pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0008303**
Facility Type	**Industrial**	APS ID	**732594**
Major / Minor	**Major**	Authorization ID	**1388150**

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

Applicant and Facility Information

Applicant Name	**Cleveland Cliffs Steelton LLC**	Facility Name	**Cleveland Cliffs Steelton LLC**
Applicant Address	215 S Front Street	Facility Address	215 S Front Street
	Steelton, PA 17113-2538		Steelton, PA 17113-2538
Applicant Contact	Ray Ajalli	Facility Contact	Ray Ajalli
Applicant Phone	(610) 683-2097	Facility Phone	(610) 683-2097
Client ID	221652	Site ID	444261
SIC Code	3312	Municipality	Steelton Borough
SIC Description	Manufacturing - Blast Furnaces And Steel Mills	County	Dauphin
Date Application Received	March 2, 2022	EPA Waived?	No
Date Application Accepted	May 12, 2022	If No, Reason	Major Facility

Purpose of Application: Permit renewal for discharge of treated industrial wastewater

Summary of Review

1.0 Generation Discussion:

This factsheet supports the renewal of an existing NPDES permit for discharge of treated industrial waste from an existing steel pipe manufacturing plant located in Steelton, Dauphin County. Cleveland Cliffs Steelton LLC owns and operates the plant. The facility's previous owners are ArcelorMittal Steelton, LLC, ISG Steelton Plant and Bethlehem Steel Corp. The permit has been transferred from ArcelorMittal Steelton, LLC to Cleveland Cliffs Steelton LLC on April 28, 2022. The site is situated on the east shore of Susquehanna River, just about two (2) miles south of Harrisburg, PA. Under the Standard Industrial Classification Code 3312, the facility currently produces railroad rails, various shaped steel products including specialty blooms, flat bars and ingots to serve the rail transportation, forging and re-rolling industries, cold-drawing and various other industrial applications. The facility operates an electric arc furnace (EAF), a three-strand continuous bloom caster, ingot-teeming facility, ladle furnace, vacuum degasser, 44" breakdown, 35"/28" rail mill and 20" bar mill. All finished/semi-finished products during and after operation are being stored at the site. DEP categorized the facility as a major industrial wastewater facility discharging less than 250 MGD based on quality and quality of wastewater generated from the industrial activities conducted at the site. All process wastewater produced at the plant is conveyed, in combination with stormwater from the site to a central treatment system (CTS) that utilizes settling and skimming to remove solids and oil from the wastewaters. The treated wastewater is then collected in the canal, which serves as the reservoir for plant production water. The plant supply canal extends for nearly the full length of the plant and it was originally part of the "Pennsylvania Canal" built in 1826. Susquehanna River is the main source of make-up water for the plant supply canal. The first pump station (i.e., East End Pump Station) pumps river water into the canal as needed. Water from the canal is then pumped to the facility through the second pump station (i.e., Swatara Street Pump Station). It is unknown how much of water is being stored/collected in the canal since the facility recirculates most of its treated process wastewater back to the canal and the canal also receives additional flows

Approve	Deny	Signatures	Date
X		*J. Pascal Kwedza* J. Pascal Kwedza, P.E. / Environmental Engineer	August 18, 2023
X		*Maria D. Bebenek for* Daniel W. Martin, P.E. / Environmental Engineer Manager	September 8, 2023
X		*Maria D. Bebenek* Maria D. Bebenek, P.E. / Program Manager	September 8, 2023

Summary of Review

from Steelton Borough's MS4s (NPDES Permit no. PAG133625) and Durabond (NPDES Permit no. PA0084468). The permit application specifies approximately 27.1 MGD of canal water is withdrawn at Swatara Street Pump Station for production purpose at the facility and the discharge rate from Outfall 002 is about 25.8 MGD. The existing NPDES permit was issued on August 8, 2017 with an effective date of September 1, 2017 and expiration date of August 31, 2022. The permit was amendment on May 16, 2018 to address permittee's concerns with the issued permit. The applicant submitted a timely NPDES renewal application to the Department and is currently operating under the terms and conditions in the existing permit under administrative extension provisions pending Department action on the renewal application. A topographical map showing discharge location is presented in attachment A.

1.1 The major industrial activities with their associated wastewater and treatment technologies are described below:

1. Electric Arc Furnace – Steel scrap is melted in a DC powered furnace. The molten steel is then transported in ladles to the Ladle furnace and Vacuum Degassers for further refining. No process wastewater is generated, but Outfall 002 receives noncontact cooling water generated from this activity.

2. Ladle Furnace – Alloys are added to the molten steel. No process water is generated, but noncontact cooling water is discharged through Outfall 002.

3. Walking Beam Furnace – A new walking beam reheat furnace was installed in 2013. Previously, steel blooms from a bloom caster were held in soaking pits at a certain temperature prior to rolling into other shapes or sale to other users. The new reheat furnace replaced three of six soaking pit batteries such that all blooms rolled at rolling mills are processed through the walking beam reheat furnace. Two of the three remaining soaking pit batteries will be used to control cooling and one is a spare. There are two (2) non-contact cooling water systems for the furnace; a closed loop recirculated cooling system utilizing heat exchangers and an open loop system with mechanical draft cooling tower providing cooling water for heat exchangers in the closed loop system and wastewater generated are described below.

   a) Closed Loop Cooling – A new water softener was installed at the facility to treat water from Steelton Borough for make-up water. Along with water softener wastes, backwash water from the filters which treat approximately 10% of the recycle system flow is commingled with blowdown from the open loop system and is discharged to the existing scale pit. No blowdown from closed loop system is expected.

   b) Open Loop Cooling – The canal water is used as make-up water. A blowdown discharge rate of 50 gpm (0.072 MGD) is expected and discharged with wastes generated from the closed loop system to the existing scale pit for the 44" and 35"/28" mills along with wastes from closed loop cooling system, wastewaters from the entire walking beam furnace system non-contact cooling water blowdown, water softener wastes and backwash water. From this pit, wastewater is conveyed to the existing three-compartment settling basin prior to No.4 Pump House which also receives treated vacuum degassing process waste water blowdown (outfall 122), treated continuous casting process waste water blowdown (outfall112) boiler house waste water and any excess EAF slag quenching wastewater from the 20-inch mill prior to discharging to the CTS which consists of 3 settling basins and 3 polishing lagoons for additional treatment (oil skimming is provided at settling basins and polishing lagoons).

4. Tank and Ingot Stream Vacuum Degassing – Molten steel is placed in a vacuum to remove impurities. Impurities removed from the steel in the off-gas are scrubbed out with direct contact water. This process water is settled and cooled in a semi-closed loop system. Blowdown from the loop is precipitated and treated via the Vacuum Degasser Blowdown Treatment System (VDBTS). The VDBTS consists of the following units:

   Floc Tank → Lamella Separator → Neutralization/Floc Tank → Thickener → Sand Filters with filtrate/backwash tanks (2) → Discharges to CTS.

   A pH controller has been installed at the first floc tank for heavy metal precipitation to address zinc violations (WQM Permit no. 2295201). From sand filters, wastewater is monitored at IMP 122 prior to discharging to the CTS via No 4 Pump station for further treatment. The permit application lists discharge rates from IMP 122 as average flow of 0.041 MGD and a maximum daily flow of 0.129 MGD but the existing discharge capacity of 0.05MGD is still appropriate and will remain for the current permit cycle. Some chemicals are added to the system for pH-control and for coagulation/flocculation purposes. Effluent from the VDBTS is treated at the CTS and then eventually discharged back to the canal through IMP 102. Outfall 002 receives noncontact cooling water generated from this activity.

Summary of Review

5. Continuous Caster – Molten steel is formed into blooms. There are two cooling waste streams associated with the molds and the rollers. Contact cooling produces scale contaminated process water that is cooled, filtered, and recirculated. The previous NPDES permits specified technology-based BAT limits at IMP102 for toxic pollutants from this process. This discharge is regulated by 40 CFR 420.64 due to new source status. The noncontact cooling water is also cooled, filtered, and recirculated. Filter blowdown is discharged to the CTS for treatment. The discharge rates from IMP112 is listed in the application as 0.103MGD annual average and 0.98MGD as maximum flow, but the existing discharge flow of 0.117MGD will remain in the permit. The discharge rates from IMP102 is listed in the application as 5.58MGD annual average and 11.8MGD as maximum flow, the existing discharge of flow 7.6MGD will remain for this permit cycle.

6. 44" Rolling Mill – This is a primary mill that produces blooms for further hot forming in the rail mill or the bar mill. The process wastewater is regulated by 40 CFR 420.72 (a)(1) and (b)(1). Process water carries scale produced by contact cooling and is conveyed to scale pit and the three-compartment settling basin prior to being sent to the CTS. Noncontact cooling water is discharged back to the canal through IMP 102.

7. 35-28" Rail Mill – This is a section mill that produces rail products. The process wastewater is regulated by 40 CFR 420.72(b)(1). Process water carries scale produced by contact cooling and is conveyed to the 44" rolling mill scale pit and the three-compartment settling basin prior to being sent to the CTS. Noncontact cooling water is discharged back to the canal through IMP 102.

8. 20" Bar Mill – This is a section mill that produces various shaped products including forming of blooms and rails by hot rolling. The process wastewater is regulated by 40 CFR 420.72(b)(1). Process water carries scale produced by contact cooling and is conveyed to a scale pit and the three-compartment settling basin prior to being sent to the CTS. Noncontact cooling water is discharged back to the canal through IMP102.

9. Rail Head Hardening – Hot formed rail is sprayed with a controlled stream of water to enhance its metallurgical properties. Up to 2200 gpm (3.168 MGD) of once-through contact cooling water is sent to a scale pit and the three-compartment settling basin prior to being sent to the CTS. Since this process is not commonly used in the USA, a Best Professional Judgment (BPJ) Effluent Limitation was developed. The applicant during previous permitting requested that a BPJ-based Total Suspended Solids allowance of 264 lb/day (10 mg/l X 3.168 MGD X 8.34) be continued for the discharge from the CTS for this process.

10. Boiler House – Steam is generated to provide process steam for the vacuum degassers and other in-plant uses. Blowdown is conveyed to the CTS. No ELGs are applicable to this process, but a BPJ limit was developed in 1984 for this process.

11. Raw Material Storage / Site Stormwater Run-off – Stormwater drained from the up-river portion of the site (including all of the above described processes) is conveyed to the CTS via a collection system that was designed to handle conditions of moderate precipitation. During heavy precipitation events the collection system becomes surcharged and overflows to the river can occur at certain locations to protect pumps, motors and treatment units from flooding damage. Stormwater drained from the down-river (frog and switch dept.) end of the facility flows to an oil skimmer prior to being discharged to the canal. During heavy precipitation events surcharges can occur that result in discharges to the river at Outfall 002. Stormwater drained from the scrap yard is collected in detention basins prior to discharging to the river through Outfall 015.

1.2 Public Participation:

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

1.3 Existing Effluent Limitations and Monitoring Report:

1.3.1 Outfall 002

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0	XXX	1/week	Grab
TRC	XXX	XXX	XXX	0.16	XXX	0.51	1/week	Grab
Temperature (ºF) Jan 1 - Nov 30	XXX	XXX	XXX	105 Daily Max	XXX	110	1/day	I-S
Temperature (ºF) Dec 1 – 31	XXX	XXX	XXX	104 Daily Max	XXX	110	1/day	I-S
TSS Effluent Net	Report	Report	XXX	30.0	60.0	75	1/week	Calculation
TSS	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Oil and Grease	Report	Report	XXX	Report	Report	XXX	1/week	Grab
Oil and Grease Effluent Net	Report	Report	XXX	10.0	15.0	25	1/week	Calculation
Nitrate-Nitrite Effluent Net	XXX	Report	XXX	XXX	Report	XXX	1/quarter	Calculation
Nitrate-Nitrite	XXX	Report	XXX	XXX	Report	XXX	1/quarter	Calculation
Total Nitrogen	XXX	Report	XXX	XXX	Report	XXX	1/quarter	Calculation
Total Nitrogen Effluent Net	XXX	Report	XXX	XXX	Report	XXX	1/quarter	Calculation
Ammonia Effluent Net	XXX	Report	XXX	XXX	Report	XXX	1/quarter	Calculation
Ammonia	XXX	Report	XXX	XXX	Report	XXX	1/quarter	Calculation
TKN	XXX	Report	XXX	XXX	Report	XXX	1/quarter	Calculation

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
TKN Effluent Net	XXX	Report	XXX	XXX	Report	XXX	1/quarter	Calculation
Total Phosphorus	XXX	Report	XXX	XXX	Report	XXX	1/quarter	Calculation
Total Phosphorus Effluent Net	XXX	Report	XXX	XXX	Report	XXX	1/quarter	Calculation
Total Arsenic	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
Total Cadmium	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
Total Chromium	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
Total Copper	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
Total Zinc	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab

1.3.2 Storm water Outfalls 005, 008 and 015

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
TSS	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
Total Arsenic	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
Total Cadmium	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
Total Chromium	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
Total Copper	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
Total Lead	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
Total Zinc	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab

1.3.3 IMP 102

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0	XXX	1/week	Grab
TSS	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
TSS Effluent Net	1062	2842	XXX	Report	Report	56	1/week	Calculation
Oil and Grease	Report	Report	XXX	Report	Report	XXX	1/week	Grab
Oil and Grease Effluent Net	240	636	XXX	Report	Report	12.5	1/week	Calculation
Total Lead	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Lead Effluent Net	Report	Report	XXX	Report	Report	XXX	1/week	Calculation
Total Zinc Effluent Net	Report	Report	XXX	Report	Report	XXX	1/week	Calculation
Total Zinc	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite

1.3.4 IMP 112

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0	XXX	1/week	Grab
TSS	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
TSS Effluent Net	Report	Report	XXX	Report	Report	XXX	1/week	Calculation
Oil and Grease	Report	Report	XXX	Report	Report	XXX	1/week	Grab
Oil and Grease Effluent Net	Report	Report	XXX	Report	Report	XXX	1/week	Calculation
Total Lead	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Lead Effluent Net	0.18	0.55	XXX	Report	Report	0.48	1/week	Calculation
Total Zinc Effluent Net	0.27	0.82	XXX	Report	Report	0.72	1/week	Calculation
Total Zinc	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite

1.3.5 IMP 122

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0	XXX	1/week	Grab
TSS	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
TSS Effluent Net	Report	Report	XXX	Report	Report	XXX	1/week	Calculation
Total Lead Effluent Net	0.21	0.63	XXX	Report	Report	1.89	1/week	Calculation
Total Lead	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Zinc Effluent Net	0.32	0.95	XXX	Report	Report	2.85	1/week	Calculation
Total Zinc	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite

1.3.6 IMP 501

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
TSS	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Oil and Grease	Report	Report	XXX	Report	Report	XXX	1/week	Grab
Nitrate-Nitrite	XXX	Report	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Total Nitrogen	XXX	Report	XXX	XXX	Report	XXX	1/quarter	Calculation
Ammonia	XXX	Report	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
TKN	XXX	Report	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Total Phosphorus	XXX	Report	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Total Lead	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Zinc	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite

1.4 Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	25.8
Latitude	40º 13' 47"	Longitude	-76º 50' 37"
Quad Name		Quad Code	
Wastewater Description:	Non-Contact Cooling Water from the EAF, the Ladle Furnace, Walking Beam Furnace, Vacuum Degassers, Continuous Casters and process wastewater treated at the CTS		
Receiving Waters	Susquehanna River (WWF, MF)	Stream Code	06685
NHD Com ID	56404165	RMI	67.69
Drainage Area	24,300	Yield (cfs/mi^2)	0.1328
Q_{7-10} Flow (cfs)	3227	Q_{7-10} Basis	USGS 01570500
Elevation (ft)	284.40	Slope (ft/ft)	
Watershed No.	7-C	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Polychlorinated Biphenyls (PCBS)		
Source(s) of Impairment	Source Unknown		
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake		Wrightsville Water Company	
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	24

Changes Since Last Permit Issuance: None

1.4.1 Public Water Supply:

The nearest downstream PWS is Wrightsville Water Company on the Susquehanna River in Wrightsville Borough, York County about 24 miles downstream of the point of discharge. The discharge will not impact the intake because of the distance, dilution and effluent limits.

