zinc, Total	0.345 †
BOD5	29.5	Benzo(a)Pyrene	0.0019 †
COD	631	Naphthalene	0.0038 †
TSS	450 †	Cadmium, Total	<0.004
Total Nitrogen	<6.5	Lead, Total	0.0079
Total Phosphorus	1.00	Nitrate Nitrite as N	<1.2
pH (s.u.)	7.9 (median)	Total Kjeldahl	5.30
Ammonia-Nitrogen	<1.16 †	Phenolics, Total	<0.020
Iron, Total	7.37 †	Free Cyanide	<0.005
Manganese, Total	0.70 †	Cyanide, Total	<0.010

† Result is the average of a lognormal or delta-lognormal distribution of maximum daily results reported on DMRs from November 2022 – November 2024

Based on the results in **Table 19**, monitoring and reporting will be required for Chemical Oxygen Demand (COD). COD is not part of the baseline monitoring requirements from Appendix B of the PAG-03, but the reported concentration is elevated compared to the COD benchmark value of 120 mg/L identified in other appendices of the PAG-03 and the COD effluent concentration goal in USS's existing permit that applies to other storm water outfalls. The monitoring frequency for COD will be 1/6 months. The monitoring frequencies for Total Nitrogen, Total Phosphorus, Oil & Grease, Total Aluminum, and Total Copper each will be 1/6 months because results are either not available to evaluate whether more frequent monitoring is appropriate, or the reported concentrations are not elevated.

As stated previously, in the absence of ELGs, case-by-case TBELs are developed based on BPJ. The development of case-by-case TBELs using BPJ typically involves the evaluation of end-of-pipe wastewater treatment technologies. However, consistent with 40 CFR § 122.44(k)(2), DEP considers the use of BMPs to be BAT for storm water discharges associated with industrial activities unless effluent concentrations indicate that BMPs provide inadequate pollution control.

Figures 1 through 8 depict the reported effluent concentrations of pollutants monitored at Outfall 001A from January 2017 through November 2024. Effluent concentration goals from USS's current permit are shown for comparison where benchmark values are not identified in Appendix B of the PAG-03.

Figure 1. Ammonia-Nitrogen at 001A

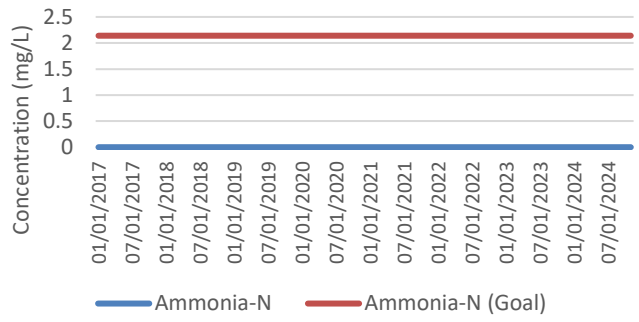


Figure 2. Benzo(a)Pyrene at 001A

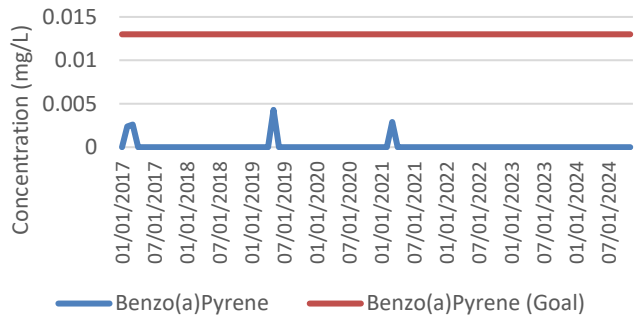


Figure 3. Total Iron at 001A

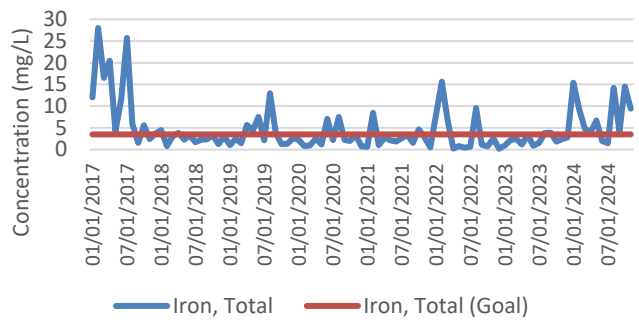


Figure 4. Total Manganese at 001A

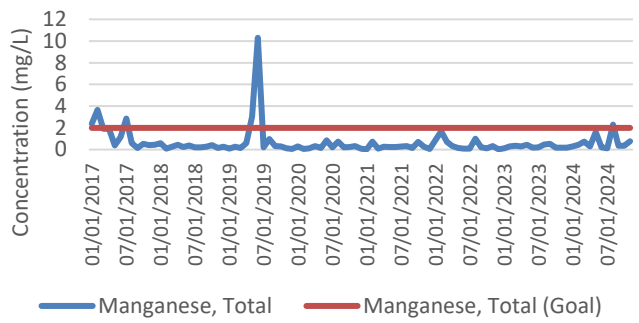


Figure 5. Naphthalene at 001A

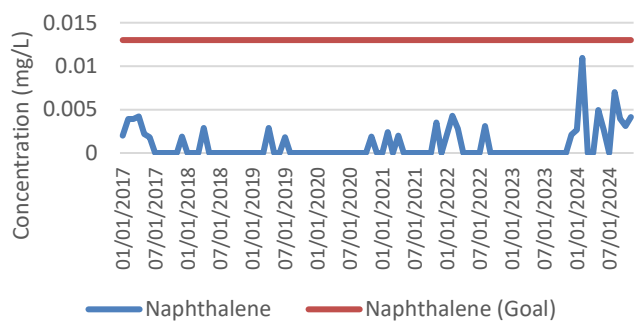


Figure 6. Total Suspended Solids at 001A

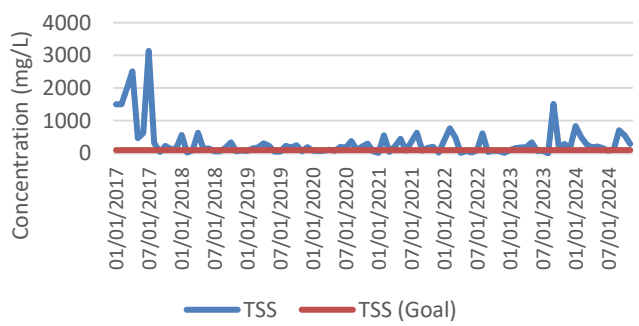


Figure 7. Total Zinc at 001A

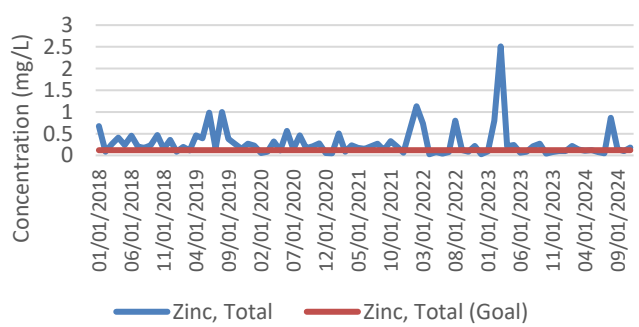
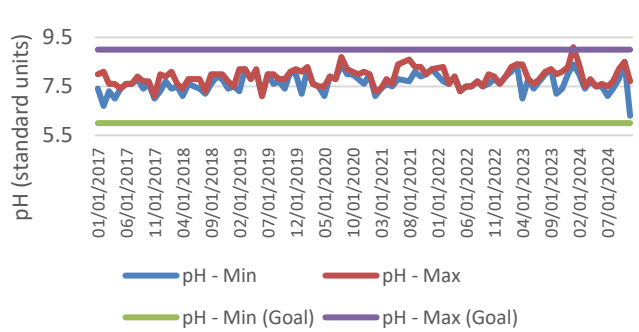


Figure 8. pH at 001A



Note: 'Non-detect' values are shown as zero.

DMR data summarized in Figures 1 through 8 and in **Table 19** indicate that TSS and iron consistently exceed benchmark values/concentration goals. Appendix B of the PAG-03 identifies a benchmark value of 100 mg/L for TSS. USS's permit identifies an effluent concentration goal of 30 mg/L. EPA explained the basis for the TSS benchmark value in supporting documentation for the 1995 Multi-Sector General Permit (MSGP) (60 FR 50825) [10]:

> For TSS a value of 100mg/L is similar to the storm water benchmark used by North Carolina for storm water permits, and given the group application data, should be readily achievable by industry with implementation of BMPs, many of which are designed for the purpose of controlling TSS. EPA also believes, given the group application data, that there is a relationship between TSS and the amount of exposed industrial activity and that industrial activities even in arid western States should be able to implement BMPs that will accomplish this benchmark.

And, on Page 82 of the 2021 MSGP, with respect to benchmark values in general:

> In general, the freshwater acute criteria are less restrictive than chronic water quality criteria. Because of the intermittent nature of wet weather (i.e., stormwater) discharges and the increased and variable ambient flows that generally result from precipitation events, EPA views acute criteria as generally more appropriate than chronic criteria in this context. Since benchmarks are usually set equal to recommended ambient water quality criteria for the receiving waters, with no allowance of dilution during storm events, they generally represent conservative values. Exceedance of a benchmark threshold does not necessarily indicate that a discharge is not meeting an applicable water quality standard, but does require the operator to evaluate the effectiveness of its stormwater control measures, with follow-up Additional Implementation Measures (AIM) responses where required (…)

DEP (and EPA) use benchmark monitoring as an indicator of the effectiveness of a facility's BMPs with the benchmark values representing levels below which a facility's discharges pose less potential for water quality concern. If sampling demonstrates exceedances of benchmark values for two or more consecutive monitoring periods, then DEP requires dischargers to submit a corrective action plan within 90 days of the end of the monitoring period triggering the plan. Four or more consecutive exceedances require additional BMPs to be employed. The benchmark values are not effluent limitations and exceedances do not constitute permit violations. However, not submitting a corrective action plan when necessary is a violation.

Discharges from Outfall 001A have not been subject to the 100 mg/L TSS benchmark value or the corresponding corrective action plan requirement, so USS will be given the opportunity to address elevated TSS concentrations in Outfall 001A's discharges through benchmark monitoring before DEP considers the need for numerical TBELs. Effluent limits for TSS will not be imposed at Outfall 001A for this permit renewal. Benchmark values for TSS, Oil & Grease, and COD will be 100 mg/L, 30 mg/L, and 120 mg/L, respectively. Those are the benchmark values for those parameters in the PAG-03. Controlling TSS also should reduce iron concentrations, but the effluent concentration goal listed in USS's current permit for iron (3.5 mg/L) will be adopted as the benchmark value for iron. Corrective action plans also will be required for consecutive exceedances of the benchmark values.

In the 2017 Application, USS requested that the sampling frequencies for pollutants that have met their corresponding concentration goals be reduced to 1/quarter. DEP agrees to a performance-based reduction of sampling frequencies for Ammonia-Nitrogen, Benzo(a)Pyrene, Total Manganese, and Naphthalene from 2/month to 1/6 months. The reductions are greater than the reductions recommended in EPA's "Interim Guidance for Performance-Based Reduction Of NPDES Permit Monitoring Frequencies" (Doc. No. EPA 833-B-96-001, April 1996), but will be consistent with the sampling frequencies for other parameters added based on Appendix B of the PAG-03 General Permit. The effluent concentration goals for those parameters currently specified for other outfalls in USS's permit (2.14 mg/L for Ammonia-Nitrogen; 0.013 mg/L for Benzo(a)Pyrene and Naphthalene; and 2.0 mg/L for Total Manganese) will be adopted as benchmark values for those parameters subject to corrective action plan requirements when there are two or more consecutive exceedances.

Parameters that are not subject to monitoring frequency reductions will additionally require reporting of a semi-annual average concentration. If a parameter's semi-annual average concentration exceeds the corresponding benchmark value for two or more consecutive semi-annual periods, then the corrective action plan requirements will be triggered for those parameters.

Storm Water Pollution Prevention Plan (SWPPP)

[10] EPA's Multi-Sector General Permit (MSGP) is the federal equivalent of DEP's PAG-03 General Permit. The current version of EPA's MSGP took effect on March 1, 2021.

The permit issued in 2012 required USS to develop and implement a SWPPP to identify the sources of pollutants in storm water and the BMPs installed or to be installed to reduce pollutants in storm water discharges. USS submitted the required SWPPP in March 2013. For Outfall 001A, the SWPPP stated the following:

> The Outfall 001A conveyance structure consists of a concrete revetment channel that prevents storm water from washing across Clairton's coal wharf. The coal wharf is used to remove small amounts of coal from the coal barges that cannot be removed by the coal unloaders. Due to the nature of this operation, deposits of coal tend to accumulate in and around the wharf. To reduce coal fines discharged through Outfall 001A runoff, the concrete culvert is cleaned out by vacuum truck quarterly.

Based on the effluent results summarized in Figures 1 through 8 and in **Table 19**, quarterly cleaning of the concrete culvert does not remove all pollutants to within benchmark values. Based on historical effluent data, USS may be required to explore additional structural or non-structural BMPs to control storm water pollution if elevated concentrations persist and corrective action plans (and PPC Plan updates) are necessary under the terms of the renewed permit.

001A.B. Water Quality-Based Effluent Limitations (WQBELs)

Generally, DEP does not develop numerical WQBELs for storm water discharges. Pursuant to 25 Pa. Code § 96.4(g), mathematical modeling used to develop WQBELs must be performed at Q_{7-10} low flow conditions. Precipitation-induced discharges generally do not occur at Q_{7-10} conditions because the precipitation that causes a storm water discharge also will increase the receiving stream's flow and that increased stream flow will provide additional assimilative capacity during a storm event. That does not preclude the potential for adverse effects to aquatic life caused by acute exposure during a storm event and intermittent chronic exposures (particularly for bioaccumulative pollutants) from multiple storm events as they naturally recur. Mathematically modeling such effects for wet weather conditions is not procedurally defined, which is why 40 CFR § 122.44(k)(2) and 25 Pa. Code § 92a.46 provide for BMPs to control or abate the discharge of pollutants in lieu of numeric limits. Pursuant to those regulations, conditions in Part C of the permit will ensure compliance with water quality standards through the combination of benchmark monitoring and BMPs including pollution prevention and exposure minimization, good housekeeping, erosion and sediment control, and spill prevention and response.[11]

001A.C. Effluent Limitations and Monitoring Requirements for Outfall 001A

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l) (incorporated in Pennsylvania's regulations at 25 Pa. Code § 92a.44), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. No TBELs are imposed at Outfall 001A (other than BMPs) and no WQBELs apply at this time, so monitoring and reporting requirements are the most stringent requirements.

Table 20. Effluent Limits and Monitoring Requirements for Outfall 001A

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
pH (S.U.)	—	—	Report (Inst. Min.)	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Chemical Oxygen Demand (COD)	—	—	—	—	Report	25 Pa. Code § 92a.61(h)
Oil and Grease	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Aluminum, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Copper, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B

[11] Benchmark values are generally based on water quality criteria (mostly acute aquatic life criteria, but also chronic criteria for bioaccumulative pollutants), so the permit's iterative requirements for responding to consecutive benchmark value exceedances will minimize the potential for water quality concerns.

Table 20 (cont'd). Effluent Limits and Monitoring Requirements for Outfall 001A

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Iron, Total	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Lead, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Manganese, Total	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Zinc, Total	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Ammonia-Nitrogen	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Nitrogen, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Phosphorus, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Benzo(a)Pyrene	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Naphthalene	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)

The monitoring frequency and sample type for pH, TSS, Total Iron, and Total Zinc will remain unchanged (2/month grab sampling). The remaining parameters will require grab sampling 1/6 months. Total Nitrogen would be calculated as the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO2+NO3-N), where TKN and NO2+NO3-N are measured in the same sample. Semi-annual average concentrations must be calculated based on the 2/month sampling results for each half year.

Development of Effluent Limitations for Outfall 002A

Outfall No.	002A (402)	**Design Flow (MGD)**	Variable
Latitude	40° 18' 54"	**Longitude**	-79° 53' 30"

Wastewater Description: Storm water runoff from the coal wharf (emergency only)

002A.A. Technology-Based Effluent Limitations (TBELs)

Storm water discharges from Outfall 002A were previously permitted as discharges consisting solely of uncontaminated storm water runoff. "Uncontaminated" is not a term of art in DEP's regulations, but a storm water discharge's status as "uncontaminated" generally corresponds to EPA's conditional exclusion for "no exposure" of industrial activities and materials to storm water under 40 CFR § 122.26(g) (incorporated by reference at 25 Pa. Code § 92a.32(a)) and DEP's requirements under 25 Pa. Code § 92a.32(b). EPA requires facility operators to submit a signed certification stating that there are no discharges of storm water contaminated by exposure to industrial materials and activities. DEP allows "no exposure" certifications on an outfall-by-outfall basis with the requirement that corroborating analytical results be provided for each outfall.

No monitoring requirements were imposed at Outfall 002A in the current permit. The NPDES permit renewal application does not identify Outfall 002A as a "no exposure" outfall and no analytical data were submitted for Outfall 002A's discharges to corroborate the historical characterization of storm water at Outfall 002A as "uncontaminated" (whether exposed to industrial activities are not). Therefore, the baseline monitoring requirements from Appendix B of the PAG-03 will be imposed at Outfall 002A including semi-annual monitoring and reporting for Total Nitrogen, Total Phosphorus, Total Suspended Solids, Oil and Grease, Total Aluminum, Total Zinc, Total Copper, Total Iron, and Total Lead.

The benchmark values and related corrective action plan requirements from Appendix B of the PAG-03 also will apply to Outfall 002A along with benchmark values for other parameters based on effluent concentration goals in the previous permit.

002A.B. Water Quality-Based Effluent Limitations (WQBELs)

No modeling is performed (see Section 001A.B of this Fact Sheet for an explanation). The combination of benchmark monitoring and BMPs including pollution prevention and exposure minimization, good housekeeping, erosion and sediment control, and spill prevention and response will ensure compliance with water quality standards.

002A.C. Effluent Limitations and Monitoring Requirements for Outfall 002A

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. No TBELs are imposed at Outfall 002A (other than BMPs) and no WQBELs apply at this time, so monitoring and reporting requirements are the most stringent requirements.

Table 21. Effluent Limits and Monitoring Requirements for Outfall 002A

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Total Suspended Solids	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Oil and Grease	—	—	—	—	Report	
Aluminum, Total	—	—	—	—	Report	
Copper, Total	—	—	—	—	Report	
Iron, Total	—	—	—	—	Report	
Lead, Total	—	—	—	—	Report	
Zinc, Total	—	—	—	—	Report	
Nitrogen, Total	—	—	—	—	Report	
Phosphorus, Total	—	—	—	—	Report	

The monitoring frequencies and sample types will be the same as those specified in Appendix B of the PAG-03 (see Table 2 in this Fact Sheet).

Development of Effluent Limitations for Outfall 007

Outfall No.	007	**Design Flow (MGD)**	0.20
Latitude	40° 18' 36"	**Longitude**	-79° 52' 59"

Wastewater Description: Air compressor non-contact cooling water

Discharges from Outfall 007 are currently subject to the following effluent limits and monitoring requirements.

Table 22. Outfall 007 – Current Effluent Limits and Monitoring Requirements

Parameter	Average Monthly	Daily Maximum	IMAX	Units	Measurement Frequency	Sample Type	Limit Basis
Flow	Report	—	Report	MGD	2/month	Measured	25 Pa. Code § 92a.61(d)(1)
pH	6.0 (Min)	—	9.0	s.u.	2/month	Grab	25 Pa. Code § 95.2(1)
Temperature	—	—	110	°F	2/month	I-S	25 Pa. Code §§ 92a.12(a)(1), 93.6(a), & 96.3(c)
Chromium, VI	Report	Report	—	mg/L	2/month	Grab	25 Pa. Code § 92a.61(b)

The effluent limits in **Table 22** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

007.A. Technology-Based Effluent Limitations (TBELs)

Non-Contact Cooling Water (NCCW)

In accordance with the recommendations given in Chapter 6, Table 6-4 of DEP's "Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits" [Doc. No. 386-0400-001], self-monitoring requirements for NCCW discharges include the following parameters: flow, pH, and temperature. Flow monitoring is required in accordance with 25 Pa. Code § 92a.61(b). Limits for pH (6.0 minimum and 9.0 maximum) are imposed at Outfall 007 based on 25 Pa. Code § 95.2(1).

007.B. Water Quality-Based Effluent Limitations (WQBELs)

Pursuant to Section VI of DEP's "Implementation Guidance for Temperature Criteria" (Doc. No. 386-2000-001), an instantaneous maximum temperature limit of 110°F is imposed on heated discharges as a public safety measure to protect sampling personnel and anyone who might come into contact with heated wastewaters at their point of discharge. The limit is necessary to ensure the achievement of general water quality criteria in the receiving water pursuant to 25 Pa. Code §§ 96.3(c) and 93.6(a).[12]

Analytical data submitted with the renewal application are limited to General Chemistry parameters (Pollutant Group 1). The General Chemistry parameters with specific water quality criteria are Total Dissolved Solids, Chloride, Sulfate, Fluoride, Nitrite+Nitrate Nitrogen, Ammonia-Nitrogen, Color, Bromide, and Temperature. Criteria for the first five parameters apply at the point of the nearest surface potable water supply withdrawal (about 15 miles downstream) but will not be evaluated because the effluent concentrations are already less than the most stringent water quality criteria. Effluent concentrations of Ammonia-Nitrogen, Color, and Bromide also are less than the most stringent water quality criteria. Therefore, no water quality analyses are conducted for those parameters.

Discharges from Outfall 007 would introduce thermal loading to waters of the Commonwealth, which would require a water quality evaluation in combination with other thermal discharge loadings at Outfalls 023, 028, 029, 038, 081, and 084. However, USS has not reported a discharge from Outfall 007 since July 2018. Also, a 2014 Thermal Work Plan submitted

[12] 25 Pa. Code § 93.6 **General water quality criteria**

(a) Water may not contain substances attributable to point or nonpoint source discharges in concentration or amounts sufficient to be inimical or harmful to the water uses to be protected or to human, animal, plant or aquatic life.

25 Pa. Code § 96.3 **Water quality protection requirements.**

(c) (…) The general water quality criteria in § 93.6 (relating to general water quality criteria) shall be achieved in surface waters at all times at design conditions.

by USS provided evidence indicating that thermal assimilative capacity is available in the Monongahela River even at the Clairton Plant's maximum discharged heat load. Although, that analysis did not include discharges from Outfall 007.

Outfall 007 is currently subject to a 2/month reporting requirement for hexavalent chromium based on detected concentrations of hexavalent chromium reported in the previous NPDES permit renewal application. Analytical results for hexavalent chromium reported on DMRs between January 2017 and June 2018 and in the 2017 Application were not detectable at concentrations of 0.010 mg/L. USS's reporting limit of 0.010 mg/L is higher than DEP's Target Quantitation Limit for hexavalent chromium of 0.001 mg/L.

Since there are no recent analytical results for hexavalent chromium due to the lack of discharges from Outfall 007, the reporting requirement for hexavalent chromium will remain in effect at Outfall 007. If there are discharges from Outfall 007, then USS should attempt to report results for hexavalent chromium down to the level of DEP's Target Quantitation Limit. Otherwise, if there are no discharges, then USS is not affected by the continued reporting requirement.

007.C. Effluent Limitations and Monitoring Requirements for Outfall 007

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable requirements are summarized in the following table.

Table 23. Effluent Limits and Monitoring Requirements for Outfall 007

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	40 CFR § 122.44(l) 25 Pa. Code § 92a.61(d)(1)
pH (S.U.)	—	—	6.0 (Inst. Min.)	—	9.0	CWA § 402(o)(1); 25 Pa. Code §§ 92a.48(a)(2) & 95.2(1)
Temperature (°F)	—	—	—	—	110	CWA § 402(o)(1); 25 Pa. Code §§ 92a.12(a)(1), 93.6(a), & 96.3(c)
Chromium, Hexavalent	—	—	Report	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(b)

The monitoring frequencies and sample types are maintained from the previous permit including 2/month measurement of flow, 2/month grab sampling for pH and hexavalent chromium, and 2/month immersion stabilization sampling for temperature.

Development of Effluent Limitations for Outfalls 009, 010, and 011

Outfall Nos. 009, 010, & 011 **Design Flow (MGD)** Variable
Latitude 40° 18' 45.59" **Longitude** -79° 53' 21.62"
Wastewater Description: Emergency overflows from the coal yard sedimentation basins

Emergency overflow (EOF) discharges from Outfalls 009, 010, and 011 are currently subject to the following effluent limits and monitoring requirements.

Table 24. Outfalls 009, 010, and 011 – Current Effluent Limits and Monitoring Requirements

Parameter	Average Monthly	Daily Maximum	IMAX	Units	Measurement Frequency	Sample Type	Limit Basis
Flow	Report	Report	—	MGD	2/discharge	Measured	25 Pa. Code § 92a.48(a)(3)
pH	6.0 (Min)	—	9.0	s.u.	2/discharge	Grab	25 Pa. Code § 95.2(1)
TSS	—	35.0	70.0	mg/L	2/discharge	Grab	25 Pa. Code § 92a.48(a)(3)
Total Iron	—	3.5	7.0	mg/L	2/discharge	Grab	25 Pa. Code § 92a.48(a)(3)
Total Manganese	—	2.0	4.0	mg/L	2/discharge	Grab	25 Pa. Code § 92a.48(a)(3)

The effluent limits in **Table 24** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

EOF.A. Technology-Based Effluent Limitations (TBELs)

Overflows from the coal yard sedimentation basins are bypasses, defined by 40 CFR § 122.41(m)(1)(i) as "the intentional diversion of waste streams from any portion of a treatment facility". Bypasses are prohibited by 40 CFR § 122.41(m)(4) unless certain conditions in that section are met. Alternatively, bypasses are allowed by 40 CFR § 122.41(m)(2), which states:

> *Bypass not exceeding limitations.* The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation.

Overflows from the coal yard sedimentation basins would be composed of the same wastewaters that are regulated at the Coal Yard Treatment System's final discharge point, Outfall 018, albeit without passing through significant portions of the treatment system. Since Outfalls 009, 010, and 011 are designated locations for the intentional diversion of coal pile runoff from portions of the Coal Yard Treatment System (as necessary to prevent uncontrolled overtopping of the sedimentation basins), discharges from those outfalls will be subject to the same effluent limits that apply at Outfall 018 based on the bypass allowance in § 122.41(m)(2) (see Section 018.C of this Fact Sheet).

Presuming that overflows from the sedimentation basins are driven by wet weather events and an excess of coal pile runoff and not operational deficiencies (*e.g.*, not removing sludge from the basins to reclaim storage capacity), compliance with the post-treatment limits could be achieved at the overflow outfalls without treatment due to incidental dilution (*e.g.*, post-first flush reductions in storm water pollutants).

EOF.B. Water Quality-Based Effluent Limitations (WQBELs)

Discharges from Outfalls 009, 010, and 011 are infrequent. From January 2017 through November 2024, USS reported two months with discharges at Outfall 009 (February 2018 and September 2018) and Outfall 010 (September 2018 and August 2020). No discharges were reported from Outfall 011 during that period. USS's site map shows Outfall 011 as "plugged". The durations of the discharge events are unknown.

USS explained effluent violations related to the February 2018 discharges from Outfall 009 as follows:

> The sedimentation basins for this facility were designed for 1.7 Mgal capacity and received approximately 3 Mgal of stormwater in a 48-hour period. The facility is not designed to treat stormwater at this rate of accumulation. The volume from the storm event exceeded the basin capacity and a portion was discharged through the emergency overflow outfall without treatment, as it was designed to do. [13]

[13] Violations of the effluent limits at Outfalls 009 and 010 would violate the conditions for bypass allowance under § 122.41(m)(2) but could alternatively qualify as allowable bypasses pursuant to the exceptions to the prohibition on bypassing in § 122.41(m)(4).

Effluent violations at Outfalls 009 and 010 in September 2018 and August 2020 were not explained, but similar circumstances likely apply.

Notwithstanding the reported violations of TBELs, emergency discharges that occur twice in seven years are unlikely to cause or contribute to excursions above water quality criteria in the Monongahela River. The basis for this qualitative evaluation of reasonable potential derives from 25 Pa. Code § 16.21 of DEP's regulations and Section 2.3.5 of EPA's "Technical Support Document for Water Quality-Based Toxics Control" [EPA/505/2-90-001, March 1991].

> § 16.21. Acute and chronic protection.
>
> To provide for protection of aquatic life, it is necessary to consider both chronic, that is, long-term (reproduction, growth, survival) and acute or short-term (survival) endpoints. Aquatic life can generally survive excursions of elevated concentrations of a pollutant as long as the excursion is of relatively short duration and does not frequently recur. However, to provide protection over a lifetime, a lower concentration shall be maintained. Thus, each aquatic life criterion consists of two magnitudes. The EPA defines these as a criterion maximum concentration (CMC) for acute protection and a criterion continuous concentration (CCC) for chronic protection. Each criterion is defined in terms of magnitude (a scientifically derived number), duration (the period of time over which the number must be achieved), and the maximum desired frequency (the number of repetitions per unit time) of occurrence. [emphasis added]
>
> 2.3.5 Frequency for Single Chemicals and Whole Effluent Toxicity
>
> To predict or ascertain the attainment of criteria it is necessary to specify the allowable frequency for exceeding the criteria. This is because it is statistically impossible to project that criteria will never be exceeded. As ecological communities are naturally subjected to a series of stresses, the allowable frequency of pollutant stress may be set at a value that does not significantly increase the frequency or severity of all stresses combined. […]
>
> EPA selected the 3-year return interval with the intent of providing a degree of protection roughly equivalent to a 7Q10 design flow condition, and with some consideration of rates of ecological recovery from a variety of severe stresses. Because of the nature of the ecological recovery studies available, the severity of criteria excursions could not be related rigorously to the resulting ecological impacts. Nevertheless, EPA derives its criteria intending that a single marginal criteria excursion (i.e., a slight excursion over a 1-hour period for acute or over a 4-day period for chronic) would result in little or no ecological effect and require little or no time for recovery. If the frequency of marginal criteria excursions is not high, it can be shown that the frequency of severe stresses, requiring measurable recovery periods, would be extremely small. EPA thus expects the 3-year return interval to provide a very high degree of protection.

Given the assimilative capacity of the Monongahela River and the low frequency of occurrence of discharges from Outfalls 009, 010, and 011, no WQBELs are developed for those outfalls.

EOF.C. Effluent Limitations and Monitoring Requirements for Outfalls 009, 010, and 011

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable requirements are summarized in the following table.

Table 25. Effluent Limits and Monitoring Requirements for Outfalls 009, 010, and 011

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(b)
Total Suspended Solids	—	—	35.0	—	70.0	25 Pa. Code § 92a.48(a)(3), 40 § CFR 122.44(l), & 40 CFR § 122.41(m)(2)
Iron, Total	—	—	3.5	—	7.0	
Manganese, Total	—	—	2.0	—	4.0	
pH (s.u.)	—	—	6.0 (Inst. Min.)	—	9.0	25 Pa. Code § 95.2(1), 40 § CFR 122.44(l), & 40 CFR § 122.41(m)(2)

The monitoring frequencies and sample types are maintained from the previous permit including 2/discharge measurement of flow and 2/discharge grab sampling for TSS, iron, manganese, and pH.

Development of Effluent Limitations for Outfall 018

Outfall No. 018 **Design Flow (MGD)** 0.36
Latitude 40° 18' 41.0" **Longitude** -79° 53' 19.0"
Wastewater Description: Treated storm water runoff from the coal storage yard and uncontaminated groundwater pumped during pond maintenance and cleanout operations

Discharges from Outfall 018 are currently subject to the following effluent limits and monitoring requirements.

Table 26. Outfall 018 – Current Effluent Limits and Monitoring Requirements

Parameter	Average Monthly	Daily Maximum	IMAX	Units	Measurement Frequency	Sample Type	Limit Basis
Flow	Report	Report	—	MGD	1/week	Measured	25 Pa. Code § 92a.61(b)
pH	6.0 (Min)	—	9.0	s.u.	1/week	Grab	25 Pa. Code § 95.2(1)
TSS	—	35.0	70.0	mg/L	1/week	Grab	25 Pa. Code § 92a.48(a)(3)
Total Iron	—	3.5	7.0	mg/L	1/week	Grab	25 Pa. Code § 92a.48(a)(3)
Total Manganese	—	2.0	4.0	mg/L	1/week	Grab	25 Pa. Code § 92a.48(a)(3)

The effluent limits in **Table 26** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

018.A. Technology-Based Effluent Limitations (TBELs)

Storm water runoff from the Clairton Plant's coal storage yard is not regulated by the Iron and Steel ELGs (40 CFR Part 420), which are the ELGs that apply to the Clairton Plant's main industrial activities and discharges. Therefore, TBELs were developed for Outfall 018's discharges in accordance with DEP's statutory and regulatory authority under Section 402(a)(1) of the Clean Water Act and implementing regulations under 40 CFR § 125.3 and 25 Pa. Code §§ 92a.3(b)(4) and 92a.48(a)(3), which allow for the establishment of effluent limits on a case-by-case basis using Best Professional Judgment.

Storm water runoff from the coal storage yard is described by the term "coal preparation plant associated areas" under 40 CFR Part 434 – Coal Mining Point Source Category BPT, BAT, BCT Limitations and New Source Performance Standards. Section 434.11(f) states:

> The term "coal preparation plant associated areas" means the coal preparation plant yards, immediate access roads, coal refuse piles and coal storage piles and facilities.

Since the term includes immediate access roads and coal storage piles and facilities, which are the same types of facilities present at the Clairton Plant, the BPT and BAT TBELs from Subpart B of Part 434 previously were adopted as the BPT and BAT limits for Outfall 018. There is no change to DEP's previous justification for those limits. The BPT and BAT limits are summarized in the tables below. BCT is reserved under Part 434.

40 CFR § 434.22(a) – BPT Effluent Limitations

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Concentration in mg/l	
Iron, total	7.0	3.5
Manganese, total	4.0	2.0
TSS	70	35
pH	[1]	[1]

[1] Within the range of 6.0 to 9.0 at all times.

40 CFR § 434.23(a) – BAT Effluent Limitations

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Concentration in mg/l	
Iron, total	7.0	3.5
Manganese, total	4.0	2.0

The limits in §§ 434.22(a) and 434.23(a) apply to discharges from sources that normally exhibit a pH of less than 6.0 s.u. prior to treatment. The pH of influent wastewater to the Coal Yard Treatment Plant was reported as 7.31 s.u. on the 2017 Application and 5.6 s.u. on the 2023 Application Update. Since the results conflict, the limits from §§ 434.22(a) and 434.23(a) are conservatively imposed. The difference between limits on sources with pH below 6.0 s.u. and sources with pH equal to or greater than 6.0 s.u. is the imposition of limits for Total Manganese, which do not apply to the latter sources. Outfall 018 is already subject to the Part 434 limits for Total Manganese, which USS has consistently achieved apart from a single exceedance of the maximum daily limit in February 2021.

018.B. Water Quality-Based Effluent Limitations (WQBELs)

Outfall 018's discharges are batch discharges that occur 1/month at a rate of 0.36 MGD for up to 18 hours. Based on those circumstances, the discharges are unlikely to cause or contribute to excursions above chronic water quality criteria. Intermittent batch discharges are more likely to cause or contribute to excursions above acute water quality criteria, but USS's reported effluent concentrations shown in **Table 27** are not elevated and do not exhibit a reasonable potential to cause or contribute to excursions above acute water quality criteria. Therefore, no WQBELs are developed for Outfall 018.

Table 27. Effluent Concentrations at Outfall 018

Parameter	Units	Average Concentration	Maximum Concentration
Oil and Grease	mg/L	<5.6	<5.6
BOD5	mg/L	6.7	6.7
COD	mg/L	15	15
TSS	mg/L	7	16
Total Nitrogen	mg/L	<5.0	<5.0
Total Phosphorus	mg/L	<0.1	<0.1
pH	s.u.	6.79 (min)	7.9
Ammonia-Nitrogen	mg/L	0.46	0.46
Iron, Total	mg/L	0.629	2.45
Manganese, Total	mg/L	0.239	0.930
Zinc, Total	mg/L	0.023	0.023
Benzo(a)pyrene	mg/L	<0.0019	<0.0019
Naphthalene	mg/L	<0.0019	<0.0019
Phenol	mg/L	<0.0097	<0.0097
Cadmium, Total	mg/L	<0.005	<0.005
Lead, Total	mg/L	<0.010	<0.010
Nitrate-Nitrite as N	mg/L	0.15	0.15
Nitrogen, Total	mg/L	<5.0	<5.0
Phenolics, Total	mg/L	<0.010	<0.010
Cyanide, Free	mg/L	<0.002	<0.002
Cyanide, Total	mg/L	0.040	0.040
Total Kjeldahl Nitrogen	mg/L	<5.0	<5.0

018.C. Effluent Limitations and Monitoring Requirements for Outfall 018

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable requirements are summarized in the following table.

Table 28. Effluent Limits and Monitoring Requirements for Outfall 018

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(b)
Total Suspended Solids	—	—	35.0	—	70.0	25 Pa. Code § 92a.48(a)(3) & 40 CFR §§ 122.44(l), 434.22(a), & 434.23(a)
Iron, Total	—	—	3.5	—	7.0	
Manganese, Total	—	—	2.0	—	4.0	
pH (s.u.)	—	—	6.0 (Inst. Min.)	—	9.0	25 Pa. Code § 95.2(1)

The monitoring frequencies and sample types are maintained from the previous permit including 1/week measurement of flow and 1/week grab sampling for TSS, iron, manganese, and pH.

Development of Effluent Limitations for Outfall 022

Outfall No.	022	**Design Flow (MGD)**	Variable
Latitude	40° 18' 35"	**Longitude**	-79° 52' 56"

Wastewater Description: Storm water from the Boiler Feed Water Treatment Plant, the adjacent parking area to the South, and a section of F-Roadway and the riverfront area adjacent to the No. 2 Boiler House

Outfall 022 discharges storm water runoff from an 82,764 sq. ft. area in and around the coke works including the Boiler Feed Water Treatment Plant, the adjacent parking area to the south, and a section of F-Roadway and the riverfront area adjacent to the No. 2 Boiler House to the east. Discharges from Outfall 022 are currently subject to the following effluent limits and monitoring requirements.

Table 29. Outfall 022 – Current Effluent Limits and Monitoring Requirements

Parameter	Minimum	Average Monthly	IMAX	Units	Measurement Frequency	Sample Type	Limit Basis
pH	Report	—	Report	s.u.	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Ammonia-N	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Kjeldahl Nitrogen	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Cyanide	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Iron	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Zinc	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Benzo(a)Pyrene	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Naphthalene	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)

The effluent limits in **Table 29** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

022.A. Technology-Based Effluent Limitations (TBELs)

There are no Federal ELGs that apply to Outfall 022's storm water discharges. In the absence of applicable ELGs, TBELs, if warranted, are developed based on Best Professional Judgment.

Consistent with 25 Pa. Code § 92a.61(h) and DEP's policy for permitting storm water discharges associated with industrial activities, the monitoring requirements and sector-specific BMPs of Appendix B of DEP's PAG-03 NPDES General Permit for Discharges of Stormwater Associated with Industrial Activity (see Table 18 in Section 001A.A of this Fact Sheet) are applied to Outfall 022's storm water discharges.

Outfall 022 is currently subject to different requirements than those specified in Appendix B of the PAG-03. TSS, iron, and zinc are the only parameters from Appendix B of the PAG-03 that are currently monitored at Outfall 022. Total nitrogen, total phosphorus, oil and grease, aluminum, copper, and lead are not monitored. Reporting also is required at Outfall 022 for pH, ammonia-nitrogen, Total Kjeldahl Nitrogen, total cyanide, benzo(a)pyrene, and naphthalene. Monitoring frequencies for the newly added parameters (total nitrogen, total phosphorus, oil and grease, aluminum, copper, and lead) will be 1/6 months, unless available effluent data indicate that more frequent monitoring is warranted.

Two years of the most recent analytical results supplemented with analytical data from one sampling event collected on April 19, 2023 for the 2023 Application Update are summarized in **Table 30**. Averages are calculated using a lognormal distribution and, for mixed datasets consisting of detected and non-detect results, a delta-lognormal distribution is used. Where only one application result is available, the "average" is the reported result.

Table 30. Storm Water Analytical Results for Outfall 022

Parameter	Average Conc. (mg/L)	Parameter	Average Conc. (mg/L)
Oil and Grease	<4.85	Zinc, Total	0.300 †
BOD5	7.90	Benzo(a)Pyrene	<0.0018 †
COD	336	Naphthalene	<0.0031 †
TSS	239 †	Cadmium, Total	<0.004

Table 30 (cont'd). Storm Water Analytical Results for Outfall 022

Parameter	Average Conc. (mg/L)	Parameter	Average Conc. (mg/L)
Total Nitrogen	<3.76	Lead, Total	0.0285
Total Phosphorus	0.260	Nitrate Nitrite as N	<1.26
pH (s.u.)	10.1 (median)	Total Kjeldahl Nitrogen	<2.23
Ammonia-Nitrogen	<1.0 †	Phenolics, Total	<0.020
Iron, Total	3.71 †	Free Cyanide	<0.005
Manganese, Total	0.173	Cyanide, Total	0.0115 †

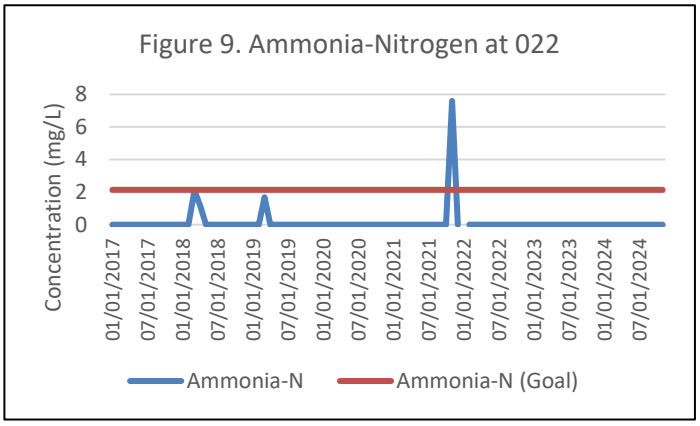
† Result is the average of a lognormal or delta-lognormal distribution of maximum daily results reported on DMRs from November 2022 – November 2024

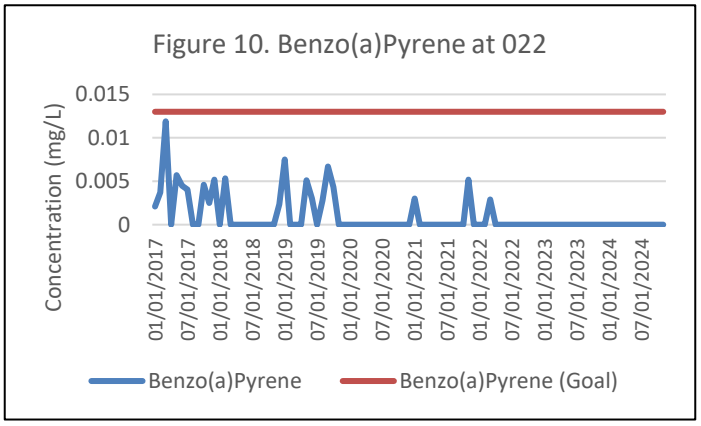
Based on the results in **Table 30**, semi-annual monitoring and reporting will be required for COD. COD is not part of the baseline monitoring requirements from Appendix B of the PAG-03, but the reported concentration is elevated compared to the COD benchmark value of 120 mg/L identified in other appendices of the PAG-03. The monitoring frequency for COD will be 1/6 months.

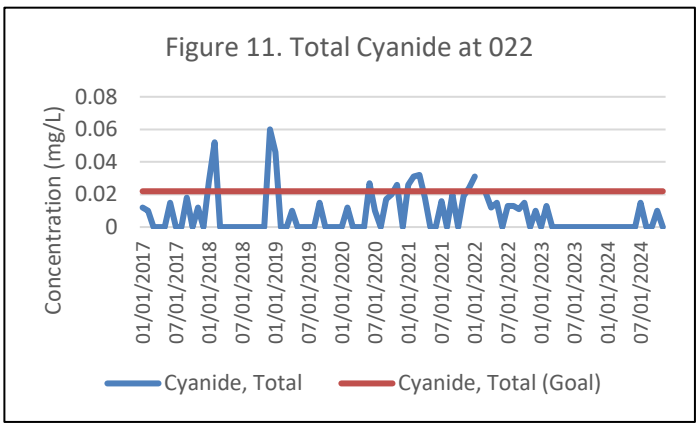
The monitoring frequencies for total nitrogen, total phosphorus, oil and grease, aluminum, and copper each will be 1/6 months because results are either not available to evaluate whether more frequent monitoring is appropriate, or the reported concentrations are not elevated.

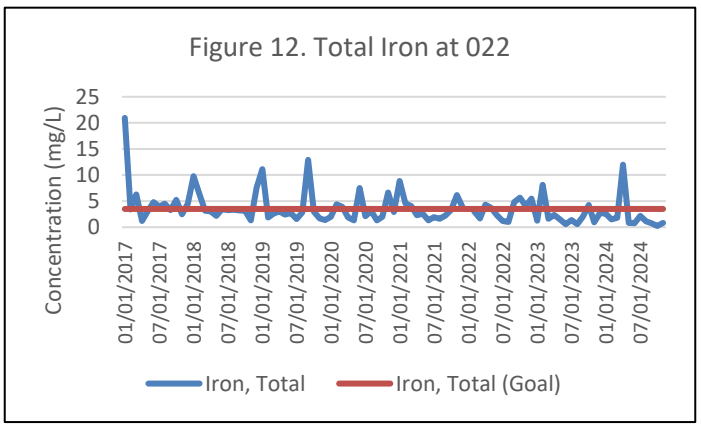
In the absence of ELGs, case-by-case TBELs are developed based on BPJ. The development of case-by-case TBELs using BPJ typically involves the evaluation of end-of-pipe wastewater treatment technologies. However, consistent with 40 CFR § 122.44(k)(2), DEP considers the use of BMPs to be BAT for storm water discharges associated with industrial activities unless effluent concentrations indicate that BMPs provide inadequate pollution control.

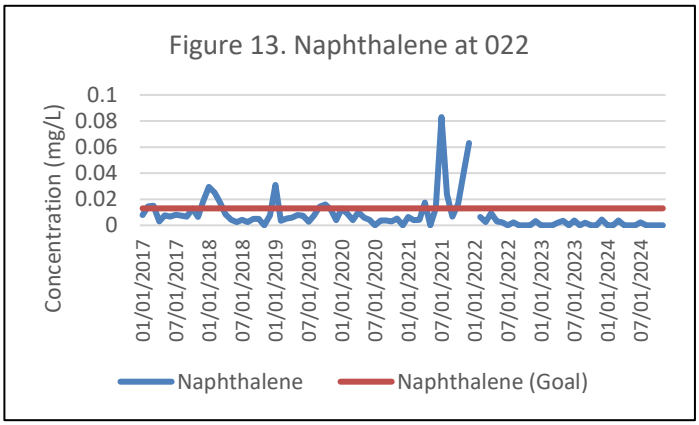
Figures 9 through 16 depict the reported effluent concentrations of pollutants monitored at Outfall 022 from January 2017 through November 2024. Effluent concentration goals from USS's current permit are shown for comparison where benchmark values are not identified in Appendix B of the PAG-03.

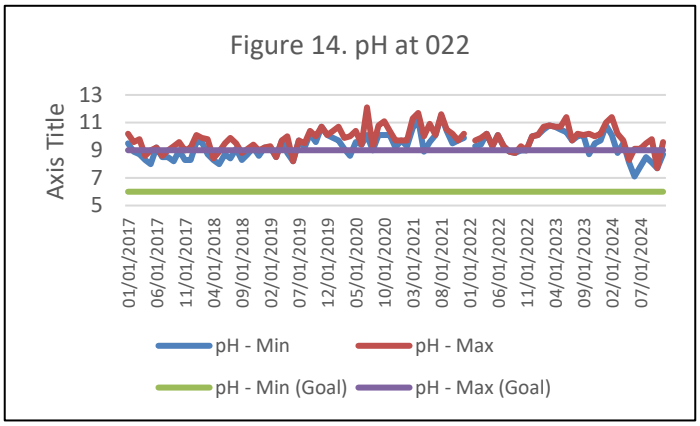


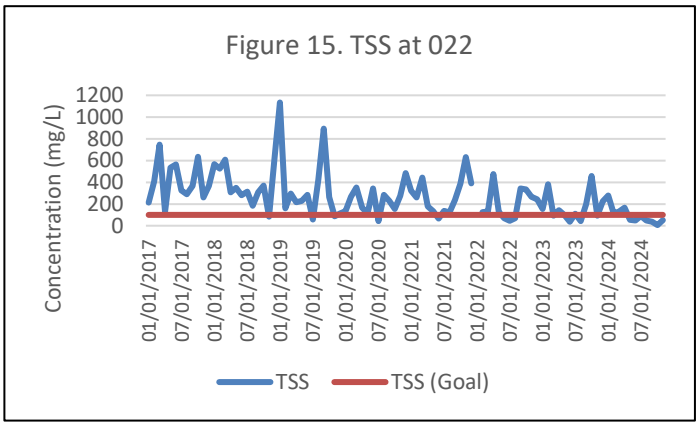


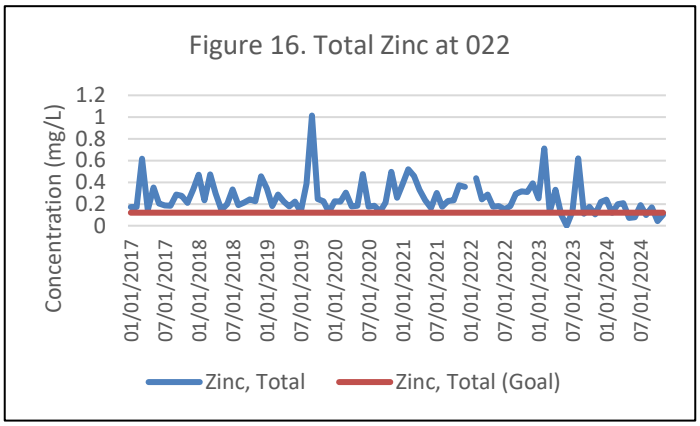












Note: 'Non-detect' values are shown as zero. No discharges were reported in January 2022.

DMR data summarized in Figures 9 through 16 and in **Table 30** indicate that TSS, iron, zinc, and pH consistently exceed benchmark values/concentration goals. Appendix B of the PAG-03 identifies a benchmark value of 100 mg/L for TSS, which is exceeded about 78% of the time at Outfall 022. There are no benchmark values for iron or zinc in the PAG-03, but there are concentration goals for iron and zinc (3.5 mg/L and 0.12 mg/L) in the permit that apply to other storm water outfalls. The iron and zinc concentration goals are exceeded 32% of the time and 88% of the time, respectively, at Outfall 022.

Results for pH are excessively alkaline with 60% of minimum pH results exceeding the maximum pH benchmark of 9.0 s.u. The maximum pH reported in the last five years was 12.1 s.u. in July 2020. For reference, 40 CFR § 261.22 regarding the identification and listing of hazardous wastes according to the characteristic of corrosivity indicates that an aqueous "solid waste" with a pH greater than or equal to 12.5 as determined by a pH meter using Method 9040C in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 is classified by EPA as a D002 Hazardous Waste. Storm water not associated with industrial activities is normally slightly acidic, so the pH of Outfall 022's discharges is evidently influenced by USS's activities.

Discharges from Outfall 022 have not been subject to the 100 mg/L TSS benchmark value or the corresponding corrective action plan requirement, so USS will be given the opportunity to address elevated TSS concentrations in Outfall 022's discharges before DEP considers the need for numerical TBELs. Effluent limits for TSS will not be imposed at Outfall 022 for this permit renewal. Controlling TSS also should reduce iron and zinc concentrations, but the effluent concentration goals listed in USS's current permit for those parameters (3.5 mg/L and 0.12 mg/L) will be adopted as benchmark values. In addition, a maximum pH benchmark of 9.0 s.u. will apply to Outfall 022 to control the basicity of the discharge. Corrective action plans will be required for consecutive exceedances of the benchmark values.

In the 2017 Application, USS requested that the sampling frequencies for pollutants that have met their corresponding concentration goals be reduced to 1/quarter. DEP agrees to a performance-based reduction of sampling frequencies for Ammonia-Nitrogen, Benzo(a)Pyrene, Total Cyanide, and Naphthalene from 2/month to 1/6 months. The reductions are greater than the reductions recommended in EPA's "Interim Guidance for Performance-Based Reduction Of NPDES Permit Monitoring Frequencies" (Doc. No. EPA 833-B-96-001, April 1996), but will be consistent with the sampling frequencies for other parameters added based on Appendix B of the PAG-03 General Permit. The effluent concentration goals for those parameters currently specified for other outfalls in USS's permit (2.14 mg/L for Ammonia-Nitrogen; 0.013 mg/L for

Benzo(a)Pyrene and Naphthalene; and 0.022 mg/L for Total Cyanide) will be adopted as benchmark values for those parameters subject to corrective action plan requirements when there are two or more consecutive exceedances.

Parameters that are not subject to monitoring frequency reductions will additionally require reporting of a semi-annual average concentration. If a parameter's semi-annual average concentration exceeds the corresponding benchmark value for two or more consecutive semi-annual periods, then the corrective action plan requirements will be triggered for those parameters.

Storm Water Pollution Prevention Plan (SWPPP)

In USS's March 2013 SWPPP, USS indicated that street sweeping had decreased pollutant loadings to Outfall 022. No other specific BMPs were proposed for Outfall 022 but general BMPs were discussed in the SWPPP for multiple areas of the site including refreshing gravel in certain areas to promote infiltration and the possible use of inlet filters. Also, USS was permitted by WQM Permit 0291205 A-3 issued on February 28, 2020 to make improvements along F-Roadway to reduce ponded storm water. However, irrespective of USS's BMPs and other improvements in the vicinity of the Boiler Feed Water Treatment Plant, DMR data summarized in Figures 9 through 16 and in Table 30 indicate that USS's storm water control measures do not remove pollutants to within benchmark values.

USS can explore other structural and non-structural control options if elevated concentrations persist and corrective action plans (and PPC Plan updates) are necessary under the terms of the renewed permit.

022.B. Water Quality-Based Effluent Limitations (WQBELs)

No modeling is performed (see Section 001A.B of this Fact Sheet for an explanation). The combination of benchmark monitoring and BMPs including pollution prevention and exposure minimization, good housekeeping, erosion and sediment control, and spill prevention and response will ensure compliance with water quality standards.

022.C. Effluent Limitations and Monitoring Requirements for Outfall 022

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. No TBELs are imposed at Outfall 022 (other than BMPs) and no WQBELs apply at this time, so monitoring and reporting requirements are the most stringent requirements.

Table 31. Effluent Limits and Monitoring Requirements for Outfall 022

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
pH (S.U.)	—	—	Report (Inst. Min.)	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Chemical Oxygen Demand (COD)	—	—	—	—	Report	25 Pa. Code § 92a.61(h)
Oil and Grease	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Aluminum, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Copper, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Iron, Total	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Lead, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B

Table 31 (cont'd). Effluent Limits and Monitoring Requirements for Outfall 022

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Zinc, Total	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Ammonia-Nitrogen	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Nitrogen, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Total Kjeldahl Nitrogen	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Phosphorus, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Benzo(a)Pyrene	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Naphthalene	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Cyanide, Total	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)

The monitoring frequency and sample type for pH, TSS, Total Kjeldahl Nitrogen, Total Iron, and Total Zinc will remain unchanged (2/month grab sampling). The remaining parameters will require 1/6 months grab sampling. Semi-annual average concentrations must be calculated based on the 2/month sampling results for each half year.

Development of Effluent Limitations for Outfall 022A

Outfall No. 022A (922) **Design Flow (MGD)** Variable
Latitude 40° 18' 35" **Longitude** -79° 52' 56"
Wastewater Description: BTX Trench (emergency only)

BTX Plant Area

The BTX Plant Area is located adjacent to the southern extent of the Coal Storage Area. The former BTX Plant is where benzene, toluene, and xylene (BTX) were extracted from the by-product coal tar associated with coke production at the site and stored in aboveground storage tanks (ASTs) which were removed in 2006 and 2007. The BTX Plant Area currently includes plant offices formerly owned by Koppers, the Light Oil Storage Area, boiler houses, and the Utilities Division for the site. There are a number of buildings not related to active site operations that are located in the BTX Plant Area as well as remnant structures associated with the former BTX Plant benzene AST containment. Peters Creek flows underneath the plant through a brick and concrete arch and discharges to the Monongahela River in the most northeastern portion of the BTX Plant Area. Additionally, the BTX Plant includes a collection recovery trench system, known as the BTX Trench. Groundwater impacts within this area include benzene and phenol impacts in shallow and deep groundwater-bearing zones.[14]

The BTX Trench consists of 1,020 feet of interceptor trench to capture impacted groundwater migrating from the BTX Plant Area. The trench was constructed to intercept impacted groundwater from elevations of 717 to 730 feet above mean sea level. The groundwater is collected in a sump and pumped directly to the Contaminated Water Treatment Plant where it is treated before being discharged through IMP 183 and then Outfall 038.

Under emergency conditions, Outfall 022A receives groundwater from the BTX Trench. Discharges from Outfall 022A are currently subject to the following effluent limits and monitoring requirements.

Table 32. Outfall 022 – Current Effluent Limits and Monitoring Requirements

Parameter	Minimum	Average Monthly	IMAX	Units	Measurement Frequency	Sample Type	Limit Basis
Flow	—	Report	Report	MGD	2/discharge	Measured	25 Pa. Code § 92a.48(a)(3) and the PAG-05 General Permit
pH	6.0	—	9.0	s.u.	2/discharge	Grab	
TSS	—	30	75	mg/L	2/discharge	Grab	
Oil and Grease	—	15	30	mg/L	2/discharge	Grab	
Benzene	—	0.001	0.0025	mg/L	2/discharge	Grab	

The effluent limits in **Table 32** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

022A.A. Technology-Based Effluent Limitations (TBELs)

There are no Federal Effluent Limitations Guidelines (ELGs) that apply to Outfall 022A's discharges. In the absence of applicable ELGs, TBELs, if warranted, are developed based on BPJ.

Effluent limits for Outfall 022A were imposed in the previous permit based on DEP's PAG-05 General Permit for Discharges from Petroleum Product Contaminated Groundwater Remediation Systems. The current PAG-05's effluent limits for groundwater contaminated with petroleum products other than gasoline are summarized in the following table.

Effluent Limitations and Monitoring Requirements – Groundwater Contaminated with Other Petroleum Products

Parameter	Effluent Limitations				Monitoring Requirements	
	Mass	Concentrations			Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Minimum	Average Monthly	Instant. Maximum		
Flow (MGD)	Report	—	—	—	1/month	Measured
Benzene (mg/L)	—	—	0.001	0.0025	1/month	Grab
Total BTEX (mg/L)	—	—	0.1	0.25	1/month	Grab

[14] APTIM, 2022. *Groundwater Monitoring Control Plan: United States Steel Corporation – Clairton Works*. Technical report dated January 28, 2022.

Effluent Limitations and Monitoring Requirements – Groundwater Contaminated with Other Petroleum Products

Parameter	Effluent Limitations				Monitoring Requirements	
	Mass	Concentrations			Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Minimum	Average Monthly	Instant. Maximum		
Total Suspended Solids (mg/L)	—	—	30	75	1/month	Grab
pH (S.U.)	—	6.0	—	9.0	1/month	Grab
Oil and Grease (mg/L)	—	—	15	30	1/month	Grab
Dissolved Iron (mg/L)	—	—	—	7.0	1/year	Grab

Effluent limits for Total BTEX and dissolved iron from the PAG-05 General Permit were not imposed in the previous permit and DEP does not have information to indicate those limits are necessary for discharges from Outfall 022A so they will not be imposed.

022A.B. Water Quality-Based Effluent Limitations (WQBELs)

USS has not reported any discharges from Outfall 022A since at least January 2017 and there have been no changes to the configuration of Outfall 022A or the BTX Trench. Based on those circumstances, discharges from Outfall 022A do not have a reasonable potential to cause or contribute to excursions above water quality criteria. Therefore, no WQBELs are developed for Outfall 022A.

