pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0002917**
Facility Type	**Industrial**	APS ID	**589421**
Major / Minor	**Major**	Authorization ID	**640824**

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

Applicant and Facility Information

Applicant Name	**Allegheny Energy Supply Co. LLC**	Facility Name	**Armstrong Power Station**
Applicant Address	341 White Pond Drive	Facility Address	108 Power Plant Road
	Akron, OH 44320		Adrian, PA 16210-3216
Applicant Contact	Douglas Hartman	Facility Contact	Willian Cannon
Applicant Phone	330-819-8447	Facility Phone	724-838-6018
Client ID	95418	Site ID	246058
SIC Code	4911	Municipality	Washington Township
SIC Description	Trans. & Utilities - Electric Services	County	Armstrong
Date Application Received	July 18, 2006	EPA Waived?	No
Date Application Accepted	July 27, 2006	If No, Reason	Major Facility

Purpose of Application: Renewal NPDES Permit Coverage

Summary of Review

The Department received a renewal NPDES application on July 17, 2006 for the Armstrong Power Station. The Department received an updated application on August 7, 2019 to reflect changes to the site since the original application was submitted. In 2011 Allegheny, Inc., the parent holding company of Allegheny Energy Supply Company, LLC (AESC) was purchased by FirstEnergy Corp. The Station was decommissioned effective September 1, 2012. One of the Station's two landfills was filled to capacity in 2007 and has since been closed. A new landfill was permitted and developed but is now itself in the closure process. Closure/remedial activities have occurred at the Station, waters have been redirected, outfalls disabled or eliminated. Only unimpacted stormwater and basement seepage remain at the station. While operational, the Station was served by a clarifier-based process wastewater system. Although there is no longer a need for this system, nor is it actually operating, stormwater continues to be pumped through the clarifier prior to discharge at outfall 009. AESC's current request is to eliminate the possibility of any discharge from Outfall 009 and to allow the water currently discharging from 009 to instead discharge by gravity via Outfall 008.

The site is a decommissioned coal-fired steam -electric generating station and coal combustion residue disposal facilities.

The site had 17 outfalls and six internal monitoring points in the previous permit, but multiple outfalls have been terminated due to the site decommissioning.

Outfall 001 previously discharged once-though, non-contact cooling water and boiler blowdown (via IMP 101) to the Allegheny River but these discharges were permanently terminated as part of the 2012 closure. Outfall 001 is currently reporting as no discharge. Outfall 001 will not be included in the renewed permit.

IMP 101 discharged boiler blowdown but has been terminated due to station closure. IMP 101 will not be included in the renewed permit.

Approve	Deny	Signatures	Date
X		Adam Olesnanik / Project Manager	2/16/2022
X		Michael E. Fifth, P.E. / Environmental Engineer Manager	2/18/2022

Summary of Review

Outfall 002 was terminated in the 2001 permit renewal. Prior to the addition of a clarifier-based process wastewater treatment system in 1994, the station's wastewater was sluiced to an impoundment. Outfall 002 represented the impoundment's discharge to the Allegheny River. Once dewatered, the impoundment was closed, and Outfall 002 was terminated as part of the 2001 permit renewal process. Outfall 002 will not be included in the renewed permit.

Outfall 003 previously discharged treated sanitary wastewater but has been terminated due to station closure. Prior to decommissioning, Armstrong operated an on-site package sewage treatment plant discharging via Outfall 003. This treatment plant has also been decommissioned and no further discharge from Outfall 003 is possible. Currently, this normally unmanned facility has a very minor sanitary wastewater flow to an underground holding vault which is pumped by a licensed contractor and delivered to a licensed sanitary wastewater facility for treatment. Outfall 003 will not be included in the renewed permit.

Outfall 004 was terminated in the 2001 permit renewal. Outfall 004 previously conveyed uncontained stormwater from about six inactive acres of the landfill to an unnamed tributary of the Allegheny River but was eliminated. Outfall 004 will not be included in the renewed permit.