1.5 Monitoring Points

Internal Monitoring Point No.	**102**	Design Flow (MGD)	7.6
Latitude	40° 13’ 45.00”	Longitude	76° 50’ 4.00”
Wastewater Description:	CTS effluent (Non-Contact Cooling Water from the EAF, the Ladle Furnace, Walking Beam Furnace, Vacuum Degassers (122), Continuous Casters 112)		
Internal Monitoring Point No.	**112**	Design Flow (MGD)	0.17
Latitude	40° 13’ 56.00”	Longitude	76° 50’ 17.00”
Wastewater Description:	Continuous caster cooling treatment system effluent		
Internal Monitoring Point No.	**122**	Design Flow (MGD)	0.05
Latitude	40° 13’ 46.00”	Longitude	76° 50’ 14.00”
Wastewater Description:	Vacuum degasser blowdown treatment system effluent		
Internal Monitoring Point No.	**401**	Design Flow (MGD)	N/A
Latitude	40° 12’ 34”	Longitude	76° 48’ 9.00”
Wastewater Description:	Source water from Susquehanna River (East End Pump Station)		
Internal Monitoring Point No.	**501**	Design Flow (MGD)	N/A
Latitude	40° 12’ 55”	Longitude	76° 50’ 11.00”
Wastewater Description:	Source water from Pennsylvania Canal (Swatara St. Pump Station)		

Outfall No.	**005**	Design Flow (MGD)	N/A		
Latitude	40° 12’ 50.00”	Longitude	76° 48’ 49.00”		
Wastewater Description:	Stormwater and Steelton’s CSO to Susquehanna River			Area Drained (acres)	11.3
Outfall No.	**008**	Design Flow (MGD)	N/A		
Latitude	40° 12’ 8.00”	Longitude	76° 49’ 30.00”		
Wastewater Description:	Stormwater & Canal Overflow to Susquehanna River			Area Drained (acres)	11.54
Outfall No.	**015**	Design Flow (MGD)	N/A		
Latitude	40° 13’ 35.00”	Longitude	76° 50’ 55.00”		
Wastewater Description:	Stormwater to Susquehanna River			Area Drained (acres)	35.9

As shown above, a number of monitoring points are needed for effluents associated with each of industrial activities in accordance with 40 CFR § 122.45(h). A schematic flow diagram is presented in attachment B.1 and treatment systems for internal monitoring point 102, 112 and 122 is presented in attachment B.2.

2.0 Compliance History

2.1 DMR Data for Outfall 002 (from July 1, 2022 to June 30, 2023)

Parameter	JUN-23	MAY-23	APR-23	MAR-23	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22
Flow (MGD) Average Monthly	18.971	18.750	18.068	16.825	18.780	20.297	21.650	19.115	17.934	20.415	11.362	16.678
Flow (MGD) Daily Maximum	26.895	27.610	35.165	26.575	26.623	26.386	26.635	26.756	25.581	25.507	25.555	25.797
pH (S.U.) Daily Minimum	7.5	7.6	7.7	7.6	7.6	7.6	7.2	7.5	7.7	7.2	7.3	7.1
pH (S.U.) Daily Maximum	7.7	7.8	7.9	8.1	7.9	8.0	7.9	8.0	8.1	7.9	7.8	7.9
TRC (mg/L) Average Monthly	0.04	0.04	0.02	0.03	0.05	0.04	0.09	0.11	0.15	0.07	0.05	0.14
TRC (mg/L) Instantaneous Maximum	0.06	0.06	0.03	0.05	0.07	0.09	0.23	0.28	0.26	0.11	0.06	0.22
Temperature (ºF) Daily Maximum				62	61	59	60	78	77	92	95	99
Temperature (ºF) Daily Maximum	91	84	76									
Temperature (ºF) Instantaneous Maximum				62	61	59	60	78	77	92	95	99
TSS (lbs/day) Average Monthly	< 709.6	1247.4	1768	375	2660.3	1302.2	< 875.9	790.2	1361.9	1160.8	531.3	907.7
TSS (lbs/day) Effluent Net Average Monthly	< 398.9	< 366.2	< 898.9	< 162.8	< 2474.4	312.7	< 342.1	< 405.4	990.8	698	< 154.7	613.9
TSS (lbs/day) Daily Maximum	< 1107.5	1577.5	3763.5	873.7	9331.1	2413.7	1750.1	1389.2	3568	1700.00	806.0	1486.7
TSS (lbs/day) Effluent Net Daily Maximum	< 1107.5	597.6	3064.2	< 221.1	9242.6	556.7	711.3	851.2	3338.3	1700.0	211.8	1486.7
TSS (mg/L) Average Monthly	< 3.2	5.6	9.8	2.4	12	6.0	< 4.0	5.4	6.5	5.5	3.3	5.3
TSS (mg/L) Effluent Net Average Monthly	< 1.8	< 1.6	< 4.4	< 1.1	< 11.2	1.4	< 1.6	< 3.0	4.7	3.3	< 1.0	3.6
TSS (mg/L) Daily Maximum	< 5.0	7.0	17.0	4.0	42	11.0	8.0	15.0	17.0	8.0	4.0	7.0

TSS (mg/L) Effluent Net Daily Maximum	< 5.0	2.7	13.8	1.3	41.6	2.5	3.2	9.2	15.9	8.0	1.0	7.0
Oil and Grease (lbs/day) Average Monthly	< 536.4	< 445.9	< 393.6	< 318.6	< 427.6	< 412.2	< 416.3	< 510.9	< 401.7	< 410.0	< 302.4	< 403.2
Oil and Grease (lbs/day) Effluent Net Average Monthly	< 536.4	< 423.4	< 332.7	< 296.7	< 427.6	< 412.2	< 416.3	< 438.3	< 401.7	< 410.0	< 302.4	< 403.2
Oil and Grease (lbs/day) Daily Maximum	< 952.4	540.9	664.2	524.2	< 437.1	< 416.9	< 419.5	1149.3	< 407.6	< 440.1	< 403.0	< 787.4
Oil and Grease (lbs/day) Effluent Net Daily Maximum	< 952.4	428.2	< 420.6	< 420.1	< 437.1	< 416.9	< 419.5	786.3	< 407.6	< 440.1	< 403.0	< 787.4
Oil and Grease (mg/L) Average Monthly	< 2.4	< 2.0	< 2.2	< 2.0	< 2	< 1.9	< 1.9	< 2.7	< 1.9	< 2.0	< 2.0	< 2.3
Oil and Grease (mg/L) Effluent Net Average Monthly	< 2.4	< 1.9	< 1.9	< 1.9	< 2.0	< 1.9	< 1.9	< 2.3	< 1.9	< 2.0	< 2.0	< 2.3
Oil and Grease (mg/L) Daily Maximum	< 4.3	2.4	3.0	2.4	< 2	< 1.9	< 1.9	5.7	< 2.0	< 2.1	< 2.0	< 3.7
Oil and Grease (mg/L) Effluent Net Daily Maximum	< 4.3	1.9	< 1.9	< 2.0	< 2.0	< 1.9	< 1.9	3.9	< 2.0	< 2.1	< 2.0	< 3.7
Nitrate-Nitrite (lbs/day) Daily Maximum	< 103.86			< 424.93			< 209.89			< 212.38		
Nitrate-Nitrite (lbs/day) Effluent Net Daily Maximum	< 103.86			< 424.93			< 209.89			< 212.38		
Nitrate-Nitrite (mg/L) Daily Maximum	< 2.00			< 2.00			< 1.00			< 1.00		
Nitrate-Nitrite (mg/L) Effluent Net Daily Maximum	< 2.00			< 2.00			< 1.00			< 1.00		
Total Nitrogen (lbs/day) Daily Maximum	< 155.79			< 637.39			< 419.77			424.76		
Total Nitrogen (lbs/day) Effluent Net Daily Maximum	< 155.79			< 637.39			< 419.77			424.76		

Total Nitrogen (mg/L) Daily Maximum	< 3.00			< 3.00			< 2.00			2.00		
Total Nitrogen (mg/L) Effluent Net Daily Maximum	< 3.00			< 3.00			< 2.00			2.00		
Ammonia (lbs/day) Daily Maximum	8.46			< 21.25			36.10			< 21.24		
Ammonia (lbs/day) Effluent Net Daily Maximum	< 5.19			< 21.25			< 20.99			< 21.24		
Ammonia (mg/L) Daily Maximum	0.16			< 0.10			0.17			< 0.10		
Ammonia (mg/L) Effluent Net Daily Maximum	< 0.10			< 0.10			< 0.10			< 0.10		
TKN (lbs/day) Daily Maximum	< 51.93			< 212.46			< 209.89			< 212.38		
TKN (lbs/day) Effluent Net Daily Maximum	< 51.93			< 212.46			< 209.89			< 212.38		
TKN (mg/L) Daily Maximum	< 1.00			< 1.00			< 1.00			< 1.00		
TKN (mg/L) Effluent Net Daily Maximum	< 1.00			< 1.00			< 1.00			< 1.00		
Total Phosphorus (lbs/day) Daily Maximum	< 5.19			< 21.25			< 20.99			< 21.24		
Total Phosphorus (lbs/day) Effluent Net Daily Maximum	< 5.19			< 21.25			< 20.99			< 21.24		
Total Phosphorus (mg/L) Daily Maximum	< 0.10			< 0.10			< 0.10			< 0.10		
Total Phosphorus (mg/L) Effluent Net Daily Maximum	< 0.10			< 0.10			< 0.10			< 0.10		
Total Arsenic (mg/L) Daily Maximum	< 0.005			< 0.005			< 0.005			< 0.005		
Total Cadmium (mg/L) Daily Maximum	< 0.001			< 0.001			< 0.001			< 0.001		
Total Chromium (mg/L) Daily Maximum	< 0.003			< 0.003			< 0.003			< 0.003		

Total Copper (mg/L) Daily Maximum	< 0.005			0.01			0.006			< 0.005		
Total Iron (mg/L) Daily Maximum	0.65			0.73			0.51			0.39		
Total Lead (mg/L) Daily Maximum	< 0.003			0.006			< 0.003			< 0.003		
Total Zinc (mg/L) Daily Maximum	0.014			0.063			0.013			< 0.01		

2.2 DMR Data for Outfall 005 (from July 1, 2022 to June 30, 2023)

Parameter	JUN-23	MAY-23	APR-23	MAR-23	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22
TSS (mg/L) Daily Maximum	< 5			< 5			< 5			6		
Oil and Grease (mg/L) Daily Maximum	< 4			< 3.6			< 4			< 3.7		
Total Arsenic (mg/L) Daily Maximum	< 0.005			< 0.005			< 0.005			< 0.005		
Total Cadmium (mg/L) Daily Maximum	< 0.001			< 0.001			< 0.001			< 0.001		
Total Chromium (mg/L) Daily Maximum	< 0.003			< 0.003			< 0.003			< 0.003		
Total Copper (mg/L) Daily Maximum	< 0.005			< 0.005			< 0.005			< 0.005		
Total Iron (mg/L) Daily Maximum	0.13			< 0.03			0.05			< 0.03		
Total Lead (mg/L) Daily Maximum	< 0.003			< 0.003			< 0.003			< 0.003		
Total Zinc (mg/L) Daily Maximum	< 0.01			< 0.01			< 0.01			< 0.01		

2.3 DMR Data for Outfall 008 (from July 1, 2022 to June 30, 2023)

Parameter	JUN-23	MAY-23	APR-23	MAR-23	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22
TSS (mg/L) Daily Maximum				10			6			16		
Oil and Grease (mg/L) Daily Maximum				< 4.7			< 5.5			< 4.3		
Total Arsenic (mg/L) Daily Maximum				< 0.005			< 0.005			< 0.005		

Total Cadmium (mg/L) Daily Maximum				< 0.001			< 0.001			< 0.001		
Total Chromium (mg/L) Daily Maximum				< 0.003			< 0.003			< 0.003		
Total Copper (mg/L) Daily Maximum				0.007			< 0.005			< 0.005		
Total Iron (mg/L) Daily Maximum				1			0.29			0.44		
Total Lead (mg/L) Daily Maximum				< 0.003			< 0.003			< 0.003		
Total Zinc (mg/L) Daily Maximum				0.014			< 0.01			< 0.01		

2.4 DMR Data for Outfall 015 (from July 1, 2022 to June 30, 2023)

Parameter	JUN-23	MAY-23	APR-23	MAR-23	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22
TSS (mg/L) Daily Maximum	9			1			2			11		
Oil and Grease (mg/L) Daily Maximum	< 3.9			< 4.1			< 4.1			< 3.7		
Total Arsenic (mg/L) Daily Maximum	< 0.005			< 0.005			< 0.005			< 0.005		
Total Cadmium (mg/L) Daily Maximum	< 0.001			< 0.001			< 0.001			< 0.001		
Total Chromium (mg/L) Daily Maximum	< 0.003			< 0.003			< 0.003			< 0.003		
Total Copper (mg/L) Daily Maximum	0.006			< 0.005			< 0.005			< 0.005		
Total Iron (mg/L) Daily Maximum	0.75			0.15			0.29			1.2		
Total Lead (mg/L) Daily Maximum	0.005			< 0.003			< 0.003			0.005		
Total Zinc (mg/L) Daily Maximum	0.036			< 0.01			0.025			0.035		

2.5 DMR Data for Outfall 102 (from July 1, 2022 to June 30, 2023)

Parameter	JUN-23	MAY-23	APR-23	MAR-23	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22
Flow (MGD) Average Monthly	4.636	3.724	4.745	5.290	6.000	5.263	5.746	4.896	4.454	4.630	3.171	4.490
Flow (MGD) Daily Maximum	6.011	6.941	6.768	6.991	7.124	6.707	8.173	7.155	6.628	6.973	6.019	6.130
pH (S.U.) Daily Minimum	7.6	7.5	7.7	7.7	7.7	7.5	7.4	7.4	7.2	7.1	7.1	7.5
pH (S.U.) Daily Maximum	7.7	7.9	8.1	7.9	7.9	8.0	7.8	7.9	7.9	7.8	7.7	7.9
TSS (lbs/day) Average Monthly	< 162.0	135	280.0	138.1	228.2	210.6	284.9	150.0	330.1	297.5	182.6	254.3
TSS (lbs/day) Effluent Net Average Monthly	< 82.0	< 64.6	< 70.8	< 52.3	< 159.2	< 57.6	81.8	< 75.0	< 253.8	206.9	< 58.7	177.7
TSS (lbs/day) Daily Maximum	351.0	197	677.5	199.9	479.3	371.2	429.1	200.4	888.1	683.3	245.1	400.2
TSS (lbs/day) Effluent Net Daily Maximum	207.3	144.3	140.7	< 58.3	458.1	96.4	122	178.3	830.9	683.3	118.3	344.8
TSS (mg/L) Average Monthly	< 4.0	3.2	5.3	2.8	4.3	4.8	5.5	3.0	6.8	6.3	4.8	5.8
TSS (mg/L) Effluent Net Average Monthly	< 1.9	< 1.5	< 1.4	< 1.1	< 3.0	< 1.3	1.5	< 1.5	< 5.1	4.1	< 1.4	4.0
TSS (mg/L) Daily Maximum	8.0	5.0	12.0	4.0	9.0	9.0	9.0	4.0	17.0	13.0	7.0	8.0
TSS (mg/L) Effluent Net Daily Maximum	4.7	3.7	2.5	1.3	8.6	2.3	2.4	3.6	15.9	13.0	2.4	7.0
Oil and Grease (lbs/day) Average Monthly	< 86.6	< 84.3	< 141.6	< 96.1	< 101.6	< 85.7	< 109.9	< 99.4	< 85.9	< 78.6	< 85.7	< 97.5
Oil and Grease (lbs/day) Effluent Net Average Monthly	< 78.2	< 82	< 93.2	< 96.1	< 101.6	< 85.7	< 102.3	< 92.4	< 85.9	< 78.6	< 75.6	< 97.5
Oil and Grease (lbs/day) Daily Maximum	93.1	119	180.7	< 110.8	< 113.0	< 107.5	125.7	130.2	< 99.3	< 98.8	124.6	< 185.1