022A.C. Effluent Limitations and Monitoring Requirements for Outfall 022A

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable requirements are summarized in the following table.

Table 33. Effluent Limits and Monitoring Requirements for Outfall 022A

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(b)
Total Suspended Solids	—	—	30.0	—	75.0	25 Pa. Code § 92a.48(a)(3), 40 § CFR 122.44(l), & the PAG-05 General Permit
Oil and Grease	—	—	15.0	—	30.0	
Benzene	—	—	0.001	—	0.0025	
pH (s.u.)	—	—	6.0 (Inst. Min.)	—	9.0	25 Pa. Code § 95.2(1), 40 § CFR 122.44(l), 25 Pa. Code § 92a.48(a)(3), 40 § CFR 122.44(l), PAG-05

The monitoring frequencies and sample types are maintained from the previous permit including 2/discharge measurement of flow and 2/discharge grab sampling for TSS, Oil and Grease, Benzene, and pH. Total BTEX will require 2/discharge grab sampling.

Development of Effluent Limitations for Outfall 023

Outfall No. 023 **Design Flow (MGD)** 14.13
Latitude 40° 18' 35.0" **Longitude** -79° 52' 55.0"
Wastewater Description: Non-contact cooling water, boiler blowdown, steam condensate, boiler feed water treatment plant wastes, storm water

Table 34. Outfall 023 – Current Effluent Limits and Monitoring Requirements

Parameter	Minimum	Average Monthly	Daily Maximum	Units	Measurement Frequency	Sample Type	Limit Basis
Flow	—	Report	Report	MGD	1/week	Measured	25 Pa. Code § 92a.61(b)
pH	6.0	—	9.0 (IMAX)	s.u.	1/week	Grab	25 Pa. Code § 95.2(1), § 92a.48(a)(3)
Heat Rejection Rate Dec 1 – Nov 15	—	—	16,564	MBTUs/ day	Continuous	Calculation	WQBELs; 25 Pa. Code §§ 92a.12 & 96.6
Heat Rejection Rate Nov 16 - 30	—	—	15,639	MBTUs/ day	Continuous	Calculation	WQBELs; 25 Pa. Code §§ 92a.12 & 96.6

The effluent limits in **Table 34** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

023.A. Technology-Based Effluent Limitations (TBELs)

Non-Contact Cooling Water (NCCW)

In accordance with the recommendations given in Chapter 6, Table 6-4 of DEP's "Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits" [Doc. No. 386-0400-001], self-monitoring requirements for NCCW discharges include the following parameters: flow, pH, and temperature. Flow monitoring is required in accordance with 25 Pa. Code § 92a.61(b). Limits for pH (6.0 minimum and 9.0 maximum) are imposed at Outfall 023 based on 25 Pa. Code § 95.2(1).

For Outfall 023 and the Clairton Plant's other heat-bearing discharges (028, 029, 038, 081, 084 and new 069A), temperature limits are imposed as aggregate, facility-wide heat rejection rates as described in Section 023.B, below.

Boiler blowdown and boiler feed water treatment plant wastes are generally alkaline (pH of 10 to 11) and may contain impurities—typically dissolved solids—that are concentrated from source water. Residual chemical additives used for feed water conditioning including biocides, anti-scalants, oxygen scavengers, corrosion inhibitors, and foam controls also may be present. As summarized in the table below, pollutant concentrations in Outfall 023's discharges are low, so no TBELs are developed.

Table 35. Analytical Data Reported for Outfall 023

Parameter	Units	Sample 1 (3/29/2023)	Sample 2 (4/5/2023)	Sample 3 (4/12/2023)
BOD5	mg/L	< 3.00	< 3.00	< 3.00
COD	mg/L	< 15.0	< 15.0	< 15.0
TOC	mg/L	2.93	2.61	6.09
TSS	mg/L	22.0	6.80	4.00
Ammonia-Nitrogen	mg/L	< 0.0475	< 0.0475	0.05 J
pH [1]	S.U.	min: 6.70	max: 8.40	med: 7.50
Fecal Coliform	No./100mL	Believed Absent	NA	NA
Oil and Grease	mg/L	< 4.85	< 4.80	< 4.80
Total Res. Chlorine	mg/L	< 0.05	< 0.05	< 0.05
Total Phosphorus	mg/L	0.059	0.019	0.024
TKN	mg/L	< 1.0	< 0.50	0.99
Nitrite + Nitrate-Nitrogen	mg/L	0.77 J	0.72 J	0.75 J

Table 35 (continued). Analytical Data Reported for Outfall 023

Parameter	Units	Sample 1 (3/29/2023)	Sample 2 (4/5/2023)	Sample 3 (4/12/2023)
Total Dissolved Solids	mg/L	168	126	168
Color	Pt-Co Units	60	12	9.0
Bromide	mg/L	< 0.200	< 0.200	< 0.200
Chloride	mg/L	11.3	26.8	11.60
Sulfate	mg/L	77.5	79.8	82.80
Sulfide	mg/L	< 1.00	< 1.00	< 1.00
Surfactants	mg/L	< 0.025	0.099	0.041
Fluoride	mg/L	0.27 J	0.25 J	0.254 J
Total Hardness as $CaCO_3$	mg/L	85.5	85.9	86.7

[1] pH data are summarized from January 2018 to March 2023.

Storm Water

The quality of storm water contributing to Outfall 023 was not quantified by USS separately from other wastewaters, which conflicts with the storm water sampling requirements of Module 1 of the current NPDES permit application forms. In USS's 2013 SWPPP, USS stated that storm water drains leading to Outfall 023 were plugged. However, the 2017 Application and 2023 Application Update indicate that Outfall 023 receives storm water runoff from a 21,780 ft^2 drainage area that includes the Benzene Boiler House and No.2 Boiler House with no mention of plugging. The discrepancy between the permit applications and SWPPP is not explained. DEP generally does not advocate plugging storm water drains because storm water runoff flowing to plugged drains would theoretically continue to flow to those drains based on existing grading and may accumulate and cause flooding.

Based on the Module 1 sampling requirements and the fact that a continuous flow of NCCW commingles with storm water at Outfall 023, USS would need to collect a representative sample of storm water elsewhere within the drainage area (*e.g.*, at a representative catch basin that empties into the Outfall 023 drainage system, or composite multiple samples taken from different locations within the drainage area (*e.g.*, multiple catch basins to the extent there are different runoff characteristics in the areas draining to each catch basin) to characterize storm water at Outfall 023 separately from other wastewaters. In the absence of data on Outfall 023's storm water, DEP cannot draw any conclusions about the effectiveness of USS's BMPs in the Outfall 023 drainage area. However, storm water BMPs must be implemented.

Consistent with 25 Pa. Code § 92a.61(h) and DEP's policy for permitting storm water discharges associated with industrial activities, the monitoring requirements and sector-specific BMPs of Appendix B of DEP's PAG-03 NPDES General Permit for Discharges of Stormwater Associated with Industrial Activity (see Table 18 in Section 001A.A of this Fact Sheet) are applied to Outfall 023's storm water discharges (to the extent they still exist). The benchmark values and corrective action plan requirements discussed in Section 001.A also will apply along with benchmark values for other parameters based on effluent concentration goals in the previous permit. Storm water data will facilitate evaluations of the effectiveness of USS's BMPs in the Outfall 023 drainage area.

No other TBELs are developed for Outfall 023.

023.B. Water Quality-Based Effluent Limitations (WQBELs)

As shown above, pollutant concentrations in Outfall 023's discharges (other than heat) are low, so no WQBELs are developed for toxic organics or inorganics.

Thermal Effluent Limits

On September 12, 2014, USS submitted a Thermal Work Plan Final Report to DEP pursuant to Part C, Condition I.B. of the NPDES permit in effect at that time. The condition stated the following:

> Based on the discharge and stream data currently available to the Department, it appears that WQBELs for temperature are necessary to protect the designated uses listed in the Department's Rules and Regulations for this receiving stream. The proposed temperature water quality-based effluent limitations are included in Part A of the permit.

Additional, site specific data collection is necessary in order to confirm the need for the proposed thermal water quality-based effluent limitations. Within 90 days of the effective date of this permit, the permittee shall submit a written plan to collect the necessary data ("Thermal Work Plan") to the Department for review and approval. The plan, at a minimum, shall include provisions to conduct a mixing zone analysis study (including stratification) and to review and compile any upstream temperature data to be used in the evaluation of thermal WQBELs. The proposed Thermal Work Plan shall include a schedule to allow for collection and compilation of all site-specific data. The permittee shall implement the Thermal Work Plan as approved by the Department.

Within one year of the effective date of this permit, the permittee shall submit a progress report to the Department, compiling and analyzing the data and other information that were generated by implementation of the Thermal Work Plan.

Within two years of the effective date of this permit, the permittee shall submit a written report to the Department, compiling and analyzing the data and other information that were generated by implementation of the Thermal Work Plan. At the time that the written report is submitted to the Department, the permittee shall either: (1) submit an application for a Water Quality Management Part II Permit for construction and operation of treatment technology that will result in compliance with the thermal WQBELs; or (2) request an opportunity to demonstrate that alternative, site-specific thermal WQBELs would be appropriate.

If the permittee requests an opportunity to demonstrate alternative, site-specific thermal WQBELS, it shall propose procedures for carrying out such demonstrations, which must be in accordance with the requirements of Section 316(a) of the Clean Water Act and the Department's Rules and Regulations. The permittee shall implement the procedures only upon receipt of the Department's written approval thereof and in compliance with the Department's approval.

If the permittee chooses this option, the requests for alternative thermal WQBELs and the associated submissions pursuant to Section 316(a) of the Clean Water Act must be submitted to the Department within three years of the effective date of this permit. The written request for alternative thermal WQBELs shall be accompanied by a written request for a modification to the compliance schedule associated with the final water quality based thermal effluent limitations.

As part of the Thermal Work Plan Final Report, USS demonstrated/requested the following:

(1) Thermal water quality-based effluent limits that would require thermal load reductions at the Clairton Plant are not necessary to protect the designated uses listed in the Department's rules and regulations for the Monongahela River.

(2) U. S. Steel projects that ambient water quality standards for the Monongahela River can be achieved downstream of Clairton 99 percent of the time. This is based on a conservative analysis where thermal discharges and temperature were modeled as conservative substances. The assessments considered current thermal discharges from the Clairton Plant and shut down of two upstream coal-fired electric power generating stations that occurred during 2013.

(3) Site-specific effluent limits for temperature that reflect current thermal discharges from the Clairton Plant should be included in an NPDES permit modification for Clairton. Any site-specific temperature effluent limits should not require thermal load reductions at Clairton.

(4) Given U. S. Steel's findings, and with concurrence from the Department, U. S. Steel is not planning to prepare an application for a Water Quality Management Part II permit for thermal load reduction at Clairton, or to conduct a Section 316(a) thermal demonstration for alternate water quality-based effluent limits for temperature at this time.

(5) Upon written approval of the Thermal Work Plan, U. S. Steel plans to submit a request to modify the Clairton Plant NPDES permit to replace the final seasonal outfall-specific temperature effluent limits with the current 110°F interim temperature effluent limits.

(6) U. S. Steel requests that the current grab sample outfall temperature monitoring protocol be maintained for the balance of the current NPDES permit term in lieu of continuous temperature monitoring. Continuous monitoring is not needed to show compliance with the proposed 110°F thermal effluent limits as the facility discharge does not have the potential to result in significant short-term changes in the temperature of the receiving water, nor does the facility have the capability of exceeding the 110°F limit on a short-term basis. Additionally, continuous temperature monitoring and the associated monthly reporting requirements would increase expense and the administrative burden unnecessarily.

In response to USS's report, DEP amended the permit on April 7, 2016 (PA0004472 A-3) to impose aggregate facility-wide heat rejection rate limits for heated discharges from Outfalls 023, 028, 029, 038, 081 and 084. The December 1st through November 15th heat rejection rate limit imposed in the A-3 amendment—16,564 MBTU/day—was based on the maximum reported thermal loading from the then preceding three years (15,776 MBTU/day from July 2014) plus 5%. The limit was less than the Monongahela River's available thermal assimilative capacity during the December 1st through November 15th monthly/semi-monthly time periods. The limit from November 16th through November 30th was 15,639 MBTU/day, which was the assimilative capacity calculated for that timeframe based on upstream thermal loading. The limits were imposed at Outfall 023 but applied to the combined thermal loadings from Outfalls 023, 028, 029, 038, 081 and 084.

Adding 5% to USS's maximum observed daily heat rejection rate is the allowance discussed in DEP's "Implementation Guidance for Temperature Criteria" for a Clean Water Act § 316(a) thermal variance when imposing thermal effluent limits less stringent than those required to achieve temperature water quality criteria or thermal TBELs. USS did not request a 316(a) variance, but the 5% incremental addition to the plant's maximum heat rejection rate was reasonable to assure that the existing thermal performance of the facility remains in the same range and to preserve some of the thermal assimilative capacity of the Monongahela River. That is, the 5% allowance was not to derive thermal limits less stringent than those necessary to achieve temperature criteria instream; the allowance was to keep USS's thermal loading near existing levels, which are mostly less than the assimilative capacity of the Monongahela River. The November 16th through November 30th period was an exception in that it was limited to the river's available assimilative capacity during that period because the 5% allowance would have exceeded the river's available thermal assimilative capacity.

Monongahela River's Available Thermal Assimilative Capacity

Temperature data for the Monongahela River are available at USGS Gaging Station 03075070 – Monongahela River at Elizabeth, PA (RMI 23.80), about four miles upstream of the Clairton Plant. In the 2014 Thermal Work Plan Final Report, USS discounted USGS data from the determination of the Monongahela River's available thermal assimilative capacity due to operation of the Mitchell and Elrama Generating Stations.

The Mitchell Generating Station was a 300 MW power plant located at RMI 28.9 (about nine river miles upstream of the Clairton Plant) that shut down in October 2013. The Elrama Generating Station was a 510 MW power plant located at RMI 25.1 (about 5.5 miles upstream of the Clairton Plant) that shut down in February 2013. Each plant discharged more than 100 MGD of once-through cooling water, which had significant thermal impacts on the Monongahela River. In discounting the USGS temperature data, USS reasoned that the historical temperature data collected at the Elizabeth gage (*i.e.*, any temperature data preceding November 2013) did not represent the then current or future temperatures of the Monongahela River that excluded the Mitchell and Elrama thermal discharge loadings. Therefore, USS used temperature data collected at the Mitchell Generating Station's intake on the Monongahela River. Intake temperature data for the Mitchell Generating Station were considered representative of the ambient temperatures of the Monongahela River upstream of the Clairton Plant since those temperatures were free of the influence of Mitchell's and Elrama's thermal discharge loadings.

There are now about ten years of temperature data from the Elizabeth gage that post-date the elimination of Mitchell's and Elrama's thermal discharge loadings. Despite the availability of those data, USS has continuously monitored the temperature of its river water intake since August 2017 and has requested DEP to use those temperature data to establish the Design Ambient Temperature of the Monongahela River. DEP agrees to use those data. **Table 36** summarizes the relevant temperatures and calculated thermal loadings for the Monongahela River and the Clairton Plant. The data in each column are described below the table. Based on the 2014 Thermal Work Plan Final Report, plume dispersion is not restricted on an aggregate, facility-wide basis, so complete mixing is assumed.

Table 36. Aggregate, Facility-Wide Thermal Loading Calculations

Period	Allowable Downstream Temp. (°F)	Design Ambient Temp. (°F)	Allowable Stream Temp. Increase (°F)	Seasonally Adjusted $Q_{7\text{-}10}$ (cfs) ‡	Assimilative Capacity (MBTUs/day)	Clairton Plant Max Load (MBTU/day)	Allowable Heat Rejection Rate (MBTUs/day)
Jan 1-31	40	37.43	2.57	2,551.9	35,285	15,318	16,471
Feb 1-29	40	39.16	1.00	3,472.3	18,716	14,052	16,471
Mar 1-30	46	44.92	1.08	3,976	23,194	13,996	16,471
Apr 1-15	52	51.17	1.00	3,179.8	17,139	12,773	16,471
Apr 16-30	58	54.55	3.45	3,179.8	59,117	12,773	16,471
May 1-15	64	59.05	4.95	2,258.9	60,268	14,771	16,471
May 16-31	72	66.72	5.28	2,258.9	64,304	14,771	16,471
Jun 1-15	80	72.68	7.32	1,169.7	46,178	15,659	16,471
Jun 16-30	84	75.14	8.86	1,169.7	55,859	15,659	16,471
July 1-31	87	81.18	5.82	903.33	28,328	15,668	16,471

Table 36 (cont'd). Aggregate, Facility-Wide Thermal Loading Calculations

Period	Allowable Downstream Temp. (°F)	Design Ambient Temp. (°F)	Allowable Stream Temp. Increase (°F)	Seasonally Adjusted Q_{7-10} (cfs) ‡	Assimilative Capacity (MBTUs/day)	Clairton Plant Max Load (MBTU/day)	Allowable Heat Rejection Rate (MBTUs/day)
Aug 1-15	87	81.09	5.91	867	27,635	14,173	16,471
Aug 16-31	87	78.87	8.13	867	37,988	14,173	16,471
Sep 1-15	84	76.85	7.15	793.92	30,577	13,295	16,471
Sep 16-30	78	72.98	5.02	793.92	21,474	13,295	16,471
Oct 1-15	72	68.88	3.12	958.37	16,108	12,561	16,108
Oct 16-31	66	60.76	5.24	958.37	27,081	12,561	16,471
Nov 1-15	58	54.28	3.72	1,145	22,932	13,980	16,471
Nov 16-30	50	45.69	4.31	1,145	26,592	14,005	16,471
Dec 1-31	42	40.47	1.53	1,942.7	15,977	15,687	15,977

† If $\Delta T < 1°F$, then ΔT is set equal to 1°F.

‡ Refer to **Attachment D**.

Allowable Downstream Temperature (T_2): the temperature criteria for streams designated for Warm Water Fishes (WWF) from 25 Pa. Code § 93.7(a). The designated aquatic life use of the Monongahela River is WWF.

Design Ambient Temperature (T_1): the median Clairton Plant river water intake temperature for each monthly or semi-monthly period from August 25, 2017 through February 11, 2025.

Allowable Stream Temperature Increase ($\Delta T = T_2 - T_1$): the difference between the Allowable Downstream Temperature and the Design Ambient Temperature. Pursuant to DEP's "Implementation Guidance for Temperature Criteria" (Section IV, p.8), DEP allows a minimum 1°F rise in instream temperature under all conditions. If ΔT is less than 1°F, then the Allowable Stream Temperature Increase is set equal to 1°F even if the temperature rise would exceed the Allowable Downstream Temperature. As explained on p.3 of the guidance, the 1°F temperature rise is allowed due to the difficulty in resolving small deltas in ambient temperatures and plume temperatures.

Seasonally Adjusted Q_{7-10} (Q_1): 25 Pa. Code § 96.4(g) requires that the 7-day, 10-year low flow (Q_{7-10}) of the receiving water be used as the design stream flow condition, and that steady-state modeling be applied in these water quality analyses. Since Chapter 93's temperature criteria are expressed over nineteen distinct monthly and semi-monthly time periods, seasonally adjusted Q_{7-10} flows are applied. DEP used the hydrologic-frequency statistics tool in USGS's Hydrological Toolbox 1.0 software program to calculate adjusted Q_{7-10} flows for each monthly and semi-monthly time period.[15] Those calculations are similar to the calculations performed by USS to determine seasonally adjusted Q_{7-10} flows for the Thermal Work Plan Final Report using EPA's DFLOW tool.

Assimilative Capacity: the available thermal assimilative capacity of the receiving water calculated as follows:

$$H = Q_1 \times (T_2 - T_1) \times 5.39 \text{ lb-sec/ft}^3\text{-day}$$

where:
H = allowable heat rejection (million BTU/day)
Q_1 = design stream flow (cubic feet per second, cfs)
T_1 = ambient stream temperature (°F)
T_2 = maximum allowable downstream temperature (°F)
5.39 = a unit conversion factor

Clairton Plant Max Load: the maximum aggregate facility-wide thermal loading reported by USS for each monthly and semi-monthly period from January 2017 through January 2025.

Allowable Heat Rejection Rate: the more stringent of either the Assimilative Capacity or the maximum of USS's maximum reported monthly or semi-monthly aggregate, facility-wide heat rejection rate plus 5%. USS's maximum reported heat rejection rate during the last five years is 15,687 MBTUs/day from December 2024. With a 5% increase, the allowable maximum is 16,471 MBTU/day. As discussed previously, the 5% allowance above the maximum heat rejection rate (for heat rejection rates that are less than the Assimilative Capacity) are intended to assure that the existing thermal performance of the facility remains in the same range and also preserves some of the assimilative capacity of the Monongahela River.

[15] U.S. Geological Survey Hydrologic Toolbox — A graphical and mapping interface for analysis of hydrologic data (usgs.gov)

The Allowable Heat Rejection Rates are imposed at Outfall 023 and represent the aggregate, facility-wide heat rejection rates from Outfalls 023, 028, 029, 038, 081, and 084 and new Outfall 069A, which will discharge non-contact cooling tower blowdown. Reporting of each outfall's heat rejection rate also is required pursuant to 25 Pa. Code § 92a.61(b) to determine each outfall's portion of the aggregate, facility-wide thermal loadings.

Pursuant to Section VI of DEP's "Implementation Guidance for Temperature Criteria", when BTU-based permit limits are imposed, the permit shall contain the following condition: "Thermal discharges may not exceed 110°F (43.3°C) at any point accessible to the general public." The condition will be listed in Part C of the permit.

023.C. Effluent Limitations and Monitoring Requirements for Outfall 023

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable requirements are summarized in the following table.

Table 37. Effluent Limits and Monitoring Requirements for Outfall 023

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(b)
pH (s.u.)	—	—	6.0 (Inst. Min.)	—	9.0	25 Pa. Code § 95.2(1), 40 § CFR 122.44(l), 25 Pa. Code § 92a.48(a)(3)
Heat Rejection Rate (MBTUs/day)	—	Report	—	—	—	25 Pa. Code § 92a.61(b)
Heat Rejection Rate (MBTUs/day) Jan 1 – Sept 30 Oct 16 – Nov 30 †	—	16,471	—	—	—	WQBELs; 25 Pa. Code §§ 92a.12 & 96.6
Heat Rejection Rate (MBTUs/day) Oct 1 – Oct 15 †	—	16,108	—	—	—	WQBELs; 25 Pa. Code §§ 92a.12 & 96.6
Heat Rejection Rate (MBTUs/day) Dec 1 – Dec 31 †	—	15,977	—	—	—	WQBELs; 25 Pa. Code §§ 92a.12 & 96.6
Total Suspended Solids ††	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Oil and Grease ††	—	—	—	—	Report	
Aluminum, Total ††	—	—	—	—	Report	
Copper, Total ††	—	—	—	—	Report	
Iron, Total ††	—	—	—	—	Report	
Lead, Total ††	—	—	—	—	Report	
Zinc, Total ††	—	—	—	—	Report	
Nitrogen, Total ††	—	—	—	—	Report	
Phosphorus, Total ††	—	—	—	—	Report	

† The Heat Rejection Rate limits at Outfall 023 are aggregate, facility-wide limits that apply to the combination of heated discharges from Outfalls 023, 028, 029, 038, 069A, 081 and 084.

†† Reporting requirement applies only to representative storm water.

Monitoring frequencies and sample types are imposed in accordance with Chapter 6, Table 6-4 of DEP's Permit Writers' Manual, DEP's Implementation Guidance for Temperature Criteria, and those specified in the previous permit. Flow must be measured 1/week; pH must be sampled 1/week using grab sampling; and heat rejection rates must be calculated using continuous temperature measurements (i.e., paired intake and effluent temperature measurements to determine ΔT in the heat rejection rate formula $H = Q_1 \times (T_2 - T_1) \times 5.39$ lb-sec/ft^3-day.

The monitoring frequency and sample type for TSS, Oil and Grease, Total Aluminum, Total Copper, Total Iron, Total Lead Total Zinc, Total Nitrogen, and Total Phosphorus will be grab sampling 1/6 months. The storm water samples should be collected at a location that consists solely of untreated storm water to Outfall 081.

Development of Effluent Limitations for Outfall 028

Outfall No. 028 **Design Flow (MGD)** 1.07
Latitude 40° 18' 34" **Longitude** -79° 52' 54"
Wastewater Description: Non-contact cooling water and boiler blowdown from the no. 2 boiler house

Table 38. Outfall 028 – Current Effluent Limits and Monitoring Requirements

Parameter	Instant. Minimum	Average Monthly	Daily Maximum	Units	Measurement Frequency	Sample Type	Limit Basis
Flow	—	Report	Report	MGD	1/week	Measured	25 Pa. Code § 92a.61(b)
pH	6.0	—	9.0 (IMAX)	s.u.	1/week	Grab	25 Pa. Code § 95.2(1), § 92a.48(a)(3)
Heat Rejection Rate Dec 1 – Nov 15	—	—	Report	MBTUs/ Day	Continuous	Calculation	25 Pa. Code § 92a.61(b)

The effluent limits in **Table 38** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

028.A. Technology-Based Effluent Limitations (TBELs)

Non-Contact Cooling Water (NCCW)

In accordance with the recommendations given in Chapter 6, Table 6-4 of DEP's "Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits" [Doc. No. 386-0400-001], self-monitoring requirements for NCCW discharges include the following parameters: flow, pH, and temperature. Flow monitoring is required in accordance with 25 Pa. Code § 92a.61(b). Limits for pH (6.0 minimum and 9.0 maximum) are imposed at Outfall 028 based on 25 Pa. Code § 95.2(1).

For Outfall 028 and the Clairton Plant's other heat-bearing discharges (023, 029, 038, 069A, 081, and 084), temperature limits are imposed as aggregate, facility-wide heat rejection rates at Outfall 023 as described in Section 023.B of this Fact Sheet.

As summarized in the table below, pollutant concentrations in Outfall 028's discharges are low, so no TBELs are developed.

Table 39. Analytical Data Reported for Outfall 028

Parameter	Units	Sample 1 (3/29/2023)	Sample 2 (4/5/2023)	Sample 3 (4/12/2023)
BOD5	mg/L	< 3.00	< 3.00	< 3.00
COD	mg/L	18.0	< 15.0	< 15.0
TOC	mg/L	2.62	2.05	2.57
TSS	mg/L	14.4	6.80	4.00
Ammonia-Nitrogen	mg/L	< 0.0475	< 0.0475	< 0.0475
pH [1]	S.U.	min: 7.0	max: 8.5	med: 7.7
Fecal Coliform	No./100mL	Believed Absent	NA	NA
Oil and Grease	mg/L	< 4.85	< 4.80	< 4.80
Total Res. Chlorine	mg/L	< 0.05	0.08	0.07
Total Phosphorus	mg/L	0.059	0.016	0.030
TKN	mg/L	1.89	< 0.50	< 0.50
Nitrite + Nitrate-Nitrogen	mg/L	0.694 J	0.62 J	0.68 J
Total Dissolved Solids	mg/L	168	104	106
Color	Pt-Co Units	35	14	7.0
Bromide	mg/L	< 0.20	< 0.200	< 0.200
Chloride	mg/L	8.78	9.7	10.0
Sulfate	mg/L	48.0	56.2	61.4
Sulfide	mg/L	< 1.00	< 1.00	< 1.00

Table 39 (continued). Analytical Data Reported for Outfall 028

Parameter	Units	Sample 1 (3/29/2023)	Sample 2 (4/5/2023)	Sample 3 (4/12/2023)
Surfactants	mg/L	< 0.025	< 0.025	< 0.025
Fluoride	mg/L	0.248 J	0.21 J	0.246 J
Total Hardness as $CaCO_3$	mg/L	84.0	90.6	94.4

[1] pH data are summarized from January 2018 to March 2023.

028.B. Water Quality-Based Effluent Limitations (WQBELs)

Pollutant concentrations in Outfall 028's discharges (other than heat) are low, so there is no reasonable potential to cause or contribute to excursions above water quality criteria and no WQBELs are developed for toxic organics or inorganics.

Heat rejection rate limits representing the thermal discharge loading from Outfall 028 and Outfalls 023, 029, 038, 069A, 081, and 084 are imposed at Outfall 023. Reporting of each outfall's heat rejection rate also is required pursuant to 25 Pa. Code § 92a.61(b) to determine each outfall's portion of the aggregate, facility-wide thermal loadings.

028.C. Effluent Limitations and Monitoring Requirements for Outfall 028

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable requirements are summarized in the following table.

Table 40. Effluent Limits and Monitoring Requirements for Outfall 028

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(b)
pH (s.u.)	—	—	6.0 (Inst. Min.)	—	9.0	25 Pa. Code § 95.2(1), 40 § CFR 122.44(l), 25 Pa. Code § 92a.48(a)(3)
Heat Rejection Rate (MBTUs/day)	—	Report	—	—	—	25 Pa. Code § 92a.61(b)

Monitoring frequencies and sample types are imposed in accordance with Chapter 6, Table 6-4 of DEP's Permit Writers' Manual, DEP's Implementation Guidance for Temperature Criteria, and those specified in the previous permit. Flow must be measured 1/week; pH must be sampled 1/week using grab sampling; and the heat rejection rate must be calculated using continuous temperature measurements (i.e., paired intake and effluent temperature measurements to determine ΔT in the heat rejection rate formula: $H = Q_1 \times (T_2 - T_1) \times 5.39$ lb-sec/ft^3-day).

Development of Effluent Limitations for Outfall 029

Outfall No. 029 **Design Flow (MGD)** 1.01
Latitude 40° 18' 34" **Longitude** -79° 52' 54"
Wastewater Description: Non-contact cooling water from the no. 2 powerhouse

Table 41. Outfall 029 – Current Effluent Limits and Monitoring Requirements

Parameter	Instant. Minimum	Average Monthly	Daily Maximum	Units	Measurement Frequency	Sample Type	Limit Basis
Flow	—	Report	Report	MGD	1/week	Measured	25 Pa. Code § 92a.61(b)
pH	6.0	—	9.0 (IMAX)	s.u.	1/week	Grab	25 Pa. Code § 95.2(1), § 92a.48(a)(3)
Heat Rejection Rate	—	—	Report	MBTUs/ Day	Continuous	Calculation	25 Pa. Code § 92a.61(b)

The effluent limits in **Table 41** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

029.A. Technology-Based Effluent Limitations (TBELs)

Non-Contact Cooling Water (NCCW)

In accordance with the recommendations given in Chapter 6, Table 6-4 of DEP's "Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits" [Doc. No. 386-0400-001], self-monitoring requirements for NCCW discharges include the following parameters: flow, pH, and temperature. Flow monitoring is required in accordance with 25 Pa. Code § 92a.61(b). Limits for pH (6.0 minimum and 9.0 maximum) are imposed at Outfall 029 based on 25 Pa. Code § 95.2(1).

For Outfall 029 and the Clairton Plant's other heat-bearing discharges (023, 028, 038, 069A, 081, and 084), temperature limits are imposed as aggregate, facility-wide heat rejection rates at Outfall 023, as described in Section 023.B of this Fact Sheet.

As summarized in the table below, pollutant concentrations in Outfall 029's discharges are low, so no TBELs are developed.

Table 42. Analytical Data Reported for Outfall 029

Parameter	Units	Sample 1 (3/29/2023)	Sample 2 (4/5/2023)	Sample 3 (4/12/2023)
BOD5	mg/L	< 3.00	< 3.00	< 3.00
COD	mg/L	< 15.0	< 15.0	< 15.0
TOC	mg/L	2.31	1.88	2.38
TSS	mg/L	27.2	6.0	2.00
Ammonia-Nitrogen	mg/L	< 0.0475	< 0.0475	< 0.0475
pH [1]	S.U.	min: 7.0	max: 8.5	med: 7.8
Fecal Coliform	No./100mL	Believed Absent	NA	NA
Oil and Grease	mg/L	< 4.90	< 4.80	< 4.80
Total Res. Chlorine	mg/L	< 0.05	0.09	0.06
Total Phosphorus	mg/L	0.050	0.019	0.021
TKN	mg/L	< 0.50	< 0.50	< 0.50
Nitrite + Nitrate-Nitrogen	mg/L	0.695 J	0.63 J	0.70 J
Total Dissolved Solids	mg/L	144	104	168
Color	Pt-Co Units	20	13	18.6
Bromide	mg/L	< 0.20	< 0.20	< 0.20
Chloride	mg/L	8.97	9.69	10.3
Sulfate	mg/L	48.5	56.4	62.4
Sulfide	mg/L	< 1.00	< 1.00	< 1.00
Surfactants	mg/L	< 0.025	< 0.025	< 0.025
Fluoride	mg/L	0.261 J	0.22 J	0.244 J

Table 42 (continued). Analytical Data Reported for Outfall 029

Parameter	Units	Sample 1 (3/29/2023)	Sample 2 (4/5/2023)	Sample 3 (4/12/2023)
Total Hardness as $CaCO_3$	mg/L	81.3	85.6	96.7

[1] pH data are summarized from January 2018 to March 2023.

029.B. Water Quality-Based Effluent Limitations (WQBELs)

Pollutant concentrations in Outfall 029's discharges (other than heat) are low, so there is no reasonable potential to cause or contribute to excursions above water quality criteria and no WQBELs are developed for toxic organics or inorganics.

Heat rejection rate limits representing the thermal discharge loading from Outfall 029 and Outfalls 023, 028, 038, 069A, 081, and 084 are imposed at Outfall 023. Reporting of each outfall's heat rejection rate also is required pursuant to 25 Pa. Code § 92a.61(b) to determine each outfall's portion of the aggregate, facility-wide thermal loadings.

029.C. Effluent Limitations and Monitoring Requirements for Outfall 029

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable requirements are summarized in the following table.

Table 43. Effluent Limits and Monitoring Requirements for Outfall 029

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(b)
pH (s.u.)	—	—	6.0 (Inst. Min)	—	9.0	25 Pa. Code § 95.2(1), 40 § CFR 122.44(l), 25 Pa. Code § 92a.48(a)(3)
Heat Rejection Rate (MBTUs/day)	—	Report	—	—	—	25 Pa. Code § 92a.61(b)

Monitoring frequencies and sample types are imposed in accordance with Chapter 6, Table 6-4 of DEP's Permit Writers' Manual, DEP's Implementation Guidance for Temperature Criteria, and those specified in the previous permit. Flow must be measured 1/week; pH must be sampled 1/week using grab sampling; and the heat rejection rate must be calculated using continuous temperature measurements (i.e., paired intake and effluent temperature measurements to determine ΔT in the heat rejection rate formula: $H = Q_1 \times (T_2 - T_1) \times 5.39$ lb-sec/ft^3-day).

Development of Effluent Limitations for Outfalls 030B, 035D, 053, 062, and 067

Outfall No.	030B, 035D, 053, 062, 067	**Design Flow (MGD)**	Variable
Latitude	40° 18' 34"; 40° 18' 25"; 40° 18' 14"; 40° 18' 7"; 40° 18' 10";	**Longitude**	-79° 52' 51"; -79° 52' 34"; -79° 52' 21"; -79° 52' 13"; -79° 52' 14";

Wastewater Description: Emergency discharges from the plant's fire protection system

The Clairton Plant operates a series of pump houses that distribute river water throughout the plant for fire protection purposes. In previous correspondence with DEP, USS explained that the pump houses discharge a low volume of water to control mussels in the system. Also, USS periodically runs the pumps for a short period of time (generally less than fifteen minutes) to ensure the pumps are functional. To avoid pressure buildup in the system, USS discharges water when the pumps are running during testing.

Outfalls 030B, 035D, 053, 062, and 067 were authorized by the previous permit to discharge "uncontaminated miscellaneous wastewater", which included emergency discharges from the Clairton Plant's fire protection system. There was a fire at the Clairton Plant on December 24, 2018, but it is unknown whether there were any discharges from Outfalls 030B, 035D, 053, 062, and 067 at that time because DEP does not require sampling or analyses of discharges from fire-fighting activities.

For this renewal, the NPDES permit will continue to authorize emergency discharges from the Clairton Plant's fire protection system at Outfalls 030B, 035D, 053, 062, and 067 without any effluent limits or monitoring requirements. The discharges will not be characterized as "uncontaminated miscellaneous wastewater".

Development of Effluent Limitations for Outfall 038

Outfall No.	038	**Design Flow (MGD)**	47.2 (avg.); 117 (max)
Latitude	40° 18' 22"	**Longitude**	-79° 52' 30"

Wastewater Description: Sources monitored at Internal Monitoring Point 183, non-contact cooling water, cooling tower blowdown, barometric and steam condensate, and storm water

Table 44. Outfall 038 – Current Effluent Limits and Monitoring Requirements

Parameter	Minimum	Average Monthly	Daily Maximum	Units	Measurement Frequency	Sample Type	Limit Basis
Flow	—	Report	Report	MGD	1/week	Measured	25 Pa. Code § 92a.61(b)
pH	6.0	—	9.0 (IMAX)	s.u.	1/week	Grab	25 Pa. Code § 95.2(1), § 92a.48(a)(3)
Total Residual Chlorine	—	0.5	1.25 (IMAX)	mg/L	1/week	Grab	25 Pa. Code § 92a.48(a)(3); BPJ
Heat Rejection Rate	—	—	Report	MBTUs/ Day	Continuous	Calculation	25 Pa. Code § 92a.61(b)

The effluent limits in **Table 44** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

038.A. Technology-Based Effluent Limitations (TBELs)

Process & Non-Process Wastewaters

TBELs that apply to process wastewaters regulated by 40 CFR Part 420 – Iron and Steel Manufacturing Point Source Category Effluent Limitations Guidelines are imposed at Internal Monitoring Point 183. WQBELs for the combined discharge of process and non-process wastewaters from IMP 183, non-contact cooling water, and cooling tower blowdown are evaluated in Section 038.B, below.

Non-Contact Cooling Water (NCCW)

In accordance with the recommendations given in Chapter 6, Table 6-4 of DEP's "Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits" [Doc. No. 386-0400-001], self-monitoring requirements for NCCW discharges include the following parameters: flow, pH, and temperature. Flow monitoring is required in accordance with 25 Pa. Code § 92a.61(b). Limits for pH (6.0 minimum and 9.0 maximum) are imposed at Outfall 038 based on 25 Pa. Code § 95.2(1).

For Outfall 038 and the Clairton Plant's other heat-bearing discharges (023, 028, 029, 081, and 084), temperature limits are imposed as aggregate, facility-wide heat rejection rates at Outfall 023, as described in Section 023.B of this Fact Sheet.

Cooling Tower Blowdown

USS is authorized to add up to 9,000 pounds per day of sodium hypochlorite to the cooling tower system for use as a biocide. DEP previously imposed effluent limits for Total Residual Chlorine at Outfall 038 pursuant to 25 Pa. Code § 92a.48(b)(3), which requires facilities or activities using chlorination that are not subject to limits for TRC or free available chlorine based on an applicable Federal ELG to meet a 30-day average TRC limit of 0.5 mg/L. The Iron and Steel ELGs that apply to this facility do not regulate cooling tower blowdown. At other facilities that discharge cooling tower blowdown, DEP has adopted the limits on cooling tower blowdown for free available chlorine from 40 CFR Part 423 – Steam Electric Power Generating Point Source Category. However, the existing TRC limits from 25 Pa. Code § 92a.48(b)(3) are adequate to control chlorine in discharges from Outfall 038 and will be maintained based on anti-backsliding.

Storm Water

Outfall 038 discharges storm water runoff from a 1,698,840 ft^2 drainage area comprised of areas adjacent to process areas including areas adjacent to Batteries B and C, former Batteries 1, 2, 3, the No. 1 and No. 2 control room, the Sulfur Plant, and the No. 1 decanters and tar receivers. Storm water from the process-adjacent areas is not directed to treatment.

The quality of storm water contributing to Outfall 038 has not been quantified separately from other wastewaters, which conflicts with the storm water sampling requirements of Module 1 of the current NPDES permit application, which states:

> If stormwater sampling is being conducted at an outfall that receives other wastewaters, the applicant must ensure that only stormwater is sampled. This may require the applicant to sample stormwater at a location that is different than the normal compliance monitoring location, or otherwise at times when only stormwater discharges are occurring.

Based on those instructions and the fact that the continuous flow of treated wastewaters from IMP 183 commingles with storm water and other wastewaters at Outfall 038, USS would need to collect a representative sample of storm water elsewhere within the drainage area (*e.g.*, at a representative catch basin that empties into the Outfall 038 storm water collection system), or composite multiple samples taken from different locations within the drainage area (*e.g.*, multiple catch basins to the extent there are different runoff characteristics in the areas draining to each catch basin) to characterize storm water at Outfall 038 separately from other wastewaters. In the absence of data on Outfall 038's storm water, DEP cannot draw any conclusions about the effectiveness of USS's BMPs in the Outfall 038 drainage area. However, storm water BMPs must be implemented.

Consistent with 25 Pa. Code § 92a.61(h) and DEP's policy for permitting storm water discharges associated with industrial activities, the monitoring requirements and sector-specific BMPs of Appendix B of DEP's PAG-03 NPDES General Permit for Discharges of Stormwater Associated with Industrial Activity (see Table 18 in Section 001A.A of this Fact Sheet) are applied to Outfall 038's storm water discharges. The benchmark values and corrective action plan requirements discussed in Section 001.A also will apply along with benchmark values for other parameters based on effluent concentration goals in the previous permit. Storm water data will facilitate evaluations of the effectiveness of USS's BMPs in the Outfall 038 drainage area. No other TBELs are developed for Outfall 038.

Per- and Polyfluoroalkyl Substances (PFAS)

As described in Section 183.B of this Fact Sheet, Outfall 038 will be subject to annual reporting for PFOA, PFOS, PFBS, and HFPO-DA.

038.B. Water Quality-Based Effluent Limitations (WQBELs)

Toxics Management Spreadsheet Water Quality Modeling Program and Procedures for Evaluating Reasonable Potential

WQBELs are developed pursuant to Section 301(b)(1)(C) of the Clean Water Act and, per 40 CFR § 122.44(d)(1)(i), are imposed to "control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) that are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality." The Department of Environmental Protection developed the DEP Toxics Management Spreadsheet (TMS) to facilitate calculations necessary to complete a reasonable potential (RP) analysis and determine WQBELs for discharges of toxic and some nonconventional pollutants.

The TMS is a single discharge, mass-balance water quality modeling program for Microsoft Excel® that considers mixing, first-order decay, and other factors to determine WQBELs for toxic and nonconventional pollutants. Required input data including stream code, river mile index, elevation, drainage area, discharge flow rate, low-flow yield, and the hardness and pH of both the discharge and the receiving stream are entered into the TMS to establish site-specific discharge conditions. Other data such as reach dimensions, partial mix factors, and the background concentrations of pollutants in the stream also may be entered to further characterize the discharge and receiving stream. The pollutants to be analyzed by the model are identified by inputting the maximum concentration reported in the permit application or Discharge Monitoring Reports, or by inputting an Average Monthly Effluent Concentration (AMEC) calculated using DEP's TOXCONC.xls spreadsheet for datasets of 10 or more effluent samples. Pollutants with no entered concentration data and pollutants for which numeric water quality criteria in 25 Pa. Code Chapter 93 have not been promulgated are excluded from the modeling. Ammonia-nitrogen, CBOD-5, and dissolved oxygen are analyzed separately using DEP's WQM 7.0 model.

The TMS evaluates each pollutant by computing a wasteload allocation for each applicable criterion, determining the most stringent governing WQBEL, and comparing that governing WQBEL to the input discharge concentration to determine whether permit requirements apply in accordance with the following RP thresholds:

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

for the permit as recommended by the TMS (or, if appropriate, use a multiplier of 2 times the average monthly limit for the maximum daily limit and 2.5 times the average monthly limit for IMAX).

- For non-conservative pollutants, establish monitoring requirements where the maximum reported effluent concentration or calculated AMEC is between 25% - 50% of the WQBEL.
- For conservative pollutants, establish monitoring requirements where the maximum reported effluent concentration or calculated AMEC is between 10% - 50% of the WQBEL.

In most cases, pollutants with effluent concentrations that are not detectable at the level of DEP's Target Quantitation Limits are eliminated as candidates for WQBELs and water quality-based monitoring.

Reasonable Potential Analysis and WQBEL Development for Outfall 038

Table 45. TMS Inputs for Outfall 038

Discharge Characteristics		
Parameter		**Value**
Discharge Flow (MGD)		47.2
Discharge Hardness (mg/L)		302
Discharge pH (s.u.)		7.6
Receiving Stream Characteristics		
Parameter	**Outfall 038**	**End of Segment**
Stream Code	37185	37185
River Mile Index	20.076	11.3
Drainage Area (mi^2)	5,350	7,337
Q_{7-10} (cfs)	550	1,060
Low-flow Yield (cfs/mi^2)	0.1	0.14
Elevation (ft)	718.7	710
Slope (ft/ft)	0.00001	0.00001
Average Width (ft)	770	770
Average Depth (ft)	9.0	9.0

Discharges from Outfall 038 are evaluated based on the maximum concentrations reported on the permit renewal application. The TMS model is run for Outfall 038 with the modeled discharge and receiving stream characteristics shown in **Table 45**. Pollutants for which water quality criteria have not been promulgated (e.g., TSS, Oil and Grease, etc.) are excluded from the modeling.

Pursuant to DEP's "Standard Operating Procedure (SOP) for Clean Water Program Establishing Effluent Limitations for Individual Industrial Permits" [SOP No. BCW-PMT-032] the flow used for modeling is the average flow during production or operation. Based on DMR data reported from January 2017 through June 2024, the average flow at Outfall 038 is 47.2 MGD. The discharge hardness is average hardness reported on the permit application and the discharge pH is the median pH reported on DMRs from January 2017 through June 2024.

Based on a post-study review of the results of USS's dye dilution mixing studies and discharge plume modeling conducted for the 2014 Thermal Work Plant Final Report, USS's consultant estimated the acute partial mix factor for Outfall 038 to be 0.79 and the chronic partial mix factor to be 0.82. Those estimates were provided to DEP by USS from calculations using CORMIX (see **Attachment E**). Partial mix factors (PMFs) represent the fractional portion of the receiving stream that mixes with a discharge at design conditions. An acute PMF of 0.79 means that Outfall 038's discharge has mixed with 79% of the river after 15 minutes where 15 minutes is the length of time (*i.e.*, the criteria compliance time) DEP allows for mixing until compliance with acute criteria is required. Similarly, a chronic PMF of 0.82 means that Outfall 038's discharge has mixed with 82% of the river at the chronic criteria compliance time, which is the lesser of twelve hours or the time until complete mixing.

Output from the TMS model is included in **Attachment F** to this Fact Sheet. As explained previously, the TMS compares the input discharge concentrations to the calculated WQBELs using DEP's Reasonable Potential thresholds to evaluate the need to impose WQBELs or monitoring requirements in the permit. The results of the modeling indicate that the following WQBELs and water quality-based reporting requirements apply to discharges from Outfall 038.

Table 46. Water Quality-Based Effluent Limits for Outfall 038

Parameter	Permit Limits			Reported Result (µg/L)	Target QL (µg/L)	Governing WQBEL	Governing WQBEL Basis†
	Avg Mo. (µg/L)	Max Daily (µg/L)	IMAX (µg/L)				
Selenium, Total	35.8	55.9	89.5	21	2.5	18.3	CFC

† AFC = Acute Fish Criterion; THH = Threshold Human Health; CFC = Chronic Fish Criterion

While the WQBELs are derived using the maximum concentrations reported on a permit application, the maximum selenium concentration is less than the maximum daily effluent limit and the average concentration reported on the permit application, 14.9 µg/L, is less than the average monthly effluent limit. Since the available effluent data indicate that USS can comply with the selenium WQBELs, no schedule of compliance is included for the new selenium WQBELs.

Heat rejection rate limits representing the thermal discharge loading from Outfall 038 and Outfalls 023, 028, 029, 069A, 081, and 084 are imposed as aggregate, facility-wide heat rejection rates at Outfall 023, as described in Section 023.B of this Fact Sheet. Reporting of each outfall's heat rejection rate also is required pursuant to 25 Pa. Code § 92a.61(b) to determine each outfall's portion of the aggregate, facility-wide thermal loadings.

DEP performed a second TMS analysis for Total Phenolics to support DEP's evaluation of USS's request to renew its Section 301(g) variance for Phenols (4AAP). Pursuant to 25 Pa. Code § 96.3(d), water quality criteria for Total Phenolics must be met at least 99% of the time at the point of all existing or planned surface potable water supply withdrawals. Therefore, the second TMS analysis was done with the nearest downstream potable water supply (Pennsylvania American Water Company - Pittsburgh at RMI 4.46 on the Monongahela River with a withdrawal of 69 MGD) as the downstream node. That modeling (see **Attachment G**) resulted in average monthly and maximum daily WQBELs of 0.0741 mg/L (29.2 pounds per day) and 0.116 mg/L (45.5 pounds per day). Assuming negligible contributions of phenols from non-contact cooling water, cooling tower blowdown, barometric and steam condensate, and storm water, the Phenols (4AAP) PMELs imposed at IMP 183 will adequately control phenolics at Outfall 038. In addition, USS reported Total Phenols results of <0.004 mg/L for its three effluent samples on the 2023 Application Update. Therefore, no WQBELs for Total Phenolics are imposed at Outfall 038. Refer to Section 183.A of this Fact Sheet for discussion of USS's Section 301(g) variance.

Water Quality Modeling for Outfall 038 with WQM 7.0

Table 47. WQM 7.0 Inputs for Outfall 038

Discharge Characteristics			
Parameter		**Value**	
Discharge Flow (MGD)		47.2	
Discharge pH (s.u.)		7.6	
Discharge Temp. (°C)		37.6	
Receiving Stream Characteristics			
Parameter	**Outfall 038**	**Yough. River**	**End of Segment**
Stream Code	37185	37456	37185
River Mile Index	20.076	15.53	11.3
Drainage Area (mi^2)	5,350	7,180	7,337
Q_{7-10} (cfs)	434.5	510 (added)	See output
Low-flow Yield (cfs/mi^2)	0.1	0.1	0.14
Elevation (ft)	718.7	718	710
Slope (ft/ft)	0.00001	0.00001	0.00001
Average Width (ft)	608.3	608.3	608.3
Average Depth (ft)	9.0	9.0	9.0
Stream Temp. (°C)	25.9	25.9	See output
Stream pH (s.u.)	7.4	7.4	

The WQM 7.0 model is run for Outfall 038 to determine whether WQBELs are necessary for Ammonia-Nitrogen. BOD5 concentrations in the effluent are <3.0 mg/L, so the modeling is limited to Ammonia-Nitrogen. Input values for the WQM 7.0 model are shown in Table 47.

The Q_{7-10} flow of the Monongahela River in the vicinity of Outfall 038 is regulated by the US Army Corps of Engineers to a minimum flow of 550 cfs. Section II.B.4 of DEP's "Standard Operating Procedure (SOP) for Clean Water Program – Establishing Effluent Limitations for Individual Industrial Permits" [SOP No. BCW-PMT-032] states that, for discharges to large water bodies, the modeled Q_{7-10} flow may be multiplied by the acute partial mix factor from TMS modeling. Using an acute partial mix factor of 0.79, as discussed in the preceding section, the Q_{7-10} flow used for WQM 7.0 modeling is 434.5 cfs. The width of the river also is adjusted to 608.3 feet (770 × 0.79) to maintain a reasonable flow velocity. If the width was not adjusted, then the velocity would be modeled at a lower value because the adjusted Q_{7-10} of 434.5 cfs would be passing through the entire cross-section of the river. An intermediate tributary flow of 510 cfs is added at RMI 15.53 to account for inflow from the Youghiogheny River, which empties into the Monongahela River at that RMI. The input discharge concentrations are the model's defaults: 25 mg/L for both CBOD5 and ammonia-nitrogen.

WQM 7.0 modeling results (see **Attachment H**) return average monthly and maximum daily Ammonia-Nitrogen WQBELs of 2.8 mg/L and 5.6 mg/L, respectively. At 47.2 MGD, the average monthly and maximum daily mass limits would be about 1,100 lbs/day and 2,210 lbs/day. Assuming negligible Ammonia-Nitrogen contributions from non-contact cooling water, cooling tower blowdown, barometric and steam condensate, and storm water, the Ammonia-Nitrogen PMELs imposed at IMP 183 will adequately control Ammonia-Nitrogen at Outfall 038. In addition, USS reported Ammonia-Nitrogen results of <0.0475 mg/L for its three effluent samples on the 2023 Application Update. Therefore, no WQBELs for Ammonia-Nitrogen are imposed at Outfall 038. Refer to Section 183.A of this Fact Sheet for discussion of USS's Section 301(g) variance.

038.C. Effluent Limitations and Monitoring Requirements for Outfall 038

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l) (incorporated in Pennsylvania's regulations at 25 Pa. Code § 92a.44), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit

renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable requirements are summarized in the following table.

Table 48. Effluent Limits and Monitoring Requirements for Outfall 038

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
pH (s.u.)	—	—	6.0 (Inst. Min.)	—	9.0	25 Pa. Code § 95.2(1), 40 § CFR 122.44(l), 25 Pa. Code § 92a.48(a)(3)
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(b)
Total Residual Chlorine	—	—	0.5	—	1.25	25 Pa. Code § 92a.48(b)(3); 33 U.S.C. §1342(o))
Selenium, Total (µg/L)	—	—	35.8	55.9	89.5	WQBELs; 25 Pa. Code §§ 92a.12(a)(1) & 96.4(b)
Heat Rejection Rate (MBTUs/day)	—	Report	—	—	—	25 Pa. Code § 92a.61(b)
Total Suspended Solids †	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Oil and Grease †	—	—	—	—	Report	
Aluminum, Total †	—	—	—	—	Report	
Copper, Total †	—	—	—	—	Report	
Iron, Total †	—	—	—	—	Report	
Lead, Total †	—	—	—	—	Report	
Zinc, Total †	—	—	—	—	Report	
Nitrogen, Total †	—	—	—	—	Report	
Phosphorus, Total †	—	—	—	—	Report	
Perfluorooctanoic acid (PFOA) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Perfluorooctanesulfonic acid (PFOS) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Perfluorobutanesulfonic acid (PFBS) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Hexafluoropropylene oxide dimer acid (HFPO-DA) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)

† Reporting requirement applies only to representative storm water.

Monitoring frequencies and sample types are imposed in accordance with Chapter 6, Table 6-4 of DEP's Permit Writers' Manual, DEP's Implementation Guidance for Temperature Criteria, those specified in the previous permit, and DEP's PAG-03 General Permit. Flow must be measured 1/week; pH must be sampled 1/week using grab sampling; and the heat rejection rate must be calculated using continuous temperature measurements (i.e., paired intake and effluent temperature measurements to determine ΔT in the heat rejection rate formula: $H = Q_1 \times (T_2 - T_1) \times 5.39$ lb-sec/ft^3-day). Aluminum, arsenic, and selenium will require 24-hour composite sampling 1/week. Total Residual Chlorine will require 1/week grab sampling. PFAS parameters will require grab sampling 1/year.

The monitoring frequency and sample type for TSS, Oil and Grease, Total Aluminum (separate from weekly sampling for Total Aluminum at Outfall 038), Total Copper, Total Iron, Total Lead Total Zinc, Total Nitrogen, and Total Phosphorus will be grab sampling 1/6 months. The storm water samples should be collected at a location that consists solely of untreated storm water directed to Outfall 038.

Development of Effluent Limitations for Outfall 044

Outfall No.	044	**Design Flow (MGD)**	0.0288
Latitude	40° 18' 20"	**Longitude**	-79° 52' 29"

Wastewater Description: Water intake screen backwash

044.A. Technology-Based Effluent Limitations (TBELs)

The backwash water for the intake screen consists solely of water from the Monongahela River. No pollutants are expected to be introduced to Outfall 044's effluent other than debris from the river that collects on the intake screen, which USS must collect and remove (discussed below).

There are no federal ELGs that apply to discharges of intake screen backwash water and no other TBELs are developed for discharges from this outfall.

044.B. Water Quality-Based Effluent Limitations (WQBELs)

As stated above, other than debris that collects on the intake screen, no other pollutants are expected to be introduced to Outfall 044's effluent by USS. Therefore, no reasonable potential to cause or contribute to excursions above water quality standards is presumed to exist.

Notwithstanding a lack of reasonable potential for backwash discharges to cause or contribute to excursions above numerical water quality standards, any discharges containing debris from the intake screen would violate narrative water quality criteria and corresponding prohibitions under 25 Pa. Code §§ 93.6 and 92a.41(c), respectively, which state:

§ 93.6. General water quality criteria

(a) Water may not contain substances attributable to point or nonpoint source discharges in concentration or amounts sufficient to be inimical or harmful to the water uses to be protected or to human, animal, plant or aquatic life.

(b) In addition to other substances listed within or addressed by this chapter, specific substances to be controlled include, but are not limited to, floating materials, oil, grease, scum and substances that produce color, tastes, odors, turbidity or settle to form deposits.

§ 92a.41. Conditions applicable to all permits.

(c) The discharger may not discharge floating materials, scum, sheen, or substances that result in deposits in the receiving water. Except as provided for in the permit, the discharger may not discharge foam, oil, grease, or substances that produce an observable change in the color, taste, odor or turbidity of the receiving water.

Based on these requirements, the following permit condition (in addition to the § 92a.41(c) condition cited above, which is included in all NPDES permits) will be imposed in the permit to ensure protection of narrative water quality criteria:

> "The material (solids or other debris) physically of mechanically removed in the backwash operation shall not be returned to the surface waters."

This condition is the same as that imposed for this outfall in previous permits.

044.C. Effluent Limitations and Monitoring Requirements for Outfall 044

There are no TBELs or WQBELs applicable to discharges from Outfall 044. Therefore, the narrative condition regarding collected debris will be imposed.

Table 49. Effluent Limits and Monitoring Requirements for Outfall 044

Pollutant	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
The material (solids or other debris) physically or mechanically removed in the backwash operation shall not be returned to the surface waters.						25 Pa. Code §§ 92a.41(c) & 93.6

Development of Effluent Limitations for Outfall 045

Outfall No.	045	**Design Flow (MGD)**	0.016
Latitude	40° 18' 20"	**Longitude**	-79° 52' 28"

Wastewater Description: Uncontaminated steam condensate, pump seal water, and strainer backwash

Outfall 045 originally discharged uncontaminated steam condensate. On November 28, 2012, USS submitted an amendment application requesting authorization to discharge pump seal water and strainer backwash. The permit was eventually amended on January 29, 2015 to authorize the additional sources. Based on the amendment application, the additional wastewaters were not expected to impact the water quality at Outfall 045. USS did not resample Outfall 045 for the 2017 Application, but sample results from the 2012 amendment application were less than Method Detection Limits for all parameters in Pollutant Groups 1 & 2. Water quality is not expected to have changed. Therefore, the NPDES permit will continue to authorize uncontaminated steam condensate, pump seal water, and strainer backwash from Outfall 045 without any effluent limits or monitoring requirements.

Development of Effluent Limitations for Outfall 045A

Outfall No. 045A (945) **Design Flow (MGD)** 0.0144
Latitude 40° 18' 20" **Longitude** -79° 52' 28"
Wastewater Description: Drain from strainers

The NPDES permit requires USS to sample Outfall 045A one per year for TSS, Oil and Grease, Surfactants, pH, Total Residual Chlorine, Copper, Hexavalent Chromium, Dissolved Iron and Zinc. Annual results reported for the last six years are summarized in the table below.

Table 50. Annual Sampling Records for Outfall 045A

Parameter	2018	2019	2020	2021	2022	2023
TSS	4.200	1.600	2.40	3.10	0.050	1.6
Oil and Grease	4.400	<5.9	5.70	<5.8	Not Reported	6.3
pH	7.060	7.300	7.35	7.85	7.36	7.35
Surfactants	0.050	<0.05	0.100	<0.10	Not Reported	Not Reported
TRC	0.000	<0.01	0.00	0.07	0.00	0
Copper, Total	0.025	<0.025	0.025	<0.025	0.025	0.025
Chromium, Hexavalent	0.010	<0.010	0.010	<0.010	0.010	0.01
Iron, Dissolved	0.069	<0.10	0.190	0.140	0.100	0.29
Zinc, Total	0.016	<0.020	0.007	<0.020	0.020	0.04

Based on the results, pollutants are not present in treatable concentrations and are not expected to cause or contribute to a violation of water quality standards. The annual monitoring requirements will remain in the permit pursuant to anti-backsliding requirements.