Outfall 005 was terminated in the 2001 permit renewal. Flow was redirected to discharge via Outfall 013. Outfall 005 will not be included in the renewed permit.

Outfall 006 discharges stormwater from the North Yard area and any emergency overflows from the collection basin for the northern end of the former coal pile area (IMP 106). The north coal pile is now fully vegetated. An interceptor ditch collects stormwater runoff from 5 acres of the former coal pile and conveys this runoff to a detention basin. The discharge from the detention basin is normally routed to Outfall 009. The emergency overflow outlet from the detention basin is approximately four feet higher than the pipe leading to the water treatment basin the emergency discharge pipe (IMP 106) contains a valve which is maintained in a closed position.

IMP 106 is the emergency overflow of the former north coal pile detention lagoon.

Outfall 007 discharged intake screen backwash but has been terminated due to station closure. Outfall 007 will not be included in the renewal permit.

Outfall 008 is the emergency overflow of hydrobins area. Currently maintained in a valve-closed condition. AESC requests this renewal terminated Outfall 009 and allow stormwater and basement seepage water collected in wastewater treatment basin to discharge via Outfall 008. In the station's later years, a dry fly ash process was used, and the only possibility of the Hydrobin Overflow discharging was in the event of a wastewater treatment failure. Since station closure, a valve on the line leaving to Outfall 008 has remained closed. If the Outfall 008 valve is opened and the wastewater treatment basin reaches its overflow condition, this overflow would be discharge to the opened leading to outfall 008.

Outfall 009 previously discharged treated wastewater from the site wastewater treatment plant but has been changed to only stormwater due to station closure. Water collected within wastewater treatment basin is presently pumped to no-operated clarifier prior to discharge, then pumped from non-operated clarifier to Outfall 009. AESC requests Outfall 009 be terminated and that contacts of the wastewater treatment basin be allowed to gravity flow to Outfall 008.

Prior to the Armstrong Power Station's closure, wastewaters were directed to the Neutralization Tank prior to being pumped to the clarifier-based process wastewater treatment system installed in 1994. Also installed in 1994 was Outfall 009 to discharge the clarifiers' effluent to the Allegheny River. In the years following closure, only stormwater from the 14-acres of Area A of the site drain to the wastewater treatment basin. Water collected in the wastewater treatment basin is then forwarded by pump to one of the clarifiers of the new unused process wastewater treatment system. This stormwater is allowed to accumulate in the active clarifier and is then pumped from the clarifier to discharge via Outfall 009. Currently, this discharge occurs in a batch mode on vary frequency based on the amount of precipitation, via Outfall 009. As state above, AESC is requesting that the discharge that would normally discharge via Outfall 009 be allow to discharge via Outfall 008, and have Outfall 009 be terminated Aside from some naturally occurring primary settling within the wastewater treatment basin, no other form of treatment is either use or necessary. No water treatment chemicals are employed.

The drop inlets for Outfall 008, relatively near the wastewater treatment basin, were traditionally present to capture overflows from the Station's Hydrobins. In the station's later years, a dry fly ash process was used, and the Hydrobin Overflow could only possibly discharge in the event of a wastewater treatment failure. Since station closure, a valve on the line leading to

Summary of Review

Outfall 008 has remained closed, if the Outfall 008 valve is opened and the wastewater treatment basin fills, this flow will then gravity discharge to the Allegheny River via Outfall 008.

Currently, clean un-impacted stormwater is being pumped from the wastewater treatment basin to the clarifier where no treatment is provided or needed prior to discharge via Outfall 009. Allegheny Energy Supply company, LLC request Department approval, formally within the renewed permit, to cease pumping stormwater from the wastewater treatment basin to the clarifier and hence from the clarifier to Outfall 009. The clarifiers would be breached allowing any rainfall directly into them to drain to the ground. Outfall 009 would cease to discharge, the Wastewater treatment basin would thereafter fill, overflow to the inlet leading to outfall 008, and gravity drain to the Allegheny River.