Oil and Grease (lbs/day) Effluent Net Daily Maximum	< 85.4	107.7	107.3	< 110.8	< 113	< 107.5	< 116.1	< 113.4	< 99.3	< 98.8	93.1	< 185.1
Oil and Grease (mg/L) Average Monthly	< 2.1	< 1.9	< 2.9	< 1.9	< 1.9	< 1.9	< 2.1	< 2.0	< 1.9	< 2.0	< 2.2	< 2.3
Oil and Grease (mg/L) Effluent Net Average Monthly	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 2.0	< 1.9	< 2.3
Oil and Grease (mg/L) Daily Maximum	2.4	2.1	4.0	< 2.0	< 1.9	< 2.0	2.5	2.6	< 2.0	< 2.1	2.8	< 3.7
Oil and Grease (mg/L) Effluent Net Daily Maximum	1.9	1.9	1.9	< 2.0	< 1.9	< 2.0	1.9	1.9	< 2.0	< 2.1	2.0	< 3.7
Total Lead (lbs/day) Average Monthly	< 0.220	< 0.172	< 0.153	< 0.207	< 0.162	< 0.175	< 0.162	< 0.154	< 0.241	< 0.200	< 0.119	< 0.137
Total Lead (lbs/day) Effluent Net Average Monthly	< 0.157	< 0.135	< 0.149	< 0.153	< 0.162	< 0.157	< 0.162	< 0.147	< 0.225	< 0.181	< 0.118	< 0.107
Total Lead (lbs/day) Daily Maximum	0.317	0.227	< 0.169	0.350	< 0.178	0.330	< 0.183	0.185	0.575	0.336	0.152	0.207
Total Lead (lbs/day) Effluent Net Daily Maximum	0.217	0.17	< 0.169	0.197	< 0.178	0.241	< 0.183	< 0.179	0.511	0.336	0.147	< 0.150
Total Lead (mg/L) Average Monthly	< 0.006	< 0.004	< 0.003	< 0.004	< 0.003	< 0.004	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	< 0.003
Total Lead (mg/L) Effluent Net Average Monthly	< 0.004	< 0.003	< 0.003	< 0.003	< 0.003	< 0.004	< 0.003	< 0.003	< 0.005	< 0.004	< 0.003	< 0.003
Total Lead (mg/L) Daily Maximum	0.009	0.006	0.003	0.006	< 0.003	0.008	< 0.003	0.004	0.011	0.006	0.003	0.005
Total Lead (mg/L) Effluent Net Daily Maximum	0.006	0.004	0.003	0.003	< 0.003	0.006	< 0.003	0.003	0.010	0.006	0.003	< 0.003
Total Zinc (lbs/day) Average Monthly	1.585	< 1.003	0.839	1.624	0.995	1.912	0.866	< 0.684	< 1.867	1.184	< 0.516	0.602
Total Zinc (lbs/day) Effluent Net Average Monthly	1.403	< 0.8	0.575	1.262	0.665	1.639	0.620	< 0.610	< 1.760	1.024	< 0.419	0.417
Total Zinc (lbs/day) Daily Maximum	2.281	1.926	1.073	2.801	1.427	4.124	1.106	1.403	5.746	2.050	0.980	0.951
Total Zinc (lbs/day) Effluent Net Daily Maximum	2.125	1.586	0.780	2.580	1.051	3.518	0.732	1.093	5.746	2.050	0.592	0.560

Total Zinc (mg/L) Average Monthly	< 0.039	< 0.023	< 0.017	< 0.033	< 0.018	< 0.043	< 0.017	< 0.014	< 0.037	< 0.028	< 0.013	< 0.015
Total Zinc (mg/L) Effluent Net Average Monthly	0.035	< 0.019	0.011	0.026	0.012	0.036	0.012	< 0.012	< 0.035	0.024	< 0.011	0.010
Total Zinc (mg/L) Daily Maximum	0.052	0.050	0.019	0.063	0.024	0.100	0.022	0.028	0.110	0.044	0.020	0.022
Total Zinc (mg/L) Effluent Net Daily Maximum	0.048	0.041	0.014	0.058	0.018	0.085	0.015	0.022	0.110	0.039	0.012	0.014

2.6 DMR Data for Outfall 112 (from July 1, 2022 to June 30, 2023)

Parameter	JUN-23	MAY-23	APR-23	MAR-23	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22
Flow (MGD) Average Monthly	0.109	0.079	0.095	0.107	0.125	0.143	0.165	0.141	0.159	0.128	0.064	0.102
Flow (MGD) Daily Maximum	0.163	0.092	0.120	0.131	0.159	0.175	0.207	0.210	0.184	0.176	0.138	0.145
pH (S.U.) Daily Minimum	7.0	7.1	7.4	7.3	7.4	6.8	7.0	7.3	7.2	6.8	6.9	7.1
pH (S.U.) Daily Maximum	7.5	7.8	7.8	7.8	7.6	7.5	7.4	7.4	7.5	7.4	7.5	7.4
TSS (lbs/day) Average Monthly	4.1	3.0	4.3	2.5	5.5	6.5	4.6	< 2.6	3.2	3.3	2.1	6.3
TSS (lbs/day) Effluent Net Average Monthly	< 1.8	< 1.0	< 0.9	< 1.0	< 3.4	2.2	< 1.4	< 1.4	< 2.2	< 2.1	< 0.9	4.2
TSS (lbs/day) Daily Maximum	5.4	4.7	7.0	3.2	10.2	10.4	6.3	5.5	5.4	4.6	3.3	10.1
TSS (lbs/day) Effluent Net Daily Maximum	3.6	1.7	< 1.0	1.6	9.7	4.5	1.8	2.1	3.9	4.6	< 1.1	7.3
TSS (mg/L) Average Monthly	4.0	4.4	4.8	4.2	4.5	5.0	3.5	< 2.2	2.3	2.8	3.8	6.0
TSS (mg/L) Effluent Net Average Monthly	< 2.0	< 1.4	< 1.0	< 1.9	< 2.7	1.6	< 1.1	< 1.1	< 1.5	< 1.8	< 1.9	4.2
TSS (mg/L) Daily Maximum	6.0	7.0	7.0	8.0	8.0	8.0	5.0	4.0	4.0	4.0	8.0	9.0
TSS (mg/L) Effluent Net Daily Maximum	5.0	2.5	< 1.0	4.3	7.6	3.2	1.3	1.6	2.9	4.0	4.7	6.5

Oil and Grease (lbs/day) Average Monthly	< 2.1	< 1.3	< 1.8	< 1.6	< 2.3	< 2.5	< 2.6	< 2.2	< 2.7	< 2.5	< 1.6	< 1.9
Oil and Grease (lbs/day) Effluent Net Average Monthly	< 2.1	< 1.3	< 1.7	< 1.5	< 2.3	< 2.5	< 2.5	< 2.2	< 2.7	< 2.5	< 1.6	< 1.9
Oil and Grease (lbs/day) Daily Maximum	< 2.6	< 1.4	2.0	2.5	< 2.4	< 2.7	2.7	< 3.0	< 2.9	< 2.8	< 2.2	< 2.3
Oil and Grease (lbs/day) Effluent Net Daily Maximum	< 2.6	< 1.4	< 1.9	2.1	< 2.4	< 2.7	< 2.7	< 3.0	< 2.9	< 2.8	< 2.2	< 2.3
Oil and Grease (mg/L) Average Monthly	< 1.9	< 1.9	< 2.0	< 2.0	< 1.9	< 1.9	< 2.0	< 1.9	< 1.9	< 2.0	< 1.9	< 1.9
Oil and Grease (mg/L) Effluent Net Average Monthly	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 2.0	< 1.9	< 1.9
Oil and Grease (mg/L) Daily Maximum	< 1.9	2.0	2.1	2.3	< 2.1	< 1.9	2.2	< 1.9	< 2.0	< 2.1	< 2.0	< 2.0
Oil and Grease (mg/L) Effluent Net Daily Maximum	< 1.9	1.9	< 1.9	2.0	< 2.1	< 1.9	1.9	< 1.9	< 2.0	< 2.1	< 2.0	< 2.0
Total Lead (lbs/day) Average Monthly	< 0.003	< 0.002	< 0.003	< 0.002	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.003	< 0.004
Total Lead (lbs/day) Effluent Net Average Monthly	< 0.003	< 0.002	< 0.003	< 0.002	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.003	< 0.003
Total Lead (lbs/day) Daily Maximum	< 0.004	< 0.002	< 0.003	< 0.003	< 0.004	< 0.004	< 0.004	< 0.005	0.004	< 0.004	< 0.003	0.006
Total Lead (lbs/day) Effluent Net Daily Maximum	< 0.004	< 0.002	< 0.003	< 0.003	< 0.004	< 0.004	< 0.004	< 0.005	0.004	< 0.004	< 0.003	< 0.003
Total Lead (mg/L) Average Monthly	< 0.003	< 0.003	< 0.003	< 0.014	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.004
Total Lead (mg/L) Effluent Net Average Monthly	< 0.003	< 0.003	< 0.003	< 0.014	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Total Lead (mg/L) Daily Maximum	0.003	< 0.003	< 0.003	0.060	< 0.003	< 0.003	< 0.003	< 0.003	0.003	< 0.003	< 0.003	0.005
Total Lead (mg/L) Effluent Net Daily Maximum	0.003	< 0.003	< 0.003	0.057	< 0.003	< 0.003	< 0.003	< 0.003	0.003	< 0.003	< 0.003	< 0.003

Total Zinc (lbs/day) Average Monthly	0.034	< 0.008	< 0.013	< 0.011	< 0.015	< 0.021	0.025	< 0.013	0.030	0.023	< 0.010	< 0.025
Total Zinc (lbs/day) Effluent Net Average Monthly	0.028	< 0.007	< 0.010	< 0.008	< 0.012	< 0.013	0.015	< 0.012	0.022	0.016	< 0.009	< 0.019
Total Zinc (lbs/day) Daily Maximum	0.048	0.008	0.020	0.018	0.02	0.032	0.029	0.019	0.041	0.032	0.014	0.043
Total Zinc (lbs/day) Effluent Net Daily Maximum	0.042	< 0.008	0.015	0.013	0.013	< 0.014	0.019	0.016	0.041	0.022	0.011	0.034
Total Zinc (mg/L) Average Monthly	0.032	< 0.011	< 0.014	< 0.199	< 0.013	< 0.016	0.019	< 0.011	0.022	0.019	< 0.020	< 0.024
Total Zinc (mg/L) Effluent Net Average Monthly	0.026	< 0.010	< 0.011	< 0.193	< 0.010	< 0.01	0.011	< 0.010	0.016	0.013	< 0.017	< 0.018
Total Zinc (mg/L) Daily Maximum	0.040	0.013	0.020	0.940	0.018	0.025	0.023	0.012	0.030	0.030	0.046	0.038
Total Zinc (mg/L) Effluent Net Daily Maximum	0.034	0.010	0.015	0.922	0.012	0.01	0.015	0.010	0.030	0.021	0.036	0.030

2.7 DMR Data for Outfall 122 (from July 1, 2022 to June 30, 2023)

Parameter	JUN-23	MAY-23	APR-23	MAR-23	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22
Flow (MGD) Average Monthly	0.043	0.052	0.054	0.046	0.032	0.037	0.043	0.039	0.041	0.040	0.022	0.041
Flow (MGD) Daily Maximum	0.054	0.055	0.073	0.054	0.052	0.048	0.053	0.050	0.047	0.047	0.047	0.045
pH (S.U.) Daily Minimum	8.1	7.7	7.7	7.5	8.0	7.4	7.4	7.7	7.9	7.4	7.4	7.7
pH (S.U.) Daily Maximum	8.6	8.2	7.9	8.2	8.2	8.2	7.8	8.3	8.2	8.7	8.6	8.4
TSS (lbs/day) Average Monthly	< 0.3	< 0.4	< 0.4	< 0.7	< 0.3	< 0.4	< 0.4	< 0.3	< 0.4	< 0.4	< 0.4	< 0.3
TSS (lbs/day) Effluent Net Average Monthly	< 0.3	< 0.4	< 0.4	< 0.5	< 0.3	< 0.3	< 0.4	< 0.3	< 0.4	< 0.4	< 0.4	< 0.3
TSS (lbs/day) Daily Maximum	< 0.4	0.4	< 0.5	1.8	< 0.4	0.6	< 0.4	0.4	< 0.4	0.7	0.4	< 0.4
TSS (lbs/day) Effluent Net Daily Maximum	< 0.4	< 0.4	< 0.5	1.0	< 0.4	< 0.4	< 0.4	0.4	< 0.4	0.4	< 0.4	< 0.4
TSS (mg/L) Average Monthly	< 1.0	< 1.0	< 1.0	< 1.6	< 1	< 1.3	< 1.0	< 1.0	< 1.0	< 1.3	< 1.0	< 1.0

TSS (mg/L) Effluent Net Average Monthly	< 1.0	< 1.0	< 1.0	< 1.3	< 1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TSS (mg/L) Daily Maximum	< 1.0	1.0	< 1.0	4.0	< 1	2.0	< 1.0	1.0	< 1.0	2.0	1.0	< 1.0
TSS (mg/L) Effluent Net Daily Maximum	< 1.0	< 1.0	< 1.0	2.3	< 1	< 1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	< 1.0
Total Lead (lbs/day) Average Monthly	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Total Lead (lbs/day) Effluent Net Average Monthly	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Total Lead (lbs/day) Daily Maximum	< 0.001	0.002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001
Total Lead (lbs/day) Effluent Net Daily Maximum	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Total Lead (mg/L) Average Monthly	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Total Lead (mg/L) Effluent Net Average Monthly	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Total Lead (mg/L) Daily Maximum	< 0.003	0.004	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Total Lead (mg/L) Effluent Net Daily Maximum	< 0.003	0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Total Zinc (lbs/day) Average Monthly	0.008	0.010	0.017	0.027	0.018	0.046	0.049	< 0.012	0.011	< 0.004	< 0.004	< 0.003
Total Zinc (lbs/day) Effluent Net Average Monthly	0.007	0.007	0.014	0.023	0.015	0.043	0.045	< 0.010	0.010	< 0.004	< 0.004	< 0.003
Total Zinc (lbs/day) Daily Maximum	0.015	0.012	0.041	0.050	0.030	0.080	0.068	0.029	0.028	< 0.004	0.004	< 0.004
Total Zinc (lbs/day) Effluent Net Daily Maximum	0.013	0.009	0.039	0.043	0.029	0.079	0.064	0.025	0.028	< 0.004	< 0.004	< 0.004
Total Zinc (mg/L) Average Monthly	0.026	0.022	0.039	0.063	0.071	0.126	0.117	< 0.038	0.028	< 0.010	< 0.010	< 0.009
Total Zinc (mg/L) Effluent Net Average Monthly	0.021	0.016	0.031	0.055	0.063	0.119	0.108	< 0.032	0.025	< 0.010	< 0.010	< 0.009
Total Zinc (mg/L) Daily Maximum	0.036	0.028	0.090	0.120	0.150	0.21	0.170	0.083	0.071	< 0.010	0.010	< 0.010

Total Zinc (mg/L) Effluent Net Daily Maximum	0.031	0.022	0.085	0.102	0.144	0.207	0.162	0.073	0.071	< 0.010	< 0.010	< 0.010

2.8 DMR Data for Outfall 401 (from July 1, 2022 to June 30, 2023)

Parameter	JUN-23	MAY-23	APR-23	MAR-23	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22
Flow (MGD) Intake Average Monthly	17.136	14.392	14.993	12.370	15.834	14.52	16.081	14.856	14.096	16.436	11.726	14.225
Flow (MGD) Intake Daily Maximum	27.994	23.409	26.438	29.733	25.663	21.573	21.726	23.562	21.573	25.398	35.720	44.717

2.9 DMR Data for Outfall 501 (from July 1, 2022 to June 30, 2023)

Parameter	JUN-23	MAY-23	APR-23	MAR-23	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22
Flow (MGD) Intake Average Monthly	27.922	16.254	26.675	26.211	27.838	28.889	30.147	28.310	27.028	29.771	20.220	26.662
Flow (MGD) Intake Daily Maximum	34.272	26.438	34.272	34.272	34.272	34.272	34.272	34.272	34.272	35.843	34.272	34.272
TSS (lbs/day) Intake Average Monthly	1358.5	1114.4	1573	734.1	858	1186.9	1215.5	< 1065.3	858.0	1644.5	922.3	< 1263
TSS (lbs/day) Intake Daily Maximum	2288	1580.4	2860	1144	1430	2288	2288	1716.0	1430.0	3718	1267.9	3432
TSS (mg/L) Intake Average Monthly	4.8	5.8	6.3	3.0	3	4.6	4.3	< 4.0	3.0	5.8	4.5	< 4.6
TSS (mg/L) Intake Daily Maximum	8.0	9.0	10.0	4.0	5	8	8.0	6.0	5.0	13.0	8.0	12.0
Oil and Grease (lbs/day) Intake Average Monthly	< 564.8	< 378	< 1068.9	< 450.9	< 543.4	< 462.2	< 543.4	< 507.8	< 536.2	< 564.8	< 417.3	< 594.3
Oil and Grease (lbs/day) Intake Daily Maximum	< 600.6	< 397.1	2917.2	< 543.4	< 543.4	< 543.4	< 543.4	< 543.4	< 572.0	< 600.6	< 567.2	< 1086.8