Table 51. Effluent Limits and Monitoring Requirements for Outfall 045A

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
TSS	—	—	—	—	Report	40 CFR § 125.3(c)(2) & 25 Pa. Code §§ 92a.3(b)(4) & 92a.48(a)(3)
Oil and Grease	—	—	—	—	Report	25 Pa. Code § 92a.61(h)
pH (S.U.)	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(b);
Surfactants (MBAS)	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(b);
TRC	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(b);
Copper, Total	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(b);
Chromium, Hexavalent	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(b);
Iron, Dissolved	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(b);
Zinc, Total	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(b);

The monitoring frequency and sample type for all parameters will be 1/year using grab sampling.

Development of Effluent Limitations for Outfall 046

Outfall No.	046	**Design Flow (MGD)**	240
Latitude	40° 18' 19"	**Longitude**	-79° 52' 28"

Wastewater Description: Standpipe overflow consisting solely of river water

This outfall discharges excess river water from a standpipe overflow. No pollutants are introduced to the discharge by USS. Therefore, the NPDES permit will continue to authorize standpipe overflows from Outfall 046 without any effluent limits or monitoring requirements.

Development of Effluent Limitations for Outfall 049A

Outfall No. 049A (949) **Design Flow (MGD)** Variable
Latitude 40° 18' 16" **Longitude** -79° 52' 22"
Wastewater Description: Storm water from plant areas

Outfall 049A (949) discharges storm water runoff from a 60,984 sq. ft. area of the plant. Discharges from Outfall 049A are currently subject to the following effluent limits and monitoring requirements.

Table 52. Outfall 049A (949) – Current Effluent Limits and Monitoring Requirements

Parameter	Minimum	Average Monthly	IMAX	Units	Measurement Frequency	Sample Type	Limit Basis
BOD_5	Report	—	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Oil and Grease	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Phosphorus, Diss.	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Cadmium, Total	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Free Available Cyanide	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Iron, Total	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Manganese, Total	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Phenol	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Benzo(a)Pyrene	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Naphthalene	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)

The effluent limits in **Table 52** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

049A.A. Technology-Based Effluent Limitations (TBELs)

There are no Federal Effluent Limitations Guidelines (ELGs) that apply to Outfall 049A's storm water discharges. In the absence of applicable ELGs, TBELs, if warranted, are developed based on Best Professional Judgment.

Consistent with 25 Pa. Code § 92a.61(h) and DEP's policy for permitting storm water discharges associated with industrial activities, the monitoring requirements and sector-specific BMPs of Appendix B of DEP's PAG-03 NPDES General Permit for Discharges of Stormwater Associated with Industrial Activity (see Table 18 in Section 001A.A of this Fact Sheet) are applied to Outfall 049A's storm water discharges.

Outfall 049A is currently subject to different requirements than those specified in Appendix B of the PAG-03. TSS, Oil and Grease, and iron are the only parameters from Appendix B of the PAG-03 that are currently monitored at Outfall 049A. Total nitrogen, total phosphorus, aluminum, copper, lead, and zinc are not monitored. Reporting also is required at Outfall 049A for BOD_5, dissolved phosphorus, cadmium, Free Available Cyanide, manganese, phenol, benzo(a)pyrene, and naphthalene—some of which are regulated in other discharges from the Clairton Plant based on 40 CFR Part 420 and were added to Outfall 049A to determine whether they are present in the facility's storm water. Monitoring frequencies for the newly added parameters (total nitrogen, aluminum, copper, lead, and zinc) will be 1/6 months. Reporting for total phosphorus will replace reporting for dissolved phosphorus, but the 2/month monitoring frequency will remain the same.

USS has not reported any discharges from Outfall 049A since at least January 2017, so there are no effluent data to evaluate for additional requirements. USS's permit renewal application states that the outfall is "emergency only" and USS's 2013 SWPPP states that the outfall is plugged. Storm water discharges from Outfall 049A will be subject to benchmark monitoring requirements and corrective action plan requirements as discussed in Section 001A of this Fact Sheet. Benchmark values for TSS and Oil and Grease will be 100 mg/L and 30 mg/L, which are the benchmark values for those parameters in the PAG-03. Benchmark values for other parameters will be based on effluent concentration goals in the previous permit. Corrective action plans will be required for consecutive exceedances of those benchmark values.

049A.B. Water Quality-Based Effluent Limitations (WQBELs)

No modeling is performed (see Section 001A.B of this Fact Sheet for an explanation). The combination of benchmark monitoring and BMPs including pollution prevention and exposure minimization, good housekeeping, erosion and sediment control, and spill prevention and response will ensure compliance with water quality standards.

049A.C. Effluent Limitations and Monitoring Requirements for Outfall 049A

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l) (incorporated in Pennsylvania's regulations at 25 Pa. Code § 92a.44), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. No TBELs are imposed at Outfall 049A (other than BMPs) and no WQBELs apply at this time, so monitoring and reporting requirements are the most stringent requirements.

Table 53. Effluent Limits and Monitoring Requirements for Outfall 049A

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
BOD_5	—	—	Report	—	Report	25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	—	Report	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Oil and Grease	—	—	Report	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Aluminum, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Cadmium, Total	—	—	Report	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Copper, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Iron, Total	—	—	Report	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Lead, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Manganese, Total	—	—	Report	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Zinc, Total	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Free Available Cyanide	—	—	Report	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Nitrogen, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Phosphorus, Total	—	—	Report	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Phenol	—	—	Report	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Benzo(a)Pyrene	—	—	Report	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Naphthalene	—	—	Report	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)

The monitoring frequency and sample type for BOD_5, TSS, Oil and Grease, Total Cadmium, Free Available Cyanide, Total Iron, Total Manganese, Phosphorus, Phenol, Benzo(a)Pyrene, and Naphthalene will remain unchanged (2/month grab sampling). The remaining parameters will require 1/6 months grab sampling.

Development of Effluent Limitations for Outfall 054A

Outfall No. 054A (954) **Design Flow (MGD)** Variable
Latitude 40° 18' 13" **Longitude** -79° 52' 20"
Wastewater Description: Storm water from plant areas and downspouts

Outfall 054A discharges storm water runoff from the 1,742 sq. ft. roof of the No. 1 Unloader Foreman's office. Discharges from Outfall 054A are currently subject to the following effluent limits and monitoring requirements.

Table 54. Outfall 054A – Current Effluent Limits and Monitoring Requirements

Parameter	Minimum	Average Monthly	IMAX	Units	Measurement Frequency	Sample Type	Limit Basis
pH	Report	—	Report	s.u.	2/month	Grab	25 Pa. Code § 92a.61(h)
BOD5	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Ammonia-N	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Free Available Cyanide	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Cyanide	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Iron	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Manganese	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Zinc	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Phenol	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Benzo(a)Pyrene	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Naphthalene	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Phenolics	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)

The effluent limits in **Table 54** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

054A.A. Technology-Based Effluent Limitations (TBELs)

There are no Federal ELGs that apply to Outfall 054A's storm water discharges. In the absence of applicable ELGs, TBELs, if warranted, are developed based on Best Professional Judgment.

Consistent with 25 Pa. Code § 92a.61(h) and DEP's policy for permitting storm water discharges associated with industrial activities, the monitoring requirements and sector-specific BMPs of Appendix B of DEP's PAG-03 NPDES General Permit for Discharges of Stormwater Associated with Industrial Activity (see Table 18 in Section 001A.A of this Fact Sheet) are applied to Outfall 054A's storm water discharges.

Outfall 054A is currently subject to different requirements than those specified in Appendix B of the PAG-03. TSS, iron, and zinc are the only parameters from Appendix B of the PAG-03 that are currently monitored at Outfall 054A. Total nitrogen, total phosphorus, oil and grease, aluminum, copper, and lead are not monitored. Reporting also is required at Outfall 054 for pH, ammonia-nitrogen, free available cyanide, total cyanide, total manganese, benzo(a)pyrene, naphthalene, phenol, and total phenolics—some of which are regulated in other discharges from the Clairton Plant based on 40 CFR Part 420 and were added to Outfall 054 to determine whether they are present in the facility's storm water. Monitoring frequencies for the newly added parameters (total nitrogen, total phosphorus, oil and grease, aluminum, copper, and lead) will be 1/6 months, unless available effluent data indicate that more frequent monitoring is warranted.

Two years of the most recent analytical results supplemented with analytical data from one sampling event collected on April 19, 2023 for the 2023 Application Update are summarized in **Table 55**. Averages are calculated using a lognormal distribution and, for mixed datasets consisting of detected and non-detect results, a delta-lognormal distribution is used. Where only one application result is available, the "average" is the reported result.

Table 55. Storm Water Analytical Results for Outfall 054A

Parameter	Average Conc. (mg/L)	Parameter	Average Conc. (mg/L)
Oil and Grease	<10.0	Zinc, Total	1.86 †
BOD5	6.56 †	Benzo(a)Pyrene	0.0031 †

Table 55 (cont'd). Storm Water Analytical Results for Outfall 054A

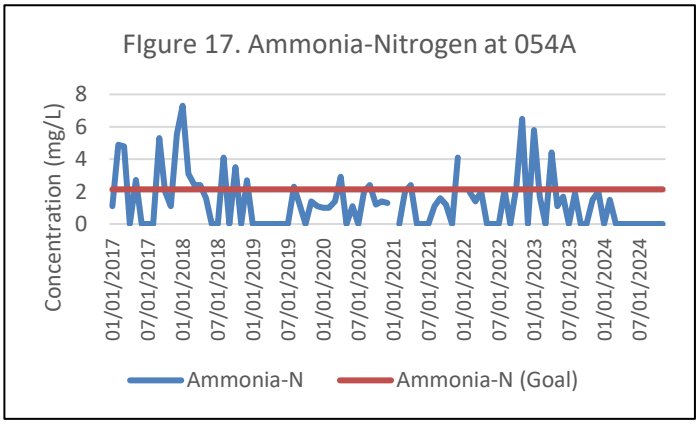
Parameter	Average Conc. (mg/L)	Parameter	Average Conc. (mg/L)
COD	773	Naphthalene	0.0175 †
TSS	292 †	Cadmium, Total	<0.004
Total Nitrogen	<13.11	Lead, Total	0.0204
Total Phosphorus	0.355	Nitrate Nitrite as N	3.11
pH (s.u.)	7.9 (median)	Total Kjeldahl Nitrogen	<10.0
Ammonia-Nitrogen	1.73 †	Phenolics, Total	0.023
Iron, Total	2.91 †	Free Cyanide	<0.0026
Manganese, Total	0.248	Cyanide, Total	<0.015 †

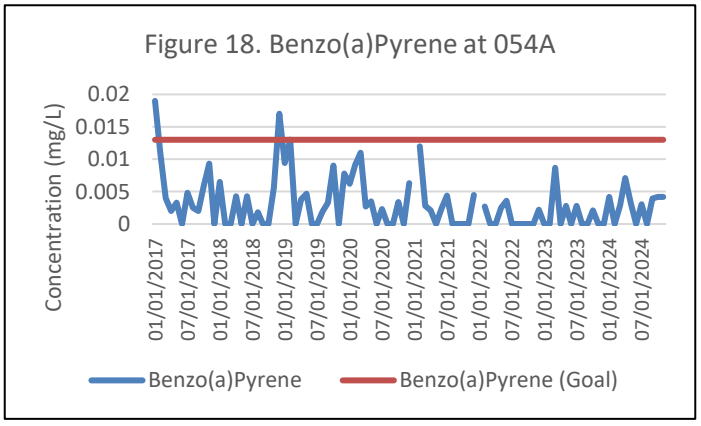
† Result is the average of a lognormal or delta-lognormal distribution of maximum daily results reported on DMRs from November 2022 – November 2024

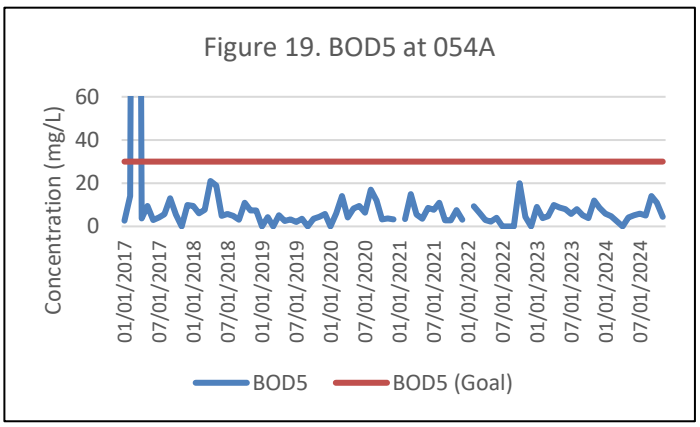
Based on the results in **Table 55**, semi-annual monitoring and reporting will be required for COD. COD is not part of the baseline monitoring requirements from Appendix B of the PAG-03, but the reported concentration is elevated compared to the COD benchmark value of 120 mg/L identified in other appendices of the PAG-03. The monitoring frequency for COD will be 1/6 months. The monitoring frequencies for total nitrogen, total phosphorus, oil and grease, aluminum, copper, and lead each will be 1/6 months because results are either not available to evaluate whether more frequent monitoring is appropriate, or the reported concentrations are not elevated.

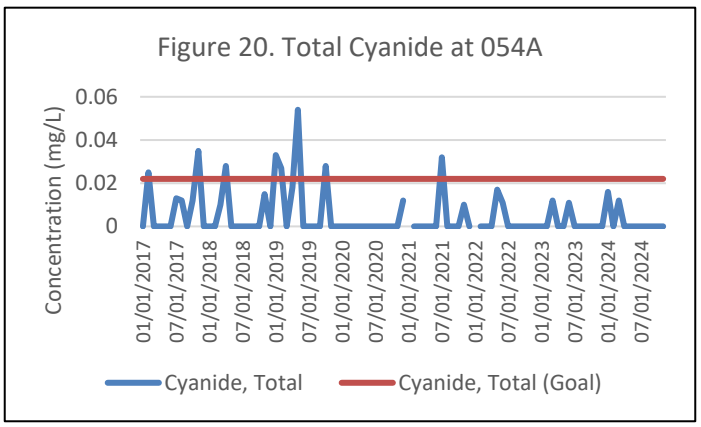
In the absence of ELGs, case-by-case TBELs are developed based on BPJ. The development of case-by-case TBELs using BPJ typically involves the evaluation of end-of-pipe wastewater treatment technologies. However, consistent with 40 CFR § 122.44(k)(2), DEP considers the use of BMPs to be BAT for storm water discharges associated with industrial activities unless effluent concentrations indicate that BMPs provide inadequate pollution control.

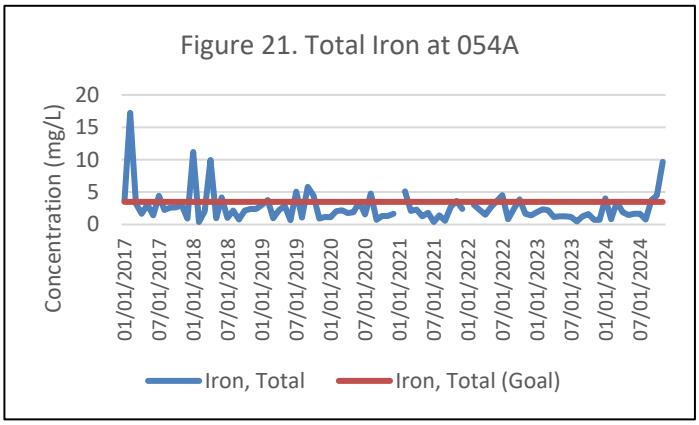
Figures 17 through 28 depict the reported effluent concentrations of pollutants monitored at Outfall 054A from January 2017 through November 2024. Effluent concentration goals from USS's current permit are shown for comparison where benchmark values are not identified in Appendix B of the PAG-03.

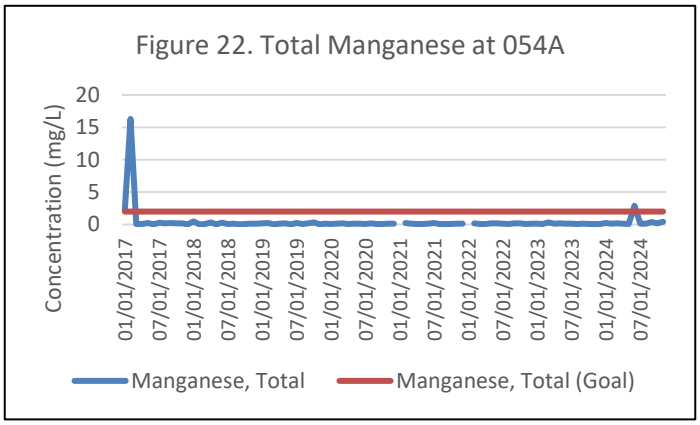


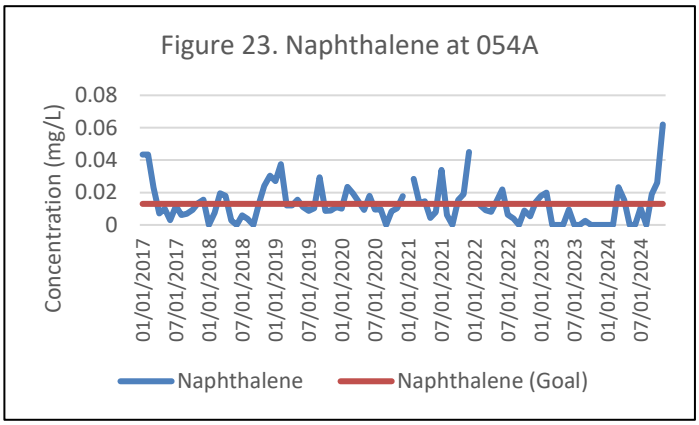


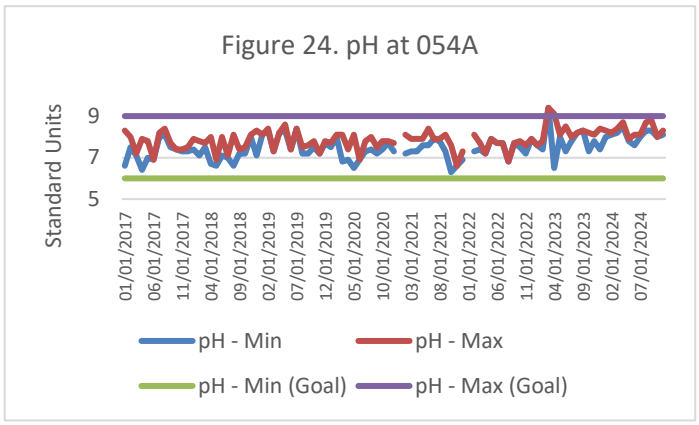


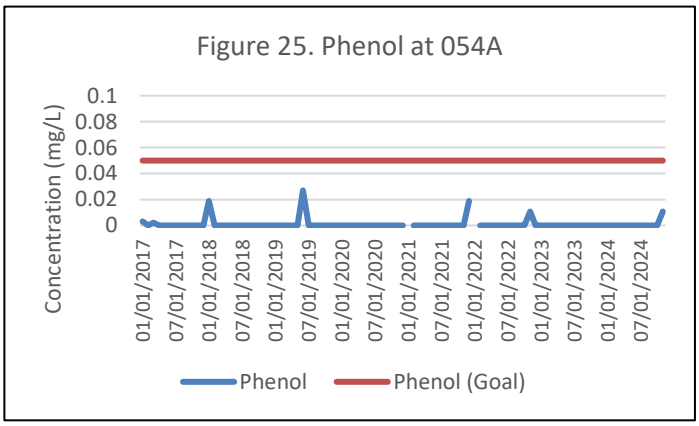


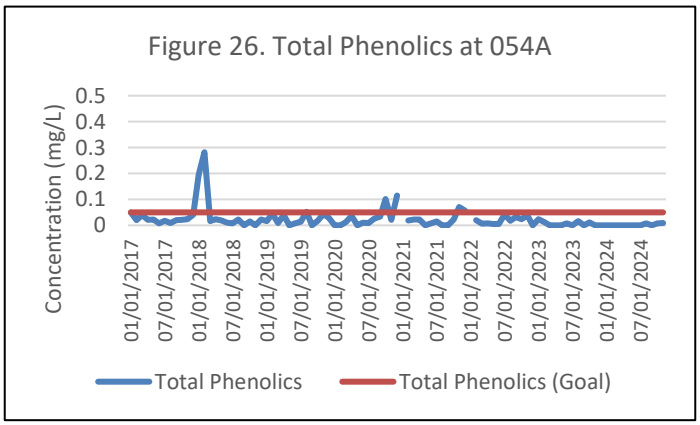


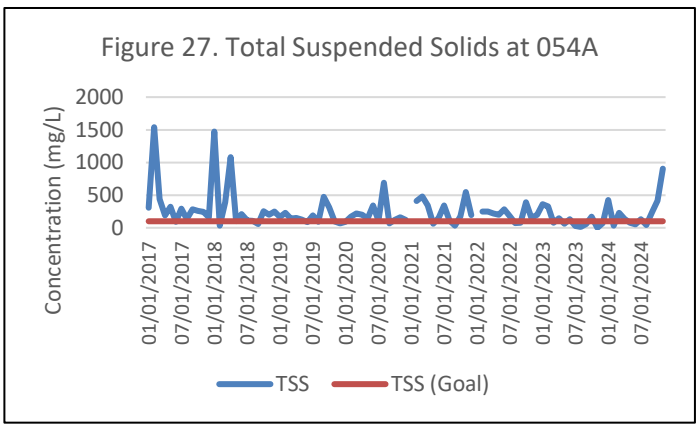


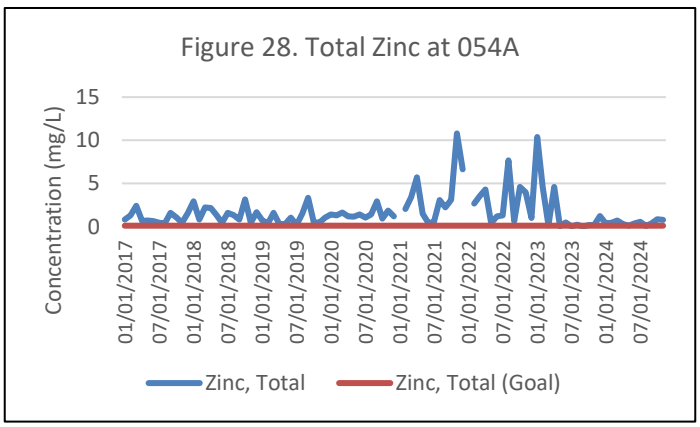












Note: No discharges were reported in January 2021 and January 2022.

DMR data summarized in Figures 17 through 28 and in **Table 55** indicate that naphthalene, TSS, iron, and zinc consistently exceed benchmark values/concentration goals. Appendix B of the PAG-03 identifies a benchmark value of 100 mg/L for TSS, which is exceeded about 73% of the time at Outfall 054A. Using the permit's TSS concentration goal of 30 mg/L instead of the 100 mg/L benchmark value, TSS concentrations exceed 95% of the time. Similarly, 37% of results for Naphthalene, 21% of results for Total Iron, and 94% of results for Total Zinc exceed the permit's concentration goals of 0.013 mg/L, 3.5 mg/L, and 0.12 mg/L for those parameters, respectively.

Discharges from Outfall 054A have not been subject to the 100 mg/L TSS benchmark value or the corresponding corrective action plan requirement, so USS will be given the opportunity to address elevated TSS concentrations in Outfall 054A's discharges before DEP considers the need for numerical TBELs. Effluent limits for TSS will not be imposed at Outfall 054A for this permit renewal. Controlling TSS also should reduce metals concentrations. The effluent concentration goals listed in USS's current permit for naphthalene, iron, and zinc at other outfalls (0.013 mg/L, 3.5 mg/L, and 0.12 mg/L) will be adopted as the benchmark values for those parameters. Corrective action plans will be required for consecutive exceedances of the benchmark values.

In the 2017 Application, USS requested that the sampling frequencies for pollutants that have met their corresponding concentration goals be reduced to 1/quarter. DEP agrees to a performance-based reduction of sampling frequencies for Ammonia-Nitrogen, Benzo(a)Pyrene, BOD-5, Free Available Cyanide, Total Cyanide, Total Manganese, Phenol, and Total Phenolics from 2/month to 1/6 months. The reduction is more than the reductions recommended in EPA's "Interim Guidance for Performance-Based Reduction Of NPDES Permit Monitoring Frequencies" (Doc. No. EPA 833-B-96-001, April 1996), but will be consistent with the sampling frequencies for other parameters added based on Appendix B of the PAG-03 General Permit. The effluent concentration goals for those parameters currently specified in USS's permit (2.14 mg/L for Ammonia-Nitrogen; 0.013 mg/L for Benzo(a)Pyrene; 30 mg/L for BOD5; 0.022 mg/L for Total Cyanide; 2.0 mg/L for Total Manganese; and 0.05 for Phenol and Total Phenolics) will be adopted as benchmark values for those parameters subject to corrective action plan requirements when there are two consecutive exceedances.

Parameters that are not subject to monitoring frequency reductions will additionally require reporting of a semi-annual average concentration. If a parameter's semi-annual average concentration exceeds the corresponding benchmark value for two consecutive semi-annual periods, then the corrective action plan requirements will be triggered for those parameters.

Storm Water Pollution Prevention Plan (SWPPP)

In USS's March 2013 SWPPP, USS stated that it was considering the following BMPs:

- Installation of gutter guards and/or filter membranes to minimize solids and other pollutants from entering roof gutters
- Redirecting roof drains to discharge to F Roadway, which does not drain to the Monongahela River
- Installing appropriate size holding tank for collection of roof drainage and transport storm water to the Coal Storage Yard Treatment Plant.

Outfall 054A still discharges storm water, so the options involving re-routing evidently have not been implemented. It is unknown whether the final BMP was implemented, but DMR data summarized in Figures 17 through 28 and in **Table 55** indicate that USS's storm water control measures do not remove pollutants to within benchmark values.

USS can explore other structural and non-structural control options if elevated concentrations persist and corrective action plans (and PPC Plan updates) are necessary under the terms of the renewed permit.

054A.B. Water Quality-Based Effluent Limitations (WQBELs)

No modeling is performed (see Section 001A.B of this Fact Sheet for an explanation). The combination of benchmark monitoring and BMPs including pollution prevention and exposure minimization, good housekeeping, erosion and sediment control, and spill prevention and response will ensure compliance with water quality standards.

054A.C. Effluent Limitations and Monitoring Requirements for Outfall 054A

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l) (incorporated in Pennsylvania's regulations at 25 Pa. Code § 92a.44), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-

backsliding discussed previously in this Fact Sheet. No TBELs are imposed at Outfall 054A (other than BMPs) and no WQBELs apply at this time, so monitoring and reporting requirements are the most stringent requirements.

Table 56. Effluent Limits and Monitoring Requirements for Outfall 054A

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
BOD5	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Chemical Oxygen Demand (COD)	—	—	—	—	Report	25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Oil and Grease	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Aluminum, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Copper, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Iron, Total	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Lead, Total	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Manganese, Total	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Zinc, Total	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Ammonia-Nitrogen	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Phenol	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Total Phenolics	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Nitrogen, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Phosphorus, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Benzo(a)Pyrene	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Naphthalene	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Free Available Cyanide	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Cyanide, Total	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
pH (S.U.)	—	—	Report (Min)	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)

The monitoring frequency and sample type for pH, TSS, Total Iron, Total Zinc, and naphthalene will remain unchanged (2/month grab sampling). The remaining parameters will require 1/6 months grab sampling. Semi-annual average concentrations must be calculated based on the 2/month sampling results for each half year.

Development of Effluent Limitations for Outfall 057

Outfall No. 057 **Design Flow (MGD)** Variable
Latitude 40° 18' 24" **Longitude** -79° 52' 33"
Wastewater Description: Surge bin floor drains

The general procedure for coal handling at the Clairton Plant involves the transfer of coal from barges or trucks onto several conveyor belts which in turn transfer the coal into mixing bins or surge bins where the coal is stored until needed in the process. The coal is transported from the surge bins into pulverizers where it is pulverized to a pre-selected size after which it is blended with a wetting agent (oil or water) to regulate the bulk density of the mixture. This mixture is stored in bunkers until a larry car picks up a specific mass (or volume) of the mixture before charging it to the ovens.

The Clairton Plant has eight surge bins in two buildings along the Monongahela River. Each building contains four 1,500-ton surge bins. DEP's understanding is that Outfall 057 discharges water from floor drains in the southern surge bin building. The NPDES permit authorizes Outfall 057 to discharge "uncontaminated miscellaneous wastewater".

A narrative condition in the NPDES permit requires USS to sample Outfall 057 once per year for TSS, Oil and Grease, Surfactants, pH, Total Residual Chlorine, Copper, Hexavalent Chromium, Dissolved Iron and Zinc. Annual results reported for the last six years are summarized in the table below.

Table 57. Annual Sampling Results for Outfall 057

Parameter	Units	2018	2019	2020	2021	2022	2023
TSS	mg/L	130.0	170.0	No Discharge	110.0	No Discharge	No Discharge
Oil and Grease	mg/L	4.500	<5.7	—	<5.8	—	—
pH	S.U.	7.240	7.46	—	0.00	—	—
Surfactants	mg/L	0.050	<0.5	—	<0.10	—	—
TRC	mg/L	0.000	<0.01	—	8.11	—	—
Copper	mg/L	0.025	<0.09	—	<0.025	—	—
Hexavalent Chromium	mg/L	0.010	<0.010	—	<0.010	—	—
Dissolved Iron	mg/L	0.031	<1.0	—	<0.10	—	—
Zinc	mg/L	0.099	0.12	—	0.27	—	—

057.A. Technology-Based Effluent Limitations (TBELs)

Based on annual sampling results for previously identified pollutants of concern at Outfall 057, DEP would not classify Outfall 057's discharges as "uncontaminated". Most pollutants were not detectable in the effluent or were present in low concentrations except for TSS. As a basis of comparison, EPA identifies floor drainage as a low volume waste source in the Steam Electric Power Generating Point Source Category Effluent Limitations Guidelines and regulates the concentrations of TSS and Oil and Grease and the pH of those sources. The Clairton Plant is not a power-generating facility, but floor drain wastewater at the Clairton Plant is analogous to floor drain wastewater regulated by the Steam Electric regulations, so the TBELs in 40 CFR § 423.12(b)(3) could reasonably be applied to floor drain wastewater discharged at other industrial facilities. Consider, for example, that both coal-fired power plants regulated by Part 423 and coke plants like the Clairton Plant handle large volumes of coal.

The BPT TBELs for low volume waste sources from Part 423 are summarized in **Table 58**.

Table 58. 40 CFR Part 423 – BPT TBELs for Low Volume Waste Sources

Pollutant	Average of daily values for 30 consecutive days (mg/L)	Maximum for any 1 day (mg/L)	Basis
TSS	30.0	100.0	40 CFR § 423.12(b)(3)
Oil and Grease	15.0	20.0	40 CFR § 423.12(b)(3)
pH	within the range of 6.0 to 9.0		40 CFR § 423.12(b)(1)

Comparing the analytical results for Outfall 057 to the TBELs for low volume waste sources shows that Oil and Grease and pH are not elevated in the surge bin floor drains. However, all reported results for TSS exceed the 100 mg/L maximum TSS concentration. TSS is a parameter that can be readily controlled with sedimentation technologies or drain filters like those employed elsewhere at the Clairton Plant. Due to the similarity of floor drain wastewater at steam electric-power generating facilities to floor drain wastewater at the Clairton Plant and based on DEP's Best Professional Judgement and the concept of technology transfer, the 100 mg/L limit for low volume waste sources from 40 CFR § 423.12(b)(3) will be adopted as a case-by-case maximum daily limit for TSS at Outfall 057 pursuant to 40 CFR § 125.3(c)(2) and 25 Pa. Code §§ 92a.3(b)(4)

and 92a.48(a)(3). Consistent with the requirements of 40 CFR § 125.3(c)(2) regarding the factors that must be considered when setting case-by-case TBELs, EPA's consideration of the § 125.3(d) factors in the Steam Electric ELGs will substitute for DEP's consideration of those factors—except that effluent data and the infrequency of discharge (a factor unique to Outfall 057) lead DEP to only impose the maximum daily limit for TSS.

DEP notes that the 1974 Development Document for the Steam Electric ELGs discusses the option of pumping floor drain wastewater onto coal piles so that the water is absorbed into the coal and eliminated by combustion (USS already uses wetting agents to regulate the bulk density of its coal mixture), so it may be possible to eliminate this floor drainage.

Annual reporting will continue to be required for TSS and other parameters based on anti-backsliding.

057.B. Water Quality-Based Effluent Limitations (WQBELs)

Based on the infrequency with which Outfall 057 discharges and the rationale discussed in Section EOF.B of this Fact Sheet, no WQBELs are developed for Outfall 057.

057.C. Effluent Limitations and Monitoring Requirements for Outfall 057

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l) (incorporated in Pennsylvania's regulations at 25 Pa. Code § 92a.44), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. No WQBELs apply to Outfall 057, so the new maximum daily TBEL for TSS and the previously imposed monitoring and reporting requirements are the most stringent requirements.

Table 59. Effluent Limits and Monitoring Requirements for Outfall 057

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
TSS	—	—	—	—	100.0	40 CFR § 125.3(c)(2) & 25 Pa. Code §§ 92a.3(b)(4) & 92a.48(a)(3)
Oil and Grease	—	—	—	—	Report	25 Pa. Code § 92a.61(h)
pH (S.U.)	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(b);
Surfactants (MBAS)	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(b);
TRC	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(b);
Copper, Total	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(b);
Chromium, Hexavalent	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(b);
Iron, Dissolved	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(b);
Zinc, Total	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(b);

The monitoring frequency and sample type for all parameters will be 1/year using grab sampling.

Development of Effluent Limitations for Outfall 068

Outfall No.	068	**Design Flow (MGD)**	Variable
Latitude	40° 18' 0"	**Longitude**	-79° 52' 11"

Wastewater Description: Storm water from the quench sump dust pile (coke breeze), metal scrap yard, and the roadway and areas adjacent to Central Door Repair

Outfall 068 discharges storm water runoff from a 383,328 sq. ft. area of the plant. Storm water flows into three catch basins southeast of the Coke Breeze Storage Area and a fourth catch basin across the road to the south. The catch basins are connected to a storm sewer under the Clairton Plant that originates from offsite and contains runoff from storm drains along North State Street (State Route 837). Discharges from Outfall 068 are currently subject to the following effluent limits and monitoring requirements.

Table 60. Outfall 068 – Current Effluent Limits and Monitoring Requirements

Parameter	Minimum	Average Monthly	IMAX	Units	Measurement Frequency	Sample Type	Limit Basis
BOD5	Report	—	Report	s.u.	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Oil and Grease	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Cyanide	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Iron	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Benzo(a)Pyrene	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Naphthalene	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)

The effluent limits in **Table 60** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

068.A. Technology-Based Effluent Limitations (TBELs)

There are no Federal ELGs that apply to Outfall 068's storm water discharges. In the absence of applicable ELGs, TBELs, if warranted, are developed based on Best Professional Judgment.

Consistent with 25 Pa. Code § 92a.61(h) and DEP's policy for permitting storm water discharges associated with industrial activities, the monitoring requirements and sector-specific BMPs of Appendix B of DEP's PAG-03 NPDES General Permit for Discharges of Stormwater Associated with Industrial Activity (see Table 18 in Section 001A.A of this Fact Sheet) are applied to Outfall 068's storm water discharges.

Outfall 068 is currently subject to different requirements than those specified in Appendix B of the PAG-03. TSS, oil and grease, iron, and zinc are the only parameters from Appendix B of the PAG-03 that are currently monitored at Outfall 068. Total nitrogen, total phosphorus, aluminum, copper, and lead are not monitored. Reporting also is required at Outfall 068 for total cyanide, benzo(a)pyrene, and naphthalene—some of which are regulated in other discharges from the Clairton Plant based on 40 CFR Part 420 and were added to Outfall 068 to determine whether they are present in the facility's storm water. Monitoring frequencies for the newly added parameters (total nitrogen, total phosphorus, aluminum, copper, and lead) will be 1/6 months, unless available effluent data indicate that more frequent monitoring is warranted.

Two years of the most recent analytical results supplemented with analytical data from one sampling event collected on April 19, 2023 for the 2023 Application Update are summarized in **Table 61**. Averages are calculated using a lognormal distribution and, for mixed datasets consisting of detected and non-detect results, a delta-lognormal distribution is used. Where only one application result is available, the "average" is the reported result.

Table 61. Storm Water Analytical Results for Outfall 068

Parameter	Average Conc. (mg/L)		Parameter	Average Conc. (mg/L)
Oil and Grease	<6.8 †		Zinc, Total	0.224
BOD5	8.37 †		Benzo(a)Pyrene	0.0022 †
COD	128		Naphthalene	0.0020 †
TSS	261 †		Cadmium, Total	<0.004

Table 61 (cont'd). Storm Water Analytical Results for Outfall 068

Parameter	Average Conc. (mg/L)	Parameter	Average Conc. (mg/L)
Total Nitrogen	<6.26	Lead, Total	<0.008
Total Phosphorus	0.270	Nitrate Nitrite as N	3.76
pH (s.u.)	7.8	Total Kjeldahl Nitrogen	<2.5
Ammonia-Nitrogen	0.26	Phenolics, Total	0.251
Iron, Total	8.15 †	Free Cyanide	<0.005
Manganese, Total	0.223	Cyanide, Total	0.793 †

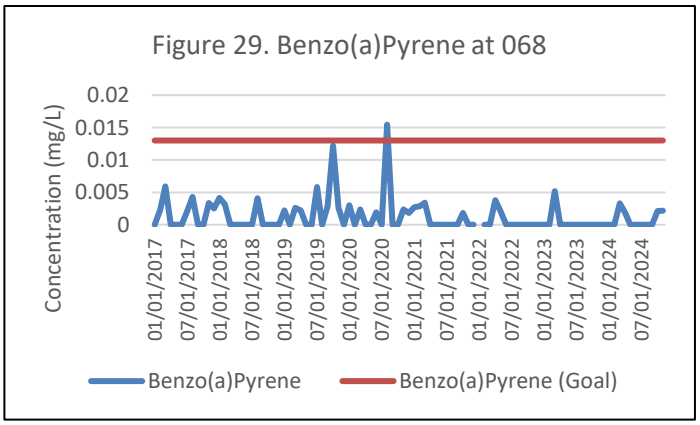
† Result is the average of a lognormal or delta-lognormal distribution of maximum daily results reported on DMRs from November 2022 – November 2024

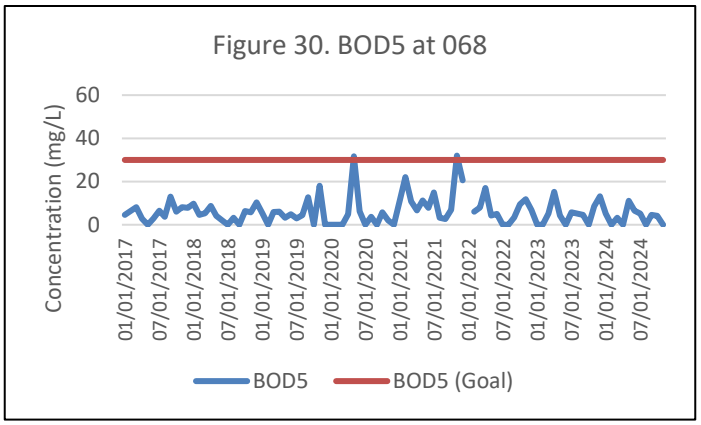
Based on the results in **Table 61**, no additional monitoring requirements are added to Outfall 068.

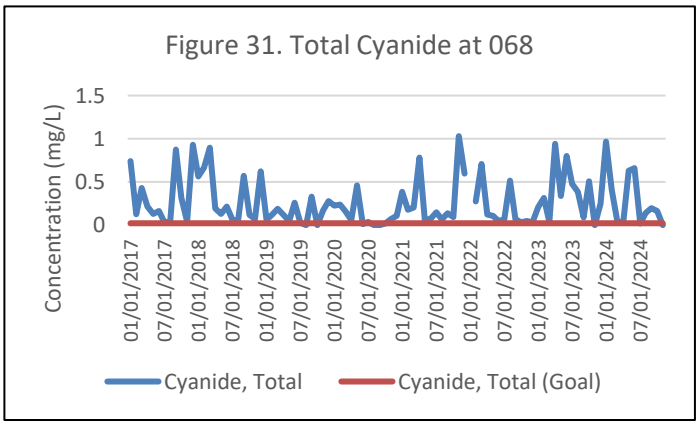
The monitoring frequencies for total nitrogen, total phosphorus, aluminum, copper, and lead each will be 1/6 months because results are either not available to evaluate whether more frequent monitoring is appropriate, or the reported concentrations are not elevated.

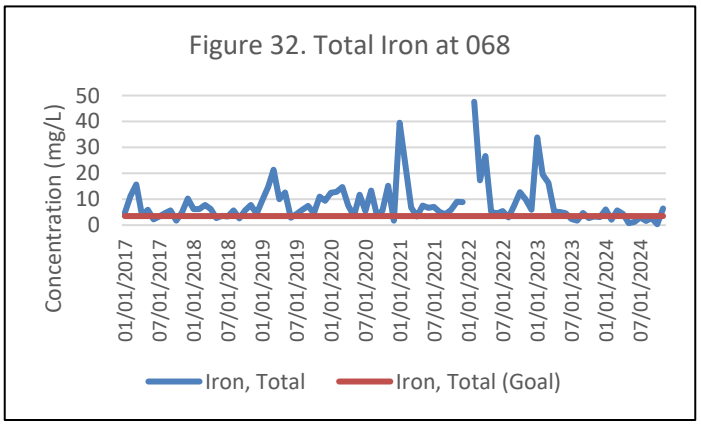
In the absence of ELGs, case-by-case TBELs are developed based on BPJ. The development of case-by-case TBELs using BPJ typically involves the evaluation of end-of-pipe wastewater treatment technologies. However, consistent with 40 CFR § 122.44(k)(2), DEP considers the use of BMPs to be BAT for storm water discharges associated with industrial activities unless effluent concentrations indicate that BMPs provide inadequate pollution control.

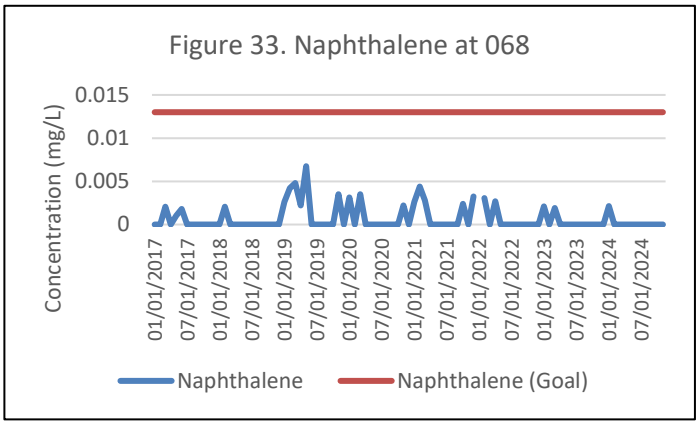
Figures 29 through 35 depict the reported effluent concentrations of pollutants monitored at Outfall 068 from January 2017 through November 2024. Effluent concentration goals from USS's current permit are shown for comparison where benchmark values are not identified in Appendix B of the PAG-03.

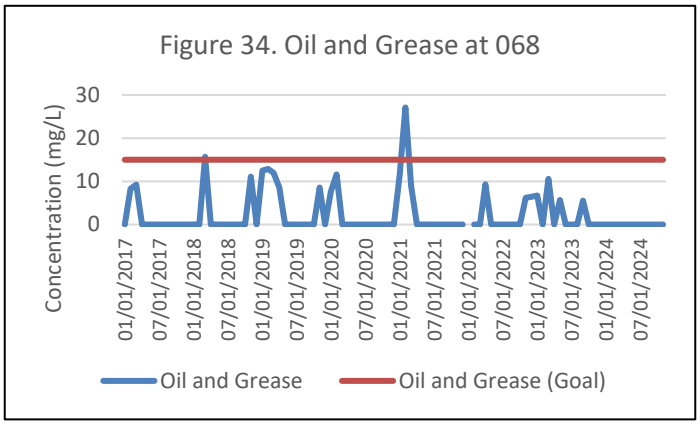


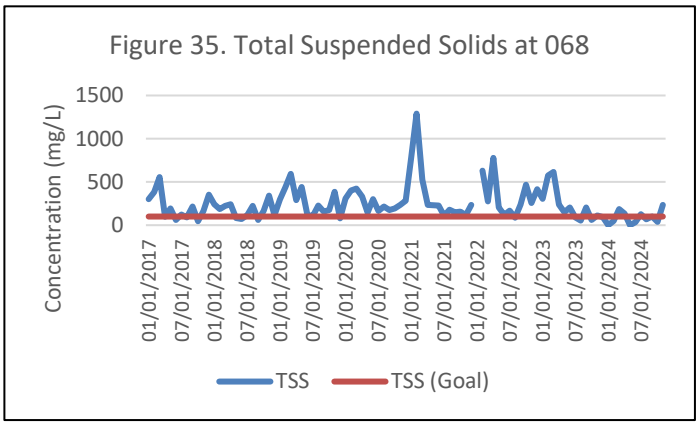












Note: No discharges were reported in January 2022.

DMR data summarized in Figures 29 through 35 and in **Table 61** indicate that TSS, total cyanide, iron, and zinc consistently exceed benchmark values/concentration goals. Appendix B of the PAG-03 identifies a benchmark value of 100 mg/L for TSS, which is exceeded 79% of the time at Outfall 068.

There are no benchmark values for total cyanide or iron in the PAG-03, but there are concentration goals for total cyanide and iron (0.022 mg/L and 3.5 mg/L) in the permit that apply to other storm water outfalls. The total cyanide and iron concentration goals are exceeded 89% and 75% of the time, respectively, at Outfall 068.

Discharges from Outfall 068 have not been subject to the 100 mg/L TSS benchmark value or the corresponding corrective action plan requirement, so USS will be given the opportunity to address elevated TSS concentrations in Outfall 068's discharges before DEP considers the need for numerical TBELs. Effluent limits for TSS will not be imposed at Outfall 068 for this permit renewal. Controlling TSS also should reduce iron concentrations. However, the effluent concentration goals listed in USS's current permit for iron, zinc, and total cyanide at other outfalls (3.5 mg/L, 0.12 mg/L, and 0.022 mg/L) will be adopted as the benchmark values for those parameters. Corrective action plans will be required for consecutive exceedances of the benchmark values.

In the 2017 Application, USS requested that the sampling frequencies for pollutants that have met their corresponding concentration goals be reduced to 1/quarter. DEP agrees to a performance-based reduction of sampling frequencies for Benzo(a)Pyrene, BOD-5, Naphthalene, and Oil and Grease from 2/month to 1/6 months. The reduction is more than the reductions recommended in EPA's "Interim Guidance for Performance-Based Reduction Of NPDES Permit Monitoring Frequencies" (Doc. No. EPA 833-B-96-001, April 1996), but will be consistent with the sampling frequencies for other parameters added based on Appendix B of the PAG-03 General Permit.

The effluent concentration goals for those parameters currently specified for other outfalls in USS's permit (0.013 mg/L for Benzo(a)Pyrene and Naphthalene; 30 mg/L for BOD5) will be adopted as benchmark values for those parameters subject to corrective action plan requirements when there are two consecutive exceedances. The benchmark values for Oil and Grease will be 30 mg/L.

Parameters that are not subject to monitoring frequency reductions will additionally require reporting of a semi-annual average concentration. If a parameter's semi-annual average concentration exceeds the corresponding benchmark value for two consecutive semi-annual periods, then the corrective action plan requirements will be triggered for those parameters.

Storm Water Pollution Prevention Plan (SWPPP)

In USS's March 2013 SWPPP, USS described the following controls for plant storm water contributions to Outfall 068:

> During the last permit term, rock gabions and silt fences were added around the catch basins adjacent to the coke breeze storage area. This BMP has helped reduce solids loading in storm water discharges to Outfall 068. This

reduction is difficult to quantify since the majority of the storm water that discharges from Outfall 068 originates from the City of Clairton. Inspections of the rock gabions and silt fence are included in the quarterly storm sewer BMP inspections.

DMR data summarized in Figures 27 through 33 and in **Table 61** indicate that USS's storm water control measures do not remove pollutants to within benchmark values.

USS can explore other structural and non-structural control options if elevated concentrations persist and corrective action plans (and PPC Plan updates) are necessary under the terms of the renewed permit.

068.B. Water Quality-Based Effluent Limitations (WQBELs)

No modeling is performed (see Section 001A.B of this Fact Sheet). The combination of benchmark monitoring and BMPs including pollution prevention and exposure minimization, good housekeeping, erosion and sediment control, and spill prevention and response will ensure compliance with water quality standards.

068.C. Effluent Limitations and Monitoring Requirements for Outfall 068

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l) (incorporated in Pennsylvania's regulations at 25 Pa. Code § 92a.44), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. No TBELs are imposed at Outfall 068 (other than BMPs) and no WQBELs apply at this time, so monitoring and reporting requirements are the most stringent requirements.

Table 62. Effluent Limits and Monitoring Requirements for Outfall 068

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
BOD5	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Oil and Grease	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Aluminum, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Copper, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Iron, Total	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Lead, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Zinc, Total	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Nitrogen, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Phosphorus, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Benzo(a)Pyrene	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Naphthalene	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Cyanide, Total	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)

The monitoring frequency and sample type for pH, TSS, Total Iron, and Total Cyanide will remain unchanged (2/month grab sampling). The remaining parameters will require 1/6 months grab sampling. Semi-annual average concentrations must be calculated based on the 2/month sampling results for each half year.

Development of Effluent Limitations for Outfall 069A

Outfall No.	069A (969)	**Design Flow (MGD)**	0.0055
Latitude	40° 17' 45"	**Longitude**	-79° 52' 17"

Wastewater Description: Non-contact cooling tower blowdown from a cooling tower for an air compressor

Outfall 069A is a new outfall that will discharge non-contact cooling water blowdown from a cooling tower for an air compressor to a City of Clairton storm sewer that runs under the plant to the Monongahela River via former Outfall 069. The average discharge is expected to be approximately 0.0055 MGD.

069A.A. Technology-Based Effluent Limitations (TBELs)

Effluent Limitations Guidelines

Cooling tower blowdown is not regulated by 40 CFR Part 420. However, cooling tower blowdown is regulated by 40 CFR Part 423 – Steam Electric Power Generating Point Source Category. Although the Clairton Plant is not a steam electric power generating facility, the cooling tower blowdown limits under Part 423 reasonably inform DEP's permitting of cooling tower blowdown pursuant to Sections 304(b)(2)(B), 304(b)(4)(B), and 402(a)(1) of the Clean Water Act and implementing regulations under 40 CFR § 125.3, which allow for the establishment of effluent limits on a case-by-case basis using Best Professional Judgment (BPJ).

Section 423.11(j) defines "blowdown" as "the minimum discharge of recirculating water for the purpose of discharging materials contained in the water, the further buildup of which would cause concentration in amounts exceeding limits established by best engineering practices." This definition does not include language specific to the steam electric power generating industry, so the performance standards applicable to "blowdown" under the Steam Electric Power Generating Point Source Category and the rationale given by EPA for those limits in documentation supporting the Steam Electric Power Generating ELGs are appropriate for blowdown discharged elsewhere.

Based on DEP's BPJ, cooling tower blowdown monitored at Outfall 069A will be subject to the most stringent TBELs and narrative limitations from § 423.12(b) paragraphs (1) and (7) for Best Practicable Control Technology Currently Available (BPT) and § 423.13 paragraphs (d)(1) - (d)(3) for Best Available Technology Economically Achievable (BAT). TBELs based on the use of Best Conventional Pollutant Control Technology (BCT) are reserved under § 423.14, so BPT limits will control conventional pollutants in the facility's blowdown. DEP will not impose the chromium and zinc limits from 40 CFR § 423.13(d)(1). Based on the Development Document for the Steam Electric ELGs, chromium and zinc were included as pollutants of concern for discharges of cooling tower blowdown due to the widespread use of chromium and zinc-based corrosion inhibitors when the Steam Electric ELGs were developed and promulgated. Based on the list of chemical additives provided in the 2023 Application Update, no chromium or zinc-based additives will be used in the 069A system, so DEP will forgo the chromium and zinc limits at this time. The applicable TBELs are summarized in **Tables 63** and **64**.

Table 63. 40 CFR Part 423 – Steam Electric BPT Effluent Limitations for Outfall 069A

Pollutant	Average Concentration (mg/L)	Maximum Concentration (mg/L)	Basis
Free Available Chlorine	0.2	0.5	40 CFR § 423.12(b)(7)
pH	within the range of 6.0 to 9.0		40 CFR § 423.12(b)(1)

Table 64. 40 CFR Part 423 – Steam Electric BAT Effluent Limitations for Outfall 069A

Pollutant	Average Concentration (mg/L)	Maximum Concentration (mg/L)	Basis
Free Available Chlorine	0.2	0.5	40 CFR § 423.13(d)(1)
The 126 priority pollutants contained in chemicals added for cooling tower maintenance	No detectable amount	No detectable amount	40 CFR § 423.13(d)(1)

Pollutant	Average of daily values for 30 consecutive days (mg/L)	Maximum for any 1 day (mg/L)	Basis
Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Regional Administrator or State, if the State has NPDES permit issuing authority, that the units in a particular location cannot operate at or below this level of chlorination.			40 CFR § 423.13(d)(2)

Table 64 (cont'd). 40 CFR Part 423 – Steam Electric BAT Effluent Limitations for Outfall 069A

Pollutant	Average Concentration (mg/L)	Maximum Concentration (mg/L)	Basis
At the permitting authority's discretion, instead of the monitoring specified in 40 CFR 122.11(b) compliance with the limitations for the 126 priority pollutants in paragraph (d)(1) of this section may be determined by engineering calculations which demonstrate that the regulated pollutants are not detectable in the final discharge by the analytical methods in 40 CFR part 136.			40 CFR § 423.13(d)(3)

The most stringent TBELs from the BPT and BAT levels of control include the pH limits from **Table 63** and the chlorine and narrative priority pollutant limits from **Table 64**. The current NPDES permit includes a requirement for chlorine minimization that is not specific to any outfall. That condition will be maintained in the renewed permit.

Regulatory Effluent Standards and Monitoring Requirements

Flow monitoring will be required in accordance with 25 Pa. Code § 92a.61(b). Effluent standards for pH are imposed on industrial wastes by 25 Pa. Code § 95.2(1). The § 95.2(1) pH limits are the same as those imposed based on BPJ.

Thermal TBELs for Heated Discharges

No TBELs are developed to control thermal pollution. However, DEP's "Implementation Guidance for Temperature Criteria" and ORSANCO's Pollution Control Standards recommend/require the imposition of a maximum temperature limit of 110°F for public safety purposes. The 110°F instantaneous maximum temperature limit is treated as an effluent standard for heated discharges. The 110°F limit will be imposed at Outfall 001 (the final discharge location where public access is possible) assuming that thermal water quality-based effluent limitations are not applicable (see Section 001.B).

069A.B. Water Quality-Based Effluent Limitations (WQBELs)

As a new outfall, USS did not report analytical results for Outfall 069A. The permit will include a condition requiring USS to perform an effluent characterization of Outfall 069A's discharges for BOD5, Total Suspended Solids (TSS), Total Dissolved Solids (TDS), Fecal Coliform (if believed present), Total Residual Chlorine (TRC) (if chlorine is used), Oil and Grease, Chemical Oxygen Demand (COD), Total Organic Carbon (TOC), Ammonia-Nitrogen, pH, and Temperature. Other than heat, USS's other non-contact cooling water discharges generally do not exhibit elevated concentrations of pollutants, so no WQBELs are developed for Outfall 069A's non-contact cooling water at this time.

Heat rejection rate limits representing the thermal discharge loading from Outfall 084 and Outfalls 023, 028, 029, 038, 069A, and 081 are imposed at Outfall 023. Reporting of each outfall's heat rejection rate also is required pursuant to 25 Pa. Code § 92a.61(b) to determine each outfall's portion of the aggregate, facility-wide thermal loadings.

069A.C. Effluent Limitations and Monitoring Requirements for Outfall 069A

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l) (incorporated in Pennsylvania's regulations at 25 Pa. Code § 92a.44), effluent limits are the more stringent of TBELs, WQBELs, and regulatory effluent standards. Applicable requirements are summarized in the following table.

Table 65. Effluent Limits and Monitoring Requirements for Outfall 069A

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(b)
pH (s.u.)	—	—	6.0 (Inst. Min)	—	9.0	25 Pa. Code § 95.2(1), 40 § CFR 122.44(l), 25 Pa. Code § 92a.48(a)(3)
Heat Rejection Rate (MBTUs/day)	—	Report	—	—	—	25 Pa. Code § 92a.61(b)
Free Available Chlorine	—	—	0.2	0.5	—	40 CFR § 125.3(c)(2) & 25 Pa. Code §§ 92a.3(b)(4) & 92a.48(a)(3)
Narrative limits from **Table 64** will be imposed as conditions in Part C of the permit.						

Monitoring frequencies and sample types are imposed in accordance with Chapter 6, Table 6-4 of DEP's Permit Writers' Manual and DEP's Implementation Guidance for Temperature Criteria. Flow must be estimated 1/week; pH and free available chlorine must be sampled 1/week using grab sampling; and the heat rejection rate must be calculated using 1/week temperature measurements (*i.e.*, paired intake and effluent temperature measurements to determine ΔT in the heat rejection rate formula: $H = Q \times (T_2 - T_1) \times 5.39$ lb-sec/ft^3-day).

Development of Effluent Limitations for Outfall 073

Outfall No.	073	**Design Flow (MGD)**	Variable
Latitude	40° 17' 24"	**Longitude**	-79° 52' 16"

Wastewater Description: Storm water from the plant and the City of Clairton

Outfall 073 discharges storm water runoff from a 52,272 sq. ft. area of the plant including the General Office Building roof drains and parking lot. Discharges from Outfall 073 are not subject to any effluent limits or monitoring requirements.

073.A. Technology-Based Effluent Limitations (TBELs)

Storm water discharges from Outfall 073 were previously permitted as discharges consisting solely of uncontaminated storm water runoff. "Uncontaminated" is not a term of art in DEP's regulations, but a storm water discharge's status as "uncontaminated" generally corresponds to EPA's conditional exclusion for "no exposure" of industrial activities and materials to storm water under 40 CFR § 122.26(g) (incorporated by reference at 25 Pa. Code § 92a.32(a)) and DEP's requirements under 25 Pa. Code § 92a.32(b). EPA requires facility operators to submit a signed certification stating that there are no discharges of storm water contaminated by exposure to industrial materials and activities. DEP allows "no exposure" certifications on an outfall-by-outfall basis with the requirement that corroborating analytical results be provided for each outfall.

No monitoring requirements were imposed at Outfall 073 in the current permit. The NPDES permit renewal application does not identify Outfall 073 as a "no exposure" outfall and no analytical data were submitted for Outfall 073's discharges to corroborate the historical characterization of storm water at Outfall 073 as "uncontaminated" (whether exposed to industrial activities are not). Therefore, the baseline monitoring requirements from Appendix B of the PAG-03 will be imposed at Outfall 073 including semi-annual monitoring and reporting for Total Nitrogen, Total Phosphorus, Total Suspended Solids, Oil and Grease, Total Aluminum, Total Zinc, Total Copper, Total Iron, and Total Lead.

The benchmark values and related corrective action plan requirements from Appendix B of the PAG-03 also will apply to Outfall 073.

073.B. Water Quality-Based Effluent Limitations (WQBELs)

No modeling is performed. Conditions in Part C of the permit in combination with benchmark monitoring requirements will ensure compliance with water quality standards through a combination of BMPs including pollution prevention and exposure minimization, good housekeeping, erosion and sediment control, and spill prevention and response.

073.C. Effluent Limitations and Monitoring Requirements for Outfall 073

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l) (incorporated in Pennsylvania's regulations at 25 Pa. Code § 92a.44), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. No TBELs are imposed at Outfall 073 (other than BMPs) and no WQBELs apply at this time, so monitoring and reporting requirements are the most stringent requirements.

Table 66. Effluent Limits and Monitoring Requirements for Outfall 073

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Total Suspended Solids	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Oil and Grease	—	—	—	—	Report	
Aluminum, Total	—	—	—	—	Report	
Copper, Total	—	—	—	—	Report	
Iron, Total	—	—	—	—	Report	
Lead, Total	—	—	—	—	Report	
Zinc, Total	—	—	—	—	Report	
Nitrogen, Total	—	—	—	—	Report	
Phosphorus, Total	—	—	—	—	Report	

The monitoring frequencies and sample types will be the same as those specified in Appendix B of the PAG-03 (see Table 18 in this Fact Sheet).