Based on the above description, the Department has determined that the wastewater that previously discharged via Outfall 009 can be routed and discharged via Outfall 008 and Outfall 009 can be eliminated from the NPDES permit.

Outfall 010 discharges stormwater from the south former coal yard area and any emergency overflows from collection basin for southern end of former coal pile area (IMP 110). The discharge from the detention basin is normally routed to Outfall 009. An interceptor ditch collects stormwater runoff from 3 acres of the former coal pile, now fully vegetated, and conveys this runoff to a detention basin designed to handle the 25-year 24-hour rainfall event.

IMP 110 is the emergency overflow of the former south coal pile detention lagoon. The emergency overflow outlet from the detention basin contains a valve which is maintained in a closed position.

Outfall 011 discharges stormwater from plant Area D.

Outfall 012 discharges stormwater from an inactive area of the combustion coal By-Product (CCB) landfill site.

Outfall 013 discharges stormwater and leachate from north and south surface impoundments of closed CCB landfill site.

Outfall 014 discharge stormwater runoff from drainage area C.

Outfall 015 discharges stormwater and leachate from the newer, lined CCB landfill. Currently the only discharge to Outfall 015 is form IMP 115. IMPs 215 and 315 have not discharged in the past five years, or greater.

IMP 115 is the discharge from the surface impoundment of the newer, lined landfill.

IMP 215 is the discharge from the leachate detention from beneath surface impoundment of newer, lined landfill. There has not been any discharges in the last five year, if ever.

IMP 315 is the subgrade underdrain from beneath surface impoundment of newer, lined landfill. There has been no discharges in at least five years.

Outfall 016 is the emergency overflow of surface impoundment of newer, lined landfill.

Outfall 017 was renamed Outfall 014 during a modification dated May 22, 2000. Outfall 017 will not be included in the renewal permit.

The only remaining outfalls are Outfall 006, 008, 010, 011, 012, 013, 014, 015, and 016. The only remaining IMPs are IMP 106, 110, 115, 215, and 315. All of the site outfalls discharge to the Allegheny River, designated in 25 PA Code Chapter 93 as a Warm Water Fishery.

Major Re-rating:

The site has been rated as a Major Facility however, due to the decommission of the power station the Department has determined that re-rating would be necessary. The NPDES Permit rating worksheet has been conducted and is in Attachment E of this Fact Sheet. Based on the rating worksheet, the site should no longer be considered a Major facility.

Summary of Review

Public Participation

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

Discharge, Receiving Waters and Water Supply Information

Outfall No.	006 (IMP 106)	Design Flow (MGD)	0
Latitude	40º 55' 47"	Longitude	-79º 27' 53"
Quad Name	Templeton	Quad Code	1110
Wastewater Description:	Stormwater		

Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123864265	RMI	55.64
Drainage Area	8830	Yield (cfs/mi^2)	0.23
Q_{7-10} Flow (cfs)	2070	Q_{7-10} Basis	US Army Corps of Engineers
Elevation (ft)	802	Slope (ft/ft)	0.0001
Watershed No.	17-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	

Nearest Downstream Public Water Supply Intake	Kittanning Suburb JT Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2070
PWS RMI	48.32	Distance from Outfall (mi)	7.32

Discharge, Receiving Waters and Water Supply Information

Outfall No.	008	Design Flow (MGD)	0
Latitude	40º 55' 42"	Longitude	-79º 27' 54"
Quad Name	Templeton	Quad Code	1110
Wastewater Description:	Stormwater		

Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123864265	RMI	55.54
Drainage Area	8830	Yield (cfs/mi^2)	0.23
Q_{7-10} Flow (cfs)	2070	Q_{7-10} Basis	US Army Corps of Engineers
Elevation (ft)	802	Slope (ft/ft)	0.0001
Watershed No.	17-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	