Oil and Grease (mg/L) Intake Average Monthly	< 2.0	< 1.9	< 4.0	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 2.0	< 1.9	< 2.3
Oil and Grease (mg/L) Intake Daily Maximum	< 2.1	< 2.0	10.2	< 2.0	< 1.9	< 2.0	< 1.9	< 1.9	< 2.0	< 2.1	< 2.0	< 3.8
Nitrate-Nitrite (lbs/day) Intake Daily Maximum	< 286			< 572			< 286.00			< 286.00		
Nitrate-Nitrite (mg/L) Intake Daily Maximum	< 2.00			< 2.00			< 1.00			< 1.00		
Total Nitrogen (lbs/day) Intake Daily Maximum	< 429			< 858			< 572.00			572		
Total Nitrogen (mg/L) Intake Daily Maximum	< 3.00			< 3.00			< 2.00			2.00		
Ammonia (lbs/day) Intake Daily Maximum	24.02			34.03			52.05			< 28.60		
Ammonia (mg/L) Intake Daily Maximum	0.17			0.12			0.18			< 0.10		
TKN (lbs/day) Intake Daily Maximum	< 143			< 286			< 286.00			< 286.00		
TKN (mg/L) Intake Daily Maximum	< 1.00			< 1			< 1.00			< 1.00		
Total Phosphorus (lbs/day) Intake Daily Maximum	< 14.30			< 28.60			< 28.60			31.46		
Total Phosphorus (mg/L) Intake Daily Maximum	< 0.10			< 0.10			< 0.10			0.11		
Total Lead (lbs/day) Intake Average Monthly	< 0.901	< 0.600	< 0.751	< 0.744	< 0.858	< 0.724	< 0.858	< 0.811	< 0.858	< 0.858	< 0.653	< 0.854
Total Lead (lbs/day) Intake Daily Maximum	1.030	< 0.662	< 0.858	< 0.858	< 0.858	< 0.858	< 0.858	< 0.858	< 0.858	< 0.858	< 0.858	1.144

Total Lead (mg/L) Intake Average Monthly	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Total Lead (mg/L) Intake Daily Maximum	0.004	< 0.003	< 0.003	0.004	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.004
Total Zinc (lbs/day) Intake Average Monthly	< 3.003	< 2.263	< 2.502	< 3.070	< 3.003	< 3.386	< 2.860	< 2.703	< 2.860	< 3.003	< 2.178	< 2.424
Total Zinc (lbs/day) Intake Daily Maximum	3.146	3.530	< 2.860	4.004	3.432	7.722	< 2.860	< 2.860	< 2.860	3.432	< 2.860	3.146
Total Zinc (mg/L) Intake Average Monthly	< 0.011	< 0.011	< 0.010	< 0.014	< 0.011	< 0.013	< 0.010	< 0.010	< 0.010	< 0.011	< 0.010	< 0.009
Total Zinc (mg/L) Intake Daily Maximum	0.011	0.016	0.010	0.026	0.012	0.027	< 0.010	< 0.010	< 0.010	0.012	< 0.010	0.011

2.10 DMR Summary:

Discharge Monitoring Reports (DMRs) review for the facility for the last 12 months of operation presented on the tables 2.1 to 2.10 above indicate permit limits have been met consistently. No effluent violations were noted during the period reviewed.

2.11 Summary of Inspections:

The facility was inspected a couple of times during the past permit cycle. Inspection reports for the facility during the period indicate permit limits have been met consistently. No effluent violations were found during plant inspections. An operation and maintenance violation was noted for the caster water treatment system during the 4/21/21 inspection. The violation has been addressed.

3.0 Development of Effluent Limitations

Outfall No.	002	**Design Flow (MGD)**	25.8
Latitude	40° 13’ 47.00”	**Longitude**	76° 50’ 37.00”

Wastewater Description: Noncontact cooling water from the EAF, the Ladle Furnace and Walking Beam Furnace, process wastewater and contact cooling water from vacuum degassers and continuous casters and central treatment system effluent.

IMP No.	102	**Design Flow (MGD)**	7.6
Latitude	40° 13’ 45.00”	**Longitude**	76° 50’ 1.5”

Wastewater Description: Central treatment system effluent

IMP No.	112	**Design Flow (MGD)**	0.17
Latitude	40° 13’ 54.00”	**Longitude**	76° 50’ 25.50”

Wastewater Description: Continuous caster cooling treatment system effluent

IMP No.	122	**Design Flow (MGD)**	0.05
Latitude	40° 13’ 49.00”	**Longitude**	76° 50’ 18.00”

Wastewater Description: Vacuum degasser blowdown treatment system effluent

IMP No.	401	Design Flow (MGD)	N/A
Latitude	40° 12’ 34.60”	Longitude	76° 48’ 9.40”

Wastewater Description: Source water from Susquehanna River (East End Pump Station)

IMP No.	501	Design Flow (MGD)	N/A
Latitude	40° 12’ 55.50”	Longitude	76°50’ 11.90”

Wastewater Description: Source water from Pennsylvania Canal basin (Swatara Street Pump Station)

3.1 Basis for Effluent Limitations:

In general, the Clean Water Act (CWA) requires that the effluent limits for a particular pollutant be the more stringent of either technology-based limits or water quality-based limits. Technology-based limits are set according to the level of treatment that is achievable using available technology. A water quality-based effluent limit (WQBEL) is designed to ensure that the water quality standards applicable to a waterbody are being met and may be more stringent than technology-based effluent limits.

3.2 Technology Based Effluent Limitations (TBELs):

In accordance with 40 CFR §125.3, technology-based treatment requirements represent the minimum level of control that must be imposed to meet the best practicable control technology currently available (BPT) for conventional and other pollutants (i.e., some metals), best conventional pollutant control technology (BCT) for conventional pollutants, and available technology economically achievable (BAT) for toxic and other non-conventional pollutants. Where no technology-based effluent guidelines are available, case-by-case effluent limitations shall be established under Section 402(a)(1)(B) of the CWA. Pursuant to 40 CFR §122.44(a)(1) and Subpart A of 40 CFR §125, the discharge from this facility must meet technology-based requirements established based on effluent limitations guidelines (ELGs) and standards found in 40 CFR §420 (i.e., Iron and Steel Manufacturing Point Source Category), other federal and state standards in 40 CFR §133.102 and 25 Pa. Code §§92a.48, and 95.2, and/or a case-by-case determination using Best Professional Judgment (BPJ). The facility’s industrial processes are currently regulated by the following ELGs: Continuous Caster (40 CFR § 420.64), Vacuum Degassers(40 CFR § 420.54), 44" Primary Mill (40 CFR § 420.72(a)(1)), 35-28" Section Mill (40 CFR § 420.72(b)(1)) and 20” Section Mill (40 CFR § 420.72(b)(1)).

40 CFR §122.45(a)(2) require permit limitations should be based on a reasonable measure of actual production rather than the designed production capacity. Attachment C shows production levels for each individual process at the facility from 2017 to 2021. DEP typically establishes TBELs using either the highest annual or monthly production rates due to variability in production data. For this permit renewal DEP used the highest monthly production rates during the past five years as a reasonable measure of actual production to establish limitations in the permit.

a) Vacuum Degasser: 40 CFR Part 420 Subpart E – Vacuum Degassing Subcategory

The highest monthly production rate during the past five years is 37901 tons with operation time of 288 hours (12 days). Daily production rate is calculated as **6,316,833.33 lbs/day** (3,158.4 tons/day).

	40 CFR §420.54: New source performance standards, Kg/kkg (pounds per 1,000 lb) of product		**NPDES Permit Effluent Limits, lbs/day**	
Pollutants	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly
TSS	0.00730	0.00261	46.1	16.5
Lead	0.0000939	0.0000313	0.60	0.20
Zinc	0.000141	0.0000469	0.90	0.30
pH	6.0 – 9.0		6.0 – 9.0	

b) Continuous Caster: 40 CFR Part 420 Subpart F – Continuous Casting Subcategory

The highest monthly production rate during the past five years is 34421 tons with operation time of 276 hours (11.5 days). Daily production rate is calculated as **5,986,260.87 lbs/day** (2993.13 tons/day).

	40 CFR §420.64: New source performance standards, Kg/kkg (pounds per 1,000 lb) of product		**NPDES Permit Effluent Limits, lbs/day**	
Pollutants	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly
TSS	0.00730	0.00261	43.7	15.6
O&G	0.00313	0.00104	18.7	6.2
Lead	0.0000939	0.0000313	0.56	0.19
Zinc	0.000141	0.0000469	0.84	0.28
pH	6.0 – 9.0		6.0 – 9.0	

c) 44" Rolling Mill (primary mill): 40 CFR Part 420 Subpart G – Hot Forming Subcategory

The highest monthly production rate during the past five years is 26541 tons with operation time of 343 hours (14.29 days). Daily production rate is calculated as **3,714,620.0 lbs/day** (1857.31 tons/day).

	40 CFR §420.72(a)(1): BPT effluent limitations*, Kg/kkg (pounds per 1,000 lb) of product		**NPDES Permit Effluent Limits, lbs/day**	
Pollutants	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly
TSS	0.150	0.0561	557.2	208.4
O&G	0.0374	0.38 x daily max**	138.9	52.8
pH	6.0 – 9.0		6.0 – 9.0	

*primary mills, carbon and specialty – without scarfing
**No monthly average ELG is available, continued from previous permit (BPJ)

d) 35"-28" Rail Mill (section mill): 40 CFR Part 420 Subpart G – Hot Forming Subcategory

The highest monthly production rate during the past five years is 17799 tons with operation time of 338 hours (14.08 days). Daily production rate is calculated as **2,528,267.05 lbs/day** (1264 tons/day).

	40 CFR §420.72(b)(1): BPT effluent limitations*, Kg/kkg (pounds per 1,000 lb) of product		**NPDES Permit Effluent Limits, lbs/day**	
Pollutants	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly
TSS	0.357	0.134	902.5	338.8
O&G	0.0894	0.38 x daily max**	226.0	85.9
pH	6.0 – 9.0		6.0 – 9.0	

*section mills & carbon
**No monthly average ELG is available, continued from previous permit (BPJ)

e) 20" Bar Mill (section mill): 40 CFR Part 420 Subpart G – Hot Forming Subcategory

The highest monthly production rate during the past five years is 3581 tons with operation time of 173 hours (7.21 days). Daily production rate is calculated as **993,200 lbs/day** (496.6 tons/day).

	40 CFR §420.72(b)(1): BPT effluent limitations*, Kg/kkg (pounds per 1,000 lb) of product		NPDES Permit Effluent Limits, lbs/day	
Pollutants	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly
TSS	0.357	0.134	354.6	133.0
O&G	0.0894	0.38 x daily max**	88.8	33.7
pH	6.0 – 9.0		6.0 – 9.0	

*section mills & carbon
**No monthly average ELG is available, continued from previous permit (BPJ)

f) TBELs for IMP 102

IMP 102	Total Suspended Solids, lbs/day		Oil and Grease, lbs/day	
Central Treatment Effluent	**Daily Maximum**	**Average Monthly**	**Daily Maximum**	**Average Monthly**
Continuous Caster 5,986,260.87 lbs/day	43.7	15.6	18.7	6.2
Vacuum Degasser 6,316,833.33 lbs/day	46.1	16.5	N/A	N/A
44" Rolling Mill (Primary Mill) 3,714,620.0 lbs/day	557.2	208.4	138.9	52.8
35"-28" Rail Mill (Section Mill)2,528,267.05lbs/day	902.5	338.8	226	85.9
20" Bar Mill (Section Mill) 993,200 lbs/day	354.6	133.0	88.8	33.7
Rail Head Hardening*	712	264	N/A	N/A
Boiler Plant*	260	98	173	65
TOTAL	2876.1	1074.3	645.4	243.6

*BPJ Limits from previous permit

g) TBELs for IMP 112

IMP 112	Total Lead, lbs/day		Total Zinc, lbs/day	
Continuous Caster	**Daily Maximum**	**Average Monthly**	**Daily Maximum**	**Average Monthly**
5,986,260.87 lbs/day	0.56	0.19	0.84	0.28
TOTAL	**0.56**	**0.19**	**0.84**	**0.28**

h) TBELs for IMP 122

IMP 122	Total Lead, lbs/day		Total Zinc, lbs/day	
Continuous Caster	**Daily Maximum**	**Average Monthly**	**Daily Maximum**	**Average Monthly**
Vacuum Degasser 6,316,833.33 lbs/day	0.60	0.20	0.90	0.30
TOTAL	**0.60**	**0.20**	**0.90**	**0.30**

All abovementioned TBELs apply, subject to water quality analysis and BPJ, where applicable.

3.6 Internal Monitoring Points (IMP):

Per 40 CFR § 122.45 (h), effluent limits were applied at points in the facility that provided appropriate level of compliance monitoring while avoiding unnecessary duplication of monitoring of pollutants in the effluent. Historically, compliance with technology-based limits for this facility has been evaluated using internal monitoring conducted at three locations (IMP 102, 112, and 122) and will be continued for the current permit renewal. Control of certain ELG parameters at internal monitoring points make it unnecessary to monitor them at outfall 002. IMP 122 was created in 1995 to capture the discharge from the vacuum degasser. IMP 112 captures the discharge from the continuous caster water treatment blowdown, Zinc and Lead are limited here, while TSS and O&G limits are carried down to IMP 102. IMP 102 captures the effluent from the CTS which receives flows from all of the ELG regulated processes (and other non-regulated processes). Limits for TSS, O&G, and pH for the combined wastewater flow are set at IMP 102

3.7 Water Quality Based Effluent Limitations (WQBELs):

3.7.1 Stream Flow:

Streamflows for the water quality analysis were determined by correlating with the yield of USGS gauging station No. 01570500 on Susquehanna River in Harrisburg. The Q_{7-10} and drainage area at the gage is 3200 ft^3/s and 24100mi^2 respectively. The resulting yields are as follows:

- Q_{7-10} = (3200 ft^3/s)/ 24100 mi^2 = 0.1328 $ft^3/s/ mi^2$
- Q_{30-10} / Q_{7-10} = 1.15
- Q_{1-10} / Q_{7-10} = 0.94

The drainage area at discharge taken from the previous factsheet = 24,300 mi^2

The Q_{7-10} at discharge = (24300) x (0.1328) = 3,227 cfs

The median pH and temperature at WQN0202 on Susquehanna River in Harrisburg during July through September are 8.25 and 23.5 respectively and the hardness during July through October is 115.

Historically, WQBEL evaluation was conducted for only Outfall 002 because it is the only outfall that discharges treated wastewater directly to the river. The updated discharge flow of 25.8 MGD was used to perform water quality analysis. for Outfall 002.

3.7.2 Temperature:

Majority of the 25.8 MGD flows discharged from Outfall 002 is noncontact cooling water; therefore, thermal discharge impact was evaluated using DEP's Thermal Worksheet. Case 2 was utilized because the source of plant water is the canal which receives make-up water from the river and other sources such as water from Steelton stormwater and treated process wastewater from Cleveland-Cliffs and Durabond plants. The following inputs were used for the thermal load analysis: The current estimated withdrawal rate at Swatara St. pump station of 27.1 MGD, design flow of 25.8 MGD, and a Q7-10 flow at the point of discharge calculated as (3227 cfs) with a chronic partial mixing factor of 0.082, The recommended thermal effluent limits for Outfall 002 is presented in attachment E. The results indicate that a limit of 110.0 ºF year-round is adequate to protect the river. This recommendation is less stringent than the existing limits of 104 ºF for December and 105 ºF for the rest of the months. Due to anti-backsliding restrictions, the existing limits of 104 ºF for December and 105 ºF for the rest of the months with IMAX of 110 ºF will remain in the permit. Also, the discharge shall not cause a change in the stream temperature of more than 2°F during any one hour. The facility has no problem meeting the existing limits.

3.7.3 CBOD5, NH3-N and DO:

WQM 7.0 was not used to evaluate WQBELs for CBOD5, NH3-N and DO, because the discharge is not associated with oxygen depletion process.

3.7.4 Total Residual Chlorine (TRC):

The attached TRC calculation results presented in attachment F utilizes the equations and calculations as presented in the Department's May 1, 2003 Implementation Guidance for Total Residual Chlorine (TRC) (ID No. 391-2000-015) for developing chlorine limitations. The Guidance references Chapter 92a, Section 92a.48 (b) which establishes a standard BAT limit of 0.5 mg/l unless a facility-specific BAT has been developed. TRC calculation was run using a PMFs of 0.011

AFC & 0.082 CFC taken from Toxics Management Spreadsheet used to analyzed reasonable potential. The results presented in attachment F indicates that a water quality limit of 0.15 mg/l monthly average and IMAX of 0.49 mg/l would be needed to prevent toxicity concerns. The IMAX is slightly more stringent than the existing permit, but DMR and inspection reports indicate the facility can meet the recommended limit.