Similar to Outfall 068, Outfall 073 receives storm water runoff from the City of Clairton via storm drains along North State Street (State Route 837). The sampling requirements apply only to USS's contributions to Outfall 073.

Development of Effluent Limitations for Outfall 081

Outfall No. 081 **Design Flow (MGD)** 21.0
Latitude 40° 18' 34" **Longitude** -79° 52' 54"
Wastewater Description: Non-contact cooling water, steam condensate, emergency bypass for Internal Monitoring Point 183, plant fire suppression water, and storm water runoff

Table 67. Outfall 081 – Current Effluent Limits and Monitoring Requirements

Parameter	Instant. Minimum	Average Monthly	Daily Maximum	Units	Measurement Frequency	Sample Type	Limit Basis
Flow	—	Report	Report	MGD	1/week	Measured	25 Pa. Code § 92a.61(b)
pH	6.0	—	9.0 (IMAX)	s.u.	1/week	Grab	25 Pa. Code § 95.2(1), § 92a.48(a)(3)
Heat Rejection Rate	—	—	Report	MBTUs/ Day	Continuous	Calculation	25 Pa. Code § 92a.61(b)
Benzo(a)Pyrene	—	0.003	0.0075 (IMAX)	mg/L	1/week	Grab	33 U.S.C. §1342(o)

The effluent limits in **Table 67** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

081.A. Technology-Based Effluent Limitations (TBELs)

Non-Contact Cooling Water (NCCW)

In accordance with the recommendations given in Chapter 6, Table 6-4 of DEP's "Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits" [Doc. No. 386-0400-001], self-monitoring requirements for NCCW discharges include the following parameters: flow, pH, and temperature. Flow monitoring is required in accordance with 25 Pa. Code § 92a.61(b). Limits for pH (6.0 minimum and 9.0 maximum) are imposed at Outfall 029 based on 25 Pa. Code § 95.2(1).

For Outfall 081 and the Clairton Plant's other heat-bearing discharges (023, 028, 029, 038, 069A and 084), temperature limits are imposed as aggregate, facility-wide heat rejection rates at Outfall 023, as described in Section 023.B of this Fact Sheet.

As summarized in the table below, pollutant concentrations in Outfall 081's discharges are low, so no TBELs are developed.

Table 68. Analytical Data Reported for Outfall 081

Parameter	Units	Sample 1 (3/29/2023)	Sample 2 (4/5/2023)	Sample 3 (4/12/2023)
BOD5	mg/L	< 3.0	< 3.0	< 3.00
COD	mg/L	< 15.0	< 15.0	15.8
TOC	mg/L	2.38	1.91	2.24
TSS	mg/L	8.0	3.6	1.60
Ammonia-Nitrogen	mg/L	< 0.0475	< 0.0475	< 0.0475
pH [1]	S.U.	min: 6.8	max: 8.1	med: 7.5
Fecal Coliform	No./100mL	Believed Absent	NA	NA
Oil and Grease	mg/L	< 4.90	< 4.85	< 4.85
Total Res. Chlorine	mg/L	< 0.05	< 0.05	< 0.05
Total Phosphorus	mg/L	0.057	0.011	0.021
TKN	mg/L	1.34	0.645	< 0.50
Nitrite + Nitrate-Nitrogen	mg/L	0.70 J	0.64 J	0.69 J
Total Dissolved Solids	mg/L	174	128	162
Color	Pt-Co Units	75	7.0	< 5.0
Bromide	mg/L	< 0.200	< 0.200	< 0.200
Chloride	mg/L	9.41	9.99	10.2

Table 68 (continued). Analytical Data Reported for Outfall 081

Parameter	Units	Sample 1 (3/29/2023)	Sample 2 (4/5/2023)	Sample 3 (4/12/2023)
Sulfate	mg/L	49.8	56.6	63.3
Sulfide	mg/L	< 1.00	1.70	< 1.00
Surfactants	mg/L	< 0.025	< 0.025	< 0.025
Fluoride	mg/L	0.26 J	0.227 J	0.247 J
Total Hardness as $CaCO_3$	mg/L	86.5	82.8	97.6

[1] pH data are summarized from January 2018 to March 2023.

Steam Condensate and Fire Suppression Wastewater

The current permit lists steam condensate and fire suppression water as effluent sources for Outfall 081. Those sources will continue to be authorized by the renewed permit without any effluent limits or monitoring requirements specific to those sources. Refer to previous sections of this Fact Sheet that discuss steam condensate and emergency discharges from the plant's fire protection system for additional information.

Storm Water

Outfall 081 discharges storm water runoff from an 827,640 ft^2 drainage area comprised of areas adjacent to process areas including areas adjacent to Batteries 13, 14, and 15, the No. 2 decanters and tar receivers, the Contaminated Water Treatment Plant, and the tar tank farm. The quality of storm water contributing to Outfall 081 was not quantified by USS separately from other wastewaters, which conflicts with the storm water sampling requirements of Module 1 of the current NPDES permit application forms.

Based on the Module 1 sampling requirements and the fact that a continuous flow of NCCW commingles with storm water at Outfall 081, USS would need to collect a representative sample of storm water elsewhere within the drainage area (*e.g.*, at a representative catch basin that empties into the Outfall 081 storm water collection system), or composite multiple samples taken from different locations within the drainage area (*e.g.*, multiple catch basins to the extent there are different runoff characteristics in the areas draining to each catch basin) to characterize storm water at Outfall 081 separately from other wastewaters. In the absence of data on Outfall 081's storm water, DEP cannot draw any conclusions about the effectiveness of USS's BMPs in the Outfall 081 drainage area. However, storm water BMPs must be implemented.

Consistent with 25 Pa. Code § 92a.61(h) and DEP's policy for permitting storm water discharges associated with industrial activities, the monitoring requirements and sector-specific BMPs of Appendix B of DEP's PAG-03 NPDES General Permit for Discharges of Stormwater Associated with Industrial Activity (see Table 18 in Section 001A.A of this Fact Sheet) are applied to Outfall 081's storm water discharges. The benchmark values and corrective action plan requirements discussed in Section 001.A also will apply along with benchmark values for other parameters based on effluent concentration goals in the previous permit. Storm water data will facilitate evaluations of the effectiveness of USS's BMPs in the Outfall 081 drainage area.

No other TBELs are developed for Outfall 081.

081.B. Water Quality-Based Effluent Limitations (WQBELs)

Pollutant concentrations in Outfall 081's discharges (other than heat) are low, so there is no reasonable potential to cause or contribute to excursions above water quality criteria and no WQBELs are developed for toxic organics or inorganics.

Heat rejection rate limits representing the thermal discharge loading from Outfall 081 and Outfalls 023, 028, 029, 038, 069A, and 084 are imposed at Outfall 023. Reporting of each outfall's heat rejection rate also is required pursuant to 25 Pa. Code § 92a.61(b) to determine each outfall's portion of the aggregate, facility-wide thermal loadings.

081.C. Effluent Limitations and Monitoring Requirements for Outfall 081

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l) (incorporated in Pennsylvania's regulations at 25 Pa. Code § 92a.44), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable requirements are summarized in the following table.

Table 69. Effluent Limits and Monitoring Requirements for Outfall 081

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(b)
pH (s.u.)	—	—	6.0 (Inst. Min)	—	9.0	25 Pa. Code § 95.2(1), 40 § CFR 122.44(l), 25 Pa. Code § 92a.48(a)(3)
Heat Rejection Rate (MBTUs/day)	—	Report	—	—	—	25 Pa. Code § 92a.61(b)
Benzo(a)Pyrene	—	—	0.003	—	0.0075	40 § CFR 122.44(l) & 25 Pa. Code § 92a.61(b)
Total Suspended Solids †	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Oil and Grease †	—	—	—	—	Report	
Aluminum, Total †	—	—	—	—	Report	
Copper, Total †	—	—	—	—	Report	
Iron, Total †	—	—	—	—	Report	
Lead, Total †	—	—	—	—	Report	
Zinc, Total †	—	—	—	—	Report	
Nitrogen, Total †	—	—	—	—	Report	
Phosphorus, Total †	—	—	—	—	Report	

† Reporting requirement applies only to representative storm water.

Monitoring frequencies and sample types are imposed in accordance with Chapter 6, Table 6-4 of DEP's Permit Writers' Manual, DEP's Implementation Guidance for Temperature Criteria, those specified in the previous permit, and DEP's PAG-03 General Permit. Flow must be measured 1/week; pH must be sampled 1/week using grab sampling; and the heat rejection rate must be calculated using continuous temperature measurements (i.e., paired intake and effluent temperature measurements to determine ΔT in the heat rejection rate formula: $H = Q \times (T_2 - T_1) \times 5.39$ lb-sec/ft^3-day).

The monitoring frequency and sample type for TSS, Oil and Grease, Total Aluminum, Total Copper, Total Iron, Total Lead Total Zinc, Total Nitrogen, and Total Phosphorus will be grab sampling 1/6 months. The storm water samples should be collected at a location that consists solely of untreated storm water to Outfall 081.

Development of Effluent Limitations for Outfall 083

Outfall No.	083	**Design Flow (MGD)**	Variable
Latitude	40° 18' 30"	**Longitude**	-79° 52' 56"

Wastewater Description: Inactive storm water outfall (emergency only; rerouted to Outfall 081)

083.A. Technology-Based Effluent Limitations (TBELs)

USS listed Outfall 083 as an inactive storm water outfall in the 2017 Application—described as both "emergency only" and "rerouted to 081".

The current permit authorizes Outfall 083 to discharge uncontaminated storm water runoff. There are no data for Outfall 083, but the 2017 Application does not identify Outfall 083 as a "no exposure" outfall, which would be the regulatory equivalent of an uncontaminated storm water discharge. Also, as an inactive outfall, there are no analytical data to corroborate the historical characterization of storm water at Outfall 083 as "uncontaminated".

In the absence of data and a "no exposure" certification, the baseline monitoring requirements from Appendix B of the PAG-03 will be imposed at Outfall 083 including semi-annual monitoring and reporting for Total Nitrogen, Total Phosphorus, Total Suspended Solids, Oil and Grease, Total Aluminum, Total Zinc, Total Copper, Total Iron, and Total Lead. The benchmark values and related corrective action plan requirements from Appendix B of the PAG-03 also will apply to Outfall 083.

If Outfall 083 never discharges, then the added reporting requirements will have no effect on USS.

083.B. Water Quality-Based Effluent Limitations (WQBELs)

No modeling is performed. If discharges from Outfall 083 occur, conditions in Part C of the permit in combination with benchmark monitoring requirements will ensure compliance with water quality standards through a combination of BMPs including pollution prevention and exposure minimization, good housekeeping, erosion and sediment control, and spill prevention and response.

Peters Creek Watershed TMDL

Section 303(d) of the Clean Water Act and the U.S. Environmental Protection Agency's Water Quality Planning and Management Regulations (40 CFR Part 130) require states to develop a Total Maximum Daily Load (TMDL) for impaired water bodies. A TMDL establishes the amount of a pollutant that a water body can assimilate without exceeding the water quality criteria for that pollutant. TMDLs provide the scientific basis for a state to establish water quality-based controls to reduce pollution from both point and non-point sources to restore and maintain the quality of the state's water resources. A TMDL considers each river and tributary within the target watershed and its impairment sources. Stream data and discharger data are used to calculate minimum pollutant reductions that are necessary to attain water quality criteria. To achieve those reductions, the TMDL prescribes allocations to all contributing pollutant sources in the target watershed to minimally achieve water quality criteria (*i.e.*, 100% use of a stream's assimilative capacity).

TMDL allocations include waste load allocations (WLA), load allocations (LA), and a margin of safety (MOS). The WLA is the portion of the allowable load assigned to point sources. The LA is the portion of the allowable load assigned to non-point sources. The MOS is applied to account for uncertainties in the computational process and may be expressed implicitly (documenting conservative processes in the computations) or explicitly (setting aside a portion of the allowable load). Absent a TMDL revision, loads included in the MOS cannot be reallocated to either the WLA or LA portion of the TMDL.

The Peters Creek Watershed is affected by pollution from acid mine drainage from historical mining activities. Most of the Peters Creek Watershed is underlain with high-quality, easily mined coal deposits that outcrop on the slopes of many of the stream valleys. The proximity of the valuable deposits to Pittsburgh area coke ovens and steel mills has led to extensive mining throughout the watershed. The Pittsburgh coal bed has been mined since the early 1900s by underground methods and resulted in many parts of the watershed being prone to surface subsidence. The Redstone coal bed, which overlies the Pittsburgh coal bed, was mined subsequently by surface methods before environmental laws were enacted requiring reclamation of mined lands. The resulting spoil piles have remained largely un-reclaimed and are scattered throughout the watershed.

A TMDL for the Peters Creek Watershed was completed by DEP on January 6, 2009 to control aluminum, iron, manganese, and pH. Endpoint concentrations in the TMDL are based on water quality criteria in 25 Pa. Code Chapter 93 including 0.75 mg/L of total recoverable aluminum, 1.5 mg/L of total recoverable iron based on a 30-day average, and 1.0 mg/L of total recoverable manganese. For pH, acidity was compared to alkalinity at each sample point and statistical procedures were applied using the average value for total alkalinity at that point as the target to specify a reduction in the acid concentration. By maintaining a net alkaline stream, the pH value will be in the range between six and eight. That method negates the need to specifically compute the pH value, which for streams affected by low pH from acid mine drainage may not be a true reflection of acidity. This method assures that Pennsylvania's standard for pH is met when the acid concentration reduction is met.

In accordance with 40 CFR § 122.44(d)(1)(vii)(B), when developing WQBELs, the permitting authority shall ensure that effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation (WLA) for the discharge prepared by the State and approved by EPA pursuant to 40 CFR § 130.7.

None of USS's outfalls discharging to Peters Creek were assigned wasteload allocations by the Peters Creek TMDL. DEP does not have data on Outfall 083 given its historical categorization as "uncontaminated". USS also classifies the outfall as "inactive" so there should be no active discharges. However, monitoring will be required for total aluminum, total iron, total manganese, and pH (if discharges do occur) to determine whether additional controls on TMDL parameters are needed. Monitoring for aluminum and iron is required based on Appendix B of the PAG-03 (see Section 083.A above). Manganese and pH will be added to the semi-annual monitoring requirements.

083.C. Effluent Limitations and Monitoring Requirements for Outfall 083

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l) (incorporated in Pennsylvania's regulations at 25 Pa. Code § 92a.44), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. No TBELs are imposed at Outfall 083 (other than BMPs) and no WQBELs apply at this time, so monitoring and reporting requirements are the most stringent requirements.

Table 70. Effluent Limits and Monitoring Requirements for Outfall 083

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Total Suspended Solids	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Oil and Grease	—	—	—	—	Report	
Aluminum, Total	—	—	—	—	Report	
Copper, Total	—	—	—	—	Report	
Iron, Total	—	—	—	—	Report	
Lead, Total	—	—	—	—	Report	
Zinc, Total	—	—	—	—	Report	
Nitrogen, Total	—	—	—	—	Report	
Phosphorus, Total	—	—	—	—	Report	
Manganese, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); 40 CFR § 122.44(d)(1)(vii)(B)
pH	—	—	—	—	Report	

The monitoring frequencies and sample types will be the same as those specified in Appendix B of the PAG-03 (see Table 18 in this Fact Sheet)—grab sampling 1/6 months. The monitoring frequencies and sample types for manganese and pH will be the same as for other parameters.

Development of Effluent Limitations for Outfall 084

Outfall No. 084 **Design Flow (MGD)** 1.54
Latitude 40° 18' 35" **Longitude** -79° 52' 55"
Wastewater Description: Non-contact cooling water

Table 71. Outfall 029 – Current Effluent Limits and Monitoring Requirements

Parameter	Instant. Minimum	Average Monthly	Daily Maximum	Units	Measurement Frequency	Sample Type	Limit Basis
Flow	—	Report	Report	MGD	1/week	Measured	25 Pa. Code § 92a.61(b)
pH	6.0	—	9.0 (IMAX)	s.u.	1/week	Grab	25 Pa. Code § 95.2(1), § 92a.48(a)(3)
Heat Rejection Rate	—	—	Report	MBTUs/ Day	Continuous	Calculation	25 Pa. Code § 92a.61(b)
TSS	—	Report	Report (IMAX)	mg/L	1/week	Calculation	25 Pa. Code § 92a.61(b)

The effluent limits in **Table 71** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

084.A. Technology-Based Effluent Limitations (TBELs)

Non-Contact Cooling Water (NCCW)

In accordance with the recommendations given in Chapter 6, Table 6-4 of DEP's "Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits" [Doc. No. 386-0400-001], self-monitoring requirements for NCCW discharges include the following parameters: flow, pH, and temperature. Flow monitoring is required in accordance with 25 Pa. Code § 92a.61(b). Limits for pH (6.0 minimum and 9.0 maximum) are imposed at Outfall 029 based on 25 Pa. Code § 95.2(1).

For Outfall 084 and the Clairton Plant's other heat-bearing discharges (023, 028, 029, 038, 069A, and 081), temperature limits are imposed as aggregate, facility-wide heat rejection rates at Outfall 023, as described in Section 023.B of this Fact Sheet.

As summarized in the table below, pollutant concentrations in Outfall 084's discharges are low, so no TBELs are developed.

Table 72. Analytical Data Reported for Outfall 084

Parameter	Units	Sample 1 (3/29/2023)	Sample 2 (4/5/2023)	Sample 3 (4/12/2023)
BOD5	mg/L	< 3.00	< 3.00	< 3.00
COD	mg/L	< 15.0	< 15.0	< 15.0
TOC	mg/L	2.43	1.94	2.12
TSS	mg/L	16.4	4.00	8.27
Ammonia-Nitrogen	mg/L	< 0.0475	< 0.0475	< 0.0475
pH [1]	S.U.	min: 6.8	max: 8.5	med: 7.7
Fecal Coliform	No./100mL	Believed Absent	NA	NA
Oil and Grease	mg/L	< 4.85	< 4.80	< 4.85
Total Res. Chlorine	mg/L	< 0.05	0.09	0.06
Total Phosphorus	mg/L	0.056	0.011	0.011
TKN	mg/L	< 1.0	< 0.50	< 0.50
Nitrite + Nitrate-Nitrogen	mg/L	0.68 J	0.64 J	0.68 J
Total Dissolved Solids	mg/L	318	78	126
Color	Pt-Co Units	80	12.0	< 5.0
Bromide	mg/L	< 0.200	< 0.200	< 0.200
Chloride	mg/L	9.79	10.30	10.1
Sulfate	mg/L	54.7	56.1	62.0
Sulfide	mg/L	< 1.00	< 1.00	< 1.00

Table 72 (continued). Analytical Data Reported for Outfall 029

Parameter	Units	Sample 1 (3/29/2023)	Sample 2 (4/5/2023)	Sample 3 (4/12/2023)
Surfactants	mg/L	< 0.025	< 0.025	< 0.025
Fluoride	mg/L	0.26 J	0.225 J	0.244 J
Total Hardness as $CaCO_3$	mg/L	90.4	86.1	98.5

[1] pH data are summarized from January 2018 to March 2023.

084.B. Water Quality-Based Effluent Limitations (WQBELs)

Pollutant concentrations in Outfall 084's discharges (other than heat) are low, so there is no reasonable potential to cause or contribute to excursions above water quality criteria and no WQBELs are developed for toxic organics or inorganics.

Heat rejection rate limits representing the thermal discharge loading from Outfall 084 and Outfalls 023, 028, 029, 038, 069A, and 081 are imposed at Outfall 023. Reporting of each outfall's heat rejection rate also is required pursuant to 25 Pa. Code § 92a.61(b) to determine each outfall's portion of the aggregate, facility-wide thermal loadings.

084.C. Effluent Limitations and Monitoring Requirements for Outfall 084

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l) (incorporated in Pennsylvania's regulations at 25 Pa. Code § 92a.44), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable requirements are summarized in the following table.

Table 73. Effluent Limits and Monitoring Requirements for Outfall 084

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(b)
pH (s.u.)	—	—	6.0 (Inst. Min)	—	9.0	25 Pa. Code § 95.2(1), 40 § CFR 122.44(l), 25 Pa. Code § 92a.48(a)(3)
Heat Rejection Rate (MBTUs/day)	—	Report	—	—	—	25 Pa. Code § 92a.61(b)
Total Suspended Solids	—	—	Report	—	Report	25 Pa. Code § 92a.61(b)

Monitoring frequencies and sample types are imposed in accordance with Chapter 6, Table 6-4 of DEP's Permit Writers' Manual, DEP's Implementation Guidance for Temperature Criteria, and those specified in the previous permit. Flow must be measured 1/week; pH must be sampled 1/week using grab sampling; and the heat rejection rate must be calculated using continuous temperature measurements (i.e., paired intake and effluent temperature measurements to determine ΔT in the heat rejection rate formula: $H = Q \times (T_2 - T_1) \times 5.39$ lb-sec/ft^3-day).

Development of Effluent Limitations for Outfall 085

Outfall No.	085	**Design Flow (MGD)**	Variable
Latitude	40° 18' 22"	**Longitude**	-79° 52' 56"
Wastewater Description:	Storm water from catch basins west of former Battery 22 pusher pad and a section of B Roadway along the perimeter of the former Koppers plant, and fire protection water		

Outfall 085 discharges storm water runoff from an 95,832 sq. ft. area in and around former Battery 22 and portions of B Roadway. Discharges from Outfall 085 are currently subject to the following effluent limits and monitoring requirements.

Table 74. Outfall 085 – Current Effluent Limits and Monitoring Requirements

Parameter	Minimum	Average Monthly	IMAX	Units	Measurement Frequency	Sample Type	Limit Basis
pH	Report	—	Report	s.u.	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Residual Chlorine	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
COD	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Kjeldahl Nit.	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Cadmium	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Iron	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Lead	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Manganese	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)

The effluent limits in **Table 74** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

085.A. Technology-Based Effluent Limitations (TBELs)

There are no Federal ELGs that apply to Outfall 085's storm water discharges. In the absence of applicable ELGs, TBELs, if warranted, are developed based on Best Professional Judgment.

Consistent with 25 Pa. Code § 92a.61(h) and DEP's policy for permitting storm water discharges associated with industrial activities, the monitoring requirements and sector-specific BMPs of Appendix B of DEP's PAG-03 NPDES General Permit for Discharges of Stormwater Associated with Industrial Activity (see Table 18 in Section 001A.A of this Fact Sheet) are applied to Outfall 085's storm water discharges.

Outfall 085 is currently subject to different requirements than those specified in Appendix B of the PAG-03. TSS and iron are the only parameters from Appendix B of the PAG-03 that are currently monitored at Outfall 085. Total nitrogen, total phosphorus, oil and grease, aluminum, copper, lead, and zinc are not monitored. Reporting also is required at Outfall 085 for pH, TRC, COD, Total Kjeldahl Nitrogen, cadmium, and manganese—some of which are regulated in other discharges from the Clairton Plant based on 40 CFR Part 420 and were added to Outfall 085 to determine whether they are present in the facility's storm water. Monitoring frequencies for the newly added parameters (total nitrogen, total phosphorus, oil and grease, aluminum, copper, lead, and zinc) will be 1/6 months, unless available effluent data indicate that more frequent monitoring is warranted.

Two years of the most recent analytical results supplemented with analytical data from one sampling event collected on April 19, 2023 for the 2023 Application Update are summarized in **Table 75**. Averages are calculated using a lognormal distribution and, for mixed datasets consisting of detected and non-detect results, a delta-lognormal distribution is used. Where only one application result is available, the "average" is the reported result.

Table 75. Storm Water Analytical Results for Outfall 085

Parameter	Average Conc. (mg/L)	Parameter	Average Conc. (mg/L)
Oil and Grease	<4.8	Zinc, Total	0.348 †
BOD5	< 3.0	Benzo(a)Pyrene	< 0.0035 †
COD	169 †	Naphthalene	< 0.0029 †
TSS	262 †	Cadmium, Total	<0.010

Table 75 (cont'd). Storm Water Analytical Results for Outfall 085

Parameter	Average Conc. (mg/L)	Parameter	Average Conc. (mg/L)
Total Nitrogen	<2.41	Lead, Total	0.042 †
Total Phosphorus	0.075	Nitrate Nitrite as N	<1.26
pH (s.u.)	8.3 (median)	Total Kjeldahl Nitrogen	< 1.34 †
Ammonia-Nitrogen	<0.2	Phenolics, Total	0.065
Iron, Total	5.25 †	Free Cyanide	<0.005
Manganese, Total	0.610	Cyanide, Total	0.013

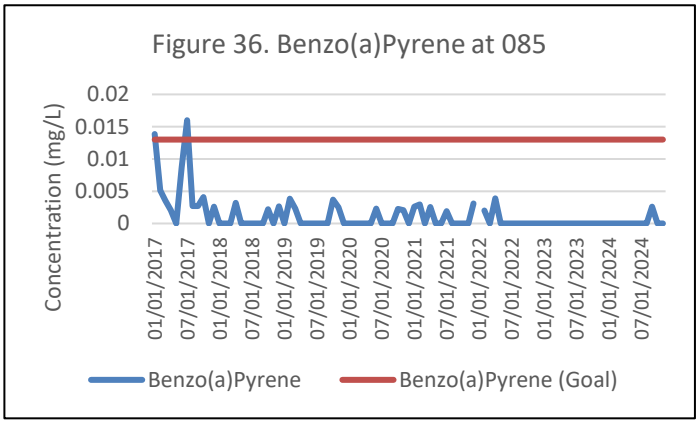
† Result is the average of a lognormal or delta-lognormal distribution of maximum daily results reported on DMRs from November 2022 – November 2024

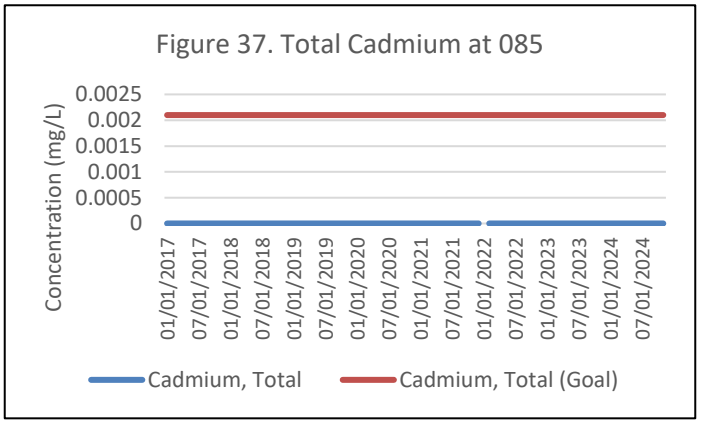
Based on the results in **Table 75**, no additional monitoring requirements are added to Outfall 085.

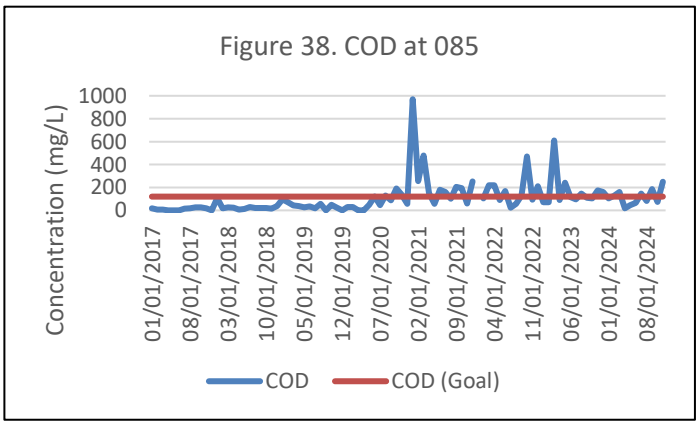
The monitoring frequencies for total nitrogen, total phosphorus, oil and grease, aluminum, copper, lead, and zinc each will be 1/6 months because results are either not available to evaluate whether more frequent monitoring is appropriate, or the reported concentrations are not elevated.

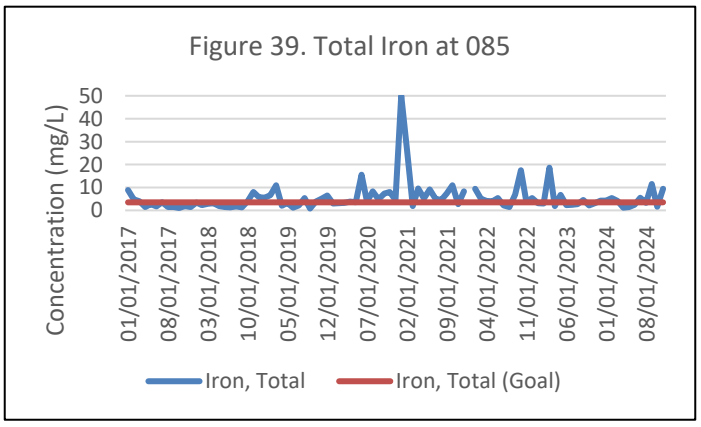
In the absence of ELGs, case-by-case TBELs are developed based on BPJ. The development of case-by-case TBELs using BPJ typically involves the evaluation of end-of-pipe wastewater treatment technologies. However, consistent with 40 CFR § 122.44(k)(2), DEP considers the use of BMPs to be BAT for storm water discharges associated with industrial activities unless effluent concentrations indicate that BMPs provide inadequate pollution control.

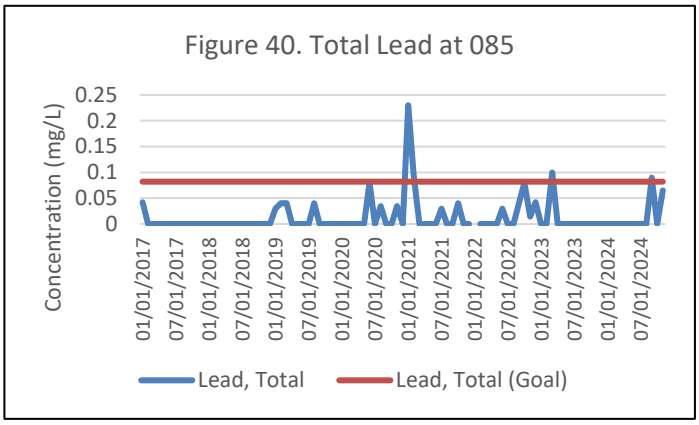
Figures 36 through 46 depict the reported effluent concentrations of pollutants monitored at Outfall 085 from January 2017 through June 2024. Effluent concentration goals from USS's current permit are shown for comparison where benchmark values are not identified in Appendix B of the PAG-03.

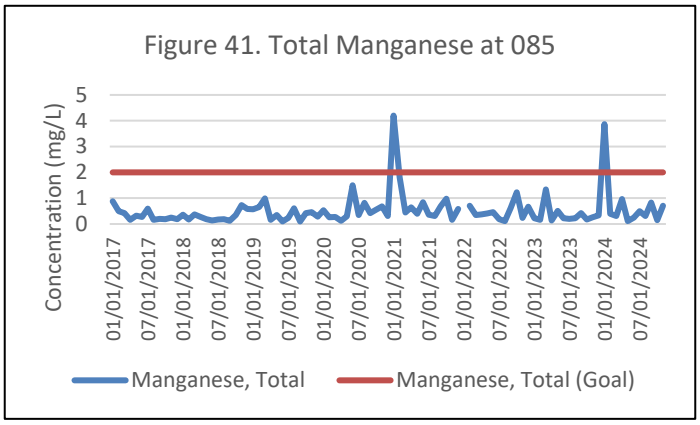


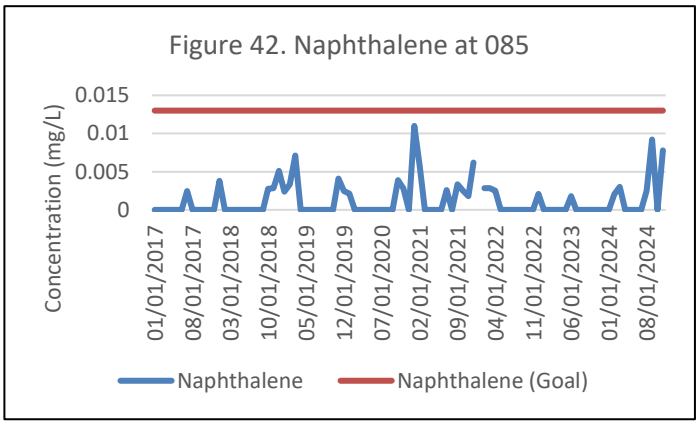


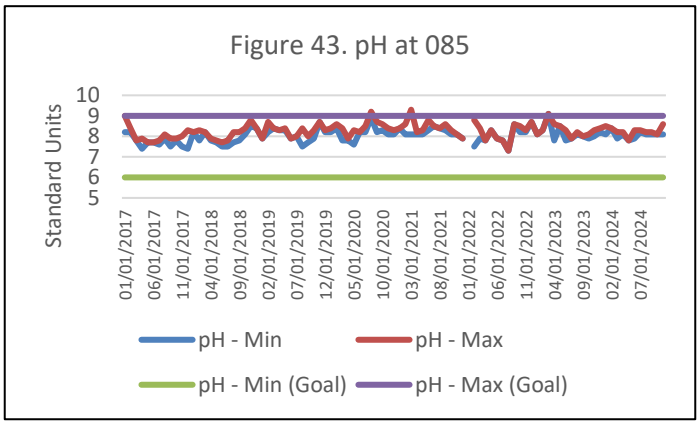


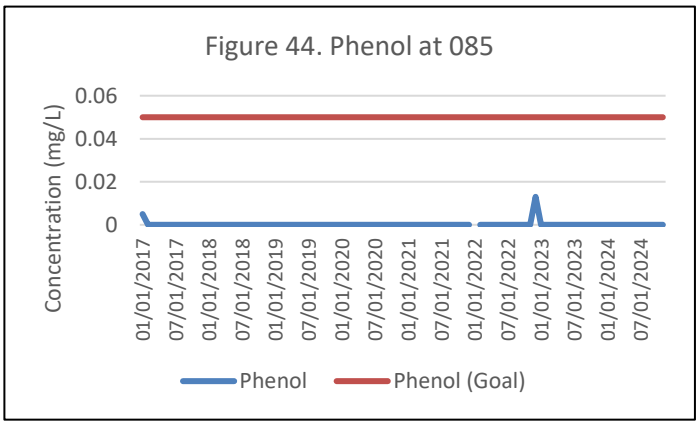


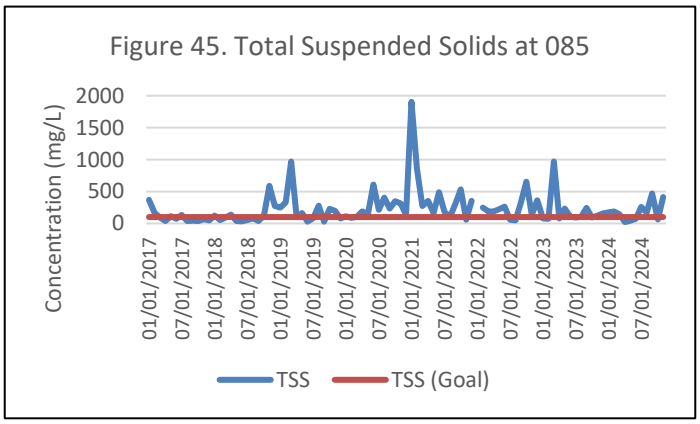


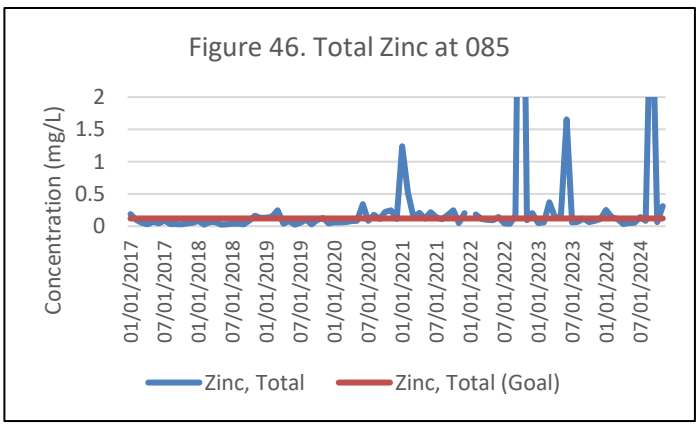












DMR data summarized in Figures 36 through 46 and in **Table 75** indicate that TSS, iron and zinc consistently exceed benchmark values/concentration goals. Appendix B of the PAG-03 identifies a benchmark value of 100 mg/L for TSS, which is exceeded about 65% of the time at Outfall 085. Using the permit's TSS concentration goal of 30 mg/L instead of the 100 mg/L benchmark value, TSS concentrations exceed 97% of the time. Similarly, 54% of results for Total Iron and 35% of results for Total Zinc exceed the permit's concentration goals of 3.5 mg/L and 0.12 mg/L for those parameters, respectively.

Note: 'Non-detect' values are shown as zero. No discharges were reported in January 2022.

Discharges from Outfall 085 have not been subject to the PAG-03 General Permit's 100 mg/L TSS benchmark value or the corresponding corrective action plan requirement, so USS will be given the opportunity to address elevated TSS concentrations in Outfall 085's discharges before DEP considers the need for numerical TBELs. Effluent limits for TSS will not be imposed at Outfall 085 for this permit renewal. Controlling TSS also should reduce iron and zinc concentrations, but the effluent concentration goals listed in USS's current permit for iron and zinc (3.5 mg/L and 0.12 mgL) will be adopted as the benchmark values for those parameters.

In the 2017 Application, USS requested that the sampling frequencies for pollutants that have met their corresponding concentration goals be reduced to 1/quarter. DEP agrees to a performance-based reduction of sampling frequencies for Benzo(a)Pyrene, Total Cadmium, Total Lead, Total Manganese, Phenol, TKN, TRC, and Naphthalene from 2/month to 1/6 months. The reductions are greater than the reductions recommended in EPA's "Interim Guidance for Performance-Based Reduction Of NPDES Permit Monitoring Frequencies" (Doc. No. EPA 833-B-96-001, April 1996), but will be consistent with the sampling frequencies for other parameters added based on Appendix B of the PAG-03 General Permit. The effluent concentration goals for those parameters currently specified for other outfalls in USS's permit (0.013 mg/L for Benzo(a)Pyrene and Naphthalene; 0.0021 mg/L for Total Cadmium, 0.082 mg/L for Total Lead, 2.0 mg/L for Total Manganese, and 0.05 mg/L for Phenol) will be adopted as benchmark values for those parameters subject to corrective action plan requirements when there are two consecutive exceedances.

Parameters that are not subject to monitoring frequency reductions will additionally require reporting of a semi-annual average concentration. If a parameter's semi-annual average concentration exceeds the corresponding benchmark value for two consecutive semi-annual periods, then the corrective action plan requirements will be triggered for those parameters.

Storm Water Pollution Prevention Plan (SWPPP)

In USS's March 2013 SWPPP, USS indicated that storm sewer cleanouts and street sweeping had decreased pollutant loadings to Outfall 085. The SWPPP also stated that pollutants loadings to Outfall 085 were decreased in 2004 when the roadway pavement was extended and a curb was installed around the perimeters of catch basins on the former Kopper's side of B-Roadway to prevent surface water from the gravel berm area from running into the catch basins. No other specific BMPs were proposed for Outfall 085. However, irrespective of USS's BMPs and other improvements in the vicinity of the former Battery 22 pusher pad, DMR data summarized in Figures 36 through 46 and in **Table 75** indicate that USS's storm water control measures do not remove pollutants to within benchmark values.

USS can explore other structural and non-structural control options if elevated concentrations persist and corrective action plans (and PPC Plan updates) are necessary under the terms of the renewed permit.

085.B. Water Quality-Based Effluent Limitations (WQBELs)

No modeling is performed (see Section 001A.B of this Fact Sheet). The combination of benchmark monitoring and BMPs including pollution prevention and exposure minimization, good housekeeping, erosion and sediment control, and spill prevention and response will ensure compliance with water quality standards.

Peters Creek Watershed TMDL

With respect to parameters of concern for the Peters Creek Watershed TMDL, monitoring is either already required (iron, manganese, and pH), or will be required under the renewed permit (aluminum). Based on data reported under the previous permit, manganese concentrations and pH values are not contributing to the impairment of Peters Creek because the reported values are less than applicable water quality criteria. However, iron concentrations are normally elevated with a long-term average concentration of 5.37 mg/L compared to an average in-stream criterion of 1.5 mg/L. As stated above, 54% of results reported for Total Iron exceed the permit's effluent concentration goal of 3.5 mg/L. Also, as shown in Figure 39, there has been no appreciable downward trend in iron concentrations. To facilitate reductions in total iron that may contribute to the impairment of Peters Creek, the existing 3.5 mg/L effluent concentration goal will be adopted as a benchmark value subject to the permit's storm water corrective action plan requirements. DEP considers this implementation methodology to be consistent with 40 CFR § 122.44(d)(1)(vii)(B).

085.C. Effluent Limitations and Monitoring Requirements for Outfall 085

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l) (incorporated in Pennsylvania's regulations at 25 Pa. Code § 92a.44), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-

backsliding discussed previously in this Fact Sheet. No TBELs are imposed at Outfall 085 (other than BMPs) and no WQBELs apply at this time, so monitoring and reporting requirements are the most stringent requirements.

Table 76. Effluent Limits and Monitoring Requirements for Outfall 085

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
pH (S.U.)	—	—	Report (Inst. Min.)	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Chemical Oxygen Demand (COD)	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	Report	—	25 Pa. Code § 92a.61(h)
Oil and Grease	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Aluminum, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Cadmium, Total	—	—	—	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Copper, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Iron, Total	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Lead, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Manganese, Total	—	—	—	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Zinc, Total	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Nitrogen, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Total Residual Chlorine	—	—	—	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Total Kjeldahl Nitrogen	—	—	—	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Phosphorus, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Benzo(a)Pyrene	—	—	—	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Naphthalene	—	—	—	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Phenol	—	—	—	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)

The monitoring frequency and sample type for pH, TSS, COD, Total Iron, and Total Zinc will remain unchanged (2/month grab sampling). The remaining parameters will require 1/6 months grab sampling. Semi-annual average concentrations must be calculated based on the 2/month sampling results for each half year.

Development of Effluent Limitations for Outfall 085A

Outfall No. 085A (985) **Design Flow (MGD)** Variable
Latitude 40° 18' 23" **Longitude** -79° 52' 56"
Wastewater Description: Groundwater treated by the Mendelssohn sewer treatment facility

Mendelssohn Street Storm Sewer Groundwater Collection System (Mendelssohn System)

The Mendelssohn Street storm sewer was a 42-inch-diameter storm sewer that transported storm water from the City of Clairton underneath the former Tar Plant Area into Peters Creek. The sources of flow to the Mendelssohn Street storm sewer included a 24-inch diameter and 42-inch diameter pipe for storm water runoff from the City of Clairton; a 42-inch diameter pipe for storm water runoff from the City of Clairton and a Norfolk Southern Railroad right-of-way; and an 18-inch diameter pipe for storm water runoff from roof drains and a parking lot area of the Tar Plant Area (formerly Koppers, Inc.'s Clairton Plant). Due to integrity issues in the sewer wall, impacted groundwater from the Tar Plant Area began infiltrating the storm sewer and caused compliance issues at the sewer's outfall to Peters Creek. [16]

Ultimately, the contaminated discharge was addressed by constructing a new separate storm sewer line near the Norfolk Southern Rail Line to convey storm water from the City of Clairton and the Norfolk Southern right-of-way directly to Peters Creek. Upon completion, ownership of the new separate storm sewer line transferred to the City of Clairton. The remaining portion of the Mendelssohn sewer was plugged where the 24" and 42" pipes entered the sewer line and at the final discharge location to create an isolated groundwater collection system approximately 600 feet long. Contaminated groundwater now accumulates in an existing sump where a single pump operates on a high-level float switch. Once water levels within the sump activate the automated high-level pump system, impacted water is transferred from the sump through conveyance piping to USS's Contaminated Water Treatment Plant for treatment and discharge through IMP 183 and then Outfall 038.

USS acquired ownership of the former Tar Plant Area in June 2021 and continues to operate and maintain the Mendelssohn System. USS's obligations and the release of Commercial Liability Partners, LLC (an environmental liability transfer company that owned the Tar Plant Area after Koppers, Inc.) for the Mendelssohn System were memorialized in a Consent Order and Agreement finalized on January 14, 2022.

Under emergency conditions, Outfall 085A would receive groundwater from the Mendelssohn System. Discharges from Outfall 085A are currently subject to the following effluent limits and monitoring requirements.

Table 77. Outfall 085A – Current Effluent Limits and Monitoring Requirements

Parameter	Minimum	Average Monthly	IMAX	Units	Measurement Frequency	Sample Type	Limit Basis
Flow	—	Report	Report	MGD	2/discharge	Measured	25 Pa. Code § 92a.61(h)
pH	6.0	—	9.0	s.u.	2/discharge	Grab	25 Pa. Code § 92a.61(h)
TSS	—	30	75	mg/L	2/discharge	Grab	25 Pa. Code § 92a.61(h)
Oil and Grease	—	15	30	mg/L	2/discharge	Grab	25 Pa. Code § 92a.61(h)
Benzene	—	0.001	0.0025	mg/L	2/discharge	Grab	25 Pa. Code § 92a.61(h)
Naphthalene	—	0.3	0.75	mg/L	2/discharge	Grab	25 Pa. Code § 92a.61(h)

The effluent limits in **Table 77** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

085A.A. Technology-Based Effluent Limitations (TBELs)

There are no Federal Effluent Limitations Guidelines (ELGs) that apply to Outfall 085A's discharges. In the absence of applicable ELGs, TBELs, if warranted, are developed based on Best Professional Judgment.

Effluent limits for Outfall 085A were imposed in the previous permit based, in part, on DEP's PAG-05 General Permit for Discharges from Petroleum Product Contaminated Groundwater Remediation Systems. The current PAG-05's effluent limits for groundwater contaminated with petroleum products other than gasoline are summarized in the following table.

[16] APTIM, 2022. *Groundwater Monitoring Control Plan: United States Steel Corporation – Clairton Works*. Technical report dated January 28, 2022.

Effluent Limitations and Monitoring Requirements – Groundwater Contaminated with Other Petroleum Products

Parameter	Effluent Limitations				Monitoring Requirements	
	Mass	Concentrations			Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Minimum	Average Monthly	Instant. Maximum		
Flow (MGD)	Report	—	—	—	1/month	Measured
Benzene (mg/L)	—	—	0.001	0.0025	1/month	Grab
Total BTEX (mg/L)	—	—	0.1	0.25	1/month	Grab
Total Suspended Solids (mg/L)	—	—	30	75	1/month	Grab
pH (S.U.)	—	6.0	—	9.0	1/month	Grab
Oil and Grease (mg/L)	—	—	15	30	1/month	Grab
Dissolved Iron (mg/L)	—	—	—	7.0	1/year	Grab

Total BTEX and Dissolved Iron limits were not imposed in the previous permit and were not discussed in the accompany permit documentation. Presumably those parameters were not identified as parameters of concern for the Tar Plant Area.

In the 2001 NPDES permit, limits for naphthalene were imposed based on limits in a January 21, 2000 temporary discharge approval letter that authorized temporary discharges of treated groundwater from the BTX Trench and the Mendelssohn Sewer. USS has not reported any discharges from Outfall 085A since at least January 2017 and there have been no substantial changes in the characteristics of the impacted groundwater (despite upgrades to the system), so no TBELs are added or removed.

085A.B. Water Quality-Based Effluent Limitations (WQBELs)

USS has not reported any discharges from Outfall 085A since at least January 2017. There were substantial upgrades to the Mendelssohn System in 2020 and 2021 including new pumps in the three recovery wells, new control panels, new liquid level induction control relays, new electrode level sensors, and new sampling ports and transfer piping for each recovery well. The upgrades resulted in an increased flow rate from the recovery wells, but the recovered groundwater continues to flow to the Contaminated Water Treatment Plant. Based on those circumstances, discharges from Outfall 085A do not have a reasonable potential to cause or contribute to excursions above water quality criteria. Therefore, no WQBELs are developed for Outfall 085A.

Peters Creek Watershed TMDL

Consistent with DEP's observation that USS has not reported any discharges from Outfall 085A since at least January 2017 and DEP's determination that discharges from Outfall 085A do not have a reasonable potential to cause or contribute to excursions above water quality criteria, no TMDL WQBELs are imposed at Outfall 085A. However, monitoring will be required for total aluminum, total iron, and total manganese (if discharges do occur) to determine whether additional controls on TMDL parameters are needed.

085A.C. Effluent Limitations and Monitoring Requirements for Outfall 085A

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l) (incorporated in Pennsylvania's regulations at 25 Pa. Code § 92a.44), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable requirements are summarized in the following table.

Table 78. Effluent Limits and Monitoring Requirements for Outfall 085A

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
pH (s.u.)	—	—	6.0 (Inst. Min.)	—	9.0	25 Pa. Code § 95.2(1), 40 § CFR 122.44(l), 25 Pa. Code § 92a.48(a)(3), 40 § CFR 122.44(l), PAG-05 General Permit
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(b)
Total Suspended Solids	—	—	30.0	—	75.0	25 Pa. Code § 92a.48(a)(3), 40 § CFR 122.44(l); PAG-05 General Permit
Oil and Grease	—	—	15.0	—	30.0	

Table 78 (cont'd). Effluent Limits and Monitoring Requirements for Outfall 085

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Benzene	—	—	0.001	—	0.0025	25 Pa. Code § 92a.48(a)(3), 40 § CFR 122.44(l); PAG-05 General Permit
Naphthalene	—	—	0.3	—	0.75	
Aluminum, Total	—	—	Report	—	Report	25 Pa. Code § 92a.61(b)
Iron, Total	—	—	Report	—	Report	25 Pa. Code § 92a.61(b)
Manganese, Total	—	—	Report	—	Report	25 Pa. Code § 92a.61(b)

The monitoring frequencies and sample types are maintained from the previous permit including 2/discharge measurement of flow and 2/discharge grab sampling for TSS, Oil and Grease, Benzene, Naphthalene, and pH. Aluminum, iron, and manganese will require 2/discharge grab sampling.

Development of Effluent Limitations for Outfall 086

Outfall No.	086	**Design Flow (MGD)**	Variable
Latitude	40° 18' 20"	**Longitude**	-79° 52' 54"

Wastewater Description: Storm water from catch basins west of former Battery 21 pusher pad and a section of B Roadway along the perimeter of the former Koppers plant, and fire protection water

Outfall 086 discharges storm water runoff from a 126,324 sq. ft. area in and around former Battery 21 and portions of B Roadway. Discharges from Outfall 086 are currently subject to the following effluent limits and monitoring requirements.

Table 79. Outfall 086 – Current Effluent Limits and Monitoring Requirements

Parameter	Minimum	Average Monthly	IMAX	Units	Measurement Frequency	Sample Type	Limit Basis
pH	—	Report	Report	S.U.	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Residual Chlorine	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Kjeldahl Nitrogen	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Free Available Cyanide	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Cyanide	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Iron	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Lead	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Manganese	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Zinc	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Phenol	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Benzo(a)Pyrene	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Phenolics, Total	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)

The effluent limits in **Table 79** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

086.A. Technology-Based Effluent Limitations (TBELs)

There are no Federal ELGs that apply to Outfall 086's storm water discharges. In the absence of applicable ELGs, TBELs, if warranted, are developed based on Best Professional Judgment.

Consistent with 25 Pa. Code § 92a.61(h) and DEP's policy for permitting storm water discharges associated with industrial activities, the monitoring requirements and sector-specific BMPs of Appendix B of DEP's PAG-03 NPDES General Permit for Discharges of Stormwater Associated with Industrial Activity (see Table 18 in Section 001A.A of this Fact Sheet) are applied to Outfall 086's storm water discharges.

Outfall 086 is currently subject to different requirements than those specified in Appendix B of the PAG-03. TSS, iron, lead, zinc are the only parameters from Appendix B of the PAG-03 that are currently monitored at Outfall 086. Total nitrogen, total phosphorus, oil and grease, aluminum, and copper are not monitored. Reporting also is required at Outfall 086 for pH, TRC, Total Kjeldahl Nitrogen, free available cyanide, total cyanide, manganese, benzo(a)pyrene, and total phenolics—some of which are regulated in other discharges from the Clairton Plant based on 40 CFR Part 420 and were added to Outfall 086 to determine whether they are present in the facility's storm water. Monitoring frequencies for the newly added parameters (total nitrogen, total phosphorus, oil and grease, aluminum, and copper) will be 1/6 months, unless available effluent data indicate that more frequent monitoring is warranted.

Two years of the most recent analytical results supplemented with analytical data from one sampling event collected on April 19, 2023 for the 2023 Application Update are summarized in **Table 80**. Averages are calculated using a lognormal distribution and, for mixed datasets consisting of detected and non-detect results, a delta-lognormal distribution is used. Where only one application result is available, the "average" is the reported result.

Table 80. Storm Water Analytical Results for Outfall 086

Parameter	Average Conc. (mg/L)	Parameter	Average Conc. (mg/L)
Oil and Grease	<4.9	Zinc, Total	0.402 †
BOD5	< 3.0	Benzo(a)Pyrene	< 0.0025 †

Table 80 (cont'd). Storm Water Analytical Results for Outfall 086

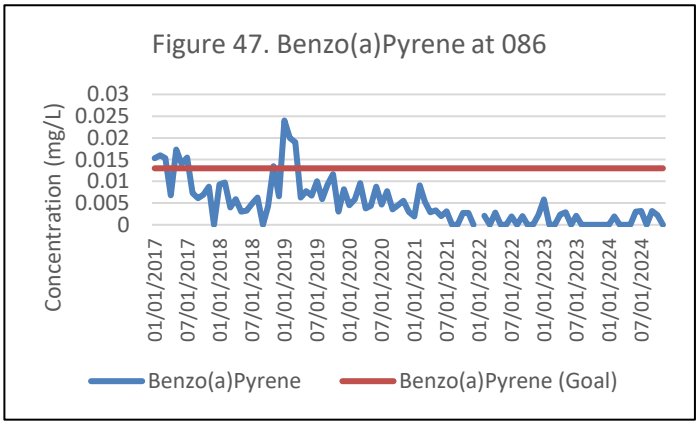
Parameter	Average Conc. (mg/L)	Parameter	Average Conc. (mg/L)
COD	340	Naphthalene	< 0.001
TSS	466 †	Cadmium, Total	<0.004
Total Nitrogen	<3.77	Lead, Total	0.053 †
Total Phosphorus	0.330	Nitrate Nitrite as N	1.27
pH (s.u.)	8.3 (median)	Total Kjeldahl Nitrogen	< 1.75 †
Ammonia-Nitrogen	<0.20	Phenolics, Total	0.011 †
Iron, Total	9.36 †	Free Cyanide	0.0021 †
Manganese, Total	0.703 †	Cyanide, Total	0.029 †

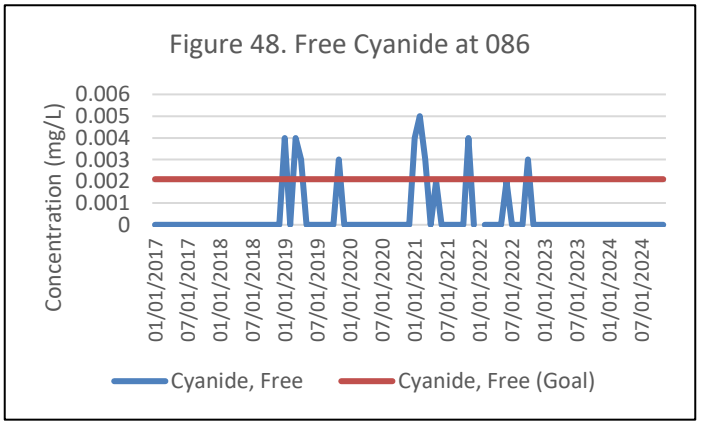
† Result is the average of a lognormal or delta-lognormal distribution of maximum daily results reported on DMRs from June 2022 – June 2024

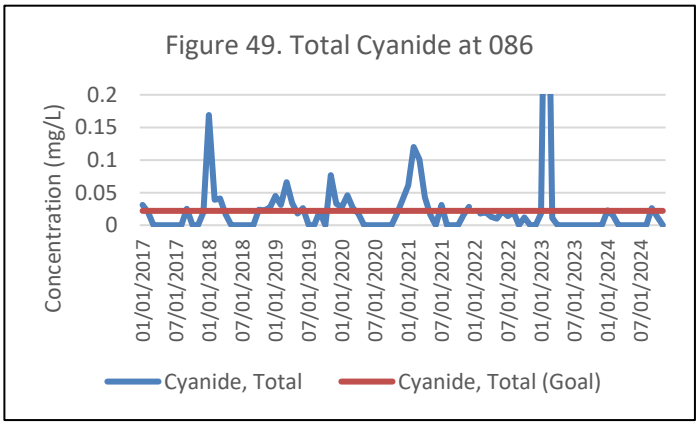
Based on the results in **Table 80**, semi-annual monitoring and reporting will be required for COD. COD is not part of the baseline monitoring requirements from Appendix B of the PAG-03, but the reported concentration is elevated compared to the COD benchmark value of 120 mg/L identified in other appendices of the PAG-03. The monitoring frequency for COD will be 1/6 months. The monitoring frequencies for total nitrogen, total phosphorus, oil and grease, aluminum, and copper each will be 1/6 months because results are either not available to evaluate whether more frequent monitoring is appropriate, or the reported concentrations are not elevated.

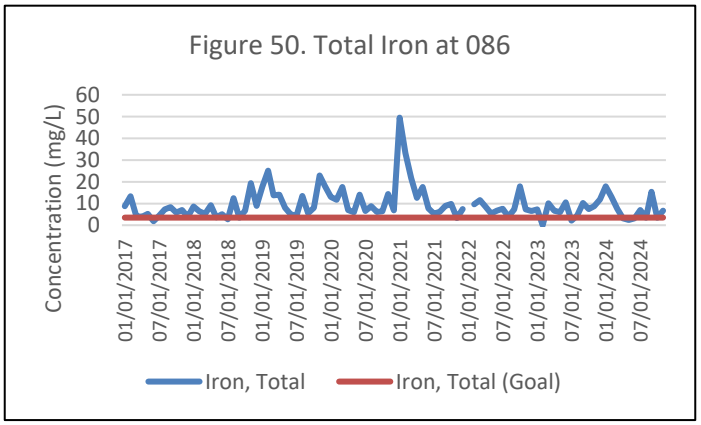
In the absence of ELGs, case-by-case TBELs are developed based on BPJ. The development of case-by-case TBELs using BPJ typically involves the evaluation of end-of-pipe wastewater treatment technologies. However, consistent with 40 CFR § 122.44(k)(2), DEP considers the use of BMPs to be BAT for storm water discharges associated with industrial activities unless effluent concentrations indicate that BMPs provide inadequate pollution control.

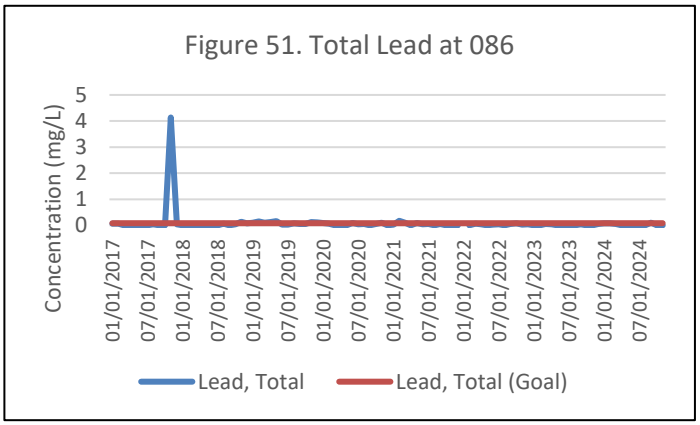
Figures 47 through 57 depict the reported effluent concentrations of pollutants monitored at Outfall 022 from January 2017 through June 2024. Effluent concentration goals from USS's current permit are shown for comparison where benchmark values are not identified in Appendix B of the PAG-03.