Nearest Downstream Public Water Supply Intake	Kittanning Suburb JT Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2070
PWS RMI	48.32	Distance from Outfall (mi)	7.22

Discharge, Receiving Waters and Water Supply Information

Outfall No.	010 (IMP 110)	Design Flow (MGD)	0
Latitude	40º 55' 39"	Longitude	-79º 27' 55"
Quad Name	Templeton	Quad Code	1110
Wastewater Description:	Stormwater		

Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123864265	RMI	55.48
Drainage Area	8830	Yield (cfs/mi^2)	0.23
Q_{7-10} Flow (cfs)	2070	Q_{7-10} Basis	US Army Corps of Engineers
Elevation (ft)	802	Slope (ft/ft)	0.0001
Watershed No.	17-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	

Nearest Downstream Public Water Supply Intake	Kittanning Suburb JT Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2070
PWS RMI	48.32	Distance from Outfall (mi)	7.16

Discharge, Receiving Waters and Water Supply Information

Outfall No.	011	Design Flow (MGD)	0
Latitude	40º 55' 43"	Longitude	-79º 27' 53"
Quad Name	Templeton	Quad Code	1110
Wastewater Description:	Stormwater		

Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123864265	RMI	55.57
Drainage Area	8830	Yield (cfs/mi^2)	0.23
Q_{7-10} Flow (cfs)	2070	Q_{7-10} Basis	US Army Corps of Engineers
Elevation (ft)	802	Slope (ft/ft)	0.0001
Watershed No.	17-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	

Nearest Downstream Public Water Supply Intake	Kittanning Suburb JT Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2070
PWS RMI	48.32	Distance from Outfall (mi)	7.25

Discharge, Receiving Waters and Water Supply Information

Outfall No.	012	Design Flow (MGD)	0
Latitude	40º 55' 55"	Longitude	-79º 27' 53"
Quad Name	Templeton	Quad Code	1110
Wastewater Description:	Stormwater		

Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123864270	RMI	55.82
Drainage Area	8830	Yield (cfs/mi^2)	0.23
Q_{7-10} Flow (cfs)	2070	Q_{7-10} Basis	US Army Corps of Engineers
Elevation (ft)	802	Slope (ft/ft)	0.0001
Watershed No.	17-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	

Nearest Downstream Public Water Supply Intake	Kittanning Suburb JT Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2070
PWS RMI	48.32	Distance from Outfall (mi)	7.5

Discharge, Receiving Waters and Water Supply Information

Outfall No.	013	Design Flow (MGD)	0.042
Latitude	40º 54' 16"	Longitude	-79º 28' 07"
Quad Name	Templeton	Quad Code	1110
Wastewater Description:	IW Process Effluent without ELG (Coal Combustion By-Product Leachate), Stormwater		

Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123864270	RMI	53.83
Drainage Area	8830	Yield (cfs/mi^2)	0.23
Q_{7-10} Flow (cfs)	2070	Q_{7-10} Basis	US Army Corps of Engineers
Elevation (ft)	802	Slope (ft/ft)	0.0001
Watershed No.	17-E	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	

Nearest Downstream Public Water Supply Intake	Kittanning Suburb JT Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2070
PWS RMI	48.32	Distance from Outfall (mi)	5.51

Discharge, Receiving Waters and Water Supply Information

Outfall No.	014	Design Flow (MGD)	0
Latitude	40º 55' 44"	Longitude	-79º 27' 53"
Quad Name	Templeton	Quad Code	1110
Wastewater Description:	Stormwater		

Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123864265	RMI	55.57
Drainage Area	8830	Yield (cfs/mi^2)	0.23
Q_{7-10} Flow (cfs)	2070	Q_{7-10} Basis	US Army Corps of Engineers
Elevation (