3.7.5 Toxics Screening Analysis for Outfalls 002:

A reasonable potential (RP) analysis was done for pollutants sampled in support of the permit renewal. All pollutants that were presented in the application sampling data for outfall 002 were entered into DEP's Toxics Management Spreadsheet (TMS) to calculate Water Quality Based-Effluent Limits (WQBELs). The permittee also submitted 7 additional samples to the 3 original samples for Total Copper which was analyzed using TOXCON to determine Average Monthly Effluent Concentration (AMEC) of 0.0085 mg/l and a daily coefficient of variation (CV) of 0.24 for Total Copper, presented in attachment G. The calculated AMEC for Total Copper was added to the TMS for analysis. The results of the TMS are presented in attachment D. The discharge levels for all parameters analyzed for outfall 002 in exception of Total Aluminum and Total Copper were well below DEP's target quantitation limits (TQL) and calculated WQBELs, therefore no limitation or monitoring is required in the permit. Monitoring is recommended for Total Aluminum and Total Copper. Monitoring 2/month for Total Aluminum and Total Copper will be required in the permit to collect data for further analysis. The recommended limitations follow the logic presented in DEPs SOP, to establish limits in the permit where the maximum reported concentration exceeds 50% of the WQBEL, or for non-conservative pollutants to establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL, or to establish monitoring requirements for conservative pollutants where the maximum reported concentration is between 10% - 50% of the WQBEL.

3.7.6 Chesapeake Bay Requirement from standard steel factsheet:

In 2003, EPA established state-wide cap loads for Total Nitrogen and Total Phosphorus for Pennsylvania that are needed to ensure compliance with new water quality standards enacted to restore the water quality of the Chesapeake Bay. DEP released Pennsylvania's Chesapeake Bay Tributary Strategy (CBTS) in January of 2005 to guide Pennsylvania's efforts to meet those cap loads and made revisions to the Strategy in 2006-2007 following a stakeholder process. Industrial discharges have been prioritized by Central Office based on their delivered TN and TP loadings to the Bay. Significant industrial wastewater dischargers are facilities that discharge more than 75 lbs/day of TN or 25 lbs/day of TP on an average annual basis and the rest are classified as non-significant dischargers. DEP developed Chesapeake Bay IW monitoring plan for all industrial facilities that discharge to the Chesapeake Bay. This facility is classified as a non-significant discharger with potential to introduce nutrients to the receiving stream and has been monitoring TP and the TN series (nitrate-nitrite, TKN) and will continue monitoring them quarterly at outfall 002 and IMP 501 to collect data for Chesapeake Bay modelling efforts.

3.8 Best Professional Judgement Limitations (BPJ):

3.8.1 O&G for Outfall 002:

The requirements of PA code 25 § 95.2(2) (ii) are applicable to outfalls 002. The technology-based concentration limits per PA code 25 § 95.2(2) (ii) are 15mg/l average monthly and 30 mg/l maximum daily, however, the existing concentration limits of 10 mg/l average monthly, 15 mg/l maximum daily and 25 mg/l for O&G based on BPJ are more stringent than the tech limits and will remain in the permit with a monitoring frequency of 1/week to provide protection for the receiving waterbody.

3.8.2 TSS for Outfalls 002:

The requirements of 40 CFR § 133.105(b)(1) are applicable to outfalls 002. The technology based average monthly concentration limit is 45 mg/l. The existing concentration limits for TSS of 30 mg/l average monthly, 60 mg/l maximum daily and 75 mg/l based on BPJ are more stringent and will remain in the permit with a monitoring frequency of 1/week for outfall 002 to provide protection for the receiving water.

3.8.3 O&G for IMP 102:

The existing Oil/Grease BPJ mass limits of 65 lbs/day (average monthly) and 173 lbs/day (daily maximum) were established during the 1984 permit (the basis of these limits were not well documented) and has been carried forward in subsequent permits and will be continued in the current renewal since no ELGs has been developed for discharges from Boiler Plant. Under 40 CFR § 420.02, boiler blowdown is considered non-process wastewater and the requirement to develop BPJ limits for non-process wastewater per 40 CFR § 420.08 applies and is justified for IMP 102.

3.8.4 TSS for IMP 102:

The existing TSS BPJ mass limits of 98 lbs/day (average monthly) and 260 lbs/day (daily maximum) were established during the 1984 permit for discharges from Boiler Plant (the basis of these limits were not well documented) and TSS BPJ mass limits of 264 lbs/day (average monthly) and 712 lbs/day (daily maximum) were established during the 1995 permit, based on average pump rate of 2,200 gpm (i.e., 3.16 MGD) and concentration factor of 10 mg/L for Rail Head Hardening discharge. These limitations has been carried forward in subsequent permits and will be continued in the current renewal since no ELGs has been developed for these discharges.

3.8.5 IMAX Limits for IMPs 102, 112, and 122:

IMAX limits were developed using a multiplier of 1.25 from the daily maximum concentration calculated using the daily maximum mass and flow of 7.6MGD, 0.17MGD and 0.05 MGD for IMPs 102, 112 and 122 respectively. For DEP compliance purpose, IMAX limits of 56.7mg/L TSS and 12.7 mg/L O&G were developed for IMP 102, IMAX limits of 0.49mg/L Total Lead and 0.72 mg/L Total Zinc were developed for IMP 112 and IMAX limits of 1.8 mg/L Total Lead and 2.7 mg/L Total Zinc were developed for IMP 122.

3.9 Net Effluent Limitations:

The previous permit renewals expressed TBELs as net limits following 40 CFR § 122.45(g). The facility withdraws water from the same waterbody where the discharge occurs. However, the process wastewater is discharged through IMP 102 to the plant water supply canal, upstream of the point where the facility withdraws water for its process and noncontact cooling water. The facility's river intake is located within the effluent-river mixing zone, approximately two miles downstream from the discharge point. The site set up makes net limit calculation complicated. Control samples has been collected at Swatara Street Pump Station (IMP 501) to establish intake concentrations and will continue during this permit renewal. Effluent net limitations will be calculated as the difference between the discharge levels at Outfall 002, IMPs 102, 112,122 and the intake concentrations calculated for the plant water supply canal based on mass loadings to IMP 102 and IMP 501. Intake concentrations for the plant water supply canal is calculated as the difference between the mass loading to IMP 501 and the mass loading to IMP 102 divided by multiplication of 8.34 (conversion factor) and the difference between the IMP 501 flow rate and IMP 102 flow rate ($IMP501_{mass}$ – $IMP\ 102_{mass}$) / ([$IMP501_{flow}$ – $IMP102_{flow}$] * 8.34).

3.10a Stormwater:

The activities at the site fall under SIC code 3312 and the requirements in Appendix B of the current PAG 03 presented on the table below applies and will replace the existing stormwater parameters being monitored. The permittee shall monitor and report analytical results for the parameters listed below semi-annually on DMRs for Outfalls 002, 005, 008 and 015. Although all Outfalls discharge stormwater, 002, 005, 008 and 015 were chosen as the representative sampling point for stormwater at the site. The existing permit has sampling requirement for outfall 005, but the permittee indicated no industrial activity is occurring in the drainage area of the outfall. However, there are finished railroad products are stored in the drainage area belonging to a tenant of the permittee that will require storm water monitoring. Until a storm water permit is issued to the tenant, outfall 005 will remain in the permit. Also, Outfall 010 at the capped landfill which has been listed in the previous permit with no monitoring requirement will be removed from the permit. The permittee indicated that the outfall is located on a property that does not belong to them anymore. The existing permit required quarterly sampling and the results were consistent every quarter. Semi-annual sampling will be required during this permit renewal which should generate enough storm water data for future review. The benchmark values listed on the table are not effluent limitations, and exceedances do not constitute permit violations. However, if the permittee's sampling demonstrates exceedances of benchmark values for two consecutive monitoring periods, the permittee shall submit a corrective action plan within 90 days of the end of the monitoring period triggering the plan.

Parameter (mg/l)	Minimum Measuring Frequency	Sample Type (mg/l)	Benchmark Values
Total Nitrogen (TN)	1 / 6months	Grab	XXX
Total Phosphorus. (TP)	1 / 6months	Grab	XXX
Total Suspended Solids (TSS)	1 / 6months	Grab	100
Oil and Grease	1 / 6months	Grab	30
Total Aluminum	1 / 6months	Grab	XXX

Total Zinc	1 / 6months	Grab	XXX
Total Copper	1 / 6months	Grab	XXX
Total Iron	1 / 6months	Grab	XXX
Total Lead	1 / 6months	Grab	XXX

3.10b Stormwater Best Management Practices (BMPs):

In addition to general BMPs, the permittee shall implement the following BMPs that may be applicable to SIC code 3312.

1. Install and use dust control/collection systems around materials handling and transfer activities.
2. Perform all mixing, pouring, cutting, and molding activities in buildings with dust control systems.
3. Store flux materials in enclosed silos or buildings where possible, or otherwise cover materials susceptible to erosion and wind entrainment.
4. Provide for reclamation of/or erosion control on historic waste piles

3.11 Chemical Additives:

The following Chemical additives have been approved for use at the facilty and are currently being used at the site:

- Optisperse AP0520, Sodium Bisulfite, Cortrol IS3000, Solus AP24 and Solus AP25 are used in boilers' internal treatment and discharge to outfall 002

- Gengard GN814, Gengard GN7110, Gengard GN7112, Gengard GN7004, Sodium Hypochlorite, Spectrus NX122, Spectrus NX1100, Spectrus NX1102, Spectrus NX1106, Corrshield NT4203, Flogard POT6100, Depositrol BL5400 Ferroquest FQ7101, Ferroquest FQ7102 and Inhibitor AZ8104 are used in the cooling towers and closed loop systems and discharge to outfall 002

Sumary of TMS results are presented in attachement G. The applicant indicates all chemical additive usage will be below the maximum allowable recommended by TMS results. The permit is written with chemical additive usage and notification requirement located in Part C.II of the permit.

4.0 Section 316(b) Requirements

Section 316(b) of the Clean Water Act (CWA) requires that "the location, design, construction, and capacity of cooling water intake structures(CWISs) reflect the best technology available (BTA) for minimizing adverse environmental impact" to protect aquatic organisms from being killed or injured by impingement (being pinned against screens or other parts of a cooling water intake structure) or entrainment (being drawn into cooling water systems and subjected to thermal, physical or chemical stresses).

On August 15, 2014, EPA published the final 316(b) existing facilities rule with effective date of October 14, 2014. The 3 main components of the rule are: First, existing facilities that withdraw at least 25 percent of their water from an adjacent waterbody exclusively for cooling purposes and have a design intake flow of greater than 2 million gallons per day (MGD) are required to reduce fish impingement. To ensure flexibility, facilities will be able to choose one of seven options to meet BTA requirements for reducing impingement as described at 40 CFR § 125.94(c). The seven alternatives are: 1. Operate a closed-cycle recirculating cooling system, as defined at 40 CFR§ 125.92; 2. Operate a cooling water intake structure with a design intake velocity of less than 0.5 feet per second through-screen velocity; 3. Operate a cooling water intake structure with an actual intake velocity of less than 0.5 feet per second through-screen velocity; 4. Operate an existing offshore velocity cap, as defined at 40 CFR§ 125.92; 5. Operate modified traveling screens, as defined at 40 CFR§ 125.92; 6. Operate a system of technologies, management practices and operational measures that optimizes impingement mortality; or 7. Achieve a 12-month performance standard of no more than 24% mortality including latent mortality for all non-fragile species. Second, existing facilities that withdraw very large amounts of water at least 125 million gallons per day are required to conduct studies to help their permitting authority determine what site-specific controls, if any, would be required to reduce the number of aquatic organisms entrained by cooling water systems. Third, new units that add electrical generation capacity at an existing facility are required to add technology that achieves one of two alternatives under the national BTA standards for entrainment for new units at existing facilities.

Cleveland Cliffs withdraws about 30 MGD of water from the plant supply basin/canal for manufacturing via Swatara Street Pump Station and the water level in the supply basin/canal is maintained by periodic withdrawal of water from Susquehanna River via East End Pump Station and uses more than 25% for cooling DEP determined the intake structure at the river should comply with the 316(b) existing rule and the canal considered as an internal monitoring point. Cleveland Cliffs operates the CWIS with a Design Intake Flow (DIF) of 43.2 MGD, but the Actual Intake Flow (AIF) is 18.4 MGD based on the amount of water needed to maintain level in the supply canal during plant operation and consumptive loss. The CWIS is located along the Susquehanna River. The intake structure consists of a bar rack with about 40bars approximately 7/16" wide and spaced about 3.5" prior to a 10 feet wide travelling screen with 3/8 inch-square screen opening. The screen wire width, panel height and panel height with frame are 0.081", 18.78" and 21.75" respectively. The screen is rotated on a timed basis and a high-pressure sprays flush debris and anything trapped on the screen to a trough adjacent to the screen house. A 530 feet long variable width channel oriented at 45 degrees in the opposite direction of the river flow direct water to the intake. There are two pumps at the East End Pump Station, 30,000GPM duty pump and 34,000GPM back-up pump. The duty pump operates between 10 and 14 hours when plant is operating and pumps to the plant supply basin/canal which is about 2.4miles long. The pump also operates as needed to maintain level in the supply basin. The duty pump is activated when water level reaches certain level and pumps till a set level is reached and deactivates.

4.1 Impingement BTA

The rule established steps for developing BTA requirements for complying with impingement mortality standards. Based on the water withdrawn, this facility is required to comply with one of the seven alternative BTAs for reducing impingement mortality described at 40 CFR § 125.94(c). The permittee did not conduct a detailed impingement study but requested a De minimis status per 40 CFR § 125.94(c)(11) and propose additional data collection to support their request. DEP informed the permittee that at least two-year impingement study is required for review to determine if the facility qualify for a De minimis designation. Otherwise, one of the recommended BTAs for complying with impingement mortality standard must be selected and installed. The permittee updated the permit application and selected modified traveling screen with a fish return per 40 CFR 125.94(c)(5) to comply with BTA requirements for reducing impingement. The permittee requested 3 years from permit effective date to design, get permit approval and installation of the modified travelling screen with fish return. The regulation requires an impingement technology performance optimization study but does not require pre-installment impingement data. Basic guidance on optimization study can be found at 122.21(r)(6)(i). The permittee will conduct a two year impingement mortality technology optimization study required under 40 CFR 122.21(r)(6)(i) during the two years following the screen installation. The permittee understands that a study plan for the impingement mortality technology optimization study is required to be reviewed and approved by DEP.

4.2 Entrainment BTA

Under the final rule, BTA for entrainment is to be developed on a site-specific basis by the permitting authority. The rule requires that facilities achieve maximum reduction in entrainment after consideration of several relevant factors specified in 40 CFR § 125.98. The permittee indicated the Walking Beam Furnace and Continuous Caster process had close loop non-contact cooling recirculation system which reduces the amount of intake water for cooling by a significant amount. The permittee contend that the percentage of AIF to mean river flow is about 0.08% due to the recycle systems at the plant which provided about 53% reduction versus a once-through cooling needs of the plant. The facility also indicates it captures and re-uses run-off from Borough of Steelton as cooling water to further reduce withdrawal from the river. The permittee concluded the existing entrainment reduction technologies at the site constitute BTA for the site. The permittee think they should not conduct entrainment study due to the minimal amount of water withdrawn compared to the mean volume of the river. DEP disagreed with the permittee and inform the permittee that DEP consistently require an entrainment study for existing facilities with less than 125 mgd AIF regardless of its existing technology to reduce entrainment or the relative amount of the withdrawn water relative to the waterbody. Permittee was informed that collection of entrainment data allows DEP to ensure that the technologies are performing as designed and that unexpectedly high rates of entrainment are not present. DEP will accept a one year of entrainment data to be limited to the peak entrainment season from mid-spring to late summer.

It is noted that, neither federally listed threatened and endangered species, nor migratory species of concern were identified from existing data in the vicinity of the CWISs. Portions of operations has closed-cycle recirculating system and change in particulate emissions or other pollutants is not expected to occur based on the BTA decision. The existing closed-cycle recirculating system is already installed and the proposed intake structure at the facility has a small footprint therefore land availability should not be an issue. The facility does not indicate that the plant will close in the next 10 years. Comprehensive Technical Feasibility and Cost Evaluation Study report in accordance with 40 CFR 122.21(r)(10) was not submitted.

4.3 Schedule of compliance BTA determined for Impingement and Entrainment

DEP determined that the reductions in impingement and entrainment already provided by the existing closed cycle recirculating cooling systems in addition to the proposed modified traveling screen with a fish return constitute BTA for both impingement and entrainment for the site.

The reissued permit will include compliance schedule below to design, get approval, install and operate the selected BTA for reducing impingement mortality and entrainment mortality.

Milestone	Completion Date
Design the selected technology and Submit permit application for approval	14 months from permit effective date
Submit progress report on planning and design of the technology	8 months from permit effective date
Complete construction of the approved technology and start operation	12 months from permit approval date
Submit study plans for impingement and entrainment studies	6 months from operation start date of the installed technology
Start impingement and entrainment studies	3 months from study plans approval dates
Submit progress report	12 months from the impingement and entrainment studies start dates
Complete and submit impingement and entrainment studies	24 months from the impingement and entrainment studies start dates

After installation of the screen, impingement and entrainment studies would be conducted to document performance of the controls as indicated on the compliance schedule.