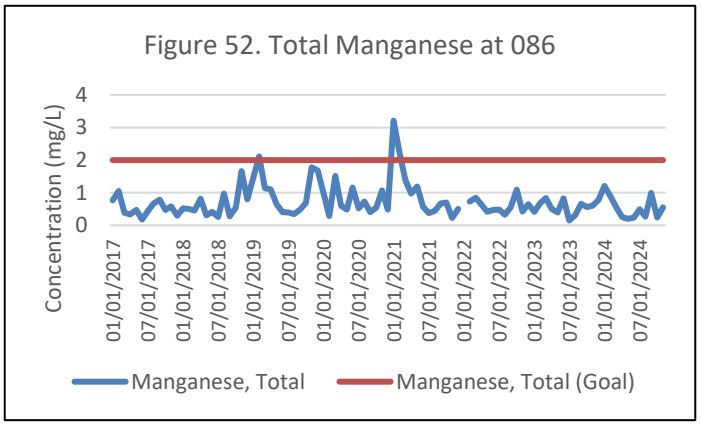


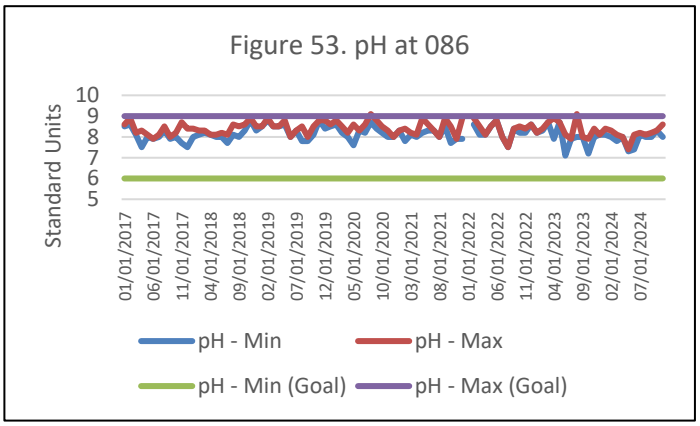


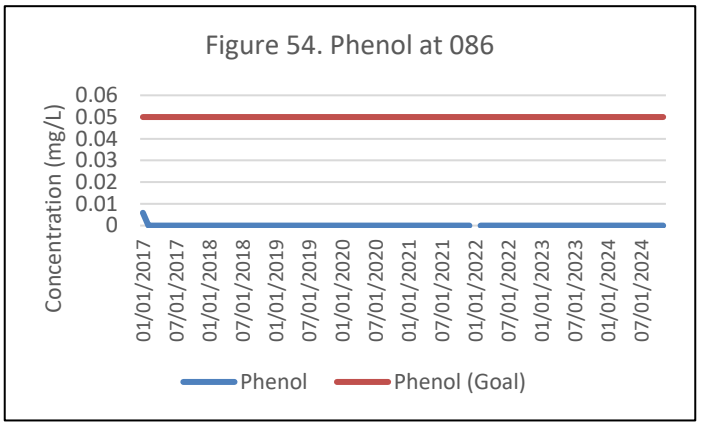


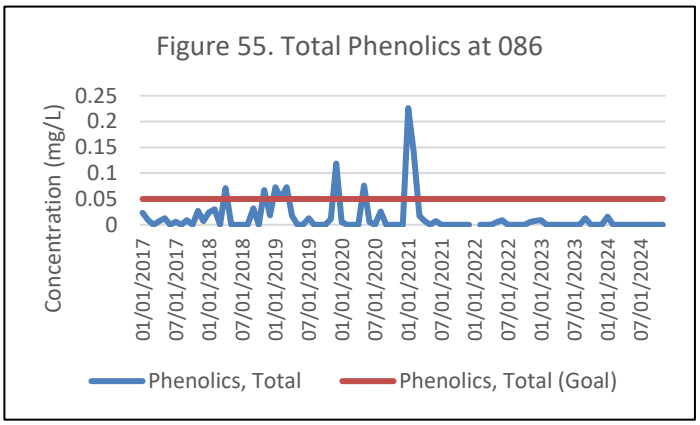


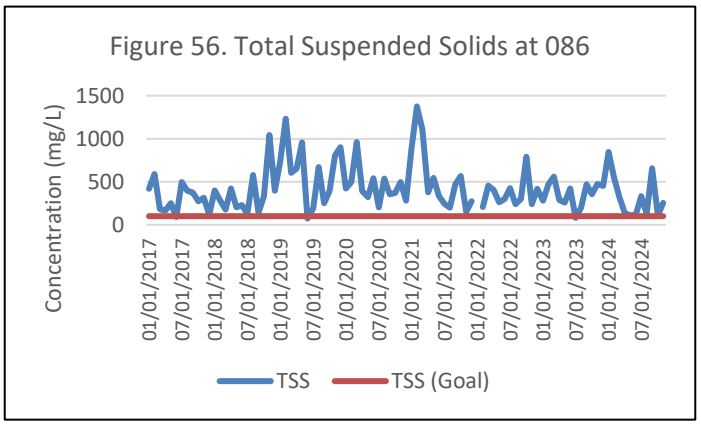


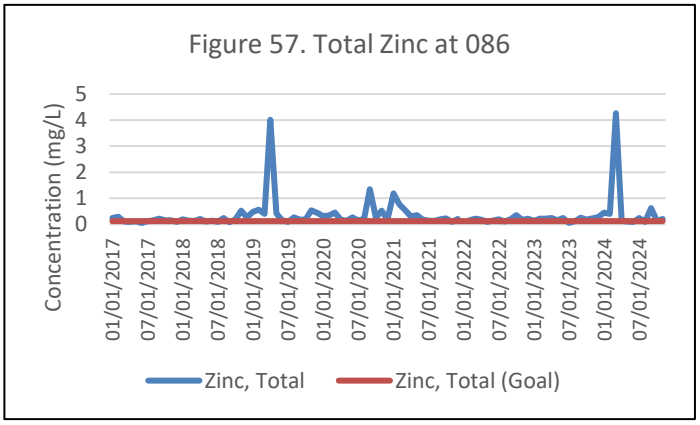












Note: 'Non-detect' values are shown as zero. No discharges were reported in January 2022.

DMR data summarized in Figures 47 through 57 and in **Table 80** indicate that TSS, iron, zinc, and total cyanide consistently exceed benchmark values/concentration goals. Appendix B of the PAG-03 identifies a benchmark value of 100 mg/L for TSS, which is exceeded about 97% of the time at Outfall 086. Using the permit's TSS concentration goal of 30 mg/L instead of the 100 mg/L benchmark value, TSS concentrations exceed 100% of the time. Similarly, 88% of results for Total Iron, 82% of results for Total Zinc, and 30% of results for total cyanide exceed the permit's concentration goals of 3.5 mg/L, 0.12 mg/L, and 0.022 mg/L for those parameters, respectively.

Discharges from Outfall 086 have not been subject to the PAG-03 General Permit's 100 mg/L TSS benchmark value or the corresponding corrective action plan requirement, so USS will be given the opportunity to address elevated TSS concentrations in Outfall 086's discharges before DEP considers the need for numerical TBELs. Effluent limits for TSS will not be imposed at Outfall 086 for this permit renewal. Controlling TSS also should reduce iron and zinc concentrations. However, the effluent concentration goals listed in USS's current permit for iron, zinc, and total cyanide at other outfalls (3.5 mg/L, 0.12 mg/L, and 0.022 mg/L) will be adopted as the benchmark values for those parameters. Corrective action plans will be required for consecutive exceedances of the benchmark values.

In the 2017 Application, USS requested that the sampling frequencies for pollutants that have met their corresponding concentration goals be reduced to 1/quarter. DEP agrees to a performance-based reduction of sampling frequencies for Benzo(a)Pyrene, Total Lead, Total Manganese, Phenol, Total Phenolics, TKN, and TRC from 2/month to 1/6 months. The reductions are greater than the reductions recommended in EPA's "Interim Guidance for Performance-Based Reduction Of NPDES Permit Monitoring Frequencies" (Doc. No. EPA 833-B-96-001, April 1996), but will be consistent with the sampling frequencies for other parameters added based on Appendix B of the PAG-03 General Permit. The effluent concentration goals for those parameters currently specified for other outfalls in USS's permit (0.013 mg/L for Benzo(a)Pyrene, 0.082 mg/L for Total Lead, 2.0 mg/L for Total Manganese, and 0.05 mg/L for Phenol and Total Phenolics) will be adopted as benchmark values for those parameters subject to corrective action plan requirements when there are two consecutive exceedances.

Parameters that are not subject to monitoring frequency reductions will additionally require reporting of a semi-annual average concentration. If a parameter's semi-annual average concentration exceeds the corresponding benchmark value for two consecutive semi-annual periods, then the corrective action plan requirements will be triggered for those parameters.

Storm Water Pollution Prevention Plan (SWPPP)

In USS's March 2013 SWPPP, USS indicated that storm sewer cleanouts and street sweeping had decreased pollutant loadings to Outfall 086. The SWPPP also stated that pollutants loadings to Outfall 086 were decreased in 2004 when the roadway pavement was extended and a curb was installed around the perimeters of catch basins on the former Kopper's side of B-Roadway to prevent surface water from the gravel berm area from running into the catch basins. No other specific BMPs were proposed for Outfall 086. However, irrespective of USS's BMPs and other improvements in the vicinity of the former Battery 21 pusher pad, DMR data summarized in Figures 47 through 57 and in **Table 80** indicate that USS's storm water control measures do not remove pollutants to within benchmark values.

USS can explore other structural and non-structural control options if elevated concentrations persist and corrective action plans (and PPC Plan updates) are necessary under the terms of the renewed permit.

086.B. Water Quality-Based Effluent Limitations (WQBELs)

No modeling is performed (see Section 001A.B of this Fact Sheet). The combination of benchmark monitoring and BMPs including pollution prevention and exposure minimization, good housekeeping, erosion and sediment control, and spill prevention and response will ensure compliance with water quality standards.

Peters Creek Watershed TMDL

With respect to parameters of concern for the Peters Creek Watershed TMDL, monitoring is either already required (iron, manganese, and pH), or will be required under the renewed permit (aluminum). Based on data reported under the previous permit, manganese concentrations and pH values are not contributing to the impairment of Peters Creek because the reported values are less than applicable water quality criteria. However, iron concentrations are normally elevated with a long-term average concentration of 9.6 mg/L compared to an average in-stream criterion of 1.5 mg/L. As stated above, 89.9% of results reported for Total Iron exceed the permit's effluent concentration goal of 3.5 mg/L. Also, as shown in Figure 48, there has been no appreciable downward trend in iron concentrations. To facilitate reductions in total iron that may contribute to the impairment of Peters Creek, the existing 3.5 mg/L effluent concentration goal will be adopted as a benchmark value subject to the permit's storm water corrective action plan requirements. DEP considers this implementation methodology to be consistent with 40 CFR § 122.44(d)(1)(vii)(B).

086.C. Effluent Limitations and Monitoring Requirements for Outfall 086

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l) (incorporated in Pennsylvania's regulations at 25 Pa. Code § 92a.44), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit

renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. No TBELs are imposed at Outfall 086 (other than BMPs) and no WQBELs apply at this time, so monitoring and reporting requirements are the most stringent requirements.

Table 81. Effluent Limits and Monitoring Requirements for Outfall 086

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
pH (S.U.)	—	—	Report (Inst. Min.)	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Total Residual Chlorine	—	—	—	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Chemical Oxygen Demand (COD)	—	—	—	Report	—	25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Oil and Grease	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Nitrogen, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Total Kjeldahl Nitrogen	—	—	—	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Phosphorus, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Cyanide, Free	—	—	—	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Cyanide, Total	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Oil and Grease	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Aluminum, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Cadmium, Total	—	—	—	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Copper, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Iron, Total	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Lead, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Manganese, Total	—	—	—	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Zinc, Total	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Phenol	—	—	—	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Benzo(a)Pyrene	—	—	—	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Phenols, Total	—	—	—	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)

The monitoring frequency and sample type for pH, TSS, Total Cyanide, Total Iron, Total Zinc and pH will remain unchanged (2/month grab sampling). The remaining parameters will require 1/6 months grab sampling. Semi-annual average concentrations must be calculated based on the 2/month sampling results for each half year.

Development of Effluent Limitations for Outfall 087

Outfall No. 087 **Design Flow (MGD)** Variable
Latitude 40° 18' 18" **Longitude** -79° 52' 53"
Wastewater Description: Storm water from the Coke Works Office Building and parking lot

Outfall 087 discharges storm water runoff from an 104,544 sq. ft. area that includes the Coke Works Office Building and parking lot. Discharges from Outfall 087 are currently subject to the following effluent limits and monitoring requirements.

Table 82. Outfall 087 – Current Effluent Limits and Monitoring Requirements

Parameter	Minimum	Average Monthly	IMAX	Units	Measurement Frequency	Sample Type	Limit Basis
Total Suspended Solids	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Oil and Grease	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Kjeldahl Nitrogen	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Iron	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Manganese	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Zinc	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Benzo(a)Pyrene	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Naphthalene	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)

The effluent limits in **Table 82** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

087.A. Technology-Based Effluent Limitations (TBELs)

There are no Federal ELGs that apply to Outfall 087's storm water discharges. In the absence of applicable ELGs, TBELs, if warranted, are developed based on Best Professional Judgment.

Consistent with 25 Pa. Code § 92a.61(h) and DEP's policy for permitting storm water discharges associated with industrial activities, the monitoring requirements and sector-specific BMPs of Appendix B of DEP's PAG-03 NPDES General Permit for Discharges of Stormwater Associated with Industrial Activity (see Table 18 in Section 001A.A of this Fact Sheet) are applied to Outfall 087's storm water discharges.

Outfall 087 is currently subject to different requirements than those specified in Appendix B of the PAG-03. TSS, Oil and Grease, iron, and zinc are the only parameters from Appendix B of the PAG-03 that are currently monitored at Outfall 087. Total nitrogen, total phosphorus, aluminum, copper, and lead are not monitored. Reporting also is required at Outfall 087 for Total Kjeldahl Nitrogen, manganese, benzo(a)pyrene, and naphthalene—some of which are regulated in other discharges from the Clairton Plant based on 40 CFR Part 420 and were added to Outfall 087 to determine whether they are present in the facility's storm water. Monitoring frequencies for the newly added parameters (total nitrogen, total phosphorus, oil and grease, aluminum, copper, and lead) will be 1/6 months, unless available effluent data indicate that more frequent monitoring is warranted.

Two years of the most recent analytical results supplemented with analytical data from one sampling event collected on April 19, 2023 for the 2023 Application Update are summarized in **Table 83**. Averages are calculated using a lognormal distribution and, for mixed datasets consisting of detected and non-detect results, a delta-lognormal distribution is used. Where only one application result is available, the "average" is the reported result.

Table 83. Storm Water Analytical Results for Outfall 087

Parameter	Average Conc. (mg/L)	Parameter	Average Conc. (mg/L)
Oil and Grease	<5.0 †	Zinc, Total	0.140 †
BOD5	< 3.0	Benzo(a)Pyrene	< 0.0026 †
COD	38.3	Naphthalene	< 0.0029 †
TSS	51.2 †	Cadmium, Total	<0.004
Total Nitrogen	<1.52	Lead, Total	<0.008
Total Phosphorus	0.040	Nitrate Nitrite as N	1.02

Table 83 (cont'd). Storm Water Analytical Results for Outfall 087

Parameter	Average Conc. (mg/L)	Parameter	Average Conc. (mg/L)
pH (s.u.)	7.7	Total Kjeldahl Nitrogen	< 1.78 †
Ammonia-Nitrogen	<0.20	Phenolics, Total	0.105
Iron, Total	1.66 †	Free Cyanide	<0.005
Manganese, Total	0.207 †	Cyanide, Total	0.001

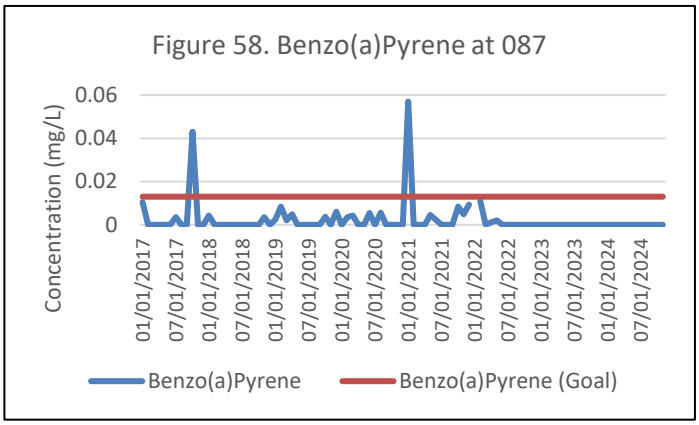
† Result is the average of a lognormal or delta-lognormal distribution of maximum daily results reported on DMRs from November 2022 – November 2024

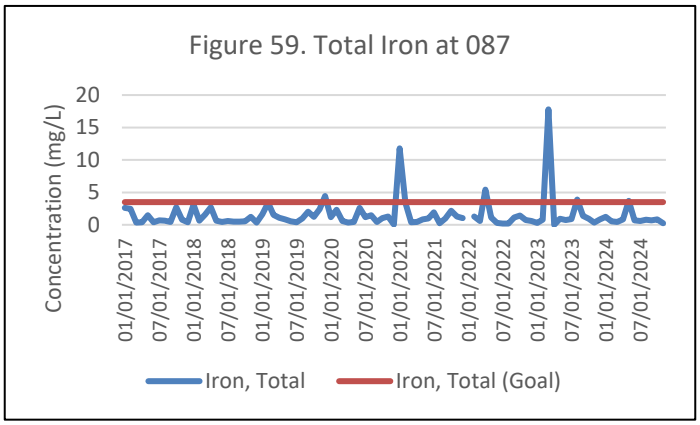
Based on the results in **Table 83**, no additional monitoring requirements are added to Outfall 087.

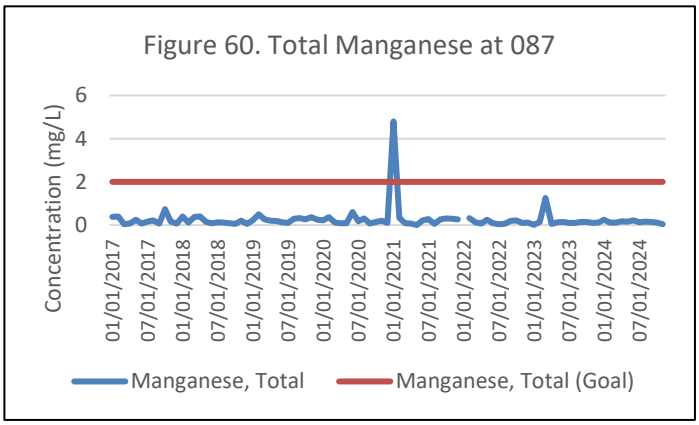
The monitoring frequencies for total nitrogen, total phosphorus, oil and grease, aluminum, copper, and lead each will be 1/6 months because results are either not available to evaluate whether more frequent monitoring is appropriate, or the reported concentrations are not elevated.

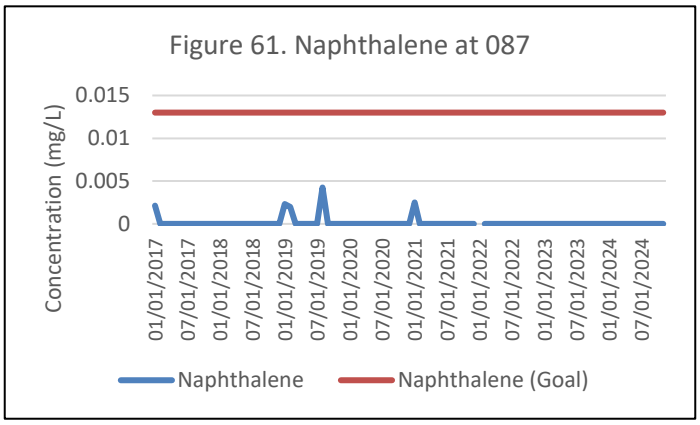
In the absence of ELGs, case-by-case TBELs are developed based on BPJ. The development of case-by-case TBELs using BPJ typically involves the evaluation of end-of-pipe wastewater treatment technologies. However, consistent with 40 CFR § 122.44(k)(2), DEP considers the use of BMPs to be BAT for storm water discharges associated with industrial activities unless effluent concentrations indicate that BMPs provide inadequate pollution control.

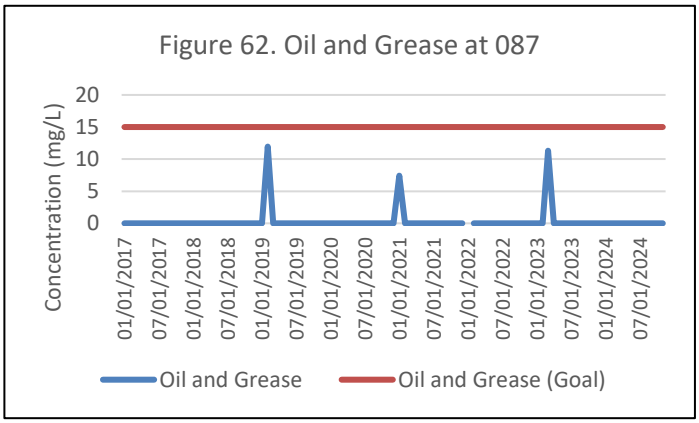
Figures 58 through 65 depict the reported effluent concentrations of pollutants monitored at Outfall 022 from January 2017 through June 2024. Effluent concentration goals from USS's current permit are shown for comparison where benchmark values are not identified in Appendix B of the PAG-03.

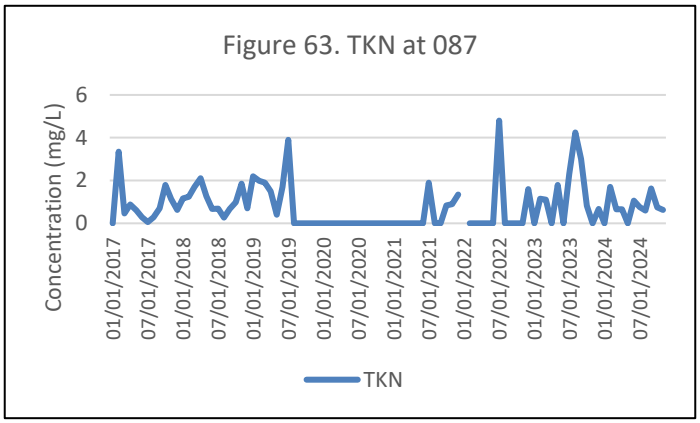


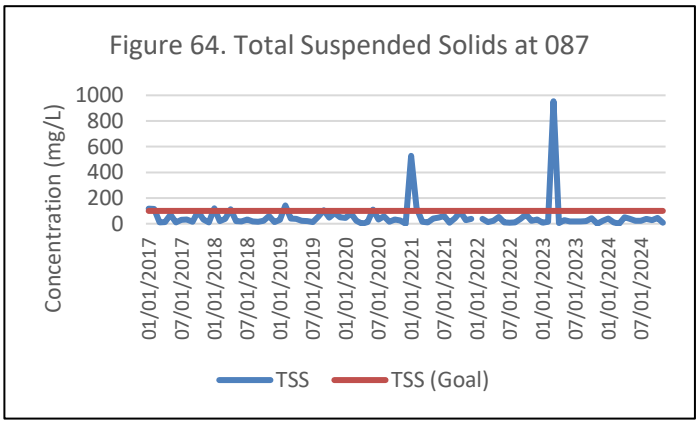


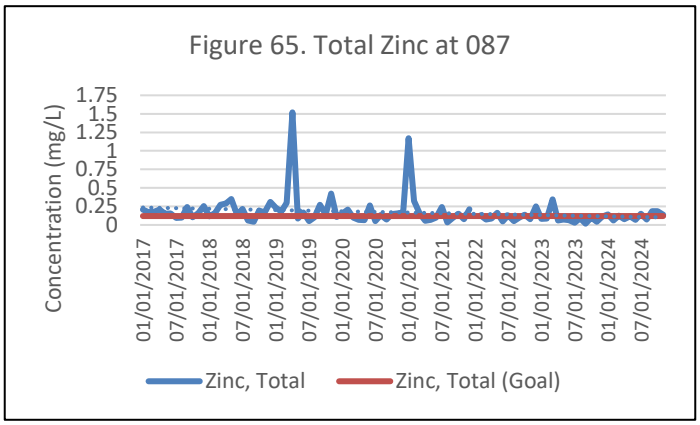












Note: 'Non-detect' values are shown as zero. No discharges were reported in January 2022.

DMR data summarized in Figures 58 through 65 and in **Table 83** indicate that zinc concentrations exceeded the corresponding concentration goal for zinc in the current permit about 54% of the time. However, concentrations have generally trended downward. The next parameters that exceed benchmark values/concentration goals most frequently at Outfall 087 are TSS (11% of results exceeding 100 mg/L) and iron (about 6% of results exceeding 3.5 mg/L).

In the 2017 Application, USS requested that the sampling frequencies for pollutants that have met their corresponding concentration goals be reduced to 1/quarter. DEP agrees to a performance-based reduction of sampling frequencies for Oil and Grease, Benzo(a)Pyrene, Naphthalene, Total Manganese, TKN from 2/month to 1/6 months. The reductions are greater than the reductions recommended in EPA's "Interim Guidance for Performance-Based Reduction Of NPDES Permit Monitoring Frequencies" (Doc. No. EPA 833-B-96-001, April 1996), but will be consistent with the sampling frequencies for other parameters added based on Appendix B of the PAG-03 General Permit. The effluent concentration goals for those parameters currently specified in USS's permit (0.013 mg/L for Benzo(a)Pyrene and Naphthalene and 2.0 mg/L for Total Manganese) will be adopted as benchmark values for those parameters subject to corrective action plan requirements when there are two consecutive exceedances.

Parameters that are not subject to monitoring frequency reductions will additionally require reporting of a semi-annual average concentration. If a parameter's semi-annual average concentration exceeds the corresponding benchmark value for two consecutive semi-annual periods, then the corrective action plan requirements will be triggered for those parameters.

Storm Water Pollution Prevention Plan (SWPPP)

In USS's March 2013 SWPPP, USS indicated that storm sewer cleanouts and street sweeping had decreased pollutant loadings to Outfall 087. However, irrespective of USS's BMPs and other improvements in the vicinity of the former Battery 21 pusher pad, DMR data summarized in Figures 58 through 65 and in **Table 83** indicate that USS's storm water control measures do not remove pollutants to within benchmark values.

USS can explore other structural and non-structural control options if elevated concentrations persist and corrective action plans (and PPC Plan updates) are necessary under the terms of the renewed permit.

087.B. Water Quality-Based Effluent Limitations (WQBELs)

No modeling is performed (see Section 001A.B of this Fact Sheet). The combination of benchmark monitoring and BMPs including pollution prevention and exposure minimization, good housekeeping, erosion and sediment control, and spill prevention and response will ensure compliance with water quality standards.

Peters Creek Watershed TMDL

With respect to parameters of concern for the Peters Creek Watershed TMDL, monitoring is already required for iron and manganese and monitoring for aluminum will be required under the renewed permit based on requirements from Appendix B of the PAG-03. Based on data reported under the previous permit, iron and manganese concentrations generally do not contribute to the impairment of Peters Creek—notwithstanding some elevated concentrations of total iron. Semi-annual monitoring for pH will be added to Outfall 087 as the only other unmonitored TMDL parameter. To facilitate reductions in total iron that may contribute to the impairment of Peters Creek, the existing 3.5 mg/L effluent concentration goal will be adopted as a benchmark value subject to the permit's storm water corrective action plan requirements. DEP considers this implementation methodology to be consistent with 40 CFR § 122.44(d)(1)(vii)(B).

087.C. Effluent Limitations and Monitoring Requirements for Outfall 087

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l) (incorporated in Pennsylvania's regulations at 25 Pa. Code § 92a.44), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. No TBELs are imposed at Outfall 087 (other than BMPs) and no WQBELs apply at this time, so monitoring and reporting requirements are the most stringent requirements.

Table 84. Effluent Limits and Monitoring Requirements for Outfall 087

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
pH (S.U.)	—	—	—	Report	—	25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Oil and Grease	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Nitrogen, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Total Kjeldahl Nitrogen	—	—	—	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Phosphorus, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Aluminum, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Copper, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Iron, Total	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Lead, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Manganese, Total	—	—	—	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Zinc, Total	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Benzo(a)Pyrene	—	—	—	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Naphthalene	—	—	—	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)

The monitoring frequencies and sample types for TSS, Total Iron, and Total Zinc will remain unchanged (2/month grab sampling). The remaining parameters will require 1/6 months grab sampling. Semi-annual average concentrations must be calculated based on the 2/month sampling results for each half year.

Development of Effluent Limitations for Outfall 088

Outfall No.	088	**Design Flow (MGD)**	Variable
Latitude	40° 18' 18"	**Longitude**	-79° 52' 53"

Wastewater Description: Steam condensate and storm water from catch basins west of former Battery 20 pusher pad and a section of B Roadway along the perimeter of the former Koppers plant

Outfall 088 discharges storm water runoff from an 152,460 sq. ft. area in and around former Battery 20 and portions of B Roadway. Discharges from Outfall 088 are currently subject to the following effluent limits and monitoring requirements.

Table 85. Outfall 088 – Current Effluent Limits and Monitoring Requirements

Parameter	Minimum	Average Monthly	IMAX	Units	Measurement Frequency	Sample Type	Limit Basis
pH	—	Report	Report	S.U.	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Oil and Grease	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Iron	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Lead	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Manganese	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Zinc	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Phenol	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Benzo(a)Pyrene	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Naphthalene	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Phenolics, Total	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)

The effluent limits in **Table 85** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

088.A. Technology-Based Effluent Limitations (TBELs)

There are no Federal ELGs that apply to Outfall 088's storm water discharges. In the absence of applicable ELGs, TBELs, if warranted, are developed based on Best Professional Judgment.

Consistent with 25 Pa. Code § 92a.61(h) and DEP's policy for permitting storm water discharges associated with industrial activities, the monitoring requirements and sector-specific BMPs of Appendix B of DEP's PAG-03 NPDES General Permit for Discharges of Stormwater Associated with Industrial Activity (see Table 18 in Section 001A.A of this Fact Sheet) are applied to Outfall 088's storm water discharges.

Outfall 088 is currently subject to different requirements than those specified in Appendix B of the PAG-03. TSS, Oil and Grease, iron, lead, and zinc are the only parameters from Appendix B of the PAG-03 that are currently monitored at Outfall 088. Total nitrogen, total phosphorus, oil and grease, aluminum, and copper are not monitored. Reporting also is required at Outfall 088 for pH, total manganese, phenol, benzo(a)pyrene, naphthalene, and total phenolics—some of which are regulated in other discharges from the Clairton Plant based on 40 CFR Part 420 and were added to Outfall 088 to determine whether they are present in the facility's storm water. Monitoring frequencies for the newly added parameters (total nitrogen, total phosphorus, aluminum, and copper) will be 1/6 months, unless available effluent data indicate that more frequent monitoring is warranted.

Two years of the most recent analytical results supplemented with analytical data from one sampling event collected on April 19, 2023 for the 2023 Application Update are summarized in **Table 86**. Averages are calculated using a lognormal distribution and, for mixed datasets consisting of detected and non-detect results, a delta-lognormal distribution is used. Where only one application result is available, the "average" is the reported result.

Table 86. Storm Water Analytical Results for Outfall 088

Parameter	Average Conc. (mg/L)	Parameter	Average Conc. (mg/L)
Oil and Grease	<5.53 †	Zinc, Total	0.394 †
BOD5	5.7	Benzo(a)Pyrene	< 0.0067 †

Table 86 (cont'd). Storm Water Analytical Results for Outfall 088

Parameter	Average Conc. (mg/L)	Parameter	Average Conc. (mg/L)
COD	83.3	Naphthalene	0.0141 †
TSS	202 †	Cadmium, Total	<0.004
Total Nitrogen	2.76	Lead, Total	0.033 †
Total Phosphorus	0.142	Nitrate Nitrite as N	1.26
pH (s.u.)	9.4 (median)	Total Kjeldahl Nitrogen	1.5
Ammonia-Nitrogen	0.49	Phenolics, Total	0.0080 †
Iron, Total	2.78 †	Free Cyanide	<0.0005
Manganese, Total	0.244 †	Cyanide, Total	<0.010

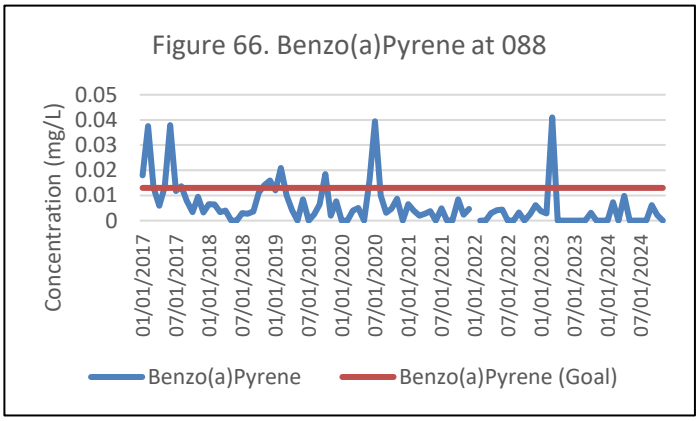
† Result is the average of a lognormal or delta-lognormal distribution of maximum daily results reported on DMRs from November 2022 – November 2024

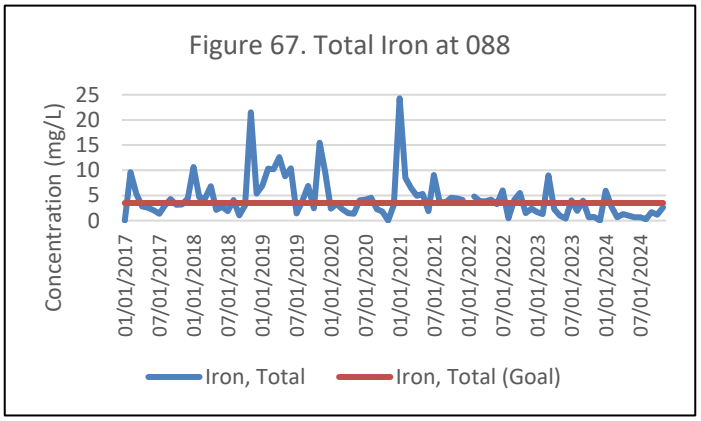
Based on the results in **Table 86**, no additional monitoring requirements are added to Outfall 088.

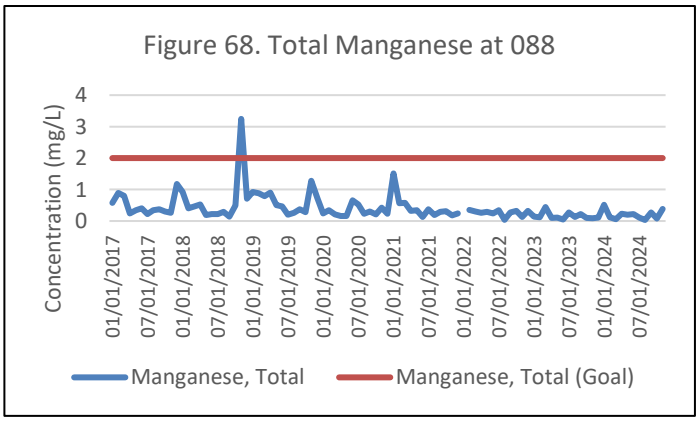
The monitoring frequencies for total nitrogen, total phosphorus, aluminum, and copper each will be 1/6 months because results are either not available to evaluate whether more frequent monitoring is appropriate, or the reported concentrations are not elevated.

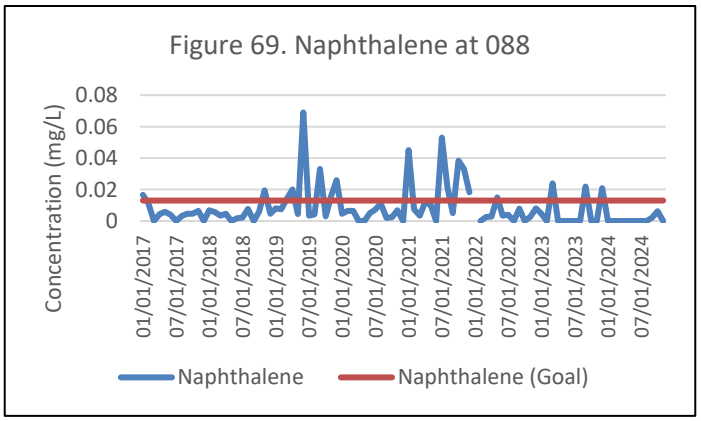
In the absence of ELGs, case-by-case TBELs are developed based on BPJ. The development of case-by-case TBELs using BPJ typically involves the evaluation of end-of-pipe wastewater treatment technologies. However, consistent with 40 CFR § 122.44(k)(2), DEP considers the use of BMPs to be BAT for storm water discharges associated with industrial activities unless effluent concentrations indicate that BMPs provide inadequate pollution control.

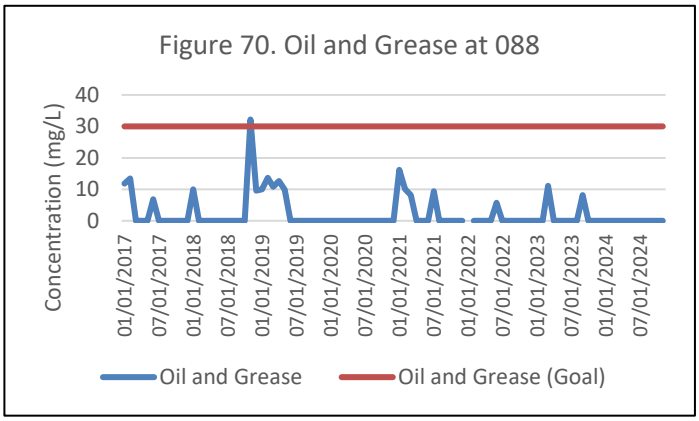
Figures 66 through 75 depict the reported effluent concentrations of pollutants monitored at Outfall 022 from January 2017 through June 2024. Effluent concentration goals from USS's current permit are shown for comparison where benchmark values are not identified in Appendix B of the PAG-03.

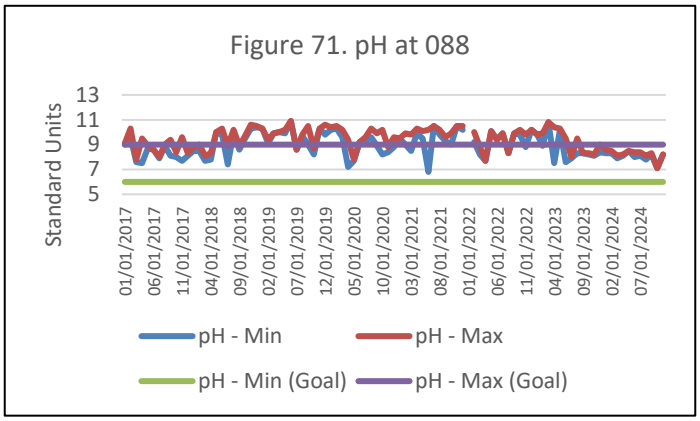


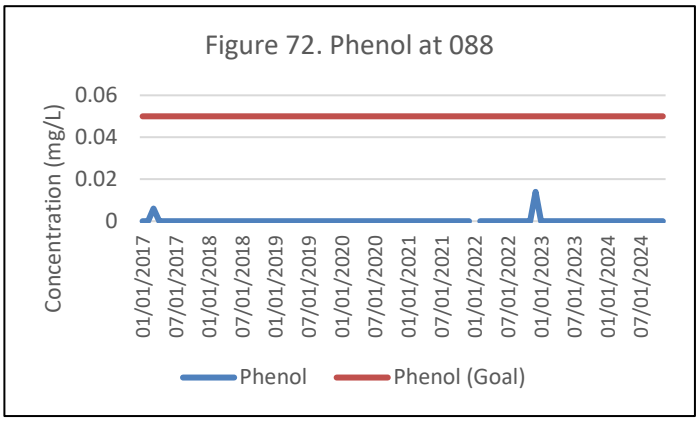


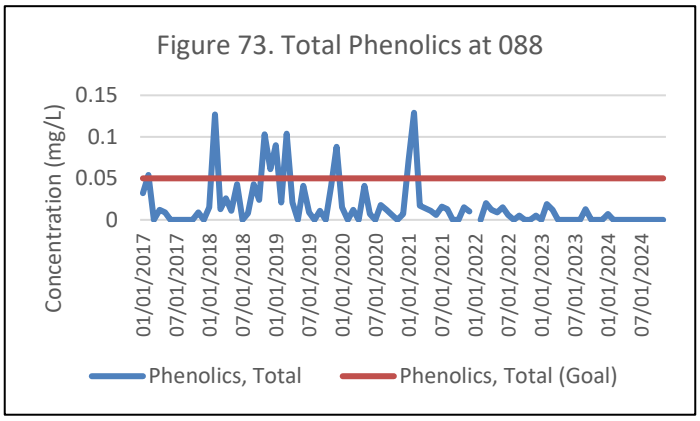


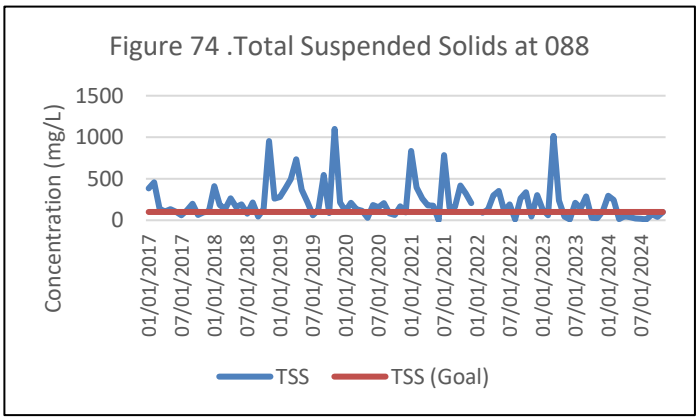


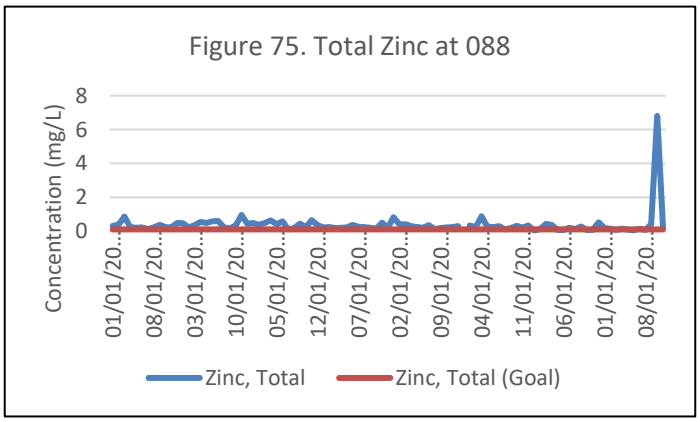












Note: 'Non-detect' values are shown as zero. No discharges were reported in January 2022.

DMR data summarized in Figures 66 through 75 and in **Table 86** indicate that TSS, iron, and zinc consistently exceed benchmark values/concentration goals and, to a lesser extent, pH (trending lower recently), naphthalene, and benzo(a)pyrene. Appendix B of the PAG-03 identifies a benchmark value of 100 mg/L for TSS, which is exceeded about 69% of the time at Outfall 088. Similarly, 49% of results for Total Iron, 88% of results for Total Zinc, 19% of results for naphthalene, and 14% of results for benzo(a)pyrene exceed the permit's effluent goals of 3.5 mg/L, 0.12 mg/L, 0.013 mg/L, and 0.013 mg/L for those parameters, respectively. Results for pH are excessively alkaline with 42.5% of minimum pH results exceeding the maximum pH benchmark of 9.0 s.u. and 61.7% of maximum pH results exceeding 9.0 s.u.

Discharges from Outfall 088 have not been subject to the PAG-03 General Permit's 100 mg/L TSS benchmark value or the corresponding corrective action plan requirement, so USS will be given the opportunity to address elevated TSS concentrations in Outfall 088's discharges before DEP considers the need for numerical TBELs. Effluent limits for TSS will not be imposed at Outfall 088 for this permit renewal. Controlling TSS also should reduce iron and zinc concentrations. In addition, a maximum pH benchmark of 9.0 s.u. will apply to Outfall 088 to control the basicity of the discharge and the effluent concentration goals listed in USS's current permit for iron, zinc, benzo(a)pyrene, and naphthalene at other outfalls

(3.5 mg/L, 0.12 mg/L, 0.022 mg/L, and 0.013 mg/L) will be adopted as the benchmark values for those parameters. Corrective action plans will be required for consecutive exceedances of the benchmark values.

In the 2017 Application, USS requested that the sampling frequencies for pollutants that have met their corresponding concentration goals be reduced to 1/quarter. DEP agrees to a performance-based reduction of sampling frequencies for Oil and Grease, Total Lead, Total Manganese, Phenol, and Total Phenolics from 2/month to 1/6 months. The reductions are greater than the reductions recommended in EPA's "Interim Guidance for Performance-Based Reduction Of NPDES Permit Monitoring Frequencies" (Doc. No. EPA 833-B-96-001, April 1996), but will be consistent with the sampling frequencies for other parameters added based on Appendix B of the PAG-03 General Permit. The effluent concentration goals for those parameters currently specified for other outfalls in USS's permit (0.082 mg/L for Total Lead, 2.0 mg/L for Total Manganese, and 0.05 mg/L for Phenol and Total Phenolics) will be adopted as benchmark values for those parameters subject to corrective action plan requirements when there are two consecutive exceedances. The benchmark for Oil and Grease will be 30 mg/L as specified in Appendix B of the PAG-03 General Permit.

Parameters that are not subject to monitoring frequency reductions will additionally require reporting of a semi-annual average concentration. If a parameter's semi-annual average concentration exceeds the corresponding benchmark value for two consecutive semi-annual periods, then the corrective action plan requirements will be triggered for those parameters.

Storm Water Pollution Prevention Plan (SWPPP)

In USS's March 2013 SWPPP, USS indicated that storm sewer and pusher pad cleanouts and street sweeping were expected to reduce pollutant loadings to Outfall 088. No other specific BMPs were proposed for Outfall 088. However, irrespective of USS's BMPs and other improvements in the vicinity of the former Battery 20 pusher pad, DMR data summarized in Figures 66 through 75 and in **Table 86** indicate that USS's storm water control measures do not remove pollutants to within benchmark values.

USS can explore other structural and non-structural control options if elevated concentrations persist and corrective action plans (and PPC Plan updates) are necessary under the terms of the renewed permit.

088.B. Water Quality-Based Effluent Limitations (WQBELs)

No modeling is performed (see Section 001A.B of this Fact Sheet). The combination of benchmark monitoring and BMPs including pollution prevention and exposure minimization, good housekeeping, erosion and sediment control, and spill prevention and response will ensure compliance with water quality standards.

Peters Creek Watershed TMDL

With respect to parameters of concern for the Peters Creek Watershed TMDL, monitoring is either already required (iron, manganese, and pH), or will be required under the renewed permit (aluminum). Based on data reported under the previous permit, manganese concentrations are not contributing to the impairment of Peters Creek because the reported values are less than applicable water quality criterion. Results for pH exceeded 9.0 s.u. for several years but have trended lower than 9.0 s.u. within the last year. Iron concentrations are normally elevated with a long-term average concentration of 4.5 mg/L compared to an average in-stream criterion of 1.5 mg/L. As stated above, 49% of results reported for Total Iron exceed the permit's effluent concentration goal of 3.5 mg/L. To facilitate reductions in total iron that may contribute to the impairment of Peters Creek, the existing 3.5 mg/L effluent concentration goal will be adopted as a benchmark value subject to the permit's storm water corrective action plan requirements. DEP considers this implementation methodology to be consistent with 40 CFR § 122.44(d)(1)(vii)(B).

088.C. Effluent Limitations and Monitoring Requirements for Outfall 088

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l) (incorporated in Pennsylvania's regulations at 25 Pa. Code § 92a.44), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. No TBELs are imposed at Outfall 088 (other than BMPs) and no WQBELs apply at this time, so monitoring and reporting requirements are the most stringent requirements.

Table 87. Effluent Limits and Monitoring Requirements for Outfall 088

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
pH (S.U.)	—	—	Report (Inst. Min.)	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)

Table 87 (cont'd). Effluent Limits and Monitoring Requirements for Outfall 088

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Total Suspended Solids	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Oil and Grease	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Aluminum, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Copper, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Iron, Total	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Lead, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Manganese, Total	—	—	—	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Zinc, Total	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Nitrogen, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Phosphorus, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(h); PAG-03, App. B
Benzo(a)Pyrene	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Naphthalene	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Phenol	—	—	—	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Phenolics, Total	—	—	—	Report	—	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)

The monitoring frequency and sample type for pH, TSS, Total Iron, Total Zinc, benzo(a)pyrene, and naphthalene will remain unchanged (2/month grab sampling). The remaining parameters will require 1/6 months grab sampling. Semi-annual average concentrations must be calculated based on the 2/month sampling results for each half year.

Development of Effluent Limitations for Outfall 089

Outfall No. 089 **Design Flow (MGD)** Variable
Latitude 40° 18' 15" **Longitude** -79° 52' 54"
Wastewater Description: Storm water from areas near the Battery 19 pusher pad and adjacent section of B Roadway, the No. 1 Power House, and adjacent sections of C Roadway, and steam condensate

Outfall 089 discharges storm water runoff from an 548,856 sq. ft. area in and around former Battery 19 and the No. 1 Power House and portions of B and C Roadways. Discharges from Outfall 089 are currently subject to the following effluent limits and monitoring requirements.

Table 88. Outfall 089 – Current Effluent Limits and Monitoring Requirements

Parameter	Minimum	Average Monthly	IMAX	Units	Measurement Frequency	Sample Type	Limit Basis
pH	—	Report	Report	S.U.	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Suspended Solids	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Oil and Grease	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Cyanide	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Iron	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Manganese	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Total Zinc	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Phenol	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Benzo(a)Pyrene	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Naphthalene	—	Report	Report	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)

The effluent limits in **Table 88** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

089.A. Technology-Based Effluent Limitations (TBELs)

There are no Federal ELGs that apply to Outfall 089's storm water discharges. In the absence of applicable ELGs, TBELs, if warranted, are developed based on Best Professional Judgment.

Consistent with 25 Pa. Code § 92a.61(h) and DEP's policy for permitting storm water discharges associated with industrial activities, the monitoring requirements and sector-specific BMPs of Appendix B of DEP's PAG-03 NPDES General Permit for Discharges of Stormwater Associated with Industrial Activity (see Table 18 in Section 001A.A of this Fact Sheet) are applied to Outfall 088's storm water discharges.

Outfall 089 is currently subject to different requirements than those specified in Appendix B of the PAG-03. TSS, Oil and Grease, iron, and zinc are the only parameters from Appendix B of the PAG-03 that are currently monitored at Outfall 089. Total nitrogen, total phosphorus, oil and grease, aluminum, copper, and lead are not monitored. Reporting also is required at Outfall 089 for pH, total cyanide, total manganese, phenol, benzo(a)pyrene, and naphthalene—some of which are regulated in other discharges from the Clairton Plant based on 40 CFR Part 420 and were added to Outfall 089 to determine whether they are present in the facility's storm water. Monitoring frequencies for the newly added parameters (total nitrogen, total phosphorus, aluminum, copper, and lead) will be 1/6 months, unless available effluent data indicate that more frequent monitoring is warranted.

Two years of the most recent analytical results supplemented with analytical data from one sampling event collected on April 19, 2023 for the 2023 Application Update are summarized in **Table 89**. Averages are calculated using a lognormal distribution and, for mixed datasets consisting of detected and non-detect results, a delta-lognormal distribution is used. Where only one application result is available, the "average" is the reported result.

Table 89. Storm Water Analytical Results for Outfall 089

Parameter	Average Conc. (mg/L)	Parameter	Average Conc. (mg/L)
Oil and Grease	<7.31 †	Zinc, Total	0.366 †
BOD5	5.7	Benzo(a)Pyrene	< 0.0031 †

Table 89 (cont'd). Storm Water Analytical Results for Outfall 089

Parameter	Average Conc. (mg/L)	Parameter	Average Conc. (mg/L)
COD	962	Naphthalene	<0.0157 †
TSS	434 †	Cadmium, Total	<0.004
Total Nitrogen	<8.9	Lead, Total	0.0357
Total Phosphorus	0.465	Nitrate Nitrite as N	<1.2
pH (s.u.)	8.45 (median)	Total Kjeldahl Nitrogen	7.7
Ammonia-Nitrogen	0.34	Phenolics, Total	0.020
Iron, Total	11.8 †	Free Cyanide	<0.0005
Manganese, Total	0.620 †	Cyanide, Total	0.023 †

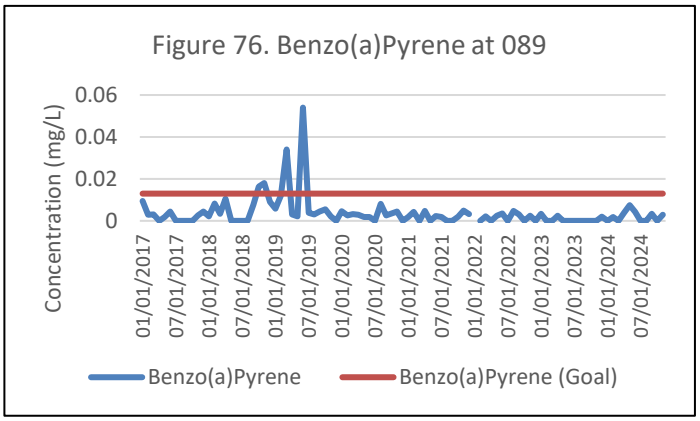
† Result is the average of a lognormal or delta-lognormal distribution of maximum daily results reported on DMRs from November 2022 – November 2024

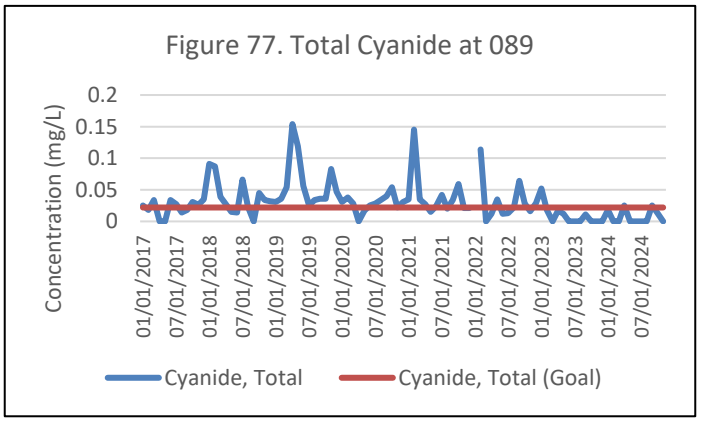
Based on the results in **Table 89**, monitoring and reporting will be required for Chemical Oxygen Demand (COD). COD is not part of the baseline monitoring requirements from Appendix B of the PAG-03, but the reported concentration is elevated compared to the COD benchmark value of 120 mg/L identified in other appendices of the PAG-03, and the COD effluent concentration goal in USS's existing permit. The monitoring frequency for COD will be 1/6 months.

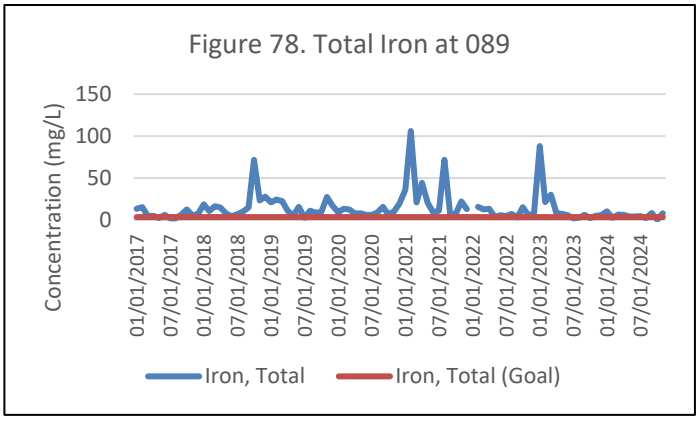
The monitoring frequencies for COD, total nitrogen, total phosphorus, aluminum, copper, and lead each will be 1/6 months because results are either not available to evaluate whether more frequent monitoring is appropriate, or the reported concentrations are not elevated.

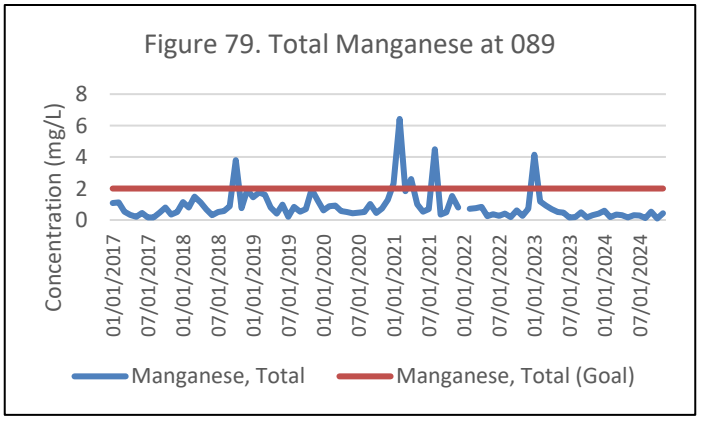
In the absence of ELGs, case-by-case TBELs are developed based on BPJ. The development of case-by-case TBELs using BPJ typically involves the evaluation of end-of-pipe wastewater treatment technologies. However, consistent with 40 CFR § 122.44(k)(2), DEP considers the use of BMPs to be BAT for storm water discharges associated with industrial activities unless effluent concentrations indicate that BMPs provide inadequate pollution control.

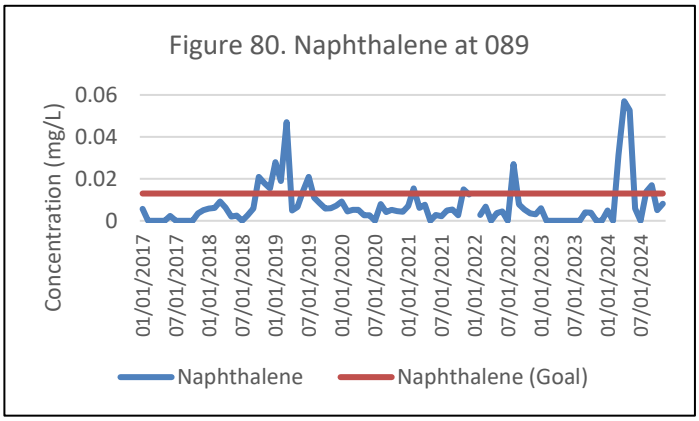
Figures 76 through 85 depict the reported effluent concentrations of pollutants monitored at Outfall 022 from January 2017 through June 2024. Effluent concentration goals from USS's current permit are shown for comparison where benchmark values are not identified in Appendix B of the PAG-03.

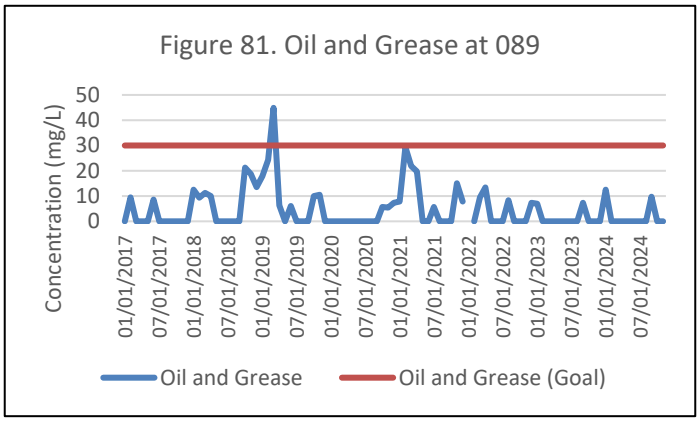


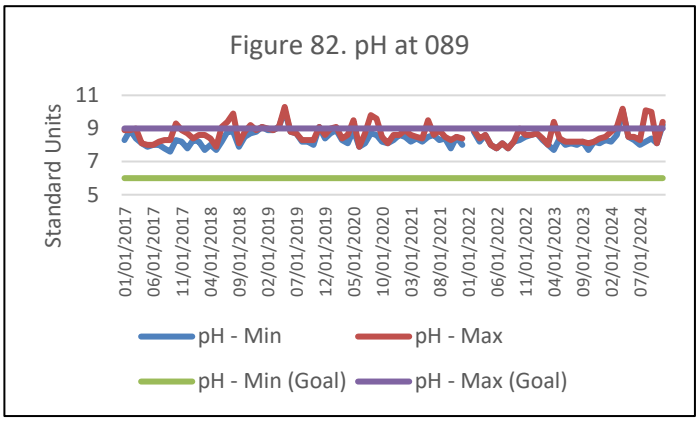


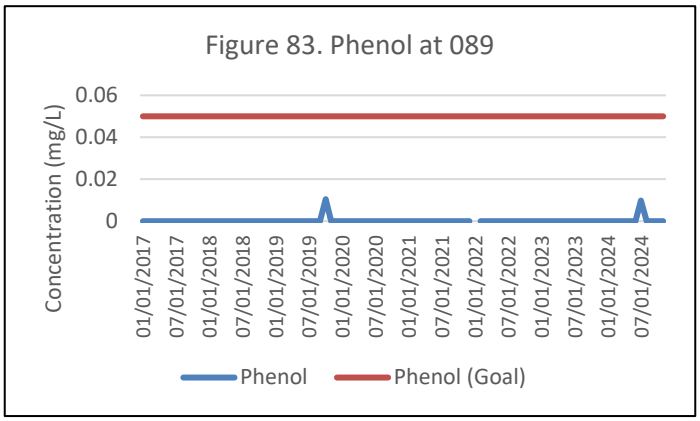


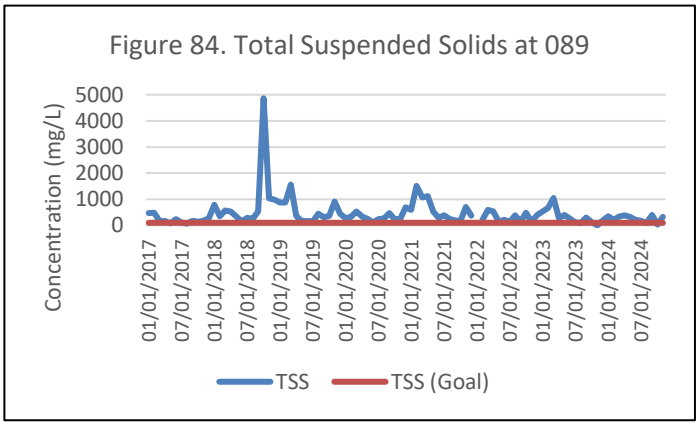


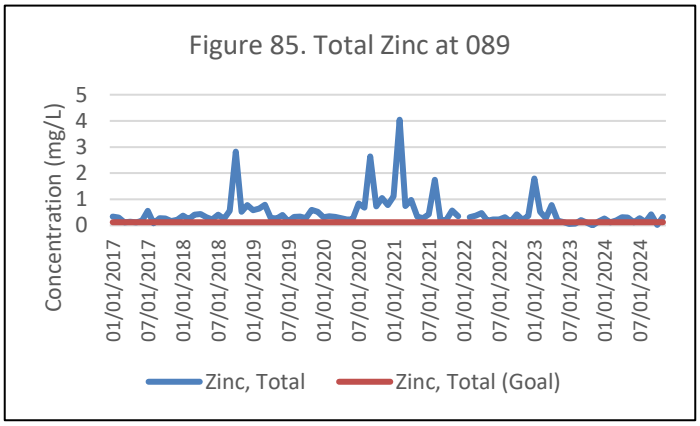












Note: 'Non-detect' values are shown as zero. No discharges were reported in January 2022.

DMR data summarized in Figures 76 through 85 and in **Table 89** indicate that TSS, iron, zinc, and total cyanide consistently exceed benchmark values/concentration goals. Appendix B of the PAG-03 identifies a benchmark value of 100 mg/L for TSS, which is exceeded about 94% of the time at Outfall 089. Similarly, 88% of results for Total Iron, 90% of results for Total Zinc, and 56% of results for total cyanide exceed the permit's effluent goals of 3.5 mg/L, 0.12 mg/L, and 0.022 mg/L for those parameters, respectively.

Discharges from Outfall 089 have not been subject to the PAG-03 General Permit's 100 mg/L TSS benchmark value or the corresponding corrective action plan requirement, so USS will be given the opportunity to address elevated TSS concentrations in Outfall 089's discharges before DEP considers the need for numerical TBELs. Effluent limits for TSS will not be imposed at Outfall 089 for this permit renewal. Controlling TSS also should reduce iron and zinc concentrations. However, the effluent concentration goals listed in USS's current permit for iron, zinc, and total cyanide at other outfalls (3.5 mg/L, 0.12 mg/L, and 0.022 mg/L) will be adopted as the benchmark values for those parameters. Corrective action plans will be required for consecutive exceedances of the benchmark values.

In the 2017 Application, USS requested that the sampling frequencies for pollutants that have met their corresponding concentration goals be reduced to 1/quarter. DEP agrees to a performance-based reduction of sampling frequencies for Benzo(a)pyrene, Total Manganese, Naphthalene, Oil and Grease, and Phenol from 2/month to 1/6 months. The reductions are greater than the reductions recommended in EPA's "Interim Guidance for Performance-Based Reduction Of NPDES Permit Monitoring Frequencies" (Doc. No. EPA 833-B-96-001, April 1996), but will be consistent with the sampling frequencies for other parameters added based on Appendix B of the PAG-03 General Permit. The effluent concentration goals for those parameters currently specified for other outfalls in USS's permit (0.013 mg/L for Benzo(a)Pyrene and Naphthalene, 2.0 mg/L for Total Manganese, and 0.05 mg/L for Phenol) will be adopted as benchmark values for those parameters subject to corrective action plan requirements when there are two consecutive exceedances. The benchmark for Oil and Grease will be 30 mg/L as specified in Appendix B of the PAG-03 General Permit.

Parameters that are not subject to monitoring frequency reductions will additionally require reporting of a semi-annual average concentration. If a parameter's semi-annual average concentration exceeds the corresponding benchmark value for two consecutive semi-annual periods, then the corrective action plan requirements will be triggered for those parameters.

Storm Water Pollution Prevention Plan (SWPPP)

In USS's March 2013 SWPPP, USS indicated that storm sewer and pusher pad cleanouts and street sweeping were expected to reduce pollutant loadings to Outfall 088. No other specific BMPs were proposed for Outfall 088. However, irrespective of USS's BMPs and other improvements in the vicinity of the former Battery 19 pusher pad, DMR data summarized in Figures 76 through 85 and in **Table 89** indicate that USS's storm water control measures do not remove pollutants to within benchmark values.

USS can explore other structural and non-structural control options if elevated concentrations persist and corrective action plans (and PPC Plan updates) are necessary under the terms of the renewed permit.

089.B. Water Quality-Based Effluent Limitations (WQBELs)

No modeling is performed (see Section 001A.B of this Fact Sheet). The combination of benchmark monitoring and BMPs including pollution prevention and exposure minimization, good housekeeping, erosion and sediment control, and spill prevention and response will ensure compliance with water quality standards.

Peters Creek Watershed TMDL

With respect to parameters of concern for the Peters Creek Watershed TMDL, monitoring is either already required (iron, manganese, and pH), or will be required under the renewed permit (aluminum). Based on data reported under the previous permit, manganese concentrations and pH values are not contributing to the impairment of Peters Creek because the reported values generally are less than applicable water quality criteria. Iron concentrations are normally elevated with a long-term average concentration of 14 mg/L compared to an average in-stream criterion of 1.5 mg/L. As stated above, 88% of results reported for Total Iron exceed the permit's effluent concentration goal of 3.5 mg/L. To facilitate reductions in total iron that may contribute to the impairment of Peters Creek, the existing 3.5 mg/L effluent concentration goal will be adopted as a benchmark value subject to the permit's storm water corrective action plan requirements. DEP considers this implementation methodology to be consistent with 40 CFR § 122.44(d)(1)(vii)(B).

089.C. Effluent Limitations and Monitoring Requirements for Outfall 089

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l) (incorporated in Pennsylvania's regulations at 25 Pa. Code § 92a.44), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. No TBELs are imposed at Outfall 089 (other than BMPs) and no WQBELs apply at this time, so monitoring and reporting requirements are the most stringent requirements.

Table 90. Effluent Limits and Monitoring Requirements for Outfall 089

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
pH (S.U.)	—	—	Report (Inst. Min.)	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)

Table 90 (cont'd). Effluent Limits and Monitoring Requirements for Outfall 089

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Total Suspended Solids	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Oil and Grease	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Nitrogen, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Phosphorus, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Aluminum, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Copper, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Cyanide, Total	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Iron, Total	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Lead, Total	—	—	—	—	Report	25 Pa. Code § 92a.61(h); PAG-03, App. B
Manganese, Total	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Zinc, Total	—	—	Report (Avg. Mo. & Semi-Annual Avg.)	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h); PAG-03, App. B
Phenol	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Benzo(a)Pyrene	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)
Naphthalene	—	—	—	—	Report	40 CFR § 122.44(l); 25 Pa. Code § 92a.61(h)

The monitoring frequency and sample type for pH, TSS, Total Cyanide, Total Iron, and Total Zinc will remain unchanged (2/month grab sampling). The remaining parameters will require 1/6 months grab sampling. Semi-annual average concentrations must be calculated based on the 2/month sampling results for each half year.

Development of Effluent Limitations for Outfall 090

Outfall No.	090	**Design Flow (MGD)**	0.018 (avg.); 0.022 (max)
Latitude	40° 18' 20"	**Longitude**	-79° 52' 55"

Wastewater Description: Treated ground water and storm water from the Peters Creek Lagoon Area

Peters Creek Coke Yard Area and Peters Creek Lagoon

The Peters Creek Coke Yard Area is located southwest of State Route 837 and consists of approximately 108 acres of land containing the Coke Yard Storage Area and the former Peters Creek Lagoon. The former Peters Creek Lagoon was a man-made, unlined lagoon/impoundment that was used to dispose of materials generated from cokemaking operations. It is believed that the lagoon was formed as a diked area on the original flood plain of Peters Creek and possibly as part of the old creek bed. Active use of the Peters Creek Lagoon ceased in the early 1970s. The Peters Creek Coke Yard is currently used as a sorting and storage area for different sizes of coke produced at the Clairton Plant.

The contents of the lagoon consist primarily of tar, lime, slag, and similar substances with varying compositions. Groundwater impacts in the area include benzene and phenol in shallow, deep, and bedrock groundwater-bearing zones. Closure activities for the former Peters Creek Lagoon began in 1998 and were completed in 2003 including the installation of a slurry wall around the perimeter of the former lagoon to prevent the contents of the lagoon from migrating into the groundwater and impacting Peters Creek, in situ and ex situ solidification of the contents of the lagoon to provide a stable foundation for the placement of an impervious cap, and construction and installation of an impervious cap. In addition to the slurry wall, a collection trench (identified as the Peters Creek Collection Trench or "Trench 1") was installed in 1999. In April 2011, USS began operating a permanent water treatment plant to collect and treat contaminated groundwater from the collection trench. Collected groundwater is pumped to an equalization tank and then through an oil/water separator to a settling tank for solids. Effluent from the solids settling tank flows to a second equalization tank from which the wastewater is pumped through bag filters and activated carbon absorption vessels. Effluent from the activated carbon vessel flows to an effluent tank for final pH adjustment before discharging through Outfall 090 to Peters Creek. In addition to those active remedial system operations, quarterly passive manual recovery of LNAPL occurs at select identified wells via absorbent socks and/or manual hand bailing coinciding with quarterly sampling events.[17]

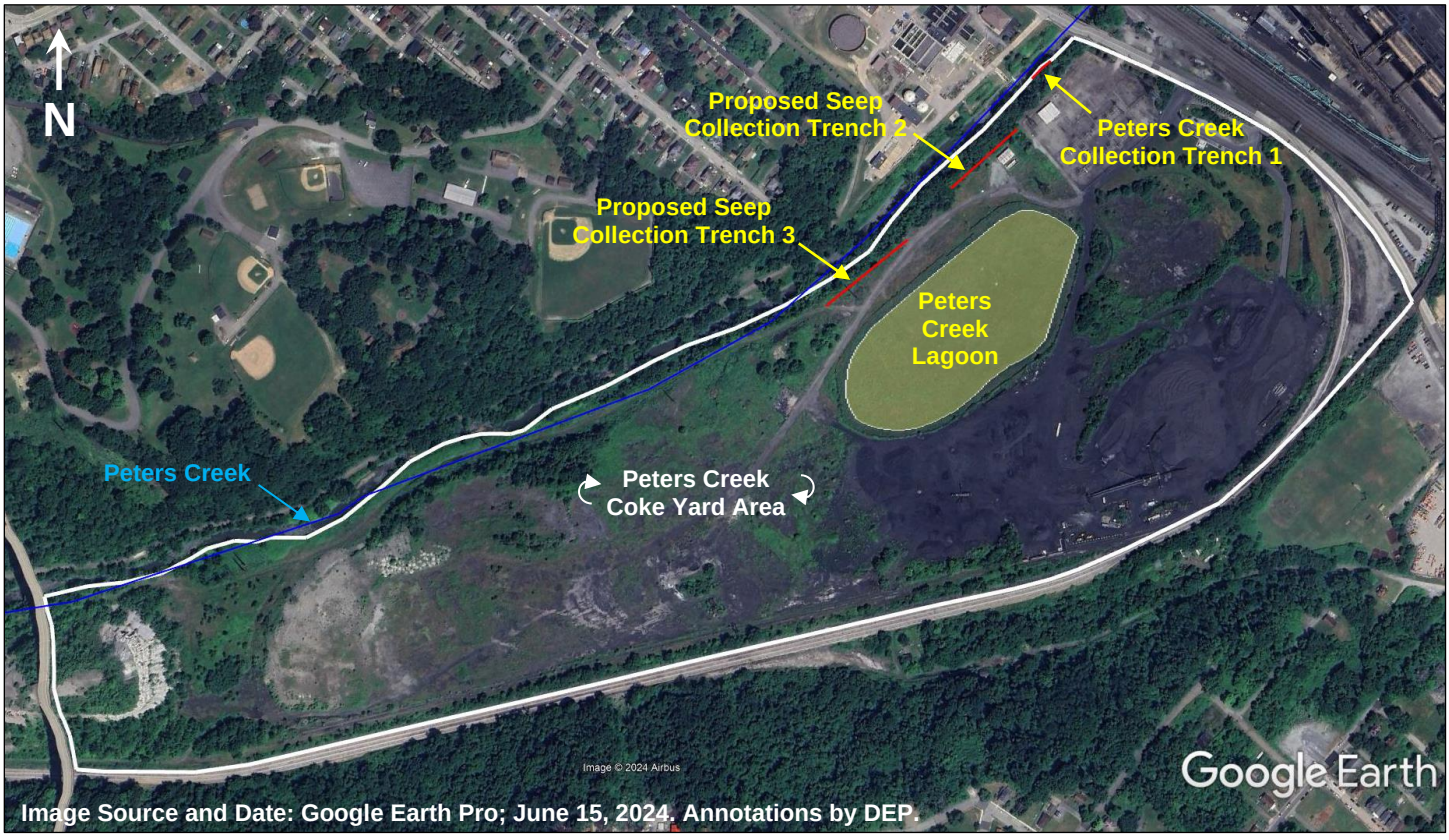


Image Source and Date: Google Earth Pro; June 15, 2024. Annotations by DEP.

[17] APTIM, 2022. *Groundwater Monitoring Control Plan: United States Steel Corporation – Clairton Works*. Technical report dated January 28, 2022.

USS is planning two additional collection trenches (Trenches 2 and 3) with pumps stations and related appurtenances to direct collected groundwater to treatment.

Discharges from Outfall 090 are currently subject to the following effluent limits and monitoring requirements.

Table 91. Outfall 090 – Current Effluent Limits and Monitoring Requirements

Parameter	Minimum	Average Monthly	IMAX	Units	Measurement Frequency	Sample Type	Limit Basis
Flow	—	Report	Report	MGD	2/month	Measured	25 Pa. Code § 92a.61(b)
pH	6.0	—	9.0	s.u.	2/month	Grab	25 Pa. Code § 92a.61(b)
TSS	—	30	75	mg/L	2/month	Grab	25 Pa. Code § 92a.61(b)
Oil and Grease	—	15	30	mg/L	2/month	Grab	25 Pa. Code § 92a.61(b)
Chromium VI	—	—	Report	mg/L	1/month	Grab	25 Pa. Code § 92a.61(b)
Benzene	—	0.001	0.0025	mg/L	2/month	Grab	25 Pa. Code § 92a.61(b)
Naphthalene	—	0.3	0.75	mg/L	2/month	Grab	25 Pa. Code § 92a.61(b)

The effluent limits in **Table 91** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

090.A. Technology-Based Effluent Limitations (TBELs)

There are no Federal Effluent Limitations Guidelines (ELGs) that apply to Outfall 090's discharges. In the absence of applicable ELGs, TBELs, if warranted, are developed based on Best Professional Judgment.

Effluent limits for Outfall 090 were imposed in the previous permit based on DEP's PAG-05 General Permit for Discharges from Petroleum Product Contaminated Groundwater Remediation Systems. The current PAG-05's effluent limits for groundwater contaminated with petroleum products other than gasoline are summarized in the following table.

Effluent Limitations and Monitoring Requirements – Groundwater Contaminated with Other Petroleum Products

Parameter	Effluent Limitations				Monitoring Requirements	
	Mass	Concentrations			Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Minimum	Average Monthly	Instant. Maximum		
Flow (MGD)	Report	—	—	—	1/month	Measured
Benzene (mg/L)	—	—	0.001	0.0025	1/month	Grab
Total BTEX (mg/L)	—	—	0.1	0.25	1/month	Grab
Total Suspended Solids (mg/L)	—	—	30	75	1/month	Grab
pH (S.U.)	—	6.0	—	9.0	1/month	Grab
Oil and Grease (mg/L)	—	—	15	30	1/month	Grab
Dissolved Iron (mg/L)	—	—	—	7.0	1/year	Grab

Effluent limits for Total BTEX and Dissolved Iron from the PAG-05 General Permit were not imposed in the previous permit. Influent analyses indicate that there are detectable concentrations of Dissolved Iron and Ethylbenzene, Toluene, Naphthalene, Phenol, Acenaphthene, 1,2-Diphenylhydrazine, Fluorene, and Phenanthrene in the raw wastewater. The influent concentration of Dissolved Iron is low (0.084 mg/L) compared to the 7.0 mg/L limit, so regulating Dissolved Iron is not necessary. Also, the influent concentrations of organics other than benzene were low and, for the purpose of establishing TBELs, benzene acts as an indicator parameter for the removal of other organics present in the raw groundwater (except for Naphthalene, which is limited separately). Generally, all the organics are highly or moderately removable by activated carbon. In the 2001 NPDES permit, limits for Naphthalene were imposed based on limits in a January 21, 2000 temporary discharge approval letter that authorized temporary discharges of treated groundwater. Those limits will remain in effect based on anti-backsliding.

090.B. Water Quality-Based Effluent Limitations (WQBELs)

Reasonable Potential Analysis and WQBEL Development for Outfall 090

Discharges from Outfall 090 are evaluated based on the maximum concentrations reported on the permit renewal application. The TMS model is run for Outfall 090 with the modeled discharge and receiving stream characteristics shown

in **Table 92**. Pollutants for which water quality criteria have not been promulgated (e.g., TSS, Oil and Grease, etc.) are excluded from the modeling.

Table 92. TMS Inputs for Outfall 090

Discharge Characteristics		
Parameter		**Value**
Discharge Flow (MGD)		0.018
Discharge Hardness (mg/L)		808
Discharge pH (s.u.)		7.55
Receiving Stream Characteristics		
Parameter	**Outfall 090**	**End of Segment**
Stream Code	39425	39425
River Mile Index	0.4578	0.42
Drainage Area (mi^2)	51.2	51.33
Q_{7-10} (cfs)	0.997	5.697
$Q_{harmonic}$ (cfs)	16.3	21.0
Low-flow Yield (cfs/mi^2)	0.01947	0.01945
Elevation (ft)	724.8	721.5
Slope (ft/ft)	0.00193	0.00193

For modeling, the discharge concentration of Hexavalent Chromium is the Average Monthly Effluent Concentration (AMEC) calculated using DEP's TOXCONC program and data reported on DMRs from January 2017 through June 2024. Benzene and naphthalene are modeled using the average monthly TBELs as their respective discharge concentrations.

Pursuant to DEP's "Standard Operating Procedure (SOP) for Clean Water Program Establishing Effluent Limitations for Individual Industrial Permits" [SOP No. BCW-PMT-032] the flow used for modeling is the average flow during production or operation. Based on DMR data reported from January 2017 through June 2024, the average flow at Outfall 090 is 0.018 MGD. The discharge hardness is the average hardness reported on the permit application and the discharge pH is the median pH reported on DMRs from January 2017 through June 2024.

The Q_{7-10} and $Q_{harmonic}$ stream flows are the flows calculated using USGS's StreamStats web application. The Q_{7-10} and $Q_{harmonic}$ stream flows at the point of discharge are the corresponding flows calculated from StreamStats at that location. The end-of-segment location (RMI 0.42) is the river mile index of the discharge from the Clairton Municipal Authority's sewage treatment plant (STP). Pursuant to a request from USS, DEP has added the minimum monthly average flow from the Clairton Municipal Authority STP (3.04 MGD or 4.7 cfs) from the last three years (January 2022 through January 2025) to the Q_{7-10} and $Q_{harmonic}$ stream flows at the downstream location based on the premise that the STP will contribute flow to Peters Creek that is additional flow available for mixing and dilution. The downstream Q_{7-10} and $Q_{harmonic}$ stream flows are the upstream Q_{7-10} and $Q_{harmonic}$ stream flows plus 4.7 cfs.

Output from the TMS model is included in **Attachment I** to this Fact Sheet. As explained previously, the TMS compares the input discharge concentrations to the calculated WQBELs using DEP's Reasonable Potential thresholds to evaluate the need to impose WQBELs or monitoring requirements in the permit. The results of the modeling indicate that the following WQBELs and water quality-based reporting requirements apply to discharges from Outfall 090.

Table 93. Water Quality-Based Effluent Limits for Outfall 090

Parameter	**Permit Limits**			**Reported Result (µg/L)**	**Target QL (µg/L)**	**Governing WQBEL**	**Governing WQBEL Basis†**
	Avg Mo. (µg/L)	**Max Daily (µg/L)**	**IMAX (µg/L)**				
Cadmium, Total	Report	Report	—	2.62	0.2	11.3	CFC
~~Acrylamide~~	~~18.7~~	~~29.2~~	~~46.7~~	~~<49~~	~~1~~	~~18.7~~	~~CRL~~
Bis(2-Chloroethyl)Ether	Report	Report	—	7.55	5	17.6	CRL

† CFC = Chronic Fish Criterion; CRL = Cancer Risk Level

USS reported results for Acrylamide using an analytical reporting limit of 49 µg/L. For modeling purposes, the TMS uses a Target QL of 0.1 µg/L for Acrylamide. The permit application instructions do not identify a Target QL for Acrylamide, so applicants are not held to the TMS's Target QL for Acrylamide. Also, according to the application, chemical additives containing Acrylamide are not used in the Peters Creek treatment system (although, they are used at the Contaminated Water Treatment Plant). Therefore, the TMS's WQBELs for Acrylamide are not imposed at Outfall 090.

Pursuant to DEP's updated reasonable potential analysis and the exception to anti-backsliding at 40 CFR § 122.44(l)(2)(i)(B)(*1*) (regarding new information and justifies the application of less stringent requirements), reporting requirements for hexavalent chromium will be removed from Outfall 090.

Peters Creek Watershed TMDL

Data available for aluminum, iron, manganese from USS's 2023 Application Update and DMR data for pH suggest that discharges from Outfall 090 are not likely to contribute to the impairment of Peters Creek. However, data for aluminum,

iron, and manganese are limited to three sample analyses. To confirm that Outfall 090 does not contribute to the impairment, quarterly reporting will be required for Total Aluminum, Total Iron, and Total Manganese.

Table 94. Outfall 090 Effluent Concentrations for Peters Creek Watershed TMDL Parameters of Concern

Parameter	Effluent Concentration			Average	Maximum	Units
	Sample 1 (3/29/2023)	Sample 2 (4/5/2023)	Sample 3 (4/12/2023)			
Aluminum, Total	438	31	33	167	438	µg/L
Iron, Total	37	41	37	38.3	41.0	µg/L
Iron, Dissolved	33	36	32	33.7	36.0	µg/L
Manganese, Total	4.7	6.5	6.9	6.1	6.9	µg/L
pH	6.9 Minimum	8.5 Maximum		7.7 Median		S.U.

090.C. Effluent Limitations and Monitoring Requirements for Outfall 090

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l) (incorporated in Pennsylvania's regulations at 25 Pa. Code § 92a.44), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable requirements are summarized in the following table.

Table 95. Effluent Limits and Monitoring Requirements for Outfall 090

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(d)(1)
pH (s.u.)	—	—	6.0 (Inst. Min.)	—	9.0	25 Pa. Code § 95.2(1), 40 § CFR 122.44(l), 25 Pa. Code § 92a.48(a)(3), 40 § CFR 122.44(l), PAG-05 General Permit
Total Suspended Solids	—	—	30.0	—	75.0	25 Pa. Code § 92a.48(a)(3), 40 § CFR 122.44(l), & the PAG-05 General Permit
Oil and Grease	—	—	15.0	—	30.0	
Benzene	—	—	0.001	—	0.0025	
Naphthalene	—	—	0.3	—	0.75	40 § CFR 122.44(l), 25 Pa. Code § 92a.48(a)(3)
Cadmium, Total (µg/L)	—	—	Report	Report	—	25 Pa. Code § 92a.61(b)
Bis(2-Chloroethyl)Ether	—	—	Report	Report	—	WQBELs; 25 Pa. Code §§ 92a.12(a)(1) & 96.4(b)
Aluminum, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Iron, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Manganese, Total	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Perfluorooctanoic acid (PFOA) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Perfluorooctanesulfonic acid (PFOS) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Perfluorobutanesulfonic acid (PFBS) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)
Hexafluoropropylene oxide dimer acid (HFPO-DA) (ng/L)	—	—	—	Report	—	25 Pa. Code § 92a.61(b)

The monitoring frequencies and sample types are maintained from the previous permit including 2/month measurement of flow and 2/month grab sampling for TSS, Oil and Grease, Benzene, Naphthalene, and pH. Total Cadmium and Bis(2-Chloroethyl)Ether will require 2/month 24-hour composite sampling based on the recommendations in Table 6-4 of DEP's "Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits" [Doc. No. 386-0400-001]. Total Aluminum, Total Iron, and Total Manganese will require 24-hour composite sampling 1/quarter. PFAS parameters will require grab sampling 1/year.

Development of Effluent Limitations for Outfall 091

Outfall No. 091 **Design Flow (MGD)** Variable
Latitude 40° 18' 20" **Longitude** -79° 52' 55"
Wastewater Description: Storm water from the Peters Creek lagoon area

Outfall 091 discharges storm water runoff from a 352,836 square foot portion of the Peters Creek Lagoon area, but only during "emergency" situations. Discharges from Outfall 091 are currently subject to the following effluent limits and monitoring requirements.

Table 96. Outfall 091 – Current Effluent Limits and Monitoring Requirements

Parameter	Minimum	Average Monthly	IMAX	Units	Measurement Frequency	Sample Type	Limit Basis
Flow	—	Report	Report	MGD	2/month	Measured	25 Pa. Code § 92a.61(h)
pH	6.0	—	9.0	s.u.	2/month	Grab	25 Pa. Code § 92a.61(h)
TSS	—	—	75	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Oil and Grease	—	—	30	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Benzene	—	—	0.01	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)
Naphthalene	—	—	0.75	mg/L	2/month	Grab	25 Pa. Code § 92a.61(h)

The effluent limits in **Table 96** will remain in effect in the renewed permit pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act (33 U.S.C. §1342(o)) and/or 40 CFR § 122.44(l) (incorporated by reference at 25 Pa. Code § 92a.44) unless the limits are superseded by more stringent limits developed for this renewal or are relaxed pursuant to the anti-backsliding exceptions listed in 33 U.S.C. §1342(o) or 40 CFR § 122.44(l).

091.A. Technology-Based Effluent Limitations (TBELs)

There are no Federal Effluent Limitations Guidelines (ELGs) that apply to Outfall 091's discharges. In the absence of applicable ELGs, TBELs, if warranted, are developed based on Best Professional Judgment.

The fact sheet for the previous permit states that sample analyses indicated that storm water discharges through Outfall 091 are contaminated and would be treated by activated carbon. The fact sheet also states that the outfall is plugged, but that USS still requested authorization to discharge through Outfall 091.

Based on the types of contaminants present in the Peters Creek Lagoon area and the type of treatment used (or proposed to be used if treatment is necessary), TBELs equivalent to those imposed on treated groundwater from the Peters Creek Lagoon area were imposed. However, only the instantaneous maximum limits were imposed. Those limits will be maintained except for the benzene limit that is updated from 0.01 mg/L to 0.0025 mg/L consistent with the most recent revision of the PAG-05 General Permit on which most of the limits are based.

091.B. Water Quality-Based Effluent Limitations (WQBELs)

USS has not reported any discharges from Outfall 091 since at least January 2017 and there have been no changes to the configuration of Outfall 091. Based on those circumstances, discharges from Outfall 091 do not have a reasonable potential to cause or contribute to excursions above water quality criteria. Therefore, no WQBELs are developed for Outfall 091.

Peters Creek Watershed TMDL

Consistent with DEP's observation that USS has not reported any discharges from Outfall 091 since at least January 2017, no TMDL WQBELs are imposed at Outfall 091. However, monitoring will be required for total aluminum, total iron, and total manganese (if discharges do occur) to determine whether additional controls on TMDL parameters are needed.

091.C. Effluent Limitations and Monitoring Requirements for Outfall 091

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l) (incorporated in Pennsylvania's regulations at 25 Pa. Code § 92a.44), effluent limits are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable requirements are summarized in the following table.

Table 97. Effluent Limits and Monitoring Requirements for Outfall 091

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
pH (s.u.)	—	—	6.0 (Inst. Min.)	—	9.0	25 Pa. Code § 95.2(1), 40 § CFR 122.44(l), 25 Pa. Code § 92a.48(a)(3), 40 § CFR 122.44(l), and the PAG-05 General Permit
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(b)
Total Suspended Solids	—	—	30.0	—	75.0	25 Pa. Code § 92a.48(a)(3), 40 § CFR 122.44(l), and the PAG-05 General Permit
Oil and Grease	—	—	15.0	—	30.0	
Benzene	—	—	0.001	—	0.0025	
Naphthalene	—	—	0.3	—	0.75	

The monitoring frequencies and sample types are maintained from the previous permit including 2/discharge measurement of flow and 2/discharge grab sampling for TSS, Oil and Grease, Benzene, Naphthalene, and pH.

Clean Water Act Section 316(b) – Best Technology Available for Cooling Water Intake Structures

On August 15, 2014, EPA promulgated Clean Water Act Section 316(b) regulations that apply to cooling water intake structures at existing facilities. The regulations established best technology available (BTA) standards to reduce impingement mortality and entrainment of all life stages of fish and shellfish at existing power-generating and manufacturing facilities. The Final Rule took effect on October 14, 2014. Regulations implementing the 2014 Final Rule (and the previously promulgated Phase I Rule) are provided in 40 CFR part 125, Subparts I and J for new facilities and existing facilities, respectively. Associated NPDES permit application requirements for facilities with cooling water intake structures are provided in 40 CFR Part 122, Subpart B – Permit Application and Special NPDES Program Requirements (§ 122.21(r)).

The Clairton Plant has one cooling water intake structure, the Coke Works River Pump House (CWRPH), that withdraws approximately 59 MGD on average (91 MGD peak) from the Monongahela River. The actual design intake flow (DIF) is unknown, but, based on the observed maximum operation of individual pumps, the DIF is estimated to be 231 MGD. The CWRPH draws water through three forebay channels that are perpendicular to the river. Each forebay has two trash bar screens followed by two traveling screens prior to two pumps.

The five-year average Actual Intake Flow (AIF) is 53.3 MGD while the maximum daily intake flow for the past five years is 96 MGD. The through screen velocity at low river water level and at Maximum Daily AIF is 1.15 fps, 1.29 fps and 1.56 fps for forebays #1, #2 and #3 respectively. The through screen velocity at low water level and Average Daily AIF is 0.46 fps, 0.75 fps and 0.75 fps for forebays #1, #2 and #3 respectively. Once future changes are complete (1-3 batteries shutdown and Elizabeth Dam removal), the through screen velocity at low river water level and at Maximum Daily AIF will be 0.77 fps, 0.87 fps and 1.05 fps for forebays #1, #2 and #3 respectively. The through screen velocity at low water level and Average Daily AIF will be 0.29 fps, 0.5 fps and 0.49 fps for forebays #1, #2 and #3 respectively. The velocity at the face of the intake (trash screens) under normal and high flow river conditions will be less than 0.2 fps. The hydraulic zone of influence does not extend into the river past the face of the intake structure. The CWRPH operates continuously 365 days per year 24 hours per day. Over 25% of the water withdrawn is used primarily for cooling purposes.

General Applicability Criteria Evaluation

Section 316(b) of the Clean Water Act (33 U.S.C. § 1326(b)) states:

> (b) Any standard established pursuant to section 301 or section 306 of this Act and applicable to a point source shall require that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact.

EPA's "Technical Development Document for the Final Section 316(b) Existing Facilities Rule" [EPA-821-R-14-002] dated May 2014 explains Section 316(b) as follows:

> Section 316(b) addresses the adverse environmental impact caused specifically by the intake of cooling water, rather than discharges into water. Despite this special focus, the requirements of section 316(b) remain closely linked to several of the core elements of the NPDES permit program established under section 402 of the CWA to control discharges of pollutants into navigable waters. Thus, while effluent limitations apply to the discharge of pollutants by NPDES-permitted point sources to waters of the United States, section 316(b) applies to facilities subject to NPDES requirements that also withdraw water from a water of the United States for cooling and that use a cooling water intake structure to do so.

Existing facilities are subject to 40 CFR part 125, Subpart J – Requirements Applicable to Cooling Water Intake Structures for Existing Facilities Under Section 316(b) of the Clean Water Act (§§ 125.90 – 125.99) pursuant, in part, to the applicability criteria given by § 125.91(a) as follows:

1. The owner or operator of an existing facility, as defined in § 125.92(k), is subject to the requirements at §§ 125.94 through 125.99 if:

   (1) The facility is a point source;

   (2) The facility uses or proposes to use one or more cooling water intake structures with a cumulative design intake flow (DIF) of greater than 2 million gallons per day (mgd) to withdraw water from waters of the United States; and

(3) Twenty-five percent or more of the water the facility withdraws on an actual intake flow basis is used exclusively for cooling purposes.

The Clairton Plant is a point source that uses one cooling water intake structure (CWIS) with a design intake flow greater than 2 MGD and more than twenty-five percent of the water withdrawn is used for cooling purposes. Therefore, the Clairton Plant's CWIS is subject to the requirement at §§ 125.94 through 125.99.

Requirements for Existing Facilities (40 CFR § 125.94)

40 CFR § 125.94(a)(1) states that, "[o]n or after October 14, 2014, the owner or operator of an existing facility with a cumulative design intake flow (DIF) greater than 2 mgd is subject to the BTA (best technology available) standards for impingement mortality under paragraph (c) of this section, and entrainment under paragraph (d) of this section including any measures to protect Federally-listed threatened and endangered species and designated critical habitat established under paragraph (g) of this section."

While § 125.94(a)(1) generally obligates the owner or operator of an existing facility to comply with BTA standards for impingement mortality and entrainment, the implementation of 316(b) requirements is done through an NPDES permit based on information submitted in an NPDES permit application—including any supplemental information required by the Director (*i.e.*, DEP) pursuant to 40 CFR §§ 125.95(d), 125.98(i), and 122.21(r)(1)(ii)(C)—and a determination by the Director of the requirements and conditions that must be included in the permit. Permit application requirements and the Director's determination of BTA are subject to certain timeframes in the final rule, as discussed below.

Permit Application Requirements (40 CFR §§ 125.95(a), 125.98(a), and 122.21(r))

40 CFR § 125.98(a) requires the Director to review the materials submitted by the applicant under 40 CFR § 122.21(r) for completeness pursuant to 40 CFR § 122.21(e) at the time of initial permit application and any application for a subsequent permit and 40 CFR § 125.98(b) states that the Director must determine the requirements and conditions to include in the NPDES permit based on the information submitted in the permit application.

40 CFR § 122.21(e)(1) regarding application completeness states that "[t]he Director shall not issue a permit before receiving a complete application for a permit except for NPDES general permits. An application for a permit is complete when the Director receives an application form and any supplemental information which are completed to his or her satisfaction. The completeness of any application for a permit shall be judged independently of the status of any other permit application or permit for the same facility or activity. For EPA administered NPDES programs, an application which is reviewed under § 124.3 of this chapter is complete when the Director receives either a complete application or the information listed in a notice of deficiency." The requirement for application completeness in 40 CFR § 122.21(e) is mirrored in 25 Pa. Code § 92a.25.

By letter dated July 12, 2022, among other things, DEP notified USS of the need for additional application information because DEP did not receive an application containing supplemental information to DEP's satisfaction. Specifically, the letter stated: "pursuant to 40 CFR §§ 122.21(r)(1)(ii)(C) and 125.98(i) regarding the need for additional information to determine permit conditions and site-specific entrainment requirements, DEP requests USS to collect and submit one year of entrainment data for the Clairton Plant's cooling water intake structure." DEP explained the need for the information in the letter as follows:

> "DEP is requesting one year of entrainment data because the entrainment data from the Elrama Generating Station and Mitchell Power Station evaluated by USS in the 2017 NPDES permit renewal application are not specific to the Clairton Plant's cooling water intake structure. Therefore, those data have limited use for DEP's evaluation of site-specific entrainment requirements for the Clairton Plant. Additionally, the data were more than ten years old when USS submitted its renewal application in 2017 and are now more than fifteen years old. Consequently, the data do not capture any changes that have occurred in the Monongahela River during the intervening years, including, among other things, the elimination of Elrama's and Mitchell's impacts on the Monongahela River upstream of the Clairton Plant's cooling water intake structure.

Furthermore, 40 CFR § 125.94(d) requires the Director to consider the factors listed in § 125.98(f)(2) including:

(i) Numbers and types of organisms entrained, including, specifically, the numbers and species (or lowest taxonomic classification possible) of Federally-listed, threatened and endangered species, and designated critical habitat (e.g., prey base);

(ii) Impact of changes in particulate emissions or other pollutants associated with entrainment technologies;

(iii) Land availability inasmuch as it relates to the feasibility of entrainment technology;

(iv) Remaining useful plant life; and

(v) Quantified and qualitative social benefits and costs of available entrainment technologies when such information on both benefits and costs is of sufficient rigor to make a decision.

As listed above, one of the factors DEP must consider when determining site-specific entrainment requirements is the number and types of organisms entrained. USS's permit application included an entrainment reduction technology evaluation pursuant to a June 3, 2016 letter from DEP that requested such an evaluation. USS's evaluation provides information relating to some of the factors required for consideration. However, USS has no data on the numbers and types of organisms entrained by the Clairton Plant's CWIS (§ 125.98(f)(2)(i)). Therefore, data that DEP must consider are not available.[18]

Among other things, USS appealed the July 12, 2022 letter's request for site-specific entrainment data. After discussion between the parties, USS's appeal was dismissed on February 22, 2023 without prejudice to the right of USS to raise any and all factual or legal issues that were raised in the appeal docketed at EHB Docket. No 2022-056-B in any future proceeding, and without prejudice to DEP to take any future action based on the issues discussed in the July 12, 2022, letter. In effect, the parties returned to a state pre-dating the July 12, 2022 letter where there was a deficiency in supplemental information DEP requires to make a site-specific BTA determination for entrainment.

In its 2023 Application Update, USS proposed to use entrainment data from USS's Edgar Thomson Plant collected from November 2022 through January 2023 to assess entrainment at the Clairton Plant. However, the same limitations on site-specificity discussed in the July 12, 2022 letter apply to the use of entrainment data from USS's Edgar Thomson Plant. Fish are unevenly distributed with concentrations of individuals in areas where food resources, protective cover from predators, ideal spawning conditions or other preferred habitat or water quality conditions exist, and fewer individuals where those conditions are lacking. Additionally, differences in hydrology and flow patterns/rates can influence concentrations of larval fish and eggs and susceptibility to entrainment. Studies have shown significant differences (several times or even orders of magnitude difference) in ichthyoplankton concentrations across the width of streams and even at different depths at the same point in a stream. EPRI (2014) states "variations in spatial distribution, coupled with hydraulic conditions that depend on intake type, design, and operation, as well as waterbody hydrodynamics, may result in variations in entrainment rates among units" of the same facility. Due to micro-habitat differences and the influence those differences would have on ichthyoplankton concentrations and entrainment rates, it would be difficult, if not impossible, to accurately estimate entrainment rates between closely located facilities or even different units at the same facility. Apart from micro-habitat considerations, there are large-scale differences between the Edgar Thomson and Clairton Plants that preclude the use of entrainment data from the Edgar Thomson Plant. While the Edgar Thomson Plant and Clairton Plant are in the same pool of the same river, the Youghiogheny River (a major tributary) empties into the Monongahela River between the intake locations. Additionally, the Edgar Thomson Plant's intake is located in or around the lock chamber at the downstream end of the pool, where the river has more lake-like characteristics, while the Clairton facility is located upstream in a more free-flowing section of the river. Furthermore, Lock and Dam 3 at Elizabeth has been substantially removed by the U.S. Army Corps of Engineers which has turned the Braddock Pool of the Monongahela River from a 12.5-mile stretch of free-flowing water into a 30.2-mile stretch of free-flowing water, which may affect the biological community in that pool. These factors preclude the use of entrainment data from the Edgar Thomson Plant.

Pursuant to 40 CFR § 122.21(e)(1) and 25 Pa. Code § 92a.25, USS's application remains deficient with respect to supplemental information requested by DEP under 40 CFR §§ 122.21(r)(1)(ii)(C) and 125.98(i). The permit will require USS to develop site-specific entrainment data pursuant to 40 CFR § 125.95(a)(2), which states that, "[t]he owner or operator of a facility subject to this subpart whose currently effective permit expires prior to or on July 14, 2018, may request the Director to establish an alternate schedule for the submission of the information required in 40 CFR 122.21(r) when applying for a subsequent permit (consistent with the owner or operator's duty to reapply pursuant to 40 CFR 122.21(d)). If the owner or operator of the facility demonstrates that it could not develop the required information by the applicable date for submission, the Director must establish an alternate schedule for submission of the required information."

USS's currently effective permit expired on September 30, 2017 (prior to July 14, 2018). Notwithstanding the lack of a request from USS to establish an alternative schedule for the submission of site-specific entrainment data under 40 CFR

[18] There is no provision in the rule for the reporting of surrogate data on the numbers and types of organisms entrained.

§§ 122.21(r)(1)(ii)(C) and 125.98(i) (given that USS does not consider the information to be necessary), the permit will require USS to collect site-specific entrainment data.

In the absence of sufficient information, DEP is not making a BTA determination for either impingement or entrainment at the Clairton Plant's CWIS because entrainment BTA may involve changes to the CWIS that impact impingement or there may be an interdependent system of technologies that represent BTA for impingement and entrainment. Data developed during the next permit cycle should enable DEP to make BTA determinations with the next permit renewal. The permit conditions that will be included in the permit are shown below.

316(b) Permit Conditions

I. COOLING WATER INTAKE STRUCTURE

A. Nothing in this permit authorizes a take of endangered or threatened species under the Endangered Species Act.

B. Technology and operational measures currently employed at the cooling water intake structure(s) must be operated in a way that minimizes impingement mortality and entrainment to the fullest extent possible.

C. The permittee shall not alter the location, design, construction or capacity of the intake structure(s) without prior approval of DEP.

D. Requirements for Permit Renewal Application.

The permittee shall submit the applicable information specified in 40 CFR § 122.21(r) with its subsequent permit renewal application, as follows:

1. Source water physical data.
2. Cooling water intake structure data.
3. Source water biological baseline characterization data.
4. Cooling water system data.
5. Chosen method(s) of compliance with impingement mortality standard.
6. Entrainment performance studies.
7. Operational status.
8. The facility will provide information to the Department which addresses the specific factors outlined in 40 CFR §125.98(f)(2).
9. If DEP requests additional information to make a BTA determination, the permittee shall submit information within 30 days unless an alternate schedule is approved by DEP.
10. The permittee shall complete one (1) year of entrainment sampling during the permit term. The permittee shall submit an entrainment sampling study plan within one (1) year of the Permit Effective Date for approval by DEP. The study plan shall include the following, at a minimum:

a. Sampling

i. The sampling should be inclusive of the peak season of entrainment, with a minimum of April through August for at least one year.

The sampling frequency must be a minimum of bi-weekly during the period of peak abundance (April through August) and monthly during the remainder of the year-long study."

ii. Four samples must be spread out across a 24-hour period (one event per six-hour window)

b. Results

i. Samples should be enumerated by life stage and taxon.

ii. There should be an estimation of total entrainment.

c. Quality Assurance/Quality Control (QA/QC)

A QA/QC plan must be submitted with the study plan and include the following, at a minimum:

i. There must be one sequential replication, taken in the same six-hour window, for every twenty (20) samples. For example, if 10 events are performed with four samples per event (40 samples total), then two sequential replicates are necessary. Sequential replicates should be rotated to different 6-hour windows (day vs. night).

ii. The results of the QC steps must be provided to the Department upon request.

The results of the entrainment sampling (including QA/QC results) shall be summarized in a report accompanying the permit renewal application.

E. If the permittee wishes to submit a request for a reduction in permit application requirements as outlined in 40 CFR §125.95 (c) it must be submitted to DEP at least two years and six months before this permit expires. The option to request a reduction in permit application requirements does not include requirements specified under Paragraph D.10 of this condition regarding entrainment sampling.

F. The permittee shall retain data and other records for any information developed pursuant to Section 316(b) of the Clean Water Act for a minimum of ten years.

G. New Units.

The permittee must submit applicable information in 40 CFR §122.21(r) at least 180 days prior to the planned commencement of cooling water withdrawals associated with the operation of a new unit (as defined in 40 CFR §125.92(u)).

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment H)
☒	Toxics Management Spreadsheet (see Attachment F, G, and I)
☐	TRC Model Spreadsheet (see Attachment)
☐	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: Standard Operating Procedure for Clean Water Program New and Reissuance Industrial Waste and Industrial Stormwater Individual NPDES Permit Applications, SOP No. BCW-PMT-001, February 5, 2024, Version 1.7.
☒	SOP: Standard Operating Procedure for Clean Water Program Establishing Effluent Limitations for Individual Industrial Permits, SOP No. BCW-PMT-032, February 5, 2024, Version 1.7.
☐	Other:

ATTACHMENT A

Iron and Steel Effluent Limitations Guidelines
BPT Model Flow Rates

TABLE IX-2

BPT MODEL FLOW RATE
BY-PRODUCT COKEMAKING SUBCATEGORY

(All Flows in Gallons/Ton of Coke)

Wastewater Source	Flow Basis BPT Effluent I&S	Flow Basis BPT Effluent Merchant
Waste Ammonia Liquor	32	36
Final Cooler Blowdown	10	12
Barometric Condenser Discharge	75	75
Benzol Plant Wastewater	25	28
Steam & Lime Slurry	13	15
Miscellaneous Sources (leaks, seals, test taps, drains)	20	24
Subtotal - Process Wastewaters	175	190
Dilution to optimize bio-oxidation	50	50
TOTAL FLOW FOR BIOLOGICAL TREATMENT SYSTEMS	225	240
Additional Flow Allowances Provided in the Regulation:		
For Qualified Desulfurizers (Wet), up to:	25	25
For Indirect Ammonia Recovery, up to:	60	60
No Additional Allowances For:		
Air Pollution Control Scrubbers:		
Coal Drying or Preheating - up to 15 GPT Blowdown*	0	0
Charging/Larry Car - up to 5 GPT Blowdown*	0	0
Pushing Side Scrubber - up to 100 GPT Blowdown*	0	0
MAXIMUM TOTAL FLOW	310	325

*: Up to 50 GPT of dilution water is replaced by blowdowns from air pollution control scrubbers. Any excess blowdown (from pushing only) is disposed of via quenching operations, or treated and reused in the scrubber system.

ATTACHMENT B

Clean Water Act § 301(g) Variance for Ammonia-Nitrogen and Phenols (4AAP)

Clean Water Act Section 301(g) Variances

The Clean Water Act (CWA) § 301(b)(2)(F) [33 U.S.C. § 1311(b)(2)(F)], requires dischargers to achieve effluent limitations for nonconventional pollutants based on the Best Available Technology Economically Achievable (BAT). Section 301(g) of the CWA [33 U.S.C. § 1311(g)] provides that the owner or operator of a point source discharging certain nonconventional pollutants may obtain a modification of the requirements of § 301(b)(2)(F). The pollutants eligible for a 301(g) variance are ammonia, chlorine, color, iron, or total phenols (4AAP), or any other nonconventional pollutant that EPA lists under Section 301(g)(4). To date, EPA has not listed any other nonconventional pollutant.

The discharger is eligible for a Section 301(g) variance if it demonstrates that the modified requirements will meet the following criteria, as set forth in Section 301(g)(2) [33 U.S.C. § 1311(g)(2)], including:

(A) such modified requirements will result at a minimum in compliance with the requirements of subsection (b)(1)(A) or (C) of this section, whichever is applicable;

(B) such modified requirements will not result in any additional requirements on any other point or nonpoint source; and

(C) such modification will not interfere with the attainment or maintenance of that water quality which shall assure protection of public water supplies, and the protection and propagation of a balanced population of shellfish, fish, and wildlife, and allow recreational activities, in and on the water and such modification will not result in the discharge of pollutants in quantities which may reasonably be anticipated to pose an unacceptable risk to human health or the environment because of bioaccumulation, persistency in the environment, acute toxicity, chronic toxicity (including carcinogenicity, mutagenicity or teratogenicity), or synergistic propensities.

EPA's "Technical Guidance Manual for the Regulations Promulgated Pursuant to Section 301(g) of the Clean Water Act of 1977" ("301(g) Technical Guidance) provides a checklist to be used to evaluate a variance request, which is slightly more detailed list of qualifying criteria than Section 301(g)(2):

- the variance is not available for pollutants designated as toxic, conventional, or as a thermal component of a discharge;
- the new limitation will not be less than required by Best Practicable Control Technology Currently Available (BPT)
- the new limitation will comply with applicable water quality standards specific to the nonconventional pollutant
- the modification will not result in any additional requirements on any other point or nonpoint source.
- the modification will not interfere with the attainment or maintenance of water quality that assures protection of public drinking water supplies and the protection and propagation of fish, shellfish, and wildlife, and allows recreational activities in and on the water.
- the modification will not result in a discharge of pollutants in quantities which may reasonably be anticipated to pose an unacceptable risk to human health or the environment due to acute toxicity, chronic toxicity (including carcinogenicity, mutagenicity or teratogenicity), bioaccumulation, persistency in the environment, or synergistic propensities.

EPA is the approving authority for 301(g) variances, but DEP makes its recommendations since the variance is predicated on compliance with Pennsylvania's water quality standards.

Summary of Recommendations

Ammonia-Nitrogen Variance: Renew

Phenols (4AAP) Variance: Renew

In accordance with Section 301(g) of the Clean Water Act, USS submitted a request to renew variances from applicable Ammonia-Nitrogen and Phenols (4AAP) BAT performance standards promulgated on October 17, 2002 for the Cokemaking Subcategory of the Iron and Steel Manufacturing Point Source Category Effluent Limitations Guidelines. USS's proposed modified effluent limitations (PMELs) for Ammonia-Nitrogen and Phenols (4AAP) are the mass limits imposed at IMP 183 in the permit renewal that took effect on February 1, 2002 based on 1982 BAT standards in effect before October 17, 2002.

USS evaluated the 301(g) Technical Guidance checklist items for its initial 301(g) variance for Ammonia-Nitrogen and Phenols (4AAP) and performed an updated review for its request to renew those variances in its 2017 Application and its 2023 Application Update. DEP reviewed USS's checklist evaluation and also performed its own supplemental evaluations for certain checklist items. Based on USS's and DEP's evaluations, discharges containing Ammonia-Nitrogen and Phenols (4AAP) at the PMELs will:

- Comply with BPT as specified in the Cokemaking Subcategory of the Iron and Steel ELG
- Comply with applicable state water quality standards
- Not impact other point and nonpoint sources
- Not impact water supplies
- Not impact recreational activities
- Not impact human health
- Not result in synergism/persistency

Therefore, DEP recommends that the Ammonia-Nitrogen Phenols (4AAP) variances be renewed. Further details regarding compliance with the criteria for Section 301(g) variance approval for Ammonia-Nitrogen and Phenols (4AAP) are described under each section of the attached checklist.

United States Steel Corporation
Mon Valley Works
Clairton Plant
NPDES Permit No. PA0004472

Requests for Section 301(g) Variances for Ammonia-N and Total Phenols (4AAP)

Introduction

United States Steel Corporation (U. S. Steel) Mon Valley Works, Clairton Plant (Clairton) is located on the Monongahela River at Clairton, PA. Clairton is the largest by-product coke plant in the United States with capacity to produce 13,472 tons per day of metallurgical coke plus breeze.[1] Coke produced at Clairton is used in U. S. Steel blast furnaces to produce molten iron and sold on the open market. Wastewater discharges from Clairton are regulated by 40 CFR Part 420, the federal effluent limitations guidelines and standards for the iron and steel industry and by Pennsylvania water quality standards. 40 CFR part 420 was last amended by U.S. EPA (EPA) on October 17, 2002. New Best Available Technology (BAT) effluent limitations guidelines for by-product cokemaking operations were promulgated by EPA at that time.

Section 301(g) of the Clean Water Act provides for modification Of Best Available Technology (BAT) effluent limits for non-conventional pollutants under certain circumstances. The modified effluent limits cannot be less stringent than the generally applicable Best Practicable Technology (BPT) effluent limits, or limits derived from state water quality standards, whichever are more stringent. U. S. Steel provided notification of its intent to apply for Section 301(g) variances for the non-conventional pollutants ammonia-N and phenols (4AAP) on July 14, 2003, which was within the 270-day window for such notifications authorized by the federal NPDES permit regulations at 40 CFR §122.21.

This is a request from U. S. Steel for modification of the generally applicable best available technology (BAT) effluent limits for ammonia-N and phenols (4AAP) that are derived from the effluent limitations guidelines at 40 CFR §420.13(a). The effluent limitations guidelines that were promulgated by EPA on October 17, 2002 are being applied for the first time in the renewal NPDES permit for Clairton now under consideration. EPA's Section 301(g) variance checklist was used to prepare this report.

The proposed modified effluent limits (PMELs) will apply to internal Outfall 183, which is the discharge from the Clairton physical/chemical and biological process wastewater treatment system. The discharge from Clairton internal Outfall 183 averages approximately 2.3 million gallons per day (mgd). It comprises treated by-product coke plant process wastewaters; treated process wastewaters from a co-located Koppers coal tar processing facility; treated contaminated site groundwater; and other treated process and non-process wastewaters including process area storm water. These process and non-process wastewaters are treated in a physical/chemical and biological wastewater treatment facility that includes all of the treatment operations included in EPA's 2002 model BAT treatment facility for by-product coke plants.

Internal Outfall 183 discharges to final Outfall 038, which empties into the Monongahela River at river mile 20.076. Outfall 038 also discharges noncontact cooling water, cooling tower blowdown, barometric and steam condensate and storm water. The Outfall 038 long term average discharge flow is approximately 52.1 mgd.[2]

The Pennsylvania Department of Environmental Protection (the Department) is considering the generally applicable best practicable technology (BPT) effluent limits as proposed modified effluent limits (PMELS) at Outfall 183 for these Section 301(g) variances.[3] The BPT effluent limits are the maximum effluent limits that can be allowed under Section 301(g), provided ambient Pennsylvania water quality standards can be achieved in the Monongahela River and the other Section 301(g) criteria can be met. However, the generally applicable BPT mass effluent limits for ammonia-N being considered by the Department at Outfall 183 are so high that the resulting Outfall 038 effluent concentrations would cause acute or chronic toxicity. Accordingly, U. S. Steel is proposing more stringent PMELs that will meet all Section 301(g) criteria and that can be recommended for approval by the Department and approved by EPA.

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[1] The reported cakemaking capacity includes planned production from C-battery, which is a new coke battery under construction. C-Battery is scheduled to come on line November 1, 2012.

[2] Attachment to e-mail from Matthew E. Caprarese, P.E., Manager — Environmental Control, Water, United States Steel Corporation, Pittsburgh. PA to Thomas Joseph, P.E., Environmental Engineer, Pennsylvania Department of Environmental protection, Pittsburgh, PA May 23, 2012. Revised Figure 2 of 2006 Clairton NPDES Permit Application.

[3] Pennsylvania Bulletin. Volume 42, Number 25. Saturday, June 23. 2012, Harrisburg, PA. (pp. 3551-3712). U. S. Steel has been advised by the Department that a second public notice regarding the draft NPDES permit for Clairton will be published in the Pennsylvania Bulletin: and, that the second public notice will include the Option 2 PMELs for ammonia-N and total phenols (4AAP) reviewed in this report.

As shown in this report, the PMELs proposed by U. S. Steel as Section 301(g) effluent limits are substantially more stringent than the generally applicable BPT effluent limits and meet all Section 301(g) criteria.

301(g) Variance Checklist Review

USS's responses are shown in regular type below each checklist item. DEP's comments on the checklist items are provided in *Blue Italics*.

I. Preliminary Information

Did the applicant provide the following:

☒ ***1. Legal name and mailing address?***

United States Steel Corporation
Mon Valley Works
Clairton Plant
400 State Street
Clairton, PA 15025 *No change.*

☐ ***2. Name and address of the point source for which the variance is being sought if it is different from Number 1?***

Same as Number 1 *No change.*

☒ ***3. Facility ID Number (EPA ID Number)?***

NPDES Permit No. PA0004472
EPA ID No. PA004498010 *No change.*

☒ ***4. Name, title, telephone number and address of person in the firm to contact about the section 301(g) completed request?***

Contact updated to:

Matthew E. Ceprarese, P.E.
Manager - Environmental Control, Water
United States Steel Corporation
Penn Liberty Plaza I
1350 Penn Avenue, Suite 200
Pittsburgh, PA 15222-421 1

Telephone: 412.433.5918
Email: MECaprarese@uss.com

Eric Williams
USS Environmental Affairs
Manager – Water
United States Steel Corporation
400 State Street, MS No. 71
Clairton, PA 15028-1855

Telephone: 412.433.5918
Email: ewilliams@uss.com

☒ ***5. Identification of the nonconventional pollutant(s) or pollutant parameter for which a section 301(g) variance is sought?***

Ammonia-N
Phenols (4AAP) *No change.*

☒ ***6. The 40 CFR citation for the specific effluent guideline containing the limitation from which the section 301(g) variance is sought?***

Ammonia-N	40 CFR § 420.13(a)
Phenols (4AAP)	40 CFR § 420.13(a)

No change.

☒ ***7. The date the initial request (in accordance with 40 CFR 122.21) for the section 301(g) variance was submitted to EPA? (Was a postcard submitted by September 1978, or was an initial request submitted 270 days after the promulgation of the applicable guideline?)***

Promulgation date for 40 CFR Part 420: October 17, 2002

Ammonia-N	Initial request:	July 14, 2003	
Phenols (4AAP)	Initial request:	July 14, 2003	*No change.*

☒ ***8. The date the applicable BAT effluent guideline(s) was promulgated? (If no BAT effluent guidelines were promulgated, the date the notice of preparation of the draft BPJ/BAT permit was published.)***

Ammonia-N October 17, 2002
Phenols (4AAP) October 17, 2002
See 40 CFR § 420.12(a)

Pollutant	BAT Effluent Limitations Guidelines (lbs/1000 lb product)		BAT Limits Calculated by PaDEP (lbs/day)	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
Ammonia-N	0.00202	0.00293	112.0	151.2
Phenols (4AAP)	0.0000238	0.0000381	1.028	1.654
			Conc. at Outfall 038 flow 52.1 mgd (mg/L)	
Ammonia-N			0.258	0.348
Phenols (4AAP)			0.0023	0.0038

U.S. Steel does not agree with the BAT effluent limits for ammonia-N and phenols (4AAP) that were calculated by the Department.[4] U.S. Steel determined the BAT effluent limits shown directly below reflect the proper NPDES permit production rate for Clairton and properly reflect mass BAT allowances provided by 40 CFR Part 420 for base flow and non-base flow (see Attachment B).