5.0 Other Considerations

5.1 Flow Monitoring

40 CFR § 122.44(1)(ii) requires permittees to monitor effluent volume discharged from outfalls; therefore, DEP will continue to require the facility to continue monitoring the volume of effluents discharged from each monitoring points. Further, since effluent limits are expressed as net limits, influent/intake monitoring at Swatara Street Pump Station 501 is recommended to assure compliance with permit requirements.

5.2 Antidegradation Requirements (25 PA Code § 93.4):

The effluent limits for this discharge have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. The facility discharge to a stream segment designated as High-Quality Waters. The discharge is not expected to impact the stream negatively. No Exceptional Value Waters are impacted by this discharge.

5.3 Anti-backsliding

TSS and O&G technology limits for IMP 102 and Total Lead and Total Zinc technology limits for IMP 112 were relaxed in accordance with 40 CFR 122.44(l)(2)i(B)(1) which stated that relaxed limitations may be allowed where there is information available which was not available at the time the permit was issued. The technology limits are based on production data and there is a current production data which was used for the calculation.

5.4 Class A Wild Trout Streams:

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

5.5 Endangered Species

There is no confirmed existence of endangered species in the area close to the discharge. Therefore, the discharge authorized by this permit is not likely to impact any endangered or threatened species or adversely affect its critical habitat.

5.6 303d Listed Streams:

The discharge is located on a 303d listed stream segment. Susquehanna River is impaired for fish consumption by PCB and aquatic life by pH. The sources of the impairments are unknown and no TMDL has been developed. Also, in 2008, DEP has concluded that Pennsylvania Canal is impaired for siltation as a result of urban runoff/storm sewers and a TMDL is pending. No further action is warranted at this time prior to TMDL development

5.7 Basis for Effluent and Surface Water Monitoring

Section 308 of the CWA and federal regulation 40 CFR 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather effluent and surface water data to determine if additional effluent limitations are required and/or to monitor effluent impacts on receiving water quality. The permittee is responsible for conducting the monitoring and for reporting results on Discharge Monitoring Reports (DMRs).

5.8 Effluent Monitoring Frequency

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. Permittees have the option of taking more frequent samples than are required under the permit. These samples can be used for averaging if they are conducted using EPA-approved test methods (generally found in 40 CFR 136) and if the Method Detection Limits are less than the effluent limits. The sampling location must be after the last treatment unit and prior to discharge to the receiving water. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR.

6.0 Proposed Effluent Limitations and Monitoring Requirements

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

Outfall 002, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0	XXX	1/week	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.15	XXX	0.49	1/week	Grab
Temperature (deg F) (ºF) Jan 1 - Nov 30	XXX	XXX	XXX	105 Daily Max	XXX	110	1/day	I-S
Temperature (deg F) (ºF) Dec 1 - 31	XXX	XXX	XXX	104 Daily Max	XXX	110	1/day	I-S
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Suspended Solids Effluent Net	Report	Report	XXX	30.0	60.0	75	1/week	Calculation
Total Suspended Solids	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Oil and Grease Effluent Net	Report	Report	XXX	10.0	15.0	25	1/week	Calculation
Oil and Grease	Report	Report	XXX	Report	Report	XXX	1/week	Grab
Nitrate-Nitrite as N Effluent Net	XXX	Report	XXX	XXX	Report	XXX	1/quarter	Calculation
Nitrate-Nitrite as N	XXX	Report	XXX	XXX	Report	XXX	1/quarter	Calculation
Total Nitrogen	XXX	Report	XXX	XXX	Report	XXX	1/quarter	Calculation

Outfall 002, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Nitrogen Effluent Net	XXX	Report	XXX	XXX	Report	XXX	1/quarter	Calculation
Ammonia-Nitrogen Effluent Net	XXX	Report	XXX	XXX	Report	XXX	1/quarter	Calculation
Ammonia-Nitrogen	XXX	Report	XXX	XXX	Report	XXX	1/quarter	Calculation
Total Kjeldahl Nitrogen	XXX	Report	XXX	XXX	Report	XXX	1/quarter	Calculation
Total Kjeldahl Nitrogen Effluent Net	XXX	Report	XXX	XXX	Report	XXX	1/quarter	Calculation
Total Phosphorus	XXX	Report	XXX	XXX	Report	XXX	1/quarter	Calculation
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Phosphorus Effluent Net	XXX	Report	XXX	XXX	Report	XXX	1/quarter	Calculation
Aluminum, Total	Report	Report	XXX	Report	Report	XXX	2/month	24-Hr Composite
Aluminum, Total	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Copper, Total	Report	Report	XXX	Report	Report	XXX	2/month	24-Hr Composite
Copper, Total	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Iron, Total	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Lead, Total	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Zinc, Total	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Compliance Sampling Location: At Outfall 002

Proposed Effluent Limitations and Monitoring Requirements

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

Outfalls 005, 008, 015 Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Aluminum, Total	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Copper, Total	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Iron, Total	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Lead, Total	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Zinc, Total	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Compliance Sampling Location: At outfalls 005, 008, 015

6.1 Proposed Effluent Limitations and Monitoring Requirements

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

Outfall 102, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0	XXX	1/week	Grab
Total Suspended Solids Effluent Net	1074	2876	XXX	Report	Report	56.7	1/week	Calculation
Total Suspended Solids	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Oil and Grease	Report	Report	XXX	Report	Report	XXX	1/week	Grab
Oil and Grease Effluent Net	244	645	XXX	Report	Report	12.7	1/week	Calculation
Lead, Total Effluent Net	Report	Report	XXX	Report	Report	XXX	1/week	Calculation
Lead, Total	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Zinc, Total Effluent Net	Report	Report	XXX	Report	Report	XXX	1/week	Calculation
Zinc, Total	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite

Compliance Sampling Location: IMP 102

6.2 Proposed Effluent Limitations and Monitoring Requirements

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

Outfall 112, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0	XXX	1/week	Grab
Total Suspended Solids	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Suspended Solids Effluent Net	Report	Report	XXX	Report	Report	XXX	1/week	Calculation
Oil and Grease	Report	Report	XXX	Report	Report	XXX	1/week	Grab
Oil and Grease Effluent Net	Report	Report	XXX	Report	Report	XXX	1/week	Calculation
Lead, Total	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Lead, Total Effluent Net	0.19	0.56	XXX	Report	Report	0.49	1/week	Calculation
Zinc, Total Effluent Net	0.28	0.84	XXX	Report	Report	0.72	1/week	Calculation
Zinc, Total	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite

Compliance Sampling Location: IMP 112

6.3 Proposed Effluent Limitations and Monitoring Requirements

T The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 122, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0	XXX	1/week	Grab
Total Suspended Solids	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Suspended Solids Effluent Net	Report	Report	XXX	Report	Report	XXX	1/week	Calculation
Lead, Total	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Lead, Total Effluent Net	0.20	0.60	XXX	Report	Report	1.8	1/week	Calculation
Zinc, Total Effluent Net	0.30	0.90	XXX	Report	Report	2.7	1/week	Calculation
Zinc, Total	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite

Compliance Sampling Location: IMP 122

6.4 Proposed Effluent Limitations and Monitoring Requirements

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

Outfall 401, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (cfs)	XXX	XXX	XXX	Report	Report Daily Max	XXX	Continuous	Measured

Compliance Sampling Location: East End Pump Station

6.5 Proposed Effluent Limitations and Monitoring Requirements

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

Outfall 501, Effective Period: Permit Effective Date through Permit Expiration Date.

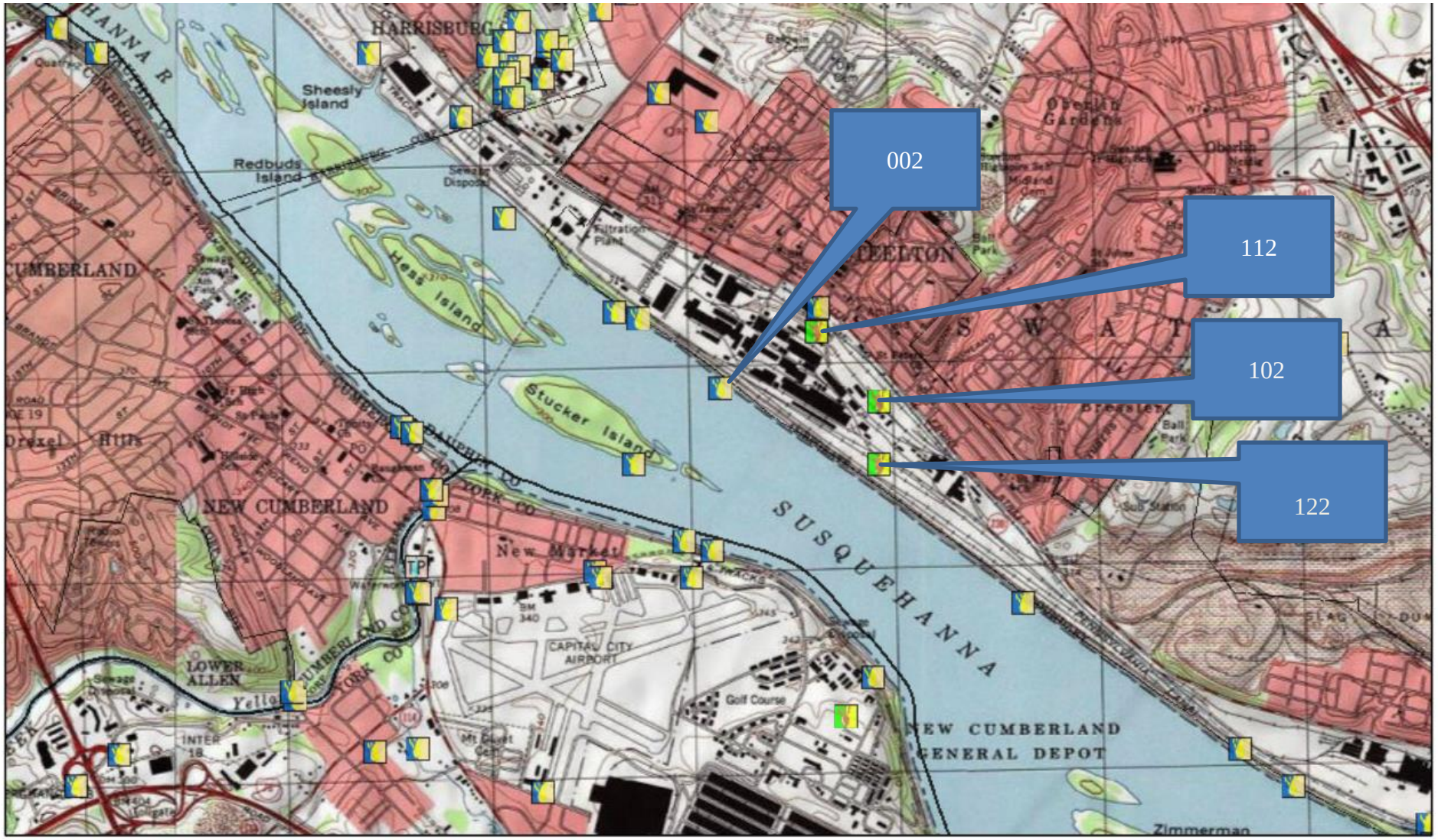
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
TSS	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Oil and Grease	Report	Report	XXX	Report	Report	XXX	1/week	Grab
Nitrate-Nitrite	XXX	Report	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Total Nitrogen	XXX	Report	XXX	XXX	Report	XXX	1/quarter	Calculation
Ammonia	XXX	Report	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
TKN	XXX	Report	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Total Phosphorus	XXX	Report	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Total Lead	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite
Total Zinc	Report	Report	XXX	Report	Report	XXX	1/week	24-Hr Composite

Compliance Sampling Location: Swatara Street Pump Station

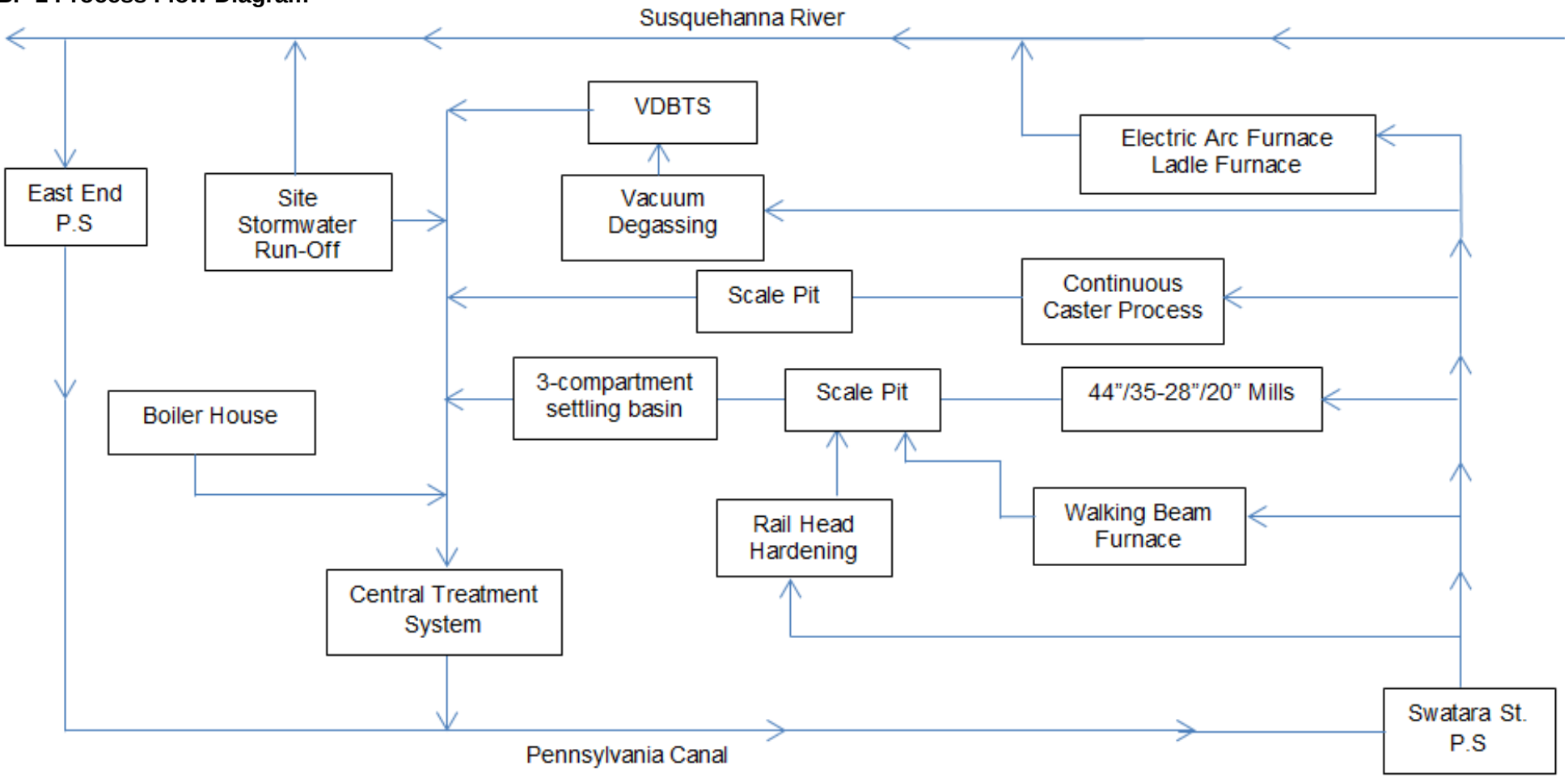
7.0 Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment **D**)
☒	TRC Model Spreadsheet (see Attachment **F**)
☒	Temperature Model Spreadsheet (see Attachment **E**)
☒	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☒	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☒	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☒	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☒	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☒	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 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, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 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, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☒	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: Establishing Effluent limitations for individual industrial permit
☒	Other: ELG 40 CFR Part 420