Pollutant	BAT Effluent Limitations Guidelines (lbs/1000 lb product)		BAT Limits Calculated by U. S. Steel (lbs/day)	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
Ammonia-N	0.00202	0.00293	108	157
Phenols (4AAP)	0.0000238	0.0000381	1.28	2.04
			Conc. at Outfall 038 flow 52.1 mgd (mg/L)	
Ammonia-N			0.248	0.361
Phenols (4AAP)			0.0029	0.0047

The Effluent Limitations Guidelines promulgated on October 17, 2002 took effect on November 18, 2002. Applicable BAT Effluent Limitations Guidelines have not changed since the initial request. However, production-based BAT mass limits for U.S. Steel have changed due to reduced coke production at the Clairton Plant including the shutdown of coke production Batteries 1, 2 and 3 and the replacement of Batteries 7, 8, and 9 with Battery C. Refer to Table 10 in this Fact Sheet for calculated BAT mass limits.

☒ ***9. The proposed modified effluent limitation (PMEL) for the nonconventional pollutant?***

Pollutant	Option 1 BPT Limits Calculated by PaDEP (lbs/day)	
	Monthly Average	Daily Maximum
Ammonia-N	2,921.8	8,751.6
Phenols (4AAP)	48.04	143.96
	Conc. at Outfall 038 flow 52.1 mgd (mg/L)	
Ammonia-N	6.72	20.1
Phenols (4AAP)	0.110	0.331

[4] See Comment Nos. 1 and 3 in U.S. Steel's Comments in response to the Department's Draft NPDES Permit (submitted to the Department on July 30, 2012) for further detail.

Pollutant	Option 2 Current NPDES Permit Limits (lbs/day)	
	Monthly Average	Daily Maximum
Ammonia-N	543	1841
Phenols (4AAP)	1.07	2.13
	Conc. at Outfall 038 flow 52.1 mgd (mg/L)	
Ammonia-N	1.25	4.23
Phenols (4AAP)	0.0025	0.0049

Note that under either Option 1 or Option 2, only mass effluent limits are considered as PMELs. The effluent concentrations shown above at the long term average Outfall 038 flow are presented for purposes of evaluating the potential for effluent toxicity associated with the PMELs. Using the long term average flow for Outfall 038 for these analyses is more conservative [than] using the design flow of 84.8 mgd cited by the Department in its public notice because less dilution of the Outfall 183 effluent in the Outfall 038 discharge results.

The maximum Option 1 PMELs under consideration by the Department for ammonia-N would likely exhibit both acute and chronic toxicity[5] to fathead minnows in the Outfall 038 discharge and are not considered viable Section 301(g) variance limits. Furthermore, the water quality assessments for ammonia-N and total phenols (4AAP) conducted for these Section 301(g) variance applications show ambient water quality standards would not be met with the Option 1 PMELs (see Section II.A).

The Option 2 PMELs proposed by U. S. Steel are the current NPDES permit effluent limits for Outfall 183, and as shown and in this report, meet all Section 301(g) criteria. Those limits are the BAT effluent limits derived from the version of 40 CFR Part 420 in effect at the time the current NPDES permit was issued. The Department also evaluated the current NPDES permit limits when it prepared the Pollution Report for the current NPDES permit and ostensibly made findings that the current limits met all requirements with respect to Pennsylvania ambient water quality standards.[6] It should be noted that applicable water quality standards for both ammonia-nitrogen and phenols have not changed since the issuance of the 2001 Pollution Report and final NPDES permit.

The Option 2 PMELs for ammonia-N are more stringent than necessary to meet Pennsylvania ambient water quality standards for ammonia-N when considering a limited amount of mixing in the Monongahela River and upstream and downstream dischargers of ammonia-N. The Option 2 PMELs for phenols (4AAP) would result in Outfall 038 concentrations less than the 0.005 mg/L drinking water standard, so the PMELs for phenols (4AAP) do not pose any water quality issues.

Option 1 PMELs were not approved.
Option 2 PMELs (mass only) were previously approved and are requested by U.S. Steel to be renewed.

☒ ***10. The promulgated BPT effluent guideline limitations? (If no BPT guidelines exists, the limitation derived by the State/Region.)***

Pollutant	BPT Effluent Limitations Guidelines (lbs/1000 lb product)		BPT Limits Calculated by PaDEP (lbs/day)	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
Ammonia-N	0.0912	0.274	2,921.8	8,751.6
Phenols (4AAP)	0.00150	0.00451	48.04	143.96
			Conc. at Outfall 038 flow 52.1 mgd (mg/L)	
Ammonia-N			6.72	201.
Phenols (4AAP)			0.110	0.331

[5] Based on available literature and consultation with toxicologists with experience regarding ammonia toxicity to aquatic life

[6] Pollution Report. United States Steel LLC, Clairton Works, NPDES Permit No. PA 0004472, Clairton, Allegheny County, November 2001.

U. S. Steel does not agree with the BPT effluent limits for ammonia-N and phenols (4AAP) that were calculated by the Department.[4] U. S. Steel determined the BPT effluent limits shown directly below reflect the proper mass BPT allowances provided by 40 CFR Part 420 for non-process and process wastewaters (see Attachment B).

Pollutant	BPT Effluent Limitations Guidelines (lbs/1000 lb product)		BPT Limits Calculated by PaDEP (lbs/day)	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
Ammonia-N	0.0912	0.274	3,135	9,419
Phenols (4AAP)	0.00150	0.00451	51.6	155
			Conc. at Outfall 038 flow 52.1 mgd (mg/L)	
Ammonia-N			7.21	21.7
Phenols (4AAP)			0.119	0.357

Applicable BPT Effluent Limitations Guidelines have not changed since the initial request. However, production-based BPT mass limits have changed due to reduced coke production at the Clairton Plant including the shutdown of coke production Batteries 1, 2 and 3 and the replacement of Batteries 7, 8, and 9 with Battery C. Refer to Table 10 in this Fact Sheet for calculated BPT mass limits.

☐ ***11. The permit compliance schedule?***

No change. The requested PMELs are already in effect.

☒ ***12. A list or description of State water quality standards applicable to the nonconventional pollutant(s)?***

The Monongahela River is designated by Pennsylvania for the following water uses.[7]

- Aquatic Life: Warm Water Fishes (WWF)
- Water Supply: Potable Water Supply (PWS)
  Industrial Water Supply (IWS)
  Livestock Water Supply (LWS)
  Wildlife Water Supply (WWS)
  Irrigation (IRS)
- Recreation: Boating (B)
  Fishing (F)
  Water Contact Sports (WC)
  Esthetics (E)
- Navigation (N)

See Attachment C for Pennsylvania water quality standards for ammonia-N and phenols (4AAP). The 30-day average and maximum water quality standards for ammonia-N are related to pH and temperature of the receiving water. The standards provide that pH and temperature data used to calculate site-specific ammonia-N criteria values must be representative of median pH and temperature for the period July through September. The water quality design flow for ammonia-N is specified as the $Q_{30,10}$, which is the lowest 30-consecutive day average flow that occurs once in ten years (see Table 1, 25 PA Code Ch. 96.4(g)). Technical guidance published by the Department states the $Q_{1,10}$ flow, which is the minimum 24-nour average flow that occurs once in ten years, should be used as the water quality design flow for application of the maximum ammonia-N water quality standard.[8]

[7] 25 PA Code, Section 93.4(a), Table 2. Statewide water uses.

[8] Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia-N. Version 1_0. Document No. 391-2000-007 Bureau of Water Supply and Wastewater Management. Pennsylvania Department of Environmental Protection, June 26, 2004. p. 6.

The Pennsylvania maximum water quality standards for ammonia-N are considerably more stringent than the current water quality criteria recommended by U.S. EPA[9], and more stringent than comparable water quality standards adopted by nearby states. The following table presents comparisons at typical Monongahela River summertime pH and temperature values of 7.6 su and 26°C.

Ammonia-N Water Quality Criteria at stated pH and Temperature	Monthly Average or CCC pH 7.6 su, Temperature 26°C	Maximum or CMC pH 7.6 su, Temperature 26°C
Pennsylvania	0.89	3.34
U.S. EPA (2009) Early life stages present	1.9	17.0
Indiana	2.07	10.4
Ohio	1.0	6.9
Virginia	1.9	11.4
West Virginia	1.9	11.4

The maximum phenols (4AAP) water quality standard is 0.005 mg/L and is applicable for Public Water Supplies. 25 PA Code Ch and (d) provide that the phenols (4AAP) water quality standard must be met 99% of the time at the point of existing or planned surface potable water supply withdrawals.

Statewide water quality criteria for Ammonia-N were updated by publication of a final rulemaking in the Pennsylvania Bulletin on July 11, 2020 (approved by EPA in 2021). The rulemaking reflects Pennsylvania's adoption of the corrected version of EPA's recommended Aquatic Life Ambient Water Quality Criteria for Ammonia—Freshwater 2013. To compare, the updated CCC and CMC Ammonia-N criteria are shown below.

Ammonia-N Water Quality Criteria at stated pH and Temperature	*Monthly Average or CCC pH 7.6 su, Temperature 26°C*	*Maximum or CMC pH 7.6 su, Temperature 26°C*
Pennsylvania (2020)	*0.862*	*4.81*

At a pH of 7.6 s.u. and a temperature of 26°C, the CCC (chronic) criterion for ammonia-nitrogen is more stringent than DEP's old CCC criterion, but the CMC (acute) criterion is less stringent than the old CMC criterion. However, that relationship does not hold for all pHs and temperatures when comparing the old ammonia-nitrogen criteria to the new criteria. At the pH and temperature used for USS's updated 301(g) calculations in its 2023 Application Update, the old ammonia-nitrogen criteria (CCC and CMC) are more stringent than the new criteria, so, all other things being equal, USS's previous demonstration of no water quality impacts from the imposition of the PMELs should hold.

Mixing Conditions	*Criteria Variables*		*Old Criteria*		*New Criteria*	
	pH (s.u.)	*Mixed Temp. (°C)*	*CMC (mg/L)*	*CCC (mg/L)*	*CMC (mg/L)*	*CCC (mg/L)*
Acute	*7.4*	*32.4*	*2.824*	*0.645*	*3.82*	*0.680*
Chronic	*7.4*	*27.7*	*3.869*	*0.883*	*5.63*	*0.920*

II. Environmental Quality Information

A. IMPACT TO POINT AND NONPOINT SOURCES

Did the applicant provide:

☒ ***1. An analysis of the potential impact of the applicant's PMEL on other point and nonpoint sources in the vicinity of the point of discharge?***

[9] National Recommended Water Quality Criteria. United States Environmental Protection Agency. Office of Water. Office of Science and Technology (4304T). Washington. D.C. 2009. http://water.epa.gov/scitech/swguidance/standards/current/

Attachment D is a list of Monongahela River and Ohio River water users located up to 20 miles downstream of the Clairton Plant. The nearest downstream point source dischargers to the Monongahela River are the Glassport Borough Sewage Treatment Plant and the U. S. Steel Corporation, Mon Valley Works, Irvin Plant, located approximately 2.5 miles downstream of Outfall 038.

The ammonia-N water quality assessment included as Attachment E shows there would be no significant impact on any downstream dischargers from the Option 2 PMELs.

The nearest downstream public water supply is the Hayes Mine Plant of Pennsylvania-American Water Company. This facility is located in Pittsburgh, approximately 15.6 miles downstream of Clairton. The phenols (4AAP) water quality assessment included as Attachment F shows there would be no significant impact from the Option 2 PMELs.

Specifically, did the applicant:

☒ ***a. Identify all the point and nonpoint sources in the vicinity of its discharge (with assistance of State permitting authority)?***

Yes. Sources within a twenty-mile distance downstream of the plant's discharge were identified.

☒ ***b. Obtain a determination from the State or interstate agency(s) having authority to establish wasteload allocations indicating whether the discharge of the PMEL would result in an additional treatment, pollution control, or other requirements on any point or nonpoint sources? (The State must include a discussion of the basis for its conclusion.)***

No. US Steel independently developed a simplified TMDL for Ammonia-N to evaluate whether additional controls are necessary on downstream dischargers. Separately, US Steel concluded that concentrations of Phenols (4AAP) at Outfall 038 based on the mass PMELs imposed at IMP 183 were less than water quality criteria for Total Phenolics.

If neither a or b were addressed:

☒ ***c. Confer with nearby point sources to determine the possible impact on those sources if the PMEL were approved in a Section 301(g) variance?***
Yes.

B. IMPACT TO RECREATIONAL ACTIVITIES

Did the applicant provide:

☒ ***1. An analysis of the potential impact the PMEL would have on recreational activities in and on the water in the vicinity of the discharge?***
Yes.

Specifically, did the applicant:

☒ ***a. Identify recreational activities in and on the water in the on the water in the vicinity of its discharge?***
Yes, see I.12 of this checklist. Recreational activities in and on the receiving water are defined by the protected uses of the receiving water as identified in Pennsylvania regulations, 25 Pa. Code Chapter 93.

☒ ***b. Provide an analysis which determined whether the PMEL would interfere with recreational activities beyond the mixing zone including without limitation swimming, diving, boating, fishing, and picnicking and sports activities along shorelines and beaches?***

The Monongahela and Ohio Rivers downstream of the Outfall 038 discharge are used for fishing and recreational water uses. The Option 2 PMELs will result in compliance with Pennsylvania water quality standards for protection of fish and other aquatic life and will

not interfere with any identified downstream recreational activities. Indeed, there has not been any indication that permitted discharges from Outfall 038 have had any long term adverse impacts on aquatic life or recreational activities in the area of the discharge.

Yes. The applicant referred to DEP's impaired water listing to determine whether there were existing impairments for any of the uses listed above. A TMDL for PCBs and Chlordane is in effect due to fish consumption impairment in the Monongahela River. Another impairment listing was proposed (after the 301(g) variance request was received) for the river's potable water supply use caused by sulfates, but the listing was never finalized. Regardless, the parameters for which PMELs are proposed are not considered to be contributing sources to existing or proposed impairments of the Monongahela River.

C. IMPACT TO PUBLIC WATER SUPPLIES

Did the applicant provide:

☒ ***1. An analysis of the potential impact of the PMEL to public water supplies in the vicinity of its discharge?***

As noted above, the nearest downstream public water supply on the Monongahela River is located approximately 15.6 miles downstream of Outfall 038. There are no public water supply water quality standards for ammonia-N. The maximum water quality standard for phenols (4AAP) is 0.005 mg/L, and that standard applies at the point of withdrawal for the public water supply, and the expected (and actual) in-stream concentrations of ammonia-N in the Monongahela River are not expected to result in additional treatment requirements at the nearest downstream or any public water supplies.

The water quality assessment for phenols (4AAP) presented as Attachment F shows the PMELs would results in attainment of the 0.005 mg/L standard in the Outfall 038 discharge. Thus, the Option 2 PMELs will not prevent the public water supply from being used, or require the public water supply to provide additional treatment. Indeed, the Option 2 PMELs would result in compliance with the Pennsylvania water quality standards for phenols (4AAP) in the Outfall 038 discharge before any dilution in the Monongahela River.

Specifically, did the applicant:

☒ ***a. Identify the public water supplies in the vicinity of its discharge?***
Yes. See II.A.1 of this checklist.

☒ ***b. Provide an analysis which demonstrated that the PMEL would not prevent a planned or existing public water supply from being used, or from continuing to be used as a public water supply, or have the effect of requiring any public water supply to provide additional treatment?***
Yes, to the extent that criteria for the protection of public water supplies are achieved within the state's criteria compliance time (see E.1 of this Checklist for further explanation).

D. IMPACT TO AQUATIC LIFE AND HUMAN HEALTH

Did the applicant provide:

☒ ***1. A demonstration that the PMEL would still maintain water quality which protects the propagation of a balanced population of shellfish, fish, and wildlife and that the PMEL would not pose an unacceptable risk to human health and the environment because of bioaccumulation, persistency, acute toxicity, chronic toxicity (including carcinogenicity, teratogenicity, mutagenicity) or synergistic effects?***
Yes, through compliance with applicable water quality criteria for those protected uses.

Speczfically, did the applicant:

☒ ***a. Identify a State water quality standard or an EPA water quality criterion (most recent published or Red Book) for the nonconventional pollutant which protects both aquatic life and human health at the edge of the mixing zone?***
Yes. State water quality standards for Ammonia-N and Total Phenolics are identified in 25 Pa. Code Chapter 93 (see I.12 of this checklist).

or ☐ ***b. Derive a site-specific criterion number for the nonconventional pollutant using an EPA-approved criterion derivation methodology, and if so, were local species used in the criterion derivation approved by the Regional Administrator?***

or ☐ ***c. Derive a criterion for the nonconventional pollutant using another method which was approved by OWRS?***

or ☐ ***d. Derive a safe concentration for the nonconventional pollutant by some other approved means such as field testing, literature search, biomonitoring?***

☒ ***e. Demonstrate that the PMEL, after dilution in the mixing zone, would meet that water quality standard or criterion?***
Yes.

The average and maximum ammonia-N criteria vary for specific pH and temperature conditions. USS calculated site-specific ammonia-N criteria based on local mixing conditions and then input those criteria into DEP's TMS model as custom criteria. That was done to allow US Steel to use conservative modeling assumptions including partial mixing and no decay (DEP's WQM 7.0 model that is normally used to evaluate water quality impacts for ammonia-N assumes complete mixing and decay).

USS calculated what the concentration of Phenols (4AAP) would be at Outfall 038 if IMP 183 was subject to the mass PMELs and determined that the effluent concentration is less than Pennsylvania water quality criteria for Total Phenolics. However, the calculation was performed when there was a higher flow rate (52.1 MGD). In theory, a decreased flow rate at Outfall 038 (now 47.9 MGD) with the same mass limits allows for higher effluent concentrations. Using the lower flow rate, the maximum daily effluent concentration would be 0.00533 mg/L, which exceeds Pennsylvania's 0.005 mg/L criterion for Total Phenolics. However, based on DEP's modeling, that higher concentration does not exhibit a reasonable potential to cause or contribute to an excursion above the criterion at the nearest downstream potable water supply intake (Pennsylvania's criterion for Total Phenolics must be achieved the nearest downstream potable water supply withdrawal).

DEP performed its own evaluation for Outfall 038 using the WQM 7.0 model with the acute partial mix factor and determined that the PMELs will result in compliance with the ammonia-N criteria.

☒ ***f. Demonstrate that all other factors such as bioaccumulation, persistency, and synergistic propensities have been adequately addressed? (See questions on persistency and synergism in Section III of the checklist)***
Yes.

See responses to Items I.1.B and II.C. The PMELs will not result in discharges of ammonia-N that can reasonably be anticipated to pose an unacceptable risk to human health or the environment because of bioaccumulation, persistency in the environment, acute and chronic toxicity, or synergistic propensities for the following reasons:

Bioaccumulation and Persistency

Ammonia-N is not persistent in the aquatic environment and does not bioacclumulate in aquatic organisms[10], Consequently, adverse impacts associated with persistency or bioaccumulation are not anticipated.

Acute and Chronic Toxicity

USEPA guidance[11] states that state water quality standards can be used as a basis for Section 301(g) variances provided the standards are designed to provide protection for aquatic life and human health concerns. Specifically, the guidance cites protection of human health through designation of recreational and drinking water uses and protection of aquatic life. The Pennsylvania water quality standards meet these criteria. Recreational and drinking water use designations are specified; and, chronic and acute toxicity to aquatic life are addressed specifically by the water quality standards for specific pollutants. Accordingly, consideration of Pennsylvania water quality standards is appropriate for evaluating these proposed Section 301(g) variances.

Because the Option 2 PMELs will meet Pennsylvania water quality standards in the Monongahela River, adverse impacts associated with acute or chronic toxicity from ammonia-N in the Monongahela River are not anticipated.

Compliance with Current Water Quality Standards for Ammonia-N

One of the key criteria for approval of a Section 301 (g) variance is that the PMELs must result in compliance with ambient water quality standards in the receiving water, See Attachment E. The Option 2 PMELs would result in compliance with Pennsylvania water quality standards after a limited amount of mixing in the Monongahela River.

E. MODELLING AND FATE AS RELATED TO SECTION 301(g) VARIANCES

Did the applicant:

☒ ***1. Provide an aerial-view map of the facility and the surrounding area illustrating the boundary of the State mixing zone and the concentration isopleth of the nonconventional pollutant from point of discharge to the mixing zone boundary?***

Isopleths were not illustrated. Pennsylvania does not have defined mixing zone boundaries. However, DEP has adapted EPA's ambient mixing equation (an empirical relationship) to determine where water quality criteria must be achieved. The bases for determining where criteria must be achieved are the criteria compliance times (CCT): the amount of time allowed for mixing before the criteria are applied. DEP assumes the following maximum compliance times:

- *Acute Fish Criteria (AFC): 15 minutes*
- *Chronic Fish Criteria (CFC): 12 hours*
- *Threshold Human Health (THH): 12 hours or travel time to the nearest downstream water supply*
- *Cancer Risk Level (CRL): 12 hours*

By combining the above compliance times with site-specific factors including design stream flow ($Q_{7\text{-}10}$ or $Q_{harmonic}$), partial mix factor (percentage of stream flow that has mixed with a discharge at the criteria compliance time), and the dimensions of the stream channel, the extent of the mixing zone is implicitly defined for each type of criterion (AFC, CFC, THH, CRL). If the compliance time for the criterion being evaluated is less than the complete mix time, then the stream flow used in the analysis will be less than the total stream flow available for dilution (i.e., a partial mix). If the compliance time for the criteria being evaluated is greater than or equal to the complete mix time, then complete mixing is assumed at the point of discharge.

*Q' (stream flow available for mixing) = Q (stream flow) * Partial Mix Factor*
*Q' / (Width*Depth) * CCT = Distance along the receiving stream's flow path where mixing occurs*

[10] Pollutant Specific Section 301(g) Guidance Document, Ammonia, USEPA Office of Water Enforcement and Permits, September 1985, page 12.
[11] Pollutant Specific Section 301(g) Guidance Document, Ammonia, USEPA Office Of Water Enforcement and Permits, September 1985

☒ ***2. Identify which model was used to determine the dilution pattern of the nonconventional pollutant and provide a basis for using that particular model?***

USS used DEP's Toxics Management Spreadsheet (TMS).

☒ ***3. Provide any field data to calibrate and validate the model of choice?***
The TMS is a steady-state model that does not require data calibration. The model is already approved and validated.

Outfall and stream-specific data were used in the model (e.g., median pH and temperature of the Monongahela River).

☒ ***4. State how the mixing zone was determined if it was not an approved State water quality standard mixing zone (case-by-case basis)?***
See II.E.1 of this checklist.

☒ ***5. Provide basis for the design flow used in making dilution calculations?***
Yes.

Attachments E and F provide the water quality assessments for ammonia-N and phenols (4AAP), respectively. An aerial view of the Monongahela River from Clairton to approximately 2.5 miles downstream (i.e., to the U. S. Steel Mon Valley Works Irvin Plant) is included in Attachment E; and, an aerial photograph from Clairton to the next downstream public water supply is included in Attachment F. The water quality assessments were completed using the Pennsylvania water quality standards, a series of mass balance calculations incorporating the prescribed water quality design flows ($Q_{30,10}$ and $Q_{1,10}$ for average and maximum ammonia-N ; $Q_{7\text{-}10}$ for phenols (4AAP)), and reasonable partial mix factors for the Outfall 038 discharge and the Monongahela River. Complex mixing zone modeling and mixing zone demonstrations were not necessary for the ammonia-N and total phenols (4AAP) Section 301(g) variance requests because the Option 2 PMELs will meet ambient water quality standards for phenols (4AAP) within the Outfall 038 discharge (prior to mixing with the Monongahela River) and water quality standards for ammonia-N will be met within a short distance of the discharge after limited mixing with the Monongahela River.

As discussed in II.D.1.e, Outfall 038 theoretically does not meet ambient water quality standards for phenols at the point of discharge because the mass-based PMELs have not changed and the discharge flow rate has decreased, which theoretically allows for higher phenols concentrations in the effluent. However, DEP's modeling indicates that the Total Phenolics criterion will be achieved at the nearest downstream water supply withdrawal.

III. Special Considerations

A. POLLUTANT PARAMETERS (COD, TOC, TKN, Total phenols)

Did the applicant:

☒ ***1. Identify the chemical constituents of the pollutant parameter and rule out the existence of toxics in the pollutant parameter? (Toxics may be found in trace amounts or at levels equivalent to BAT.)***
Yes.

Ammonia is neither a toxic nor conventional pollutant.

With respect to Phenols (4AAP), EPA's 301(g) guidance states:

"Pollutant parameters such as COD, surfactants, TOC, total phenols, etc. are also eligible for a section 301(g) variance as long as none of the constituents is found on the toxic or conventional pollutant lists (or if found on these lists, the pollutants must be properly limited by BAT or BCT)."

A sample of raw wastewater influent to the Contaminated Water Treatment Plant in 2023 returned the following results for phenolic compounds:

2-Chlorophenol (µg/L)	*<1*
2,4-Dichlorophenol (µg/L)	*<1*
2,4-Dimethylphenol (µg/L)	*1890*
4,6-Dinitro-o-Cresol (µg/L)	*<5*
2,4-Dinitrophenol (µg/L)	*<5*
2-Nitrophenol (µg/L)	*<1*
4-Nitrophenol (µg/L)	*<1*
P-Chloro-m-Cresol (µg/L)	*<1*
Pentachlorophenol (µg/L)	*<5*
Phenol (µg/L)	*9910*
2,4,6-Trichlorophenol (µg/L)	*<1*

The detected parameters 2,4-Dimethylphenol and Phenol are both toxic compounds found on EPA's list of toxic pollutants in 40 CFR § 401.15. Those parameters are regulated in USS's effluent by BAT concentration limits specified for Total Phenolics (i.e., Phenols (4AAP)) at IMP 183. The current concentration limits for Total Phenolics at IMP 183 are 0.05 mg/L average monthly and 0.1 mg/L maximum daily, which are based on 1982 BAT. 2002 BAT concentrations are 0.05 mg/L average monthly and 0.08 mg/L maximum daily. No additional toxic phenols are expected to be added to the effluent between IMP 183 and Outfall 038. Therefore, to the extent that toxic phenols are present in USS's wastewater, they are controlled at BAT levels and total phenols are eligible for a 301(g) variance.

Furthermore, the average of USS's average monthly and maximum daily effluent results for Total Phenolics at IMP 183 are 0.013 mg/L and 0.022 mg/L, respectively. Those data indicate that, while toxic phenols are present in the raw wastewaters, USS achieves a 2002 BAT level of control for Total Phenolics (and, by extension, a 2002 BAT level of control for toxics phenolics that are part of Total Phenolics) at IMP 183 and at Outfall 038 after dilution with other effluent.

☒ ***2. Identify the means by which the constituents were identified? (e.g., GC/MS)***
Yes.

☐ ***3. Derive a criterion number for the pollutant parameter by applying the EPA criterion derivation methodology of November 1980 to the whole effluent and expressing the resultant criterion in percent effluent?***
No.

☐ ***4. Determine that the pollutant parameter was not a source of toxicity after conducting a bench scale treatment study?***
No. Toxicity was evaluated based on existing effluent data.

☐ ***5. Determine a safe level of the pollutant parameter by conducting a literature search?***
No.

☒ ***6. Assess the potential for human health impact of the nonconventional pollutant parameter?***
Yes.

Attachment G is a copy of the Outfall 183 pages from the latest NPDES Permit application for Clairton. The NPDES permit application monitoring data show no detectable measurements for toxic phenolics. Accordingly, the discharge of such compounds with the Option 2 PMELs cannot reasonably be anticipated.

B. SYNERGISTIC PROPENSITIES

Did the applicant:

☒ ***1. Identify potential synergistic propensities in the effluent and receiving water?***
Yes/no. USS indicated that, based on EPA's 301(g) guidance, ammonia-N is not expected to combine with other pollutants to cause more toxic effects. Also, phenols are present in low concentrations and, to the extent those phenols could combine with other pollutants to cause toxic effects, the combined pollutants also would be present in low concentrations.

DEP notes that bioconcentration is not a factor for non-conventional phenol unless there is a substantial chlorine concentration present in the effluent. The average TRC concentration at IMP 183 is 0.24 mg/L.

Specifically, did the applicant:

☐ ***a. Identify possible chemical reactions between compounds producing more toxic pollutants?***
No. However, chemical reactions could occur with chlorine as follows:
Ammonia + chlorine → chloroamines
Phenols + chlorine → chlorinated phenols

☐ ***b. Identify possible reactions dependent upon physical parameters such as increased toxicity related to increasing or decreasing temperature, pH, alkalinity, conductivity, flow (turbulence), or suspended solids.***
No.

☐ ***c. Identify possible joint effects where two compounds affect an organism in two different ways simultaneously? (e.g., one pollutant affecting respiration, another the central nervous system.)***
No.

☐ ***d. Apply biomonitoring techniques to determine whether synergism is occurring in applicant's effluent. (Were toxicity tests conducted on separate toxic, conventional, or nonconventional fractions and then on the whole effluent to determine differences between the toxicity of the whole effluent and the different fractions?)***
No.

☐ ***e. Examine the potential for additivity in the effluent?***
No.

Data provided in the latest NPDES permit renewal application for Clairton demonstrate an overall absence of toxic organic pollutants and only low levels (low ug/L range) of a limited number of toxic metals in discharges from Outfalls 183 and 038. As stated in USEPA guidance[12], there is no information to suggest ammonia-N in combination with any of the pollutants will result in synergistic propensities (i.e., greater toxicity of two pollutants in combination than the toxicity of each pollutant considered separately and then added together).

Also, see response to III A. regarding the absence of toxic phenols in the Outfall 183 discharge.

C. PERSISTENCY

Did the applicant:

☐ ***1. Identify pollutants which could impact aquatic life or human health due to persistency?***
No.

Specifically, did the applicant:

☐ ***a. Examine chemical or physical reactions such as volatilization, photolysis, adsorption, absorption, oxidation and hydrolysis to determine the fate of the nonconventional pollutant?***
No.

[12] Pollutant Specific Section 301(g) Guidance Document, Ammonia, USEPA Office of Water Enforcement and Permits, September 1985, page 14.

☐ ***b. Apply direct analytical methods or conduct a literature search to determine the persistency of the nonconventional pollutant?***
No.

☐ ***c. Conduct structural analysis of the principal components in the effluent to determine whether the compounds are of a persistent nature?***
No.

Neither ammonia-N nor phenols (4AAP) are persistent in the aquatic environment. Both compounds are biologically oxidized in a fairly rapid manner, particularly under summertime warm water conditions. For example, the Department considers the default reach nitrification rate for ammonia-N to be 0.7/day in its guidance document for modeling ammonia-N.[13]

Antibacksliding and Antidegradation

The antibacksliding and antidegradation provisions of the federal and Pennsylvania NPDES permit regulations are not applicable in this case because the Option 2 PMELs do not result in increased effluent limits from the current NPDES permit, or authorize increases in pollutant discharge loadings that could trigger antibacksliding and antidegradation reviews.

Conclusion:

The Option 2 PMELs requested by U. S. Steel set out in this report will ensure compliance with Pennsylvania water quality standards for ammonia-N and phenols (4AAP) in the Monongahela River and will not interfere with any aquatic life, recreational or public water supply uses Of the River. As described in this report, all Section 301 (g) criteria will be met with the PMELs requested by U. S. Steel. Therefore, approval of the Option 2 PMELs for Clairton is reasonable and appropriate.

[13] Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia-N, Version 1.0. Document No. 391-2000-007. Bureau of Water Supply and Wastewater Management, Pennsylvania Department of Environmental Protection. June 26, 2004. p.8

ATTACHMENT C

Technology-Based Effluent Limit Calculations for IMP 183

ATTACHMENT C
U.S. Steel Mon Valley Works - Clairton Plant
Calculation of Technology-Based Effluent Limits - IMP 183
40 CFR 420.12(a)/420.13(a)

	Percentage of Total	Production				
Total	100.00%	10,411	tons/day	=	20,822,000	pounds/day
C-Battery (NSPS)	28.39%	2,956	tons/day	=	5,911,366	pounds/day
Other than C-Battery (BCT/BAT)	71.61%	7,455	tons/day	=	14,910,634	pounds/day

Basis of Limitation		Units	TSS		Oil & Grease		Ammonia		Benzo(a)Pyrene		Cyanide		Naphthalene		Phenols (4AAP)	
			M. Avg	D. Max	M. Avg	D. Max	M. Avg	D. Max	M. Avg	D. Max	M. Avg	D. Max	M. Avg	D. Max	M. Avg	D. Max
1982 BPT 40 CFR § 420.12(a)	Performance Std.	lbs/1000 lbs	0.131	0.253	0.0109	0.0327	0.0912	0.274	-	-	0.0219	0.0657	-	-	0.0015	0.00451
	Concentration	mg/L	140	270	11.6	34.8	97.2	291.6			23.3	70			1.6	4.8
	Calc. Mass Limits	lbs/day	1953	3772	162.5	487.6	1359.8	4085.5			326.5	979.6			22.37	67.25
1982 BCT 40 CFR § 420.17(a)	Performance Std.	lbs/1000 lbs	0.131	0.253	0.0109	0.0327	-	-	-	-	-	-	-	-	-	-
	Concentration	mg/L	140	270	11.6	34.8										
	Calc. Mass Limits	lbs/day	1953	3772	162.5	487.6										
1982 BAT (Superseded by 2002 BAT)	Performance Std.	lbs/1000 lbs	-	-	-	-	0.016	0.0543		0.0000319	0.00351	0.00638		0.0000319	0.0000319	0.0000638
	Concentration	mg/L					25	85	0.01297	0.02325	5.5	10.0	-	0.05	0.05	0.1
	Calc. Mass Limits	lbs/day					333	1131	0.00	0.66	73.1	132.8	0.00	0.66	0.66	1.33
2002 BAT 40 CFR § 420.13(a)	Performance Std.	lbs/1000 lbs	-	-	-	-	0.00202	0.00293	0.00000612	0.000011	0.00208	0.00297	0.00000616	0.0000111	0.0000238	0.0000381
	Concentration	mg/L			-		4.28	6.21	0.01297	0.02325	4.41	6.30	0.01307	0.02344	0.05	0.08
	Calc. Mass Limits	lbs/day					30.1	43.7	0.1	0.2	31.0	44.3	0.092	0.166	0.355	0.568
2002 NSPS (Tech Basis = 2002 BAT) 40 CFR § 420.14(a)(2)	Performance Std.	lbs/1000 lbs	0.014	0.0343	0.0037	0.00676	0.00202	0.00293	0.00000612	0.000011	0.00208	0.00297	0.00000616	0.0000111	0.0000238	0.0000381
	Concentration	mg/L	29.71	72.81	7.76	14.34	4.28	6.21	0.01297	0.02325	4.41	6.30	0.01307	0.02344	0.05	0.08
	Calc. Mass Limits	lbs/day	83	203	22	40	11.9	17.3	0.036	0.065	12.3	17.6	0.036	0.066	0.141	0.225
301(g)	Performance Std.	lbs/1000 lbs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Mass Limits	lbs/day					543.0	1841.0							1.07	2.13

	Units	TSS		Oil & Grease		Ammonia		Benzo(a)Pyrene		Cyanide		Naphthalene		Phenols (4AAP)	
		M. Avg	D. Max	M. Avg	D. Max	M. Avg	D. Max	M. Avg	D. Max	M. Avg	D. Max	M. Avg	D. Max	M. Avg	D. Max
Concentration Limits	mg/L	140	270	11.6	34.8	25	85	0.01297	0.02325	5.5	10	0.01307	0.02344	0.05	0.1
Baseline Load Limits	lbs/day	2036	3975	184	528	42.1	61.0	0.13	0.23	43.31	61.84	0.13	0.23	0.50	0.79
Basis for Baseline Mass Limits		Non-Battery C: 1982 BPT/BCT / Battery C: 2002 NSPS		Non-Battery C: 1982 BPT/BCT / Battery C: 2002 NSPS		CWA § 301(g)		Non-Battery C: 2002 BAT / Battery C: 2002 NSPS		Non-Battery C: 2002 BAT / Battery C: 2002 NSPS		Non-Battery C: 2002 BAT / Battery C: 2002 NSPS		CWA § 301(g)	

ATTACHMENT C
U.S. Steel Mon Valley Works - Clairton Plant
Calculation of Technology-Based Effluent Limits - IMP 183
40 CFR 420.12(a)/420.13(a)

Additional Loadings per 40 CFR 420.12(a)(1)(2) and 420.13(a)(1)(2)(3)

BAT EPA Base Flow	113 gal/ton
Base Flow at Clairton Production	817 gpm

			TSS		Oil & Grease		Ammonia		Benzo(a)Pyrene		Cyanide		Naphthalene		Phenols (4AAP)	
			lbs/day		lbs/day		lbs/day		lbs/day		lbs/day		lbs/day		lbs/day	
Wet COG Desulfurization	66 gpm	8.1% × Base Mass Limits	164	321	15	43	3.40	4.93	0.010	0.019	3.50	5.00	0.010	0.019	0.040	0.064
420.12(a)(1) 420.13(a)(1)	8.0786%															
Allowable Percentage (BPT)	11%															
Allowable Percentage (BAT & NSPS)	13.3%															
PHOSAM	107 gpm	13.10% × Base Mass Limits	267	521	24	69	5.51	7.99	0.02	0.03	5.67	8.10	0.017	0.030	0.065	0.104
420.08; BPJ	13.10%															
Groundwater remediation	115 gpm	14.08% × Base Mass Limits	287	560	26	74	5.92	8.59	0.02	0.03	6.10	8.70	0.018	0.033	0.070	0.112
420.13(a)(2) (BAT/Site-specific)	14.1%															
420.14(a)(2)(B) (NSPS/Site-specific)																
Coal Tar Wastewater	54 gpm	6.61% × Base Mass Limits	135	263	12	35	2.78	4.03	0.008	0.015	2.86	4.09	0.008	0.015	0.033	0.052
420.13(a)(2) (BAT/Site-specific)	6.6%															
420.14(a)(2)(B) (NSPS/Site-specific)																
Biological Treatment Control Water	650 gpm	44.2% × Base Mass Limits except TSS, O&G	36.6	89.6	9.7	17.7	18.6	27.0	0.06	0.10	19.1	27.3	0.06	0.10	0.22	0.35
420.13(a)(3) / BPJ of BAT	79.56%															
Allowable percentage (BAT & NSPS)	44.2%															
Process Area Storm Water	360700 sq. ft	mg/L ->	140	270	11.6	34.8	25	85	0.01297	0.02325	5.5	10	0.01307	0.02344	0.05	0.1
§ 420.08	40.3 inches/year	lbs/day ->	29	56	2.40	7.210	5.180	17.611	0.003	0.005	1.140	2.072	0.003	0.005	0.010	0.021
	17.2 gpm															
	2.11%	lbs/day ->	43.0	83.9	3.9	11.1	0.89	1.29	0.003	0.005	0.914	1.31	0.003	0.005	0.010	0.017

0.024826121 MGD

ATTACHMENT C
U.S. Steel Mon Valley Works - Clairton Plant
Calculation of Technology-Based Effluent Limits - IMP 183
40 CFR 420.12(a)/420.13(a)

FINAL TBELs for IMP 183

		TSS		Oil & Grease		Ammonia		Benzo(a)Pyrene		Cyanide		Naphthalene		Phenols (4AAP)	
		M. Avg	D. Max	M. Avg	D. Max	M. Avg	D. Max	M. Avg	D. Max	M. Avg	D. Max	M. Avg	D. Max	M. Avg	D. Max
Concentration Limits	mg/L	140.0	270.0	11.6	34.8	25.0	85.0	0.01297	0.02325	5.5	10.0	0.01307	0.02344	0.05	0.1
Load Limits	lbs/day	2968.0	5813.0	275.0	777.0	543.0	1841.0	0.240	0.431	81.5	116.0	0.241	0.435	1.07	2.13
Load Limit Basis		BCT (Non-Battery C) + NSPS (Battery C) + 8.1% + 13.1% + 14.08% + 6.61% + 44.2% (NSPS Battery C only) + 2.11%	BCT (Non-Battery C) + NSPS (Battery C) + 8.1% + 13.1% + 14.08% + 6.61% + 44.2% (NSPS Battery C only) + 2.11%	BCT (Non-Battery C) + NSPS (Battery C) + 8.1% + 13.1% + 14.08% + 6.61% + 44.2% (NSPS Battery C only) + 2.11%	BCT (Non-Battery C) + NSPS (Battery C) + 8.1% + 13.1% + 14.08% + 6.61% + 44.2% (NSPS Battery C only) + 2.11%	301(g)	301(g)	2002 BAT (Non-Battery C) + NSPS (Battery C) + 8.1% + 13.1% + 14.08% + 6.61% + 44.2% + 2.11%	2002 BAT (Non-Battery C) + NSPS (Battery C) + 8.1% + 13.1% + 14.08% + 6.61% + 44.2% + 2.11%	2002 BAT (Non-Battery C) + NSPS (Battery C) + 8.1% + 13.1% + 14.08% + 6.61% + 44.2% + 2.11%	2002 BAT (Non-Battery C) + NSPS (Battery C) + 8.1% + 13.1% + 14.08% + 6.61% + 44.2% + 2.11%	2002 BAT (Non-Battery C) + NSPS (Battery C) + 8.1% + 13.1% + 14.08% + 6.61% + 44.2% + 2.11%	2002 BAT (Non-Battery C) + NSPS (Battery C) + 8.1% + 13.1% + 14.08% + 6.61% + 44.2% + 2.11%	301(g)	301(g)

ATTACHMENT D

Seasonally Adjusted $Q_{7\text{-}10}$ Flow Calculations – USGS Gage 03075070, Monongahela River at Elizabeth, PA

RESULTS: USGS 03075070 Monongahela River at Elizabeth, PA

File Edit View Help

All available data from Jan 1, 1992 through Jan 31, 2023 are included in analysis
Season defined as Jan 1 - Jan 31. Biological flow is calculated for full climatic year starting at Jan 1.

Display Options: 03075070 Copy to Clipboard

Seasonal Calculation?	No		
Season Or Year Start	1-Jan		
Season Or Year End	31-Jan		
Years Included in Calculations	1992~2023		
Start	1992		
End	2023		
Flow Statistic	Flow Value	Percentile	x-day avg. Excur. per 3 yr.
1B3	428.89	0.09%	0.96774
Flow Statistic	Flow Value	Percentile	1-day Excur. per 3 yr.
7Q10	2,551.9	25.62%	26.903
Harmonic Mean	3,424.2	33.85%	N/A
Harmonic Mean, Adjusted	3,424.2	33.85%	N/A

Double-click on biological flow value (xBy column) to view excursion analysis result for a gage

RESULTS: USGS 03075070 Monongahela River at Elizabeth, PA

File Edit View Help

All available data from Feb 1, 1992 through Feb 28, 2023 are included in analysis
Season defined as Feb 1 - Feb 28. Biological flow is calculated for full climatic year starting at Feb 1.

Display Options: 03075070 Copy to Clipboard

Seasonal Calculation?	No		
Season Or Year Start	1-Feb		
Season Or Year End	28-Feb		
Years Included in Calculations	1993~2023		
Start	1993		
End	2023		
Flow Statistic	Flow Value	Percentile	x-day avg. Excur. per 3 yr.
1B3	428.97	0.09%	1
Flow Statistic	Flow Value	Percentile	1-day Excur. per 3 yr.
7Q10	3,472.3	34.31%	34.6
Harmonic Mean	3,423.4	33.86%	N/A
Harmonic Mean, Adjusted	3,423.4	33.86%	N/A

Double-click on biological flow value (xBy column) to view excursion analysis result for a gage

RESULTS: USGS 03075070 Monongahela River at Elizabeth, PA

File Edit View Help

All available data from Mar 1, 1992 through Mar 31, 2023 are included in analysis. Display Options: 03075070 Copy to Clipboard
Season defined as Mar 1 - Mar 31. Biological flow is calculated for full climatic year starting at Mar 1.

Seasonal Calculation?	No		
Season Or Year Start	1-Mar		
Season Or Year End	31-Mar		
Years Included in Calculations	1993~2023		
Start	1993		
End	2023		
Flow Statistic	Flow Value	Percentile	x-day avg. Excur. per 3 yr.
1B3	428.92	0.09%	1
Flow Statistic	Flow Value	Percentile	1-day Excur. per 3 yr.
7Q10	3,976	38.01%	37.6
Harmonic Mean	3,427.4	33.76%	N/A
Harmonic Mean, Adjusted	3,427.4	33.76%	N/A

Double-click on biological flow value (xBy column) to view excursion analysis result for a gage

RESULTS: USGS 03075070 Monongahela River at Elizabeth, PA

File Edit View Help

All available data from Apr 1, 1992 through Apr 30, 2023 are included in analysis. Display Options: 03075070 Copy to Clipboard
Season defined as Apr 1 - Apr 30. Biological flow is calculated for full climatic year starting at Apr 1.

Seasonal Calculation?	No		
Season Or Year Start	1-Apr		
Season Or Year End	30-Apr		
Years Included in Calculations	1993~2023		
Start	1993		
End	2023		
Flow Statistic	Flow Value	Percentile	x-day avg. Excur. per 3 yr.
1B3	428.94	0.09%	1
Flow Statistic	Flow Value	Percentile	1-day Excur. per 3 yr.
7Q10	3,179.8	31.59%	33.2
Harmonic Mean	3,420.8	33.85%	N/A
Harmonic Mean, Adjusted	3,420.8	33.85%	N/A

Double-click on biological flow value (xBy column) to view excursion analysis result for a gage

RESULTS: USGS 03075070 Monongahela River at Elizabeth, PA

File Edit View Help

All available data from May 1, 1992 through May 31, 2023 are included in analysis. Display Options: 03075070 Copy to Clipboard
Season defined as May 1 - May 31. Biological flow is calculated for full climatic year starting at May 1.

Seasonal Calculation?	No		
Season Or Year Start	1-May		
Season Or Year End	31-May		
Years Included in Calculations	1993~2023		
Start	1993		
End	2023		
Flow Statistic	Flow Value	Percentile	x-day avg. Excur. per 3 yr.
1B3	428.86	0.09%	1
Flow Statistic	Flow Value	Percentile	1-day Excur. per 3 yr.
7Q10	2,258.9	22.25%	26.5
Harmonic Mean	3,416.4	33.81%	N/A
Harmonic Mean, Adjusted	3,416.4	33.81%	N/A

Double-click on biological flow value (xBy column) to view excursion analysis result for a gage

RESULTS: USGS 03075070 Monongahela River at Elizabeth, PA

File Edit View Help

All available data from Jun 1, 1992 through Jun 30, 2023 are included in analysis. Display Options: 03075070 Copy to Clipboard
Season defined as Jun 1 - Jun 30. Biological flow is calculated for full climatic year starting at Jun 1.

Seasonal Calculation?	No		
Season Or Year Start	1-Jun		
Season Or Year End	30-Jun		
Years Included in Calculations	1993~2023		
Start	1993		
End	2023		
Flow Statistic	Flow Value	Percentile	x-day avg. Excur. per 3 yr.
1B3	427.96	0.09%	1
Flow Statistic	Flow Value	Percentile	1-day Excur. per 3 yr.
7Q10	1,169.7	6.55%	11
Harmonic Mean	3,407.4	33.88%	N/A
Harmonic Mean, Adjusted	3,407.4	33.88%	N/A

Double-click on biological flow value (xBy column) to view excursion analysis result for a gage

RESULTS: USGS 03075070 Monongahela River at Elizabeth, PA

File Edit View Help

All available data from Jul 1, 1992 through Jul 31, 2023 are included in analysis.
Season defined as Jul 1 - Jul 31. Biological flow is calculated for full climatic year starting at Jul 1.

Display Options: 03075070 Copy to Clipboard

Seasonal Calculation?	No		
Season Or Year Start	1-Jul		
Season Or Year End	31-Jul		
Years Included in Calculations	1993~2023		
Start	1993		
End	2023		
Flow Statistic	Flow Value	Percentile	x-day avg. Excur. per 3 yr.
1B3	428.83	0.09%	1
Flow Statistic	Flow Value	Percentile	1-day Excur. per 3 yr.
7Q10	903.33	3.32%	5.4
Harmonic Mean	3,413.7	33.90%	N/A
Harmonic Mean, Adjusted	3,413.7	33.90%	N/A

Double-click on biological flow value (xBy column) to view excursion analysis result for a gage

RESULTS: USGS 03075070 Monongahela River at Elizabeth, PA

File Edit View Help

All available data from Aug 1, 1992 through Aug 31, 2023 are included in analysis.
Season defined as Aug 1 - Aug 31. Biological flow is calculated for full climatic year starting at Aug 1.

Display Options: 03075070 Copy to Clipboard

Seasonal Calculation?	No		
Season Or Year Start	1-Aug		
Season Or Year End	31-Aug		
Years Included in Calculations	1993~2023		
Start	1993		
End	2023		
Flow Statistic	Flow Value	Percentile	x-day avg. Excur. per 3 yr.
1B3	427.56	0.09%	1
Flow Statistic	Flow Value	Percentile	1-day Excur. per 3 yr.
7Q10	867	2.80%	4.3
Harmonic Mean	3,431.4	33.96%	N/A
Harmonic Mean, Adjusted	3,431.4	33.96%	N/A

Double-click on biological flow value (xBy column) to view excursion analysis result for a gage

RESULTS: USGS 03075070 Monongahela River at Elizabeth, PA

File Edit View Help

All available data from Sep 1, 1992 through Sep 30, 2023 are included in analysis. Display Options: 03075070 Copy to Clipboard

Season defined as Sep 1 - Sep 30. Biological flow is calculated for full climatic year starting at Sep 1.

Seasonal Calculation?	No		
Season Or Year Start	1-Sep		
Season Or Year End	30-Sep		
Years Included in Calculations	1993~2022		
Start	1993		
End	2023		
Flow Statistic	Flow Value	Percentile	x-day avg. Excur. per 3 yr.
1B3	425.56	0.08%	0.93103
Flow Statistic	Flow Value	Percentile	1-day Excur. per 3 yr.
7Q10	793.92	1.84%	2.6897
Harmonic Mean	3,448.6	33.86%	N/A
Harmonic Mean, Adjusted	3,448.6	33.86%	N/A

Double-click on biological flow value (xBy column) to view excursion analysis result for a gage

RESULTS: USGS 03075070 Monongahela River at Elizabeth, PA

File Edit View Help

All available data from Oct 1, 1992 through Oct 31, 2023 are included in analysis. Display Options: 03075070 Copy to Clipboard

Season defined as Oct 1 - Oct 31. Biological flow is calculated for full climatic year starting at Oct 1.

Seasonal Calculation?	No		
Season Or Year Start	1-Oct		
Season Or Year End	31-Oct		
Years Included in Calculations	1993~2022		
Start	1993		
End	2023		
Flow Statistic	Flow Value	Percentile	x-day avg. Excur. per 3 yr.
1B3	425.49	0.08%	0.93103
Flow Statistic	Flow Value	Percentile	1-day Excur. per 3 yr.
7Q10	958.37	3.71%	6.1034
Harmonic Mean	3,456.2	33.92%	N/A
Harmonic Mean, Adjusted	3,456.2	33.92%	N/A

Double-click on biological flow value (xBy column) to view excursion analysis result for a gage

RESULTS: USGS 03075070 Monongahela River at Elizabeth, PA

File Edit View Help

All available data from Nov 1, 1992 through Nov 30, 2023 are included in analysis. Display Options: 03075070 Copy to Clipboard

Season defined as Nov 1 - Nov 30. Biological flow is calculated for full climatic year starting at Nov 1.

Seasonal Calculation?	No		
Season Or Year Start	1-Nov		
Season Or Year End	30-Nov		
Years Included in Calculations	1993~2022		
Start	1993		
End	2023		
Flow Statistic	Flow Value	Percentile	x-day avg. Excur. per 3 yr.
1B3	425.38	0.08%	0.93103
Flow Statistic	Flow Value	Percentile	1-day Excur. per 3 yr.
7Q10	1,145	5.99%	10.345
Harmonic Mean	3,459.9	33.84%	N/A
Harmonic Mean, Adjusted	3,459.9	33.84%	N/A

Double-click on biological flow value (xBy column) to view excursion analysis result for a gage

RESULTS: USGS 03075070 Monongahela River at Elizabeth, PA

File Edit View Help

All available data from Dec 1, 1992 through Dec 31, 2023 are included in analysis. Display Options: 03075070 Copy to Clipboard

Season defined as Dec 1 - Dec 31. Biological flow is calculated for full climatic year starting at Dec 1.

Seasonal Calculation?	No		
Season Or Year Start	1-Dec		
Season Or Year End	31-Dec		
Years Included in Calculations	1993~2023		
Start	1993		
End	2023		
Flow Statistic	Flow Value	Percentile	x-day avg. Excur. per 3 yr.
1B3	425.47	0.08%	0.9
Flow Statistic	Flow Value	Percentile	1-day Excur. per 3 yr.
7Q10	1,942.7	17.93%	21.4
Harmonic Mean	3,459.8	33.82%	N/A
Harmonic Mean, Adjusted	3,459.8	33.82%	N/A

Double-click on biological flow value (xBy column) to view excursion analysis result for a gage

ATTACHMENT E

CORMIX Dilution Modeling Results for Outfall 038

ATTACHMENT B

U. S. Steel Clairton Works
Outfall 038 CORMIX Dilution Modeling
and Partial Mix Factor Calculations

Amendola Engineering, Inc.