8. Attachments

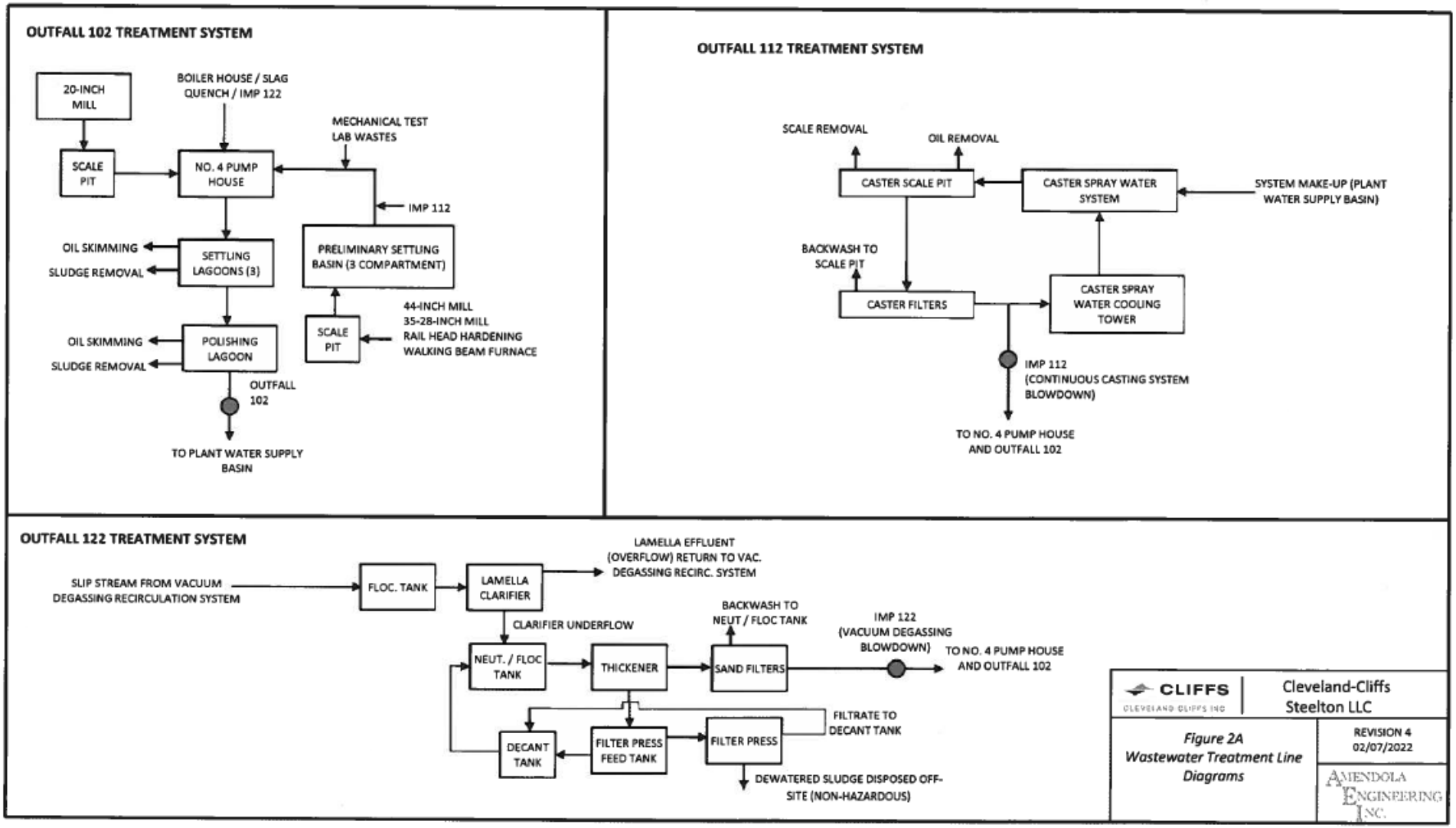
A. Topographical Map



B. 1 Process Flow Diagram



B. 2 Treatment System



C. Production Data

Production Tons

2017	January	February	March	April	May	June	July	August	September	October	November	December	Total
Vacuum Degassing	24444	37901	23217	21776	27692	26402	29713	15306	27402	18543	30219	26864	309479
Continuous Casting	21667	34421	20795	19861	24722	23878	27518	13964	25603	17134	28187	24965	282715
44-Inch Mill	19855	26541	23500	16959	21812	22508	23033	12424	24776	16943	24107	22524	254982
28-35 Inch Mill	13341	17799	17211	10553	14202	13623	13394	8690	11969	9470	13445	12380	156076
20 Inch Mill	1596	2389	2009	2316	2174	3495	2775	1513	2547	2674	3111	3110	29709
2018	January	February	March	April	May	June	July	August	September	October	November	December	Total
Vacuum Degassing	25878	22734	24626	24255	24415	29130	19235	22826	20943	25077	21876	22901	283896
Continuous Casting	24239	20537	23641	23170	21958	27190	17641	20076	19033	22410	19246	21287	260427
44-Inch Mill	20028	22713	19324	22699	18142	22273	16161	18816	17891	20712	16826	19430	235015
28-35 Inch Mill	8837	12055	9807	11785	8666	11328	9807	13497	11281	12014	11003	11586	131666
20 Inch Mill	1821	2547	3076	3526	2850	3134	2683	3091	1650	3581	2925	2340	33224
2019	January	February	March	April	May	June	July	August	September	October	November	December	Total
Vacuum Degassing	21534	12552	28421	27311	22135	20120	19226	17907	9256	23199	14029	16799	232489
Continuous Casting	19110	11998	25715	24927	19967	18641	17885	16139	8309	20500	12209	15087	210486
44-Inch Mill	17925	12438	22269	21657	17603	17438	14173	14567	7557	19776	12642	13766	191810
28-35 Inch Mill	9163	6059	10577	13027	13381	11708	10615	9222	6543	13755	9283	9150	122482
20 Inch Mill	2693	3231	2658	2252	1941	2355	1425	2223	1421	832	1498	1200	23729
2020	January	February	March	April	May	June	July	August	September	October	November	December	Total
Vacuum Degassing	22835	19184	16146	17368	9683	15388	12430	10831	12938	16673	8862	8784	171122
Continuous Casting	20622	17340	13557	15421	7713	14221	10933	8770	10472	14217	7627	8274	149166
44-Inch Mill	17323	13476	13756	14250	8666	9856	10197	9608	10242	12199	7684	7781	135038
25-38 Inch Mill	11120	8692	9038	10304	7176	6399	6118	5072	8153	6917	3777	4803	87569
20 Inch Mill	2243	2552	1930	1994	1831	1137	1679	1564	1703	1153	1361	2126	21272
2021	January	February	March	April	May	June	July	August	September	October	November	December	Total
Vacuum Degassing	13146	18150	21047	17206	17219	14120	12956	16011	14834	11736	19687	18484	194596
Continuous Casting	14446	15975	18105	15104	15734	12370	12127	14356	13284	10396	17753	16881	176532
44-Inch Mill	11837	13472	15122	14378	13676	12004	11728	7263	14225	12894	13787	17338	157725
28-35 Inch Mill	6826	8823	7641	9126	8508	10141	7731	4240	7599	8285	6943	9794	95657
20 Inch Mill	2776	1957	2710	2380	1585	1148	2651	2067	2146	2250	1834	2722	26224

D. Toxics Management Spreadsheet

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Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Cleveland Cliffs Steelton Plant** NPDES Permit No.: **PA0008303** Outfall No.: **002**

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

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
25.8	104	7.2						

					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		256									
	Chloride (PWS)	mg/L		25.9									
	Bromide	mg/L		0.2									
	Sulfate (PWS)	mg/L		24.1									
	Fluoride (PWS)	mg/L		0.2									
Group 2	Total Aluminum	µg/L		150									
	Total Antimony	µg/L		0.42									
	Total Arsenic	µg/L		0.9									
	Total Barium	µg/L		27.7									
	Total Beryllium	µg/L		2									
	Total Boron	µg/L		50									
	Total Cadmium	µg/L		0.2									
	Total Chromium (III)	µg/L		1.6									
	Hexavalent Chromium	µg/L		0.045									
	Total Cobalt	µg/L		5.25									
	Total Copper	µg/L		8.05									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L		5									
	Dissolved Iron	µg/L		170									
	Total Iron	µg/L		1100									
	Total Lead	µg/L		1.5									
	Total Manganese	µg/L		70.5									
	Total Mercury	µg/L		0.0027									
	Total Nickel	µg/L		9.7									
	Total Phenols (Phenolics) (PWS)	µg/L		10									
	Total Selenium	µg/L	<	5									
	Total Silver	µg/L	<	0.26									
	Total Thallium	µg/L	<	0.32									
	Total Zinc	µg/L		12.2									
	Total Molybdenum	µg/L		4.29									
	Acrolein	µg/L	<	1.3									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	2									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.5									

Group 3	Carbon Tetrachloride	µg/L	<	1									
	Chlorobenzene	µg/L		5									
	Chlorodibromomethane	µg/L	<	5									
	Chloroethane	µg/L	<	1									
	2-Chloroethyl Vinyl Ether	µg/L	<	5									
	Chloroform	µg/L	<	0.88									
	Dichlorobromomethane	µg/L	<	5									
	1,1-Dichloroethane	µg/L	<	5									
	1,2-Dichloroethane	µg/L	<	1									
	1,1-Dichloroethylene	µg/L	<	5									
	1,2-Dichloropropane	µg/L	<	0.5									
	1,3-Dichloropropylene	µg/L	<	1									
	1,4-Dioxane	µg/L	<	2.9									
	Ethylbenzene	µg/L	<	0.5									
	Methyl Bromide	µg/L	<	1									
	Methyl Chloride	µg/L	<	1									
	Methylene Chloride	µg/L	<	1									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.38									
	Tetrachloroethylene	µg/L	<	0.5									
	Toluene	µg/L	<	0.5									
	1,2-trans-Dichloroethylene	µg/L	<	0.5									
	1,1,1-Trichloroethane	µg/L	<	0.5									
	1,1,2-Trichloroethane	µg/L	<	0.5									
	Trichloroethylene	µg/L	<	0.5									
	Vinyl Chloride	µg/L	<	0.5									
Group 4	2-Chlorophenol	µg/L	<	2.9									
	2,4-Dichlorophenol	µg/L	<	2.9									
	2,4-Dimethylphenol	µg/L	<	2.9									
	4,6-Dinitro-o-Cresol	µg/L	<	5.7									
	2,4-Dinitrophenol	µg/L	<	5.7									
	2-Nitrophenol	µg/L	<	2.9									
	4-Nitrophenol	µg/L	<	2.9									
	p-Chloro-m-Cresol	µg/L	<	2.9									
	Pentachlorophenol	µg/L	<	5.7									
	Phenol	µg/L	<	7.6									
	2,4,6-Trichlorophenol	µg/L	<	2.9									
Group 5	Acenaphthene	µg/L	<	1.4									
	Acenaphthylene	µg/L	<	1.4									
	Anthracene	µg/L	<	1.4									
	Benzidine	µg/L	<	3.8									
	Benzo(a)Anthracene	µg/L	<	1.4									
	Benzo(a)Pyrene	µg/L	<	1.4									
	3,4-Benzofluoranthene	µg/L	<	1.4									
	Benzo(ghi)Perylene	µg/L	<	1.4									
	Benzo(k)Fluoranthene	µg/L	<	1.4									
	Bis(2-Chloroethoxy)Methane	µg/L	<	2.9									
	Bis(2-Chloroethyl)Ether	µg/L	<	2.9									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	2.9									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	2.9									
	4-Bromophenyl Phenyl Ether	µg/L	<	2.9									
	Butyl Benzyl Phthalate	µg/L	<	2.9									
	2-Chloronaphthalene	µg/L	<	2.9									
	4-Chlorophenyl Phenyl Ether	µg/L	<	2.9									
	Chrysene	µg/L	<	1.4									
	Dibenzo(a,h)Anthrancene	µg/L	<	1.4									
	1,2-Dichlorobenzene	µg/L	<	1									
	1,3-Dichlorobenzene	µg/L	<	1									
	1,4-Dichlorobenzene	µg/L	<	1									
	3,3-Dichlorobenzidine	µg/L	<	2.9									
	Diethyl Phthalate	µg/L	<	2.9									
	Dimethyl Phthalate	µg/L	<	2.9									
	Di-n-Butyl Phthalate	µg/L		2.9									
	2,4-Dinitrotoluene	µg/L	<	2.9									

	2,6-Dinitrotoluene	µg/L	<	2.9									
	Di-n-Octyl Phthalate	µg/L	<	2.9									
	1,2-Diphenylhydrazine	µg/L	<	2.9									
	Fluoranthene	µg/L	<	1.4									
	Fluorene	µg/L	<	1.4									
	Hexachlorobenzene	µg/L	<	2.9									
	Hexachlorobutadiene	µg/L	<	0.5									
	Hexachlorocyclopentadiene	µg/L	<	2.9									
	Hexachloroethane	µg/L	<	2.9									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	1.4									
	Isophorone	µg/L	<	2.9									
	Naphthalene	µg/L	<	1.4									
	Nitrobenzene	µg/L	<	2.9									
	n-Nitrosodimethylamine	µg/L	<	2.9									
	n-Nitrosodi-n-Propylamine	µg/L	<	2.9									
	n-Nitrosodiphenylamine	µg/L	<	2.9									
	Phenanthrene	µg/L	<	1.4									
	Pyrene	µg/L	<	1.4									
	1,2,4-Trichlorobenzene	µg/L	<	0.098									
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											

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Cleveland Cliffs Steelton Plant, NPDES Permit No. PA0008303, Outfall 002

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Susquehanna 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	006685	67.69	284.4	24300			Yes
End of Reach 1	006685	64.5	280.75	24400			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	67.69	0.1328	3227			1277.9	1.25					115	8.25		
End of Reach 1	64.5	0.1328													

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	67.69														
End of Reach 1	64.5														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Cleveland Cliffs Steelton Plant, NPDES Permit No. PA0008303, Outfall 002

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.012 Analysis Hardness (mg/l): 109.39 Analysis pH: 7.46

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	1,471	
Total Antimony	0	0		0	1,100	1,100	2,157	
Total Arsenic	0	0		0	340	340	667	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	41,182	
Total Boron	0	0		0	8,100	8,100	15,885	
Total Cadmium	0	0		0	2.197	2.34	4.58	Chem Translator of 0.94 applied
Total Chromium (III)	0	0		0	613.225	1,941	3,806	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	32.0	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	186	
Total Copper	0	0		0	14.625	15.2	29.9	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	71.202	91.5	179	Chem Translator of 0.778 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	3.23	Chem Translator of 0.85 applied
Total Nickel	0	0		0	505.176	506	993	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	3.754	4.42	8.66	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	127	
Total Zinc	0	0		0	126.440	129	254	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	5.88	

Acrylonitrile	0	0		0	650	650	1,275	
Benzene	0	0		0	640	640	1,255	
Bromoform	0	0		0	1,800	1,800	3,530	
Carbon Tetrachloride	0	0		0	2,800	2,800	5,491	
Chlorobenzene	0	0		0	1,200	1,200	2,353	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	35,299	
Chloroform	0	0		0	1,900	1,900	3,726	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	29,416	
1,1-Dichloroethylene	0	0		0	7,500	7,500	14,708	
1,2-Dichloropropane	0	0		0	11,000	11,000	21,572	
1,3-Dichloropropylene	0	0		0	310	310	608	
Ethylbenzene	0	0		0	2,900	2,900	5,687	
Methyl Bromide	0	0		0	550	550	1,079	
Methyl Chloride	0	0		0	28,000	28,000	54,910	
Methylene Chloride	0	0		0	12,000	12,000	23,533	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	1,961	
Tetrachloroethylene	0	0		0	700	700	1,373	
Toluene	0	0		0	1,700	1,700	3,334	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	13,335	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	5,883	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	6,668	
Trichloroethylene	0	0		0	2,300	2,300	4,510	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	1,098	
2,4-Dichlorophenol	0	0		0	1,700	1,700	3,334	
2,4-Dimethylphenol	0	0		0	660	660	1,294	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	157	
2,4-Dinitrophenol	0	0		0	660	660	1,294	
2-Nitrophenol	0	0		0	8,000	8,000	15,689	
4-Nitrophenol	0	0		0	2,300	2,300	4,510	
p-Chloro-m-Cresol	0	0		0	160	160	314	
Pentachlorophenol	0	0		0	13.806	13.8	27.1	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	902	
Acenaphthene	0	0		0	83	83.0	163	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	588	
Benzo(a)Anthracene	0	0		0	0.5	0.5	0.98	
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	58,832	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	8,825	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	529	
Butyl Benzyl Phthalate	0	0		0	140	140	275	

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	1,608	
1,3-Dichlorobenzene	0	0		0	350	350	686	
1,4-Dichlorobenzene	0	0		0	730	730	1,432	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	7,844	
Dimethyl Phthalate	0	0		0	2,500	2,500	4,903	
Di-n-Butyl Phthalate	0	0		0	110	110	216	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	3,138	
2,6-Dinitrotoluene	0	0		0	990	990	1,941	
1,2-Diphenylhydrazine	0	0		0	15	15.0	29.4	
Fluoranthene	0	0		0	200	200	392	
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	19.6	
Hexachlorocyclopentadiene	0	0		0	5	5.0	9.81	
Hexachloroethane	0	0		0	60	60.0	118	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	19,611	
Naphthalene	0	0		0	140	140	275	
Nitrobenzene	0	0		0	4,000	4,000	7,844	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	33,338	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	588	
Phenanthrene	0	0		0	5	5.0	9.81	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	255	