Updated and Corrected

CORMIX Model Input	Basis for Updated Model Input Value	**CORMIX Input Value**
Outfall Flow, MGD:	Pre-Public Notice Draft Fact Sheet:	**47.2**
Outfall Flow, CFS:	Pre-Public Notice Draft Fact Sheet:	73.0
Outfall Temp, F:	75th %-tile Jun-Sep Data (2014 TWP Final Rpt):	87.8
Mon River Flow, CFS:	Pre-Public Notice Draft Fact Sheet:	**550**
Ups. Mon River Temp, F:	75th %-tile Jun-Sep Data (2014 TWP Final Rpt):	**77.5**
ΔT, F:	Calculated from above:	**10.3**
Mon River Local Depth, ft:	Average Jun-Sep Data (2014 TWP Final Rpt):	**10.0**
Mon River Avg. Depth, ft:	Average Jun-Sep Data (2014 TWP Final Rpt):	**13.9**
Mon River Width, ft:	Field-Measured (2014 TWP Final Report:	**770**
Manning's n:	Based on Field Data (2014 TWP Final Report):	**0.200**
Outfall Verticle Angle:	Field-Measured (2014 TWP Final Report):	**0**
Outfall Horizontal Angle:	Field-Measured (2014 TWP Final Report):	**100**
Outfall Pipe Diameter, ft:	Field-Measured (2014 TWP Final Report):	**7.0**
Outfall Pipe Height (above bottom), ft:	Field-Measured (2014 TWP Final Report):	**5.0**

CORMIX-Modeled Acute and Chronic Mixing Zones		**CORMIX Output**
Acute Mixing Zone:	Dilutions:	**6.7**
(15-minutes; 900 seconds)	Downstream Boundary (ft):	373
Chronic Mixing Zone:	Dilutions:	**7.0**
(12-hours; 43,200 seconds)	Downstream Boundary (ft):	2,559

Complete Mix Dilutions	(Upstream River + Outfall Flow) / Outfall Flow	**8.5**

Acute PMF	**Acute Dilutions / Complete Mix Dilutions**	**0.79**
Chronic PMF	**Chronic Dilutions / Complete Mix Dilutions**	**0.82**

```
CORMIX SESSION REPORT:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                      CORMIX MIXING ZONE EXPERT SYSTEM
                          CORMIX Version 12.0G
                       HYDRO3:Version-12.0.0.0  December,2020
SITE NAME/LABEL:                U.S.S Clairton Outfall 038
  DESIGN CASE:                  7Q10 550 cfs
  FILE NAME:                    W:\Active Accounts\US Steel\Clairton\2021 Outfall 038
PMF\February 2025\CORMIX Modeling\Outfall 038 7Q10.prd
  Using subsystem CORMIX3:     Buoyant Surface Discharges
  Start of session:             02/07/2025--09:48:33
*****************************************************************************
SUMMARY OF INPUT DATA:
-----------------------------------------------------------------------------
AMBIENT PARAMETERS:
  Cross-section                          = bounded
  Width                         BS       = 234.70 m
  Channel regularity            ICHREG   = 1
  Ambient flowrate              QA       = 15.57 m^3/s
  Average depth                 HA       = 4.24 m
  Depth at discharge            HD       = 3.05 m
  Ambient velocity              UA       = 0.0157 m/s
  Darcy-Weisbach friction factor F       = 1.9403
    Calculated from Manning's n          = 0.2
  Wind velocity                 UW       = 2 m/s
  Stratification Type           STRCND   = U
  Surface temperature                    = 25.28 degC
  Bottom temperature                     = 25.28 degC
  Calculated FRESH-WATER DENSITY values:
  Surface density               RHOAS    = 996.9740 kg/m^3
  Bottom density                RHOAB    = 996.9740 kg/m^3
-----------------------------------------------------------------------------
DISCHARGE PARAMETERS:           Surface Discharge
  Discharge located on                   = left bank/shoreline
  Discharge configuration                = flush discharge
  Distance from bank to outlet  DISTB    = 0 m
  Discharge angle               SIGMA    = 100 deg
  Depth near discharge outlet   HD0      = 3.05 m
  Bottom slope at discharge     SLOPE    = 0 deg
  Circular pipe diameter                 = 2.1336 m
    Equivalent rectangular discharge:
    Discharge cross-section area A0      = 3.575328 m^2
    Discharge channel width     B0       = 1.675726 m
    Discharge channel depth     H0       = 2.1336 m
    Discharge aspect ratio      AR       = 1.273240
  Discharge flowrate            Q0       = 2.067956 m^3/s
  Discharge velocity            U0       = 0.58 m/s
  Discharge temperature (freshwater)     = 31 degC
  Corresponding density         RHO0     = 995.3405 kg/m^3
  Density difference            DRHO     = 1.6335 kg/m^3
  Buoyant acceleration          GP0      = 0.0161 m/s^2
  Discharge concentration       C0       = 1 mg/l
  Surface heat exchange coeff.  KS       = 0 m/s
  Coefficient of decay          KD       = 0 /s
-----------------------------------------------------------------------------
DISCHARGE/ENVIRONMENT LENGTH SCALES:
  LQ  = 1.89 m         Lm  = 69.83 m          Lbb = 8647.33 m
  LM  = 6.27 m
-----------------------------------------------------------------------------
NON-DIMENSIONAL PARAMETERS:
  Densimetric Froude number     FR0      = 3.32 (based on LQ)
  Channel densimetric Froude no. FRCH    = 3.12 (based on H0)
  Velocity ratio                R        = 36.93
-----------------------------------------------------------------------------
MIXING ZONE / TOXIC DILUTION ZONE / AREA OF INTEREST PARAMETERS:
  Toxic discharge                        = no
  Water quality standard specified       = no
  Regulatory mixing zone                 = yes
  Regulatory mixing zone specification   = trajectory
  Regulatory mixing zone value           = 113.7 m (m^2 if area)
  Region of interest                     = 3048 m
```

```
*******************************************************************************
HYDRODYNAMIC CLASSIFICATION:
  *-------------------------*
  | FLOW CLASS   = SA1 |
  *-------------------------*

  Limiting Dilution S = (QA/Q0)+ 1.0 = 8.5

*******************************************************************************
MIXING ZONE EVALUATION (hydrodynamic and regulatory summary):

-------------------------------------------------------------------------------
X-Y-Z Coordinate system:
Origin is located at WATER SURFACE and at centerline of discharge channel:
    0 m from the left bank/shore.
  Number of display steps NSTEP = 1000 per module.
-------------------------------------------------------------------------------
NEAR-FIELD REGION (NFR) CONDITIONS :
Note: The NFR is the zone of strong initial mixing.  It has no regulatory
  implication.  However, this information may be useful for the discharge
  designer because the mixing in the NFR is usually sensitive to the
  discharge design conditions.
  Pollutant concentration at NFR edge  c = 0.1461 mg/l
  Dilution at edge of NFR              s = 6.8
  NFR Location:                        x = -4.40 m
    (centerline coordinates)           y = -122.19 m
                                       z = 0 m
  NFR plume dimensions:  half-width (bh) = 51.77 m
                         thickness (bv) = 1.68 m
  Cumulative travel time:       1018.5592 sec.
-------------------------------------------------------------------------------
Buoyancy assessment:
  The effluent density is less than the surrounding ambient water
  density at the discharge level.
  Therefore, the effluent is POSITIVELY BUOYANT and will tend to rise towards
  the surface.
-------------------------------------------------------------------------------
FAR-FIELD MIXING SUMMARY:
  Plume becomes vertically fully mixed WITHIN NEAR-FIELD at 0 m
  downstream, but RE-STRATIFIES LATER and is not mixed in the far-field.
  Plume becomes laterally fully mixed at -3.16 m
  downstream.
-------------------------------------------------------------------------------
PLUME BANK CONTACT SUMMARY:
  Plume in bounded section contacts nearest bank at -4.21 m downstream.
  Plume contacts second bank at -3.16 m downstream.
********************** TOXIC DILUTION ZONE SUMMARY ************************
No TDZ was specified for this simulation.
********************** REGULATORY MIXING ZONE SUMMARY **********************
The plume conditions at the boundary of the specified RMZ are as follows:
  Pollutant concentration              c = 0.148764  mg/l
  Corresponding dilution               s = 6.7
  Plume location:                      x = -4.59 m
    (centerline coordinates)           y = -113.65 m
                                       z = 0 m
  Plume dimensions:      half-width (bh) = 47.78 m
                          thickness (bv) = 1.63 m
  Cumulative travel time:       900.6333 sec. (RMZ is within NFR)

Note:
Plume concentration c and dilution s values are reported based on prediction
file values - assuming linear interpolation between predicted points just
before and just after the RMZ boundary has been detected.

Please ensure a small step size is used in the prediction file to account
for this linear interpolation. Step size can be controlled by increasing
(reduces the prediction step size) or decreasing (increases the prediction
step size) the - Output Steps per Module - in CORMIX input.

-------------------------------------------------------------------------------
Regulatory Mixing Zone Analysis:
```

```
The specified RMZ occurs within the near-field region (NFR).  This RMZ
  specification may be highly restrictive.

********** FINAL DESIGN ADVICE AND COMMENTS **********
REMINDER:  The user must take note that HYDRODYNAMIC MODELING by any known
  technique is NOT AN EXACT SCIENCE.
Extensive comparison with field and laboratory data has shown that the
  CORMIX predictions on dilutions and concentrations (with associated
  plume geometries) are reliable for the majority of cases and are accurate
  to within about +-50% (standard deviation).
As a further safeguard, CORMIX will not give predictions whenever it judges
  the design configuration as highly complex and uncertain for prediction.
```

```
CORMIX SESSION REPORT:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                      CORMIX MIXING ZONE EXPERT SYSTEM
                          CORMIX Version 12.0G
                      HYDRO3:Version-12.0.0.0  December,2020
SITE NAME/LABEL:                U.S.S Clairton Outfall 038
  DESIGN CASE:                  7Q10 550 cfs
  FILE NAME:                    W:\Active Accounts\US Steel\Clairton\2021 Outfall 038
PMF\February 2025\CORMIX Modeling\Outfall 038 7Q10.prd
  Using subsystem CORMIX3:     Buoyant Surface Discharges
  Start of session:             02/07/2025--09:51:16
******************************************************************************
SUMMARY OF INPUT DATA:
------------------------------------------------------------------------------
AMBIENT PARAMETERS:
  Cross-section                            = bounded
  Width                         BS        = 234.70 m
  Channel regularity            ICHREG    = 1
  Ambient flowrate              QA        = 15.57 m^3/s
  Average depth                 HA        = 4.24 m
  Depth at discharge            HD        = 3.05 m
  Ambient velocity              UA        = 0.0157 m/s
  Darcy-Weisbach friction factor F        = 1.9403
    Calculated from Manning's n           = 0.2
  Wind velocity                 UW        = 2 m/s
  Stratification Type           STRCND    = U
  Surface temperature                     = 25.28 degC
  Bottom temperature                      = 25.28 degC
  Calculated FRESH-WATER DENSITY values:
  Surface density               RHOAS     = 996.9740 kg/m^3
  Bottom density                RHOAB     = 996.9740 kg/m^3
------------------------------------------------------------------------------
DISCHARGE PARAMETERS:           Surface Discharge
  Discharge located on                    = left bank/shoreline
  Discharge configuration                 = flush discharge
  Distance from bank to outlet  DISTB     = 0 m
  Discharge angle               SIGMA     = 100 deg
  Depth near discharge outlet   HD0       = 3.05 m
  Bottom slope at discharge     SLOPE     = 0 deg
  Circular pipe diameter                  = 2.1336 m
    Equivalent rectangular discharge:
    Discharge cross-section area  A0      = 3.575328 m^2
    Discharge channel width       B0      = 1.675726 m
    Discharge channel depth       H0      = 2.1336 m
    Discharge aspect ratio        AR      = 1.273240
  Discharge flowrate            Q0        = 2.067956 m^3/s
  Discharge velocity            U0        = 0.58 m/s
  Discharge temperature (freshwater)      = 31 degC
  Corresponding density         RHO0      = 995.3405 kg/m^3
  Density difference            DRHO      = 1.6335 kg/m^3
  Buoyant acceleration          GP0       = 0.0161 m/s^2
  Discharge concentration       C0        = 1 mg/l
  Surface heat exchange coeff.  KS        = 0 m/s
  Coefficient of decay          KD        = 0 /s
------------------------------------------------------------------------------
DISCHARGE/ENVIRONMENT LENGTH SCALES:
  LQ  = 1.89 m          Lm  = 69.83 m          Lbb = 8647.33 m
  LM  = 6.27 m
------------------------------------------------------------------------------
NON-DIMENSIONAL PARAMETERS:
  Densimetric Froude number     FR0       = 3.32 (based on LQ)
  Channel densimetric Froude no. FRCH     = 3.12 (based on H0)
  Velocity ratio                R         = 36.93
------------------------------------------------------------------------------
MIXING ZONE / TOXIC DILUTION ZONE / AREA OF INTEREST PARAMETERS:
  Toxic discharge                         = no
  Water quality standard specified        = no
  Regulatory mixing zone                  = yes
  Regulatory mixing zone specification    = trajectory
  Regulatory mixing zone value            = 780.30 m (m^2 if area)
  Region of interest                      = 3048 m
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*******************************************************************************
HYDRODYNAMIC CLASSIFICATION:
  *------------------------*
  | FLOW CLASS   = SA1 |
  *------------------------*

  Limiting Dilution S = (QA/Q0)+ 1.0 = 8.5

*******************************************************************************
MIXING ZONE EVALUATION (hydrodynamic and regulatory summary):

-------------------------------------------------------------------------------
X-Y-Z Coordinate system:
Origin is located at WATER SURFACE and at centerline of discharge channel:
    0 m from the left bank/shore.
  Number of display steps NSTEP = 1000 per module.
-------------------------------------------------------------------------------
NEAR-FIELD REGION (NFR) CONDITIONS :
Note: The NFR is the zone of strong initial mixing.  It has no regulatory
  implication.  However, this information may be useful for the discharge
  designer because the mixing in the NFR is usually sensitive to the
  discharge design conditions.
  Pollutant concentration at NFR edge  c = 0.1461 mg/l
  Dilution at edge of NFR              s = 6.8
  NFR Location:                        x = -4.40 m
    (centerline coordinates)           y = -122.19 m
                                       z = 0 m
  NFR plume dimensions:  half-width (bh) = 51.77 m
                         thickness (bv) = 1.68 m
  Cumulative travel time:       1018.5592 sec.
-------------------------------------------------------------------------------
Buoyancy assessment:
  The effluent density is less than the surrounding ambient water
  density at the discharge level.
  Therefore, the effluent is POSITIVELY BUOYANT and will tend to rise towards
  the surface.
-------------------------------------------------------------------------------
FAR-FIELD MIXING SUMMARY:
  Plume becomes vertically fully mixed WITHIN NEAR-FIELD at 0 m
  downstream, but RE-STRATIFIES LATER and is not mixed in the far-field.
  Plume becomes laterally fully mixed at -3.16 m
  downstream.
-------------------------------------------------------------------------------
PLUME BANK CONTACT SUMMARY:
  Plume in bounded section contacts nearest bank at -4.21 m downstream.
  Plume contacts second bank at -3.16 m downstream.
********************** TOXIC DILUTION ZONE SUMMARY ************************
No TDZ was specified for this simulation.
********************** REGULATORY MIXING ZONE SUMMARY **********************
The plume conditions at the boundary of the specified RMZ are as follows:
  Pollutant concentration              c = 0.143709  mg/l
  Corresponding dilution               s = 7.0
  Plume location:                      x = 744.17 m
    (centerline coordinates)           y = -234.70 m
                                       z = 0 m
  Plume dimensions:      half-width (bh) = 234.70 m
                          thickness (bv) = 3.46 m
  Cumulative travel time:       43208.6523 sec.

Note:
Plume concentration c and dilution s values are reported based on prediction
file values - assuming linear interpolation between predicted points just
before and just after the RMZ boundary has been detected.

Please ensure a small step size is used in the prediction file to account
for this linear interpolation. Step size can be controlled by increasing
(reduces the prediction step size) or decreasing (increases the prediction
step size) the - Output Steps per Module - in CORMIX input.

********************* FINAL DESIGN ADVICE AND COMMENTS *********************
REMINDER:  The user must take note that HYDRODYNAMIC MODELING by any known
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  technique is NOT AN EXACT SCIENCE.
Extensive comparison with field and laboratory data has shown that the
  CORMIX predictions on dilutions and concentrations (with associated
  plume geometries) are reliable for the majority of cases and are accurate
  to within about +-50% (standard deviation).
As a further safeguard, CORMIX will not give predictions whenever it judges
  the design configuration as highly complex and uncertain for prediction.
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ATTACHMENT F

Toxics Management Spreadsheet for Outfall 038

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **US Steel Corp. - Clairton Plant** NPDES Permit No.: **PA0004472** Outfall No.: **038**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **IMP 183, NCCW, Cooling Tower**

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
47.2	302	7.55	0.79	0.82	0.82	0.82		

					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		506									
	Chloride (PWS)	mg/L		127									
	Bromide	mg/L		2.02									
	Sulfate (PWS)	mg/L		116									
	Fluoride (PWS)	mg/L		0.83									
Group 2	Total Aluminum	µg/L		242									
	Total Antimony	µg/L		0.23									
	Total Arsenic	µg/L		5.3									
	Total Barium	µg/L		44.3									
	Total Beryllium	µg/L	<	0.5									
	Total Boron	µg/L	<	100									
	Total Cadmium	µg/L		0.06									
	Total Chromium (III)	µg/L		2.32									
	Hexavalent Chromium	µg/L	<	0.25									
	Total Cobalt	µg/L		0.954									
	Total Copper	µg/L	<	2.5									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L		98									
	Dissolved Iron	µg/L		87									
	Total Iron	µg/L		600									
	Total Lead	µg/L		1.2									
	Total Manganese	µg/L		77.3									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		5.05									
	Total Phenols (Phenolics) (PWS)	µg/L	<	4									
	Total Selenium	µg/L		21									
	Total Silver	µg/L	<	0.27									
	Total Thallium	µg/L	<	0.1									
	Total Zinc	µg/L		17.9									
	Total Molybdenum	µg/L		0.47									
	Acrolein	µg/L	<	1.95									
	Acrylamide	µg/L											
	Acrylonitrile	µg/L	<	1									
	Benzene	µg/L	<	0.43									
	Bromoform	µg/L	<	0.34									

Group 3	Carbon Tetrachloride	µg/L	<	0.51									
	Chlorobenzene	µg/L		0.21									
	Chlorodibromomethane	µg/L	<	0.39									
	Chloroethane	µg/L	<	0.42									
	2-Chloroethyl Vinyl Ether	µg/L	<	4									
	Chloroform	µg/L	<	0.51									
	Dichlorobromomethane	µg/L	<	0.32									
	1,1-Dichloroethane	µg/L	<	0.42									
	1,2-Dichloroethane	µg/L	<	0.39									
	1,1-Dichloroethylene	µg/L	<	0.33									
	1,2-Dichloropropane	µg/L	<	0.42									
	1,3-Dichloropropylene	µg/L	<	0.33									
	1,4-Dioxane	µg/L	<	19.6									
	Ethylbenzene	µg/L	<	0.27									
	Methyl Bromide	µg/L	<	0.46									
	Methyl Chloride	µg/L	<	0.36									
	Methylene Chloride	µg/L	<	0.45									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.36									
	Tetrachloroethylene	µg/L	<	0.39									
	Toluene	µg/L	<	0.33									
	1,2-trans-Dichloroethylene	µg/L	<	0.39									
	1,1,1-Trichloroethane	µg/L	<	0.38									
	1,1,2-Trichloroethane	µg/L	<	0.24									
	Trichloroethylene	µg/L	<	0.46									
	Vinyl Chloride	µg/L	<	0.46									
Group 4	2-Chlorophenol	µg/L	<	1									
	2,4-Dichlorophenol	µg/L	<	1									
	2,4-Dimethylphenol	µg/L	<	1									
	4,6-Dinitro-o-Cresol	µg/L	<	5									
	2,4-Dinitrophenol	µg/L	<	5									
	2-Nitrophenol	µg/L	<	1									
	4-Nitrophenol	µg/L	<	1									
	p-Chloro-m-Cresol	µg/L	<	1									
	Pentachlorophenol	µg/L	<	5									
	Phenol	µg/L		9.1									
	2,4,6-Trichlorophenol	µg/L	<	1									
Group 5	Acenaphthene	µg/L	<	1									
	Acenaphthylene	µg/L	<	1									
	Anthracene	µg/L	<	1									
	Benzidine	µg/L	<	1									
	Benzo(a)Anthracene	µg/L	<	1									
	Benzo(a)Pyrene	µg/L	<	1									
	3,4-Benzofluoranthene	µg/L	<	1									
	Benzo(ghi)Perylene	µg/L	<	1									
	Benzo(k)Fluoranthene	µg/L	<	1									
	Bis(2-Chloroethoxy)Methane	µg/L	<	1									
	Bis(2-Chloroethyl)Ether	µg/L	<	1									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	1									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	1									
	4-Bromophenyl Phenyl Ether	µg/L	<	1									
	Butyl Benzyl Phthalate	µg/L	<	1									
	2-Chloronaphthalene	µg/L	<	1									
	4-Chlorophenyl Phenyl Ether	µg/L	<	1									
	Chrysene	µg/L	<	1									
	Dibenzo(a,h)Anthrancene	µg/L	<	1									
	1,2-Dichlorobenzene	µg/L	<	0.32									
	1,3-Dichlorobenzene	µg/L	<	0.17									
	1,4-Dichlorobenzene	µg/L	<	0.15									
	3,3-Dichlorobenzidine	µg/L	<	1									
	Diethyl Phthalate	µg/L	<	1									
	Dimethyl Phthalate	µg/L	<	1									
	Di-n-Butyl Phthalate	µg/L	<	1									
	2,4-Dinitrotoluene	µg/L	<	1									

	2,6-Dinitrotoluene	µg/L	<	1									
	Di-n-Octyl Phthalate	µg/L	<	1									
	1,2-Diphenylhydrazine	µg/L	<	1									
	Fluoranthene	µg/L	<	1									
	Fluorene	µg/L	<	1									
	Hexachlorobenzene	µg/L	<	1									
	Hexachlorobutadiene	µg/L	<	0.27									
	Hexachlorocyclopentadiene	µg/L	<	1									
	Hexachloroethane	µg/L	<	1									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	1									
	Isophorone	µg/L	<	1									
	Naphthalene	µg/L		1.44									
	Nitrobenzene	µg/L	<	1									
	n-Nitrosodimethylamine	µg/L	<	1									
	n-Nitrosodi-n-Propylamine	µg/L	<	1									
	n-Nitrosodiphenylamine	µg/L	<	1									
	Phenanthrene	µg/L	<	1									
	Pyrene	µg/L	<	1									
	1,2,4-Trichlorobenzene	µg/L	<	0.17									
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											
	ChemTreat C2189T	mg/L											
	ChemTreat CL4882A	mg/L											
	ChemTreat CL8861	mg/L											

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Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

US Steel Corp. - Clairton Plant, NPDES Permit No. PA0004472, Outfall 038

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Monongahela River**

No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	037185	20.076	718.7	5350	0.0001		Yes
End of Reach 1	037185	11.3	710	7337	0.0001		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	20.076	0.195	550			770	9					100	7		
End of Reach 1	11.3	0.143	1060			770	9								

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	20.076														
End of Reach 1	11.3														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

US Steel Corp. - Clairton Plant, NPDES Permit No. PA0004472, Outfall 038

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

☑ ***Hydrodynamics***

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

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
20.076	550		550	73.018	0.0001	9.	770.	85.556	0.09	5.966	2345.681
11.3	1,060		1,060								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
20.076	1845.29		1845.29	73.018	0.0001	14.762	770.	52.161	0.169	3.178	1325.81
11.3	3274.207		3274.21								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.790 Analysis Hardness (mg/l): 129.06 Analysis pH: 7.05

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	5,213	
Total Antimony	0	0		0	1,100	1,100	7,646	
Total Arsenic	0	0		0	340	340	2,363	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	145,962	
Total Boron	0	0		0	8,100	8,100	56,299	
Total Cadmium	0	0		0	2.580	2.76	19.2	Chem Translator of 0.933 applied
Total Chromium (III)	0	0		0	702.166	2,222	15,444	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	113	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	660	
Total Copper	0	0		0	17.091	17.8	124	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	85.163	113	785	Chem Translator of 0.754 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	11.4	Chem Translator of 0.85 applied
Total Nickel	0	0		0	581.034	582	4,047	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	4.989	5.87	40.8	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	452	
Total Zinc	0	0		0	145.457	149	1,034	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	20.9	
Acrylonitrile	0	0		0	650	650	4,518	
Benzene	0	0		0	640	640	4,448	
Bromoform	0	0		0	1,800	1,800	12,511	
Carbon Tetrachloride	0	0		0	2,800	2,800	19,462	
Chlorobenzene	0	0		0	1,200	1,200	8,341	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	125,110	
Chloroform	0	0		0	1,900	1,900	13,206	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	104,258	
1,1-Dichloroethylene	0	0		0	7,500	7,500	52,129	
1,2-Dichloropropane	0	0		0	11,000	11,000	76,456	
1,3-Dichloropropylene	0	0		0	310	310	2,155	
Ethylbenzene	0	0		0	2,900	2,900	20,157	
Methyl Bromide	0	0		0	550	550	3,823	
Methyl Chloride	0	0		0	28,000	28,000	194,616	
Methylene Chloride	0	0		0	12,000	12,000	83,407	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	6,951	
Tetrachloroethylene	0	0		0	700	700	4,865	
Toluene	0	0		0	1,700	1,700	11,816	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	47,264	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	20,852	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	23,632	
Trichloroethylene	0	0		0	2,300	2,300	15,986	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	3,892	
2,4-Dichlorophenol	0	0		0	1,700	1,700	11,816	
2,4-Dimethylphenol	0	0		0	660	660	4,587	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	556	
2,4-Dinitrophenol	0	0		0	660	660	4,587	
2-Nitrophenol	0	0		0	8,000	8,000	55,604	
4-Nitrophenol	0	0		0	2,300	2,300	15,986	
p-Chloro-m-Cresol	0	0		0	160	160	1,112	
Pentachlorophenol	0	0		0	9.149	9.15	63.6	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	3,197	

Acenaphthene	0	0		0	83	83.0	577	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	2,085	
Benzo(a)Anthracene	0	0		0	0.5	0.5	3.48	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	208,517	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	31,277	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	1,877	
Butyl Benzyl Phthalate	0	0		0	140	140	973	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	5,699	
1,3-Dichlorobenzene	0	0		0	350	350	2,433	
1,4-Dichlorobenzene	0	0		0	730	730	5,074	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	27,802	
Dimethyl Phthalate	0	0		0	2,500	2,500	17,376	
Di-n-Butyl Phthalate	0	0		0	110	110	765	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	11,121	
2,6-Dinitrotoluene	0	0		0	990	990	6,881	
1,2-Diphenylhydrazine	0	0		0	15	15.0	104	
Fluoranthene	0	0		0	200	200	1,390	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	69.5	
Hexachlorocyclopentadiene	0	0		0	5	5.0	34.8	
Hexachloroethane	0	0		0	60	60.0	417	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	69,506	
Naphthalene	0	0		0	140	140	973	
Nitrobenzene	0	0		0	4,000	4,000	27,802	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	118,159	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	2,085	
Phenanthrene	0	0		0	5	5.0	34.8	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	904	

☑ ***CFC*** CCT (min): 720 PMF: 0.820 Analysis Hardness (mg/l): 128.15 Analysis pH: 7.05

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	1,579	
Total Arsenic	0	0		0	150	150	1,076	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	29,424	
Total Boron	0	0		0	1,600	1,600	11,482	
Total Cadmium	0	0		0	0.292	0.33	2.33	Chem Translator of 0.899 applied
Total Chromium (III)	0	0		0	90.807	106	758	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	74.6	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	136	
Total Copper	0	0		0	11.070	11.5	82.8	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	12,799	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	3.293	4.36	31.3	Chem Translator of 0.755 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	6.5	Chem Translator of 0.85 applied
Total Nickel	0	0		0	64.148	64.3	462	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	35.8	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	93.3	
Total Zinc	0	0		0	145.766	148	1,061	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	21.5	
Acrylonitrile	0	0		0	130	130	933	
Benzene	0	0		0	130	130	933	
Bromoform	0	0		0	370	370	2,655	
Carbon Tetrachloride	0	0		0	560	560	4,019	
Chlorobenzene	0	0		0	240	240	1,722	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	25,118	
Chloroform	0	0		0	390	390	2,799	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	22,247	
1,1-Dichloroethylene	0	0		0	1,500	1,500	10,765	
1,2-Dichloropropane	0	0		0	2,200	2,200	15,788	
1,3-Dichloropropylene	0	0		0	61	61.0	438	
Ethylbenzene	0	0		0	580	580	4,162	
Methyl Bromide	0	0		0	110	110	789	
Methyl Chloride	0	0		0	5,500	5,500	39,471	
Methylene Chloride	0	0		0	2,400	2,400	17,224	

1,1,2,2-Tetrachloroethane	0	0		0	210	210	1,507	
Tetrachloroethylene	0	0		0	140	140	1,005	
Toluene	0	0		0	330	330	2,368	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	10,047	
1,1,1-Trichloroethane	0	0		0	610	610	4,378	
1,1,2-Trichloroethane	0	0		0	680	680	4,880	
Trichloroethylene	0	0		0	450	450	3,229	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	789	
2,4-Dichlorophenol	0	0		0	340	340	2,440	
2,4-Dimethylphenol	0	0		0	130	130	933	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	115	
2,4-Dinitrophenol	0	0		0	130	130	933	
2-Nitrophenol	0	0		0	1,600	1,600	11,482	
4-Nitrophenol	0	0		0	470	470	3,373	
p-Chloro-m-Cresol	0	0		0	500	500	3,588	
Pentachlorophenol	0	0		0	7.019	7.02	50.4	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	653	
Acenaphthene	0	0		0	17	17.0	122	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	423	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.72	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	43,059	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	6,531	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	388	
Butyl Benzyl Phthalate	0	0		0	35	35.0	251	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	1,148	
1,3-Dichlorobenzene	0	0		0	69	69.0	495	
1,4-Dichlorobenzene	0	0		0	150	150	1,076	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	5,741	
Dimethyl Phthalate	0	0		0	500	500	3,588	
Di-n-Butyl Phthalate	0	0		0	21	21.0	151	
2,4-Dinitrotoluene	0	0		0	320	320	2,296	
2,6-Dinitrotoluene	0	0		0	200	200	1,435	
1,2-Diphenylhydrazine	0	0		0	3	3.0	21.5	
Fluoranthene	0	0		0	40	40.0	287	

Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	14.4	
Hexachlorocyclopentadiene	0	0		0	1	1.0	7.18	
Hexachloroethane	0	0		0	12	12.0	86.1	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	15,071	
Naphthalene	0	0		0	43	43.0	309	
Nitrobenzene	0	0		0	810	810	5,813	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	24,400	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	423	
Phenanthrene	0	0		0	1	1.0	7.18	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	187	

☑ ***THH*** CCT (min): 720 PMF: 0.820 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	40.2	
Total Arsenic	0	0		0	10	10.0	71.8	
Total Barium	0	0		0	2,400	2,400	17,224	
Total Boron	0	0		0	3,100	3,100	22,247	
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	2,153	
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	7,177	
Total Mercury	0	0		0	0.050	0.05	0.36	
Total Nickel	0	0		0	610	610	4,378	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	

Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	1.72	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	21.5	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	718	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	40.9	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	237	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	488	
Methyl Bromide	0	0		0	100	100.0	718	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	N/A	N/A	N/A	
1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A	
Tetrachloroethylene	0	0		0	N/A	N/A	N/A	
Toluene	0	0		0	57	57.0	409	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	718	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	71,765	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	30	30.0	215	
2,4-Dichlorophenol	0	0		0	10	10.0	71.8	
2,4-Dimethylphenol	0	0		0	100	100.0	718	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	14.4	
2,4-Dinitrophenol	0	0		0	10	10.0	71.8	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	28,706	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	502	
Anthracene	0	0		0	300	300	2,153	
Benzidine	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A	

Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	1,435	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	0.72	
2-Chloronaphthalene	0	0		0	800	800	5,741	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	7,177	
1,3-Dichlorobenzene	0	0		0	7	7.0	50.2	
1,4-Dichlorobenzene	0	0		0	300	300	2,153	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	4,306	
Dimethyl Phthalate	0	0		0	2,000	2,000	14,353	
Di-n-Butyl Phthalate	0	0		0	20	20.0	144	
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A	
Fluoranthene	0	0		0	20	20.0	144	
Fluorene	0	0		0	50	50.0	359	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	28.7	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	34	34.0	244	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	71.8	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	144	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.5	

☑ ***CRL*** CCT (min): 720 PMF: 0.820 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc	Stream	Trib Conc	Fate	WQC	WQ Obj	WLA (ug/L)	Comments

Pollutants	Conc (ug/L)	CV	(µg/L)	Coef	(µg/L)	(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	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	1.3	
Benzene	0	0		0	0.58	0.58	12.6	
Bromoform	0	0		0	7	7.0	152	
Carbon Tetrachloride	0	0		0	0.4	0.4	8.69	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	17.4	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	20.6	
1,2-Dichloroethane	0	0		0	9.9	9.9	215	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	19.6	
1,3-Dichloropropylene	0	0		0	0.27	0.27	5.87	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	434	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	4.34	

Tetrachloroethylene	0	0		0	10	10.0	217	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	11.9	
Trichloroethylene	0	0		0	0.6	0.6	13.0	
Vinyl Chloride	0	0		0	0.02	0.02	0.43	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	0.65	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	32.6	
Acenaphthene	0	0		0	N/A	N/A	N/A	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	0.002	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.022	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.002	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.022	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.22	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.65	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	6.95	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	2.61	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.002	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	1.09	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	1.09	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	1.09	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.65	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	

Hexachlorobenzene	0	0		0	0.00008	0.00008	0.002	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.22	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	2.17	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.022	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.015	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.11	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	71.7	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Selenium	14.1	22.0	35.8	55.9	89.5	µg/L	35.8	CFC	Discharge Conc ≥ 50% WQBEL (RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable

Total Aluminum	3,341	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	40.2	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	71.8	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	17,224	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	11,482	µg/L	Discharge Conc < TQL
Total Cadmium	2.33	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	758	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	72.6	µg/L	Discharge Conc < TQL
Total Cobalt	136	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	79.3	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	2,153	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	12,799	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	31.3	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	7,177	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.36	µg/L	Discharge Conc < TQL
Total Nickel	462	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Silver	26.1	µg/L	Discharge Conc < TQL
Total Thallium	1.72	µg/L	Discharge Conc < TQL
Total Zinc	663	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	13.4	µg/L	Discharge Conc < TQL
Acrylonitrile	1.3	µg/L	Discharge Conc < TQL
Benzene	12.6	µg/L	Discharge Conc < TQL
Bromoform	152	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	8.69	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorobenzene	718	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorodibromomethane	17.4	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	25,118	µg/L	Discharge Conc < TQL
Chloroform	40.9	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	20.6	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	215	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	237	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	19.6	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	5.87	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	488	µg/L	Discharge Conc < TQL
Methyl Bromide	718	µg/L	Discharge Conc < TQL
Methyl Chloride	39,471	µg/L	Discharge Conc < TQL
Methylene Chloride	434	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	4.34	µg/L	Discharge Conc < TQL

Tetrachloroethylene	217	µg/L	Discharge Conc < TQL
Toluene	409	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	718	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	4,378	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	11.9	µg/L	Discharge Conc < TQL
Trichloroethylene	13.0	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.43	µg/L	Discharge Conc < TQL
2-Chlorophenol	215	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	71.8	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	718	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	14.4	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	71.8	µg/L	Discharge Conc < TQL
2-Nitrophenol	11,482	µg/L	Discharge Conc < TQL
4-Nitrophenol	3,373	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	713	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.65	µg/L	Discharge Conc < TQL
Phenol	28,706	µg/L	Discharge Conc ≤ 25% WQBEL
2,4,6-Trichlorophenol	32.6	µg/L	Discharge Conc < TQL
Acenaphthene	122	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	2,153	µg/L	Discharge Conc < TQL
Benzidine	0.002	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.022	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.002	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.022	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.22	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.65	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	1,435	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	6.95	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	388	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.72	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	5,741	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	2.61	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.002	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	1,148	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	50.2	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	1,076	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	1.09	µg/L	Discharge Conc < TQL
Diethyl Phthalate	4,306	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	3,588	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	144	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	1.09	µg/L	Discharge Conc < TQL

2,6-Dinitrotoluene	1.09	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.65	µg/L	Discharge Conc < TQL
Fluoranthene	144	µg/L	Discharge Conc < TQL
Fluorene	359	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.002	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.22	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	7.18	µg/L	Discharge Conc < TQL
Hexachloroethane	2.17	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.022	µg/L	Discharge Conc < TQL
Isophorone	244	µg/L	Discharge Conc < TQL
Naphthalene	309	µg/L	Discharge Conc ≤ 25% WQBEL
Nitrobenzene	71.8	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.015	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.11	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	71.7	µg/L	Discharge Conc < TQL
Phenanthrene	7.18	µg/L	Discharge Conc < TQL
Pyrene	144	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.5	µg/L	Discharge Conc < TQL

ATTACHMENT G

Toxics Management Spreadsheet for Total Phenols at Outfall 038 (Supporting 301(g) Variance)

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **US Steel Corp. - Clairton Plant** NPDES Permit No.: **PA0004472** Outfall No.: **038**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **IMP 183, NCCW, Cooling Tower**

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
47.2	302	7.55	0.79	0.82	0.82	0.82		

					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											
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L	<										
	Total Boron	µg/L	<										
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L	<										
	Total Cobalt	µg/L											
	Total Copper	µg/L	<										
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L											
	Total Manganese	µg/L											
	Total Mercury	µg/L	<										
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L		1000000									
	Total Selenium	µg/L											
	Total Silver	µg/L	<										
	Total Thallium	µg/L	<										
	Total Zinc	µg/L	<										
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

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

	2,6-Dinitrotoluene	µg/L	<										
	Di-n-Octyl Phthalate	µg/L	<										
	1,2-Diphenylhydrazine	µg/L	<										
	Fluoranthene	µg/L	<										
	Fluorene	µg/L	<										
	Hexachlorobenzene	µg/L	<										
	Hexachlorobutadiene	µg/L	<										
	Hexachlorocyclopentadiene	µg/L	<										
	Hexachloroethane	µg/L	<										
	Indeno(1,2,3-cd)Pyrene	µg/L	<										
	Isophorone	µg/L	<										
	Naphthalene	µg/L	<										
	Nitrobenzene	µg/L	<										
	n-Nitrosodimethylamine	µg/L	<										
	n-Nitrosodi-n-Propylamine	µg/L	<										
	n-Nitrosodiphenylamine	µg/L	<										
	Phenanthrene	µg/L	<										
	Pyrene	µg/L	<										
	1,2,4-Trichlorobenzene	µg/L	<										
Group 6	Aldrin	µg/L	<										
	alpha-BHC	µg/L	<										
	beta-BHC	µg/L	<										
	gamma-BHC	µg/L	<										
	delta BHC	µg/L	<										
	Chlordane	µg/L	<										
	4,4-DDT	µg/L	<										
	4,4-DDE	µg/L	<										
	4,4-DDD	µg/L	<										
	Dieldrin	µg/L	<										
	alpha-Endosulfan	µg/L	<										
	beta-Endosulfan	µg/L	<										
	Endosulfan Sulfate	µg/L	<										
	Endrin	µg/L	<										
	Endrin Aldehyde	µg/L	<										
	Heptachlor	µg/L	<										
	Heptachlor Epoxide	µg/L	<										
	PCB-1016	µg/L	<										
	PCB-1221	µg/L	<										
	PCB-1232	µg/L	<										
	PCB-1242	µg/L	<										
	PCB-1248	µg/L	<										
	PCB-1254	µg/L	<										
	PCB-1260	µg/L	<										
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<										
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											
	ChemTreat C2189T	mg/L											
	ChemTreat CL4882A	mg/L											
	ChemTreat CL8861	mg/L											

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Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

US Steel Corp. - Clairton Plant, NPDES Permit No. PA0004472, Outfall 038

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Monongahela River**

No. Reaches to Model: 1

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	037185	20.076	718.7	5350	0.0001		Yes
End of Reach 1	037185	4.46	710	7360	0.0001	69	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	20.076	0.195	550			770	9					100	7		
End of Reach 1	4.46	0.143	1230			770	9								

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	20.076														
End of Reach 1	4.46														

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

US Steel Corp. - Clairton Plant, NPDES Permit No. PA0004472, Outfall 038

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

☑ ***Hydrodynamics***

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

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
20.076	550		550	73.018	0.0001	9.	770.	85.556	0.09	10.615	2345.681
4.46	1,230	106.743	1123.257								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
20.076	1845.29		1845.29	73.018	0.0001	14.762	770.	52.161	0.169	5.655	1325.81
4.46	3728.772	106.743	3622.03								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.790 Analysis Hardness (mg/l): 129.06 Analysis pH: 7.05

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 Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	

☑ ***CFC*** CCT (min): 720 PMF: 0.820 Analysis Hardness (mg/l): 128.15 Analysis pH: 7.05

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 Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	

☑ ***THH*** CCT (min): 720 THH PMF: 0.820 Analysis Hardness (mg/l): N/A Analysis pH: N/A PWS PMF: 0.82

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 Phenols (Phenolics) (PWS)	0	0		0	5	5.0	74.1	WQC applied at RMI 4.46 with a design stream flow of 1230 cfs

☑ ***CRL*** CCT (min): 720 PMF: 0.820 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 Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Phenols (Phenolics) (PWS)	29.2	45.5	74.1	116	185	µg/L	74.1	THH-PWS	Discharge Conc ≥ 50% WQBEL (RP)

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

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

Pollutants	Governing WQBEL	Units	Comments

ATTACHMENT H

WQM 7.0 Modeling Output
For Ammonia-Nitrogen at Outfall 038
(Supporting 301(g) Variance)

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
19A	37185	MONONGAHELA RIVER	**20.076**	718.70	5350.00	0.00001	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	434.50	0.000	0.000	0.0	608.30	9.00	25.90	7.40	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Outfall 038	PA0000472	47.2000	0.0000	0.0000	0.000	38.00	7.55

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.05	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
19A	37185	MONONGAHELA RIVER	**15.530**	718.00	7180.00	0.00001	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	510.00	0.00	0.000	0.000	0.0	608.30	9.00	25.90	7.40	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

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

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
19A	37185	MONONGAHELA RIVER	**11.300**	710.00	7337.00	0.00001	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.140	0.00	0.00	0.000	0.000	0.0	608.30	9.00	25.90	7.40	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

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

Parameter Data

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

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19A	37185	MONONGAHELA RIVER

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
20.076	434.50	0.00	434.50	73.0184	0.00001	9	608.3	67.59	0.09	2.997	27.64	7.42
15.530	944.50	0.00	944.50	73.0184	0.00001	9	608.3	67.59	0.19	1.391	26.77	7.41
Q1-10 Flow												
20.076	278.08	0.00	278.08	73.0184	0.00001	NA	NA	NA	0.06	4.332	28.42	7.43
15.530	604.48	0.00	604.48	73.0184	0.00001	NA	NA	NA	0.12	2.089	27.20	7.41
Q30-10 Flow												
20.076	590.92	0.00	590.92	73.0184	0.00001	NA	NA	NA	0.12	2.291	27.23	7.41
15.530	1284.52	0.00	1284.52	73.0184	0.00001	NA	NA	NA	0.25	1.042	26.55	7.41

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	Uniform Treatme	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19A	37185	MONONGAHELA RIVER

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
20.076	Outfall 038	NA	50	5.11	24.39	1	51
15.530		NA	NA	5.76	NA	NA	NA

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
20.076	Outfall 038	NA	25	.94	8.13	1	67
15.530		NA	NA	.99	NA	NA	NA

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
20.08	Outfall 038	25	9.32	8.13	2.8	4	4	1	64
15.53		NA	NA	NA	NA	NA	NA	NA	NA

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19A	37185	MONONGAHELA RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
20.076	47.200	27.641	7.419
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
608.300	9.000	67.589	0.093
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
3.05	0.099	0.45	1.260
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.630	0.174	O'Connor	5
Reach Travel Time (days)			
2.997			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.300	2.93	0.31	6.84
0.599	2.81	0.21	6.30
0.899	2.69	0.14	5.92
1.199	2.58	0.10	5.67
1.498	2.47	0.07	5.49
1.798	2.37	0.05	5.38
2.098	2.27	0.05	5.30
2.397	2.18	0.05	5.23
2.697	2.09	0.05	5.17
2.997	2.00	0.05	5.12

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
15.530	47.200	26.768	7.409
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
608.300	9.000	67.589	0.186
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.00	0.000	0.00	1.178
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.685	0.242	O'Connor	5
Reach Travel Time (days)			
1.391			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.139	2.00	0.00	6.73
0.278	2.00	0.00	6.77
0.417	2.00	0.00	6.82
0.556	2.00	0.00	6.86
0.695	2.00	0.00	6.90
0.835	2.00	0.00	6.94
0.974	2.00	0.00	6.98
1.113	2.00	0.00	7.02
1.252	2.00	0.00	7.05
1.391	2.00	0.00	7.09

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19A	37185	MONONGAHELA RIVER

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
20.076	Outfall 038	PA0000472	47.200	CBOD5	9.32		
				NH3-N	2.8	5.6	
				Dissolved Oxygen			4

ATTACHMENT I

Toxics Management Spreadsheet for Outfall 090

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **US Steel Corp. - Clairton Plant** NPDES Permit No.: **PA0004472** Outfall No.: **090**

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

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
0.018	808	7.55						

					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	Strea m CV	Fate Coeff	FOS	Criteri a Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		1470									
	Chloride (PWS)	mg/L		74									
	Bromide	mg/L		0.56									
	Sulfate (PWS)	mg/L		1560									
	Fluoride (PWS)	mg/L		0.542									
Group 2	Total Aluminum	µg/L		438									
	Total Antimony	µg/L		0.49									
	Total Arsenic	µg/L	<	2.5									
	Total Barium	µg/L		68.7									
	Total Beryllium	µg/L	<	0.5									
	Total Boron	µg/L	<	100									
	Total Cadmium	µg/L		2.62									
	Total Chromium (III)	µg/L	<	1.99									
	Hexavalent Chromium	µg/L		12									
	Total Cobalt	µg/L		0.474									
	Total Copper	µg/L	<	2.5									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L		91									
	Dissolved Iron	µg/L		36									
	Total Iron	µg/L		41									
	Total Lead	µg/L	<	0.1									
	Total Manganese	µg/L		6.9									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		6.1									
	Total Phenols (Phenolics) (PWS)	µg/L		6									
	Total Selenium	µg/L		9.8									
	Total Silver	µg/L	<	0.274									
	Total Thallium	µg/L	<	0.1									
	Total Zinc	µg/L	<	12.5									
	Total Molybdenum	µg/L		10.9									
	Acrolein	µg/L	<	1.95									
	Acrylamide	µg/L	<	49									
	Acrylonitrile	µg/L	<	1									
	Benzene	µg/L		1									
	Bromoform	µg/L	<	0.34									

Group 3	Carbon Tetrachloride	µg/L	<	0.51									
	Chlorobenzene	µg/L		0.21									
	Chlorodibromomethane	µg/L	<	0.39									
	Chloroethane	µg/L	<	0.42									
	2-Chloroethyl Vinyl Ether	µg/L	<	4									
	Chloroform	µg/L	<	0.51									
	Dichlorobromomethane	µg/L	<	0.32									
	1,1-Dichloroethane	µg/L	<	0.42									
	1,2-Dichloroethane	µg/L	<	0.39									
	1,1-Dichloroethylene	µg/L	<	0.33									
	1,2-Dichloropropane	µg/L	<	0.42									
	1,3-Dichloropropylene	µg/L	<	0.33									
	1,4-Dioxane	µg/L	<	1.9									
	Ethylbenzene	µg/L	<	0.27									
	Methyl Bromide	µg/L	<	0.46									
	Methyl Chloride	µg/L	<	0.36									
	Methylene Chloride	µg/L	<	0.45									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.36									
	Tetrachloroethylene	µg/L	<	0.39									
	Toluene	µg/L	<	0.33									
	1,2-trans-Dichloroethylene	µg/L	<	0.39									
	1,1,1-Trichloroethane	µg/L	<	0.38									
	1,1,2-Trichloroethane	µg/L	<	0.24									
	Trichloroethylene	µg/L	<	0.46									
	Vinyl Chloride	µg/L	<	0.46									
Group 4	2-Chlorophenol	µg/L	<	1									
	2,4-Dichlorophenol	µg/L	<	1									
	2,4-Dimethylphenol	µg/L		1.26									
	4,6-Dinitro-o-Cresol	µg/L	<	5									
	2,4-Dinitrophenol	µg/L	<	5									
	2-Nitrophenol	µg/L	<	1									
	4-Nitrophenol	µg/L	<	1									
	p-Chloro-m-Cresol	µg/L	<	1									
	Pentachlorophenol	µg/L	<	5									
	Phenol	µg/L		92.2									
	2,4,6-Trichlorophenol	µg/L	<	1									
Group 5	Acenaphthene	µg/L	<	1									
	Acenaphthylene	µg/L	<	1									
	Anthracene	µg/L	<	1									
	Benzidine	µg/L	<	5									
	Benzo(a)Anthracene	µg/L	<	1									
	Benzo(a)Pyrene	µg/L	<	1									
	3,4-Benzofluoranthene	µg/L	<	1									
	Benzo(ghi)Perylene	µg/L	<	1									
	Benzo(k)Fluoranthene	µg/L	<	1									
	Bis(2-Chloroethoxy)Methane	µg/L	<	1									
	Bis(2-Chloroethyl)Ether	µg/L		7.55									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	1									
	Bis(2-Ethylhexyl)Phthalate	µg/L		1.37		0.0582							
	4-Bromophenyl Phenyl Ether	µg/L	<	1									
	Butyl Benzyl Phthalate	µg/L	<	1									
	2-Chloronaphthalene	µg/L	<	1									
	4-Chlorophenyl Phenyl Ether	µg/L	<	1									
	Chrysene	µg/L	<	1									
	Dibenzo(a,h)Anthrancene	µg/L	<	1									
	1,2-Dichlorobenzene	µg/L	<	0.32									
	1,3-Dichlorobenzene	µg/L	<	0.17									
	1,4-Dichlorobenzene	µg/L	<	0.15									
	3,3-Dichlorobenzidine	µg/L	<	1									
	Diethyl Phthalate	µg/L	<	1									
	Dimethyl Phthalate	µg/L	<	1									
	Di-n-Butyl Phthalate	µg/L	<	1									
	2,4-Dinitrotoluene	µg/L	<	1									

	2,6-Dinitrotoluene	µg/L	<	1									
	Di-n-Octyl Phthalate	µg/L	<	1									
	1,2-Diphenylhydrazine	µg/L	<	1									
	Fluoranthene	µg/L	<	1									
	Fluorene	µg/L	<	1									
	Hexachlorobenzene	µg/L	<	1									
	Hexachlorobutadiene	µg/L		0.39									
	Hexachlorocyclopentadiene	µg/L	<	1									
	Hexachloroethane	µg/L	<	1									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	1									
	Isophorone	µg/L	<	1									
	Naphthalene	µg/L		0.46									
	Nitrobenzene	µg/L	<	1									
	n-Nitrosodimethylamine	µg/L	<	1									
	n-Nitrosodi-n-Propylamine	µg/L	<	1									
	n-Nitrosodiphenylamine	µg/L	<	1									
	Phenanthrene	µg/L	<	1									
	Pyrene	µg/L	<	1									
	1,2,4-Trichlorobenzene	µg/L	<	0.17									
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											
	ChemTreat C2189T	mg/L											
	ChemTreat CL4882A	mg/L											
	ChemTreat CL8861	mg/L											
	Naphthalene	µg/L		300									

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

US Steel Corp. - Clairton Plant, NPDES Permit No. PA0004472, Outfall 090

Instructions | Discharge | Stream

Receiving Surface Water Name: **Peters 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	039425	0.4578	724.8	51.2	0.00193		Yes
End of Reach 1	039425	0.42	721.5	51.33	0.00193		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	0.4578	0.01947	0.997									100	7		
End of Reach 1	0.42	0.01945	5.697												

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	0.4578		16.3												
End of Reach 1	0.42		21												

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

US Steel Corp. - Clairton Plant, NPDES Permit No. PA0004472, Outfall 090

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

☑ ***Hydrodynamics***

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

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
0.4578	1.00		1.00	0.028	0.002	0.576	21.506	37.366	0.083	0.028	31.277
0.42	5.70		5.697								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
0.4578	16.30		16.30	0.028	0.002	1.946	21.506	11.053	0.39	0.006	5.299
0.42	21		21								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.693 Analysis Hardness (mg/l): 127.45 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	19,346	
Total Antimony	0	0		0	1,100	1,100	28,375	
Total Arsenic	0	0		0	340	340	8,770	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	541,699	
Total Boron	0	0		0	8,100	8,100	208,941	
Total Cadmium	0	0		0	2.549	2.73	70.4	Chem Translator of 0.934 applied
Total Chromium (III)	0	0		0	694.960	2,199	56,730	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	420	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	2,451	
Total Copper	0	0		0	16.889	17.6	454	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	84.012	111	2,868	Chem Translator of 0.756 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	42.5	Chem Translator of 0.85 applied
Total Nickel	0	0		0	574.875	576	14,859	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	4.882	5.74	148	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	1,677	
Total Zinc	0	0		0	143.913	147	3,796	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	77.4	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	650	650	16,767	
Benzene	0	0		0	640	640	16,509	
Bromoform	0	0		0	1,800	1,800	46,431	
Carbon Tetrachloride	0	0		0	2,800	2,800	72,227	
Chlorobenzene	0	0		0	1,200	1,200	30,954	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	464,313	
Chloroform	0	0		0	1,900	1,900	49,011	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	386,928	
1,1-Dichloroethylene	0	0		0	7,500	7,500	193,464	
1,2-Dichloropropane	0	0		0	11,000	11,000	283,747	
1,3-Dichloropropylene	0	0		0	310	310	7,997	
Ethylbenzene	0	0		0	2,900	2,900	74,806	
Methyl Bromide	0	0		0	550	550	14,187	
Methyl Chloride	0	0		0	28,000	28,000	722,265	
Methylene Chloride	0	0		0	12,000	12,000	309,542	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	25,795	
Tetrachloroethylene	0	0		0	700	700	18,057	
Toluene	0	0		0	1,700	1,700	43,852	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	175,407	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	77,386	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	87,704	
Trichloroethylene	0	0		0	2,300	2,300	59,329	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	14,445	
2,4-Dichlorophenol	0	0		0	1,700	1,700	43,852	
2,4-Dimethylphenol	0	0		0	660	660	17,025	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	2,064	
2,4-Dinitrophenol	0	0		0	660	660	17,025	
2-Nitrophenol	0	0		0	8,000	8,000	206,362	
4-Nitrophenol	0	0		0	2,300	2,300	59,329	
p-Chloro-m-Cresol	0	0		0	160	160	4,127	
Pentachlorophenol	0	0		0	8.831	8.83	228	
Phenol	0	0		0	N/A	N/A	N/A	

2,4,6-Trichlorophenol	0	0		0	460	460	11,866	
Acenaphthene	0	0		0	83	83.0	2,141	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	7,739	
Benzo(a)Anthracene	0	0		0	0.5	0.5	12.9	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	773,856	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0.05819	0		0	4,500	4,500	116,077	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	6,965	
Butyl Benzyl Phthalate	0	0		0	140	140	3,611	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	21,152	
1,3-Dichlorobenzene	0	0		0	350	350	9,028	
1,4-Dichlorobenzene	0	0		0	730	730	18,830	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	103,181	
Dimethyl Phthalate	0	0		0	2,500	2,500	64,488	
Di-n-Butyl Phthalate	0	0		0	110	110	2,837	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	41,272	
2,6-Dinitrotoluene	0	0		0	990	990	25,537	
1,2-Diphenylhydrazine	0	0		0	15	15.0	387	
Fluoranthene	0	0		0	200	200	5,159	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	258	
Hexachlorocyclopentadiene	0	0		0	5	5.0	129	
Hexachloroethane	0	0		0	60	60.0	1,548	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	257,952	
Naphthalene	0	0		0	140	140	3,611	
Nitrobenzene	0	0		0	4,000	4,000	103,181	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	438,518	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	7,739	
Phenanthrene	0	0		0	5	5.0	129	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	3,353	
Naphthalene	0	0		0	140	140	3,611	

☑ ***CFC*** CCT (min): 31.277 PMF: 1 Analysis Hardness (mg/l): 119.24 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	8,097	
Total Arsenic	0	0		0	150	150	5,521	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	150,897	
Total Boron	0	0		0	1,600	1,600	58,887	
Total Cadmium	0	0		0	0.278	0.31	11.3	Chem Translator of 0.902 applied
Total Chromium (III)	0	0		0	85.602	99.5	3,663	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	383	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	699	
Total Copper	0	0		0	10.409	10.8	399	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	55,206	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	3.046	3.98	146	Chem Translator of 0.765 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	33.3	Chem Translator of 0.85 applied
Total Nickel	0	0		0	60.353	60.5	2,228	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	184	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	478	
Total Zinc	0	0		0	137.131	139	5,119	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	110	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	130	130	4,785	
Benzene	0	0		0	130	130	4,785	
Bromoform	0	0		0	370	370	13,618	
Carbon Tetrachloride	0	0		0	560	560	20,610	
Chlorobenzene	0	0		0	240	240	8,833	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	128,814	
Chloroform	0	0		0	390	390	14,354	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	114,093	
1,1-Dichloroethylene	0	0		0	1,500	1,500	55,206	
1,2-Dichloropropane	0	0		0	2,200	2,200	80,969	
1,3-Dichloropropylene	0	0		0	61	61.0	2,245	
Ethylbenzene	0	0		0	580	580	21,346	
Methyl Bromide	0	0		0	110	110	4,048	
Methyl Chloride	0	0		0	5,500	5,500	202,422	

Methylene Chloride	0	0		0	2,400	2,400	88,330	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	7,729	
Tetrachloroethylene	0	0		0	140	140	5,153	
Toluene	0	0		0	330	330	12,145	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	51,526	
1,1,1-Trichloroethane	0	0		0	610	610	22,450	
1,1,2-Trichloroethane	0	0		0	680	680	25,027	
Trichloroethylene	0	0		0	450	450	16,562	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	4,048	
2,4-Dichlorophenol	0	0		0	340	340	12,513	
2,4-Dimethylphenol	0	0		0	130	130	4,785	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	589	
2,4-Dinitrophenol	0	0		0	130	130	4,785	
2-Nitrophenol	0	0		0	1,600	1,600	58,887	
4-Nitrophenol	0	0		0	470	470	17,298	
p-Chloro-m-Cresol	0	0		0	500	500	18,402	
Pentachlorophenol	0	0		0	6.776	6.78	249	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	3,349	
Acenaphthene	0	0		0	17	17.0	626	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	2,171	
Benzo(a)Anthracene	0	0		0	0.1	0.1	3.68	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	220,824	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0.05819	0		0	910	910	33,490	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	1,987	
Butyl Benzyl Phthalate	0	0		0	35	35.0	1,288	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	5,889	
1,3-Dichlorobenzene	0	0		0	69	69.0	2,539	
1,4-Dichlorobenzene	0	0		0	150	150	5,521	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	29,443	
Dimethyl Phthalate	0	0		0	500	500	18,402	
Di-n-Butyl Phthalate	0	0		0	21	21.0	773	
2,4-Dinitrotoluene	0	0		0	320	320	11,777	
2,6-Dinitrotoluene	0	0		0	200	200	7,361	
1,2-Diphenylhydrazine	0	0		0	3	3.0	110	

Fluoranthene	0	0		0	40	40.0	1,472	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	73.6	
Hexachlorocyclopentadiene	0	0		0	1	1.0	36.8	
Hexachloroethane	0	0		0	12	12.0	442	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	77,289	
Naphthalene	0	0		0	43	43.0	1,583	
Nitrobenzene	0	0		0	810	810	29,811	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	125,134	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	2,171	
Phenanthrene	0	0		0	1	1.0	36.8	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	957	
Naphthalene	0	0		0	43	43.0	1,583	

☑ ***THH*** CCT (min): 31.277 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	206	
Total Arsenic	0	0		0	10	10.0	368	
Total Barium	0	0		0	2,400	2,400	88,330	
Total Boron	0	0		0	3,100	3,100	114,093	
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	11,041	
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	36,804	
Total Mercury	0	0		0	0.050	0.05	1.84	
Total Nickel	0	0		0	610	610	22,450	
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	8.83	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	110	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	3,680	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	210	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	1,215	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	2,503	
Methyl Bromide	0	0		0	100	100.0	3,680	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	N/A	N/A	N/A	
1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A	
Tetrachloroethylene	0	0		0	N/A	N/A	N/A	
Toluene	0	0		0	57	57.0	2,098	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	3,680	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	368,041	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	30	30.0	1,104	
2,4-Dichlorophenol	0	0		0	10	10.0	368	
2,4-Dimethylphenol	0	0		0	100	100.0	3,680	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	73.6	
2,4-Dinitrophenol	0	0		0	10	10.0	368	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	147,216	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	2,576	
Anthracene	0	0		0	300	300	11,041	
Benzidine	0	0		0	N/A	N/A	N/A	

Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	7,361	
Bis(2-Ethylhexyl)Phthalate	0.05819	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	3.68	
2-Chloronaphthalene	0	0		0	800	800	29,443	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	36,804	
1,3-Dichlorobenzene	0	0		0	7	7.0	258	
1,4-Dichlorobenzene	0	0		0	300	300	11,041	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	22,082	
Dimethyl Phthalate	0	0		0	2,000	2,000	73,608	
Di-n-Butyl Phthalate	0	0		0	20	20.0	736	
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A	
Fluoranthene	0	0		0	20	20.0	736	
Fluorene	0	0		0	50	50.0	1,840	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	147	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	34	34.0	1,251	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	368	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	736	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	2.58	
Naphthalene	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 5.299 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc	Stream	Trib Conc	Fate	WQC	WQ Obj	WLA (ug/l)	Comments

Pollutants	Conc (µg/L)	CV	(µg/L)	Coef	(µg/L)	(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	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylamide	0	0		0	0.07	0.07	41.0	
Acrylonitrile	0	0		0	0.06	0.06	35.2	
Benzene	0	0		0	0.58	0.58	340	
Bromoform	0	0		0	7	7.0	4,105	
Carbon Tetrachloride	0	0		0	0.4	0.4	235	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	469	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	557	
1,2-Dichloroethane	0	0		0	9.9	9.9	5,805	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	528	
1,3-Dichloropropylene	0	0		0	0.27	0.27	158	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	11,727	

1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	117	
Tetrachloroethylene	0	0		0	10	10.0	5,864	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	322	
Trichloroethylene	0	0		0	0.6	0.6	352	
Vinyl Chloride	0	0		0	0.02	0.02	11.7	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	17.6	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	880	
Acenaphthene	0	0		0	N/A	N/A	N/A	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	0.059	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.59	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.059	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.59	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	5.86	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	17.6	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0.05819	0		0	0.32	0.32	154	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	70.4	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.059	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	29.3	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	29.3	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	29.3	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	17.6	
Fluoranthene	0	0		0	N/A	N/A	N/A	

Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.047	
Hexachlorobutadiene	0	0		0	0.01	0.01	5.86	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	58.6	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.59	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.41	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	2.93	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	1,935	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Cadmium	Report	Report	Report	Report	Report	µg/L	11.3	CFC	Discharge Conc > 10% WQBEL (no RP)
Acrylamide	0.006	0.01	41.0	64.0	103	µg/L	41.0	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Bis(2-Chloroethyl)Ether	Report	Report	Report	Report	Report	µg/L	17.6	CRL	Discharge Conc > 25% WQBEL (no RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable

Total Aluminum	12,400	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	206	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	88,330	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	58,887	µg/L	Discharge Conc < TQL
Total Chromium (III)	3,663	µg/L	Discharge Conc < TQL
Hexavalent Chromium	269	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	699	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	291	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	11,041	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	55,206	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	146	µg/L	Discharge Conc < TQL
Total Manganese	36,804	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	1.84	µg/L	Discharge Conc < TQL
Total Nickel	2,228	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	184	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	95.0	µg/L	Discharge Conc < TQL
Total Thallium	8.83	µg/L	Discharge Conc < TQL
Total Zinc	2,433	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	49.6	µg/L	Discharge Conc < TQL
Acrylonitrile	35.2	µg/L	Discharge Conc < TQL
Benzene	340	µg/L	Discharge Conc ≤ 25% WQBEL
Bromoform	4,105	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	235	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorobenzene	3,680	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorodibromomethane	469	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	128,814	µg/L	Discharge Conc < TQL
Chloroform	210	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	557	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	5,805	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	1,215	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	528	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	158	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	2,503	µg/L	Discharge Conc < TQL
Methyl Bromide	3,680	µg/L	Discharge Conc < TQL
Methyl Chloride	202,422	µg/L	Discharge Conc < TQL
Methylene Chloride	11,727	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	117	µg/L	Discharge Conc < TQL

Tetrachloroethylene	5,153	µg/L	Discharge Conc < TQL
Toluene	2,098	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	3,680	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	22,450	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	322	µg/L	Discharge Conc < TQL
Trichloroethylene	352	µg/L	Discharge Conc < TQL
Vinyl Chloride	11.7	µg/L	Discharge Conc < TQL
2-Chlorophenol	1,104	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	368	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	3,680	µg/L	Discharge Conc ≤ 25% WQBEL
4,6-Dinitro-o-Cresol	73.6	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	368	µg/L	Discharge Conc < TQL
2-Nitrophenol	58,887	µg/L	Discharge Conc < TQL
4-Nitrophenol	17,298	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	2,645	µg/L	Discharge Conc < TQL
Pentachlorophenol	17.6	µg/L	Discharge Conc < TQL
Phenol	147,216	µg/L	Discharge Conc ≤ 25% WQBEL
2,4,6-Trichlorophenol	880	µg/L	Discharge Conc < TQL
Acenaphthene	626	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	11,041	µg/L	Discharge Conc < TQL
Benzidine	0.059	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.59	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.059	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.59	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	5.86	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroisopropyl)Ether	7,361	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	154	µg/L	Discharge Conc ≤ 25% WQBEL
4-Bromophenyl Phenyl Ether	1,987	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	3.68	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	29,443	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	70.4	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.059	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	5,889	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	258	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	5,521	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	29.3	µg/L	Discharge Conc < TQL
Diethyl Phthalate	22,082	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	18,402	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	736	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	29.3	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	29.3	µg/L	Discharge Conc < TQL

Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	17.6	µg/L	Discharge Conc < TQL
Fluoranthene	736	µg/L	Discharge Conc < TQL
Fluorene	1,840	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.047	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	5.86	µg/L	Discharge Conc ≤ 25% WQBEL
Hexachlorocyclopentadiene	36.8	µg/L	Discharge Conc < TQL
Hexachloroethane	58.6	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.59	µg/L	Discharge Conc < TQL
Isophorone	1,251	µg/L	Discharge Conc < TQL
Naphthalene	1,583	µg/L	Discharge Conc ≤ 25% WQBEL
Nitrobenzene	368	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.41	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	2.93	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	1,935	µg/L	Discharge Conc < TQL
Phenanthrene	36.8	µg/L	Discharge Conc < TQL
Pyrene	736	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	2.58	µg/L	Discharge Conc < TQL
Naphthalene	1,583	µg/L	Discharge Conc ≤ 25% WQBEL