☑ ***CFC*** CCT (min): 720 PMF: 0.082 Analysis Hardness (mg/l): 113.56 Analysis pH: 7.88

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	1,685	
Total Arsenic	0	0		0	150	150	1,149	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	31,400	
Total Boron	0	0		0	1,600	1,600	12,254	
Total Cadmium	0	0		0	0.269	0.3	2.28	Chem Translator of 0.904 applied
Total Chromium (III)	0	0		0	82.252	95.6	732	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	79.6	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	146	

Total Copper	0	0		0	9.984	10.4	79.6	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	122,777	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.890	3.74	28.6	Chem Translator of 0.772 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	6.94	Chem Translator of 0.85 applied
Total Nickel	0	0		0	57.915	58.1	445	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	38.2	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	99.6	
Total Zinc	0	0		0	131.582	133	1,022	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	23.0	
Acrylonitrile	0	0		0	130	130	996	
Benzene	0	0		0	130	130	996	
Bromoform	0	0		0	370	370	2,834	
Carbon Tetrachloride	0	0		0	560	560	4,289	
Chlorobenzene	0	0		0	240	240	1,838	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	26,805	
Chloroform	0	0		0	390	390	2,987	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	23,741	
1,1-Dichloroethylene	0	0		0	1,500	1,500	11,488	
1,2-Dichloropropane	0	0		0	2,200	2,200	16,849	
1,3-Dichloropropylene	0	0		0	61	61.0	467	
Ethylbenzene	0	0		0	580	580	4,442	
Methyl Bromide	0	0		0	110	110	842	
Methyl Chloride	0	0		0	5,500	5,500	42,122	
Methylene Chloride	0	0		0	2,400	2,400	18,380	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	1,608	
Tetrachloroethylene	0	0		0	140	140	1,072	
Toluene	0	0		0	330	330	2,527	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	10,722	
1,1,1-Trichloroethane	0	0		0	610	610	4,672	
1,1,2-Trichloroethane	0	0		0	680	680	5,208	
Trichloroethylene	0	0		0	450	450	3,446	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	842	
2,4-Dichlorophenol	0	0		0	340	340	2,604	
2,4-Dimethylphenol	0	0		0	130	130	996	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	123	
2,4-Dinitrophenol	0	0		0	130	130	996	
2-Nitrophenol	0	0		0	1,600	1,600	12,254	
4-Nitrophenol	0	0		0	470	470	3,599	

p-Chloro-m-Cresol	0	0		0	500	500	3,829	
Pentachlorophenol	0	0		0	10.592	10.6	81.1	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	697	
Acenaphthene	0	0		0	17	17.0	130	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	452	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.77	
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	45,951	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	6,969	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	414	
Butyl Benzyl Phthalate	0	0		0	35	35.0	268	
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	1,225	
1,3-Dichlorobenzene	0	0		0	69	69.0	528	
1,4-Dichlorobenzene	0	0		0	150	150	1,149	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	6,127	
Dimethyl Phthalate	0	0		0	500	500	3,829	
Di-n-Butyl Phthalate	0	0		0	21	21.0	161	
2,4-Dinitrotoluene	0	0		0	320	320	2,451	
2,6-Dinitrotoluene	0	0		0	200	200	1,532	
1,2-Diphenylhydrazine	0	0		0	3	3.0	23.0	
Fluoranthene	0	0		0	40	40.0	306	
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	15.3	
Hexachlorocyclopentadiene	0	0		0	1	1.0	7.66	
Hexachloroethane	0	0		0	12	12.0	91.9	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	16,083	
Naphthalene	0	0		0	43	43.0	329	
Nitrobenzene	0	0		0	810	810	6,203	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	26,039	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	452	
Phenanthrene	0	0		0	1	1.0	7.66	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	199	

☑ ***THH*** CCT (min): 720 PMF: 0.082 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	42.9	
Total Arsenic	0	0		0	10	10.0	76.6	
Total Barium	0	0		0	2,400	2,400	18,380	
Total Boron	0	0		0	3,100	3,100	23,741	
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	2,298	
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	7,658	
Total Mercury	0	0		0	0.050	0.05	0.38	
Total Nickel	0	0		0	610	610	4,672	
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	1.84	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	23.0	
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	766	
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	43.7	
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	253	
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	521	

Methyl Bromide	0	0		0	100	100.0	766	
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	437	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	766	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	76,585	
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	230	
2,4-Dichlorophenol	0	0		0	10	10.0	76.6	
2,4-Dimethylphenol	0	0		0	100	100.0	766	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	15.3	
2,4-Dinitrophenol	0	0		0	10	10.0	76.6	
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	30,634	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	536	
Anthracene	0	0		0	300	300	2,298	
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	1,532	
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	0.77	
2-Chloronaphthalene	0	0		0	800	800	6,127	
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	7,658	
1,3-Dichlorobenzene	0	0		0	7	7.0	53.6	
1,4-Dichlorobenzene	0	0		0	300	300	2,298	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	4,595	
Dimethyl Phthalate	0	0		0	2,000	2,000	15,317	
Di-n-Butyl Phthalate	0	0		0	20	20.0	153	
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	153	
Fluorene	0	0		0	50	50.0	383	
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	30.6	
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	260	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	76.6	
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	153	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.54	

☑ ***CRL*** CCT (min): 720 PMF: 0.113 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	

Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	1.53	
Benzene	0	0		0	0.58	0.58	14.8	
Bromoform	0	0		0	7	7.0	179	
Carbon Tetrachloride	0	0		0	0.4	0.4	10.2	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	20.4	
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	24.2	
1,2-Dichloroethane	0	0		0	9.9	9.9	253	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	23.0	
1,3-Dichloropropylene	0	0		0	0.27	0.27	6.89	
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	510	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	5.1	
Tetrachloroethylene	0	0		0	10	10.0	255	
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	14.0	
Trichloroethylene	0	0		0	0.6	0.6	15.3	
Vinyl Chloride	0	0		0	0.02	0.02	0.51	
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	0.77	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	38.3	
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	0.003	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.026	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.003	

3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.026	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.26	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.77	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	8.16	
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	3.06	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.003	
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	1.28	
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	1.28	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	1.28	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.77	
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	0.26	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	2.55	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.026	
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	0.018	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.13	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	84.2	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Aluminum	Report	Report	Report	Report	Report	µg/L	943	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	Report	Report	Report	Report	Report	µg/L	19.1	AFC	Discharge Conc > 10% WQBEL (no RP)

☐ ***Other Pollutants without Limits or Monitoring***

E. Temperature Calculations

Flow Data for Thermal Discharge Analysis

Facility: Cleveland-Cliffs Steelton Plant
Permit Number: PA0008303
Stream Name: Susquehanna River
Analyst/Engineer: J.P Kwedza
Stream Q7-10 (cfs): 3227

	Facility Flows				Stream Flows			
	Intake (Stream) (MGD)	Intake (External) (MGD)	Consumptive Loss (MGD)	Discharge Flow (MGD)	PMF	Upstream Stream Flow (cfs)	Adjusted Stream Flow (cfs)	Downstream Stream Flow (cfs)
Jan 1-31	27.1	0	1.3	25.8	0.08	10326.40	843.33	883.24
Feb 1-29	27.1	0	1.3	25.8	0.08	11294.50	922.71	962.62
Mar 1-31	27.1	0	1.3	25.8	0.08	22589.00	1848.86	1888.77
Apr 1-15	27.1	0	1.3	25.8	0.08	30011.10	2457.47	2497.39
Apr 16-30	27.1	0	1.3	25.8	0.08	30011.10	2457.47	2497.39
May 1-15	27.1	0	1.3	25.8	0.08	16457.70	1346.09	1386.01
May 16-31	27.1	0	1.3	25.8	0.08	16457.70	1346.09	1386.01
Jun 1-15	27.1	0	1.3	25.8	0.08	9681.00	790.40	830.32
Jun 16-30	27.1	0	1.3	25.8	0.08	9681.00	790.40	830.32
Jul 1-31	27.1	0	1.3	25.8	0.08	5485.90	446.41	486.32
Aug 1-15	27.1	0	1.3	25.8	0.08	4517.80	367.02	406.93
Aug 16-31	27.1	0	1.3	25.8	0.08	4517.80	367.02	406.93
Sep 1-15	27.1	0	1.3	25.8	0.08	3549.70	287.64	327.55
Sep 16-30	27.1	0	1.3	25.8	0.08	3549.70	287.64	327.55
Oct 1-15	27.1	0	1.3	25.8	0.08	3872.40	314.10	354.01
Oct 16-31	27.1	0	1.3	25.8	0.08	3872.40	314.10	354.01
Nov 1-15	27.1	0	1.3	25.8	0.08	5163.20	419.94	459.86
Nov 16-30	27.1	0	1.3	25.8	0.08	5163.20	419.94	459.86
Dec 1-31	27.1	0	1.3	25.8	0.08	7744.80	631.64	671.55

Please forward all comments to Tom Starosta at 717-787-4317, tstarosta@state.pa.us.
Version 2.0 -- 07/01/2005 Reference: Implementation Guidance for Temperature Criteria, DEP-ID: 391-2000-017
NOTE: The user can only edit fields that are blue.
NOTE: MGD x 1.547 = cfs.

Thermal Discharge Recommended Permit Limits

Warm Water Fishes (WWF) Stream

Facility: **Cleveland-Cliffs Steelton Plant**
Permit Number: PA0008303
Stream: Susquehanna River

	WWF Ambient Stream Temperature (ºF) (Default)	Ambient Stream Temperature (ºF) (Site-specific data)	Target Maximum Stream Temp.[1] (ºF)	**WWF** Daily WLA[2] (Million BTUs/day)	**WWF** Daily WLA[3] (ºF)	at Discharge Flow (MGD)	**PMF**
Jan 1-31	35	0	40	23,803	110.0	25.8	0.08
Feb 1-29	35	0	40	25,943	110.0	25.8	0.08
Mar 1-31	40	0	46	61,083	110.0	25.8	0.08
Apr 1-15	47	0	52	67,305	110.0	25.8	0.08
Apr 16-30	53	0	58	67,305	110.0	25.8	0.08
May 1-15	58	0	64	44,823	110.0	25.8	0.08
May 16-31	62	0	72	74,706	110.0	25.8	0.08
Jun 1-15	67	0	80	58,180	110.0	25.8	0.08
Jun 16-30	71	0	84	58,180	110.0	25.8	0.08
Jul 1-31	75	0	87	31,455	110.0	25.8	0.08
Aug 1-15	74	0	87	28,514	110.0	25.8	0.08
Aug 16-31	74	0	87	28,514	110.0	25.8	0.08
Sep 1-15	71	0	84	22,951	110.0	25.8	0.08
Sep 16-30	65	0	78	22,951	110.0	25.8	0.08
Oct 1-15	60	0	72	22,897	110.0	25.8	0.08
Oct 16-31	54	0	66	22,897	110.0	25.8	0.08
Nov 1-15	48	0	58	24,786	110.0	25.8	0.08
Nov 16-30	42	0	50	19,829	110.0	25.8	0.08
Dec 1-31	37	0	42	18,098	110.0	25.8	0.08

[1] This is the maximum of the WWF WQ criterion or the ambient temperature. The ambient temperature may be either the design (median) temperature for WWF, or the ambient stream temperature based on site-specific data entered by the user. A minimum of 1ºF above ambient stream temperature is allocated.

[2] The WLA expressed in Million BTUs/day is valid for Case 1 scenarios, and disabled for Case 2 scenarios.

[3] The WLA expressed in ºF is valid only if the limit is tied to a daily discharge flow limit (may be used for Case 1 or Case 2). WLAs greater than 110ºF are displayed as 110ºF.

F. TRC Calculations

A	B	C	D	E	F	G

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

3227	= Q stream (cfs)	0.5	= CV Daily
25.8	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	0.012	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	0.082	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)	0	=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 0.329	1.3.2.iii	WLA cfc = 2.073
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.122	5.1d	LTA_cfc = 1.205

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.151	AFC
		INST MAX LIMIT (mg/l) = 0.493	

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

G. TOXCON Analysis Results

Facility:	Cleveland-Cliffs Steelton Plant
NPDES #:	PA0008303
Outfall No:	002
n (Samples/Month):	4
Reviewer/Permit Engineer:	Pascal Kwedza

Parameter Name	Total Copper
Units	mg/l
Detection Limit	0.005
Sample Date	***When entering values below the detection limit, enter "ND" or use the < notation (eg. <0.02)***
11/17/2022	0.0103
11/24/2022	0.0067
12/1/2022	0.00573
5/17/2023	<0.005
5/31/2023	<0.005
6/7/2023	<0.005
6/14/2023	0.0067
6/21/2023	<0.005
6/28/2023	0.007
7/5/2023	0.0062

Facility:	Cleveland-Cliffs Steelton Plant
NPDES #:	PA0008303
Outfall No:	002
n (Samples/Month):	4

Parameter	Distribution Applied	Coefficient of Variation (daily)	Avg. Monthly
Total Copper (mg/l)	Delta-Lognormal	0.2453845	0.0080524

H. Chemical Additives Data

ATTACHMENT 2: CHEMICAL ADDITIVES NOTIFICATION FORM INFORMATION
Cleveland-Cliffs Steelton

Additive Name	Additive Manufacturer	Intended Use	Frequency of Use	Method of Introduction	Treatment Following Introduction	Discharge Point (Outfall)	Design Flow of Discharge (MGD)	Receiving Water Body	Q7,10 Stream Flow (cfs)	Calculated WQBEL (mg/L)	Maximum Usage Rate (lb/day)
Boiler Systems											
Optisperse AP0520	SUEZ	boiler treatment	daily	metering pump	Through 102 lagoons	002	25.8	Susquehanna River	3288	27.2	5856
Sodium Bisulfite	Commodity	Oxygen scavenger	daily	metering pump	Through 102 lagoons	002	25.8	Susquehanna River	3288	9.65	2078
Cortrol IS3000	SUEZ	Oxygen scavenger	back up for sodium bisulfite	metering pump	Through 102 lagoons	002	25.8	Susquehanna River	3288	0.54	116
Solus AP25	SUEZ	boiler treatment	daily	metering pump	Through 102 lagoons	002	25.8	Susquehanna River	3288	153	32941
Cooling Towers and Closed Loop Systems											
Gengard GN8143	SUEZ	corrosion inhibitor	daily	metering pump	Through 102 lagoons	002	25.8	Susquehanna River	3288	8.91	1918
Gengard GN7110	SUEZ	corrosion inhibitor	daily	metering pump	Through 102 lagoons	002	25.8	Susquehanna River	3288	15.6	3359
Gengard GN7112	SUEZ	corrosion inhibitor	daily	metering pump	Through 102 lagoons	002	25.8	Susquehanna River	3288	13.6	2928
Sodium Hypochlorite	Commodity	Disinfection	daily	metering pump	Through 102 lagoons	002	25.8	Susquehanna River	3288	NA: See Note [1]	
Spectrus NX122	SUEZ	Biocide	4x month	manual dose	Through 102 lagoons	002	25.8	Susquehanna River	3288	1.18	254
Spectrus NX1100	SUEZ	Biocide	6x month	manual dose	Through 102 lagoons	002	25.8	Susquehanna River	3288	0.12	26
Corrshield NT4203	SUEZ	corrosion inhibitor	1x month	manual dose	Through 102 lagoons	002	25.8	Susquehanna River	3288	16.3	3509
Gengard GN7004	SUEZ	corrosion inhibitor	daily	metering pump	Through 102 lagoons	002	25.8	Susquehanna River	3288	90.8	19549
Flogard POT6100	SUEZ	dispersant	daily	metering pump	Through 102 lagoons	002	25.8	Susquehanna River	3288	21.9	4715
Depositrol BL5400	SUEZ	dispersant	daily	metering pump	Through 102 lagoons	002	25.8	Susquehanna River	3288	8.02	1727
Inhibitor AZ8104	SUEZ	corrosion inhibitor	2x month	metering pump	Through 102 lagoons	002	25.8	Susquehanna River	3288	2.27	489
Ferroquest FQ7101	SUEZ	cleaner	1x month	metering pump	Through 102 lagoons	002	25.8	Susquehanna River	3288	66.5	14318
Ferroqust FQ7102	SUEZ	cleaner	1x month	metering pump	Through 102 lagoons	002	25.8	Susquehanna River	3288	47.7	10270
Spectrus NX1102	SUEZ	Biocide	daily	metering pump	Through 102 lagoons	002	25.8	Susquehanna River	3288	0.16	34
Spectrus NX1106	SUEZ	Biocide	6x month	manual dose	Through 102 lagoons	002	25.8	Susquehanna River	3288	0.18	39

NB: Solus AP24 has been approved after the permit application was submitted and not shown on the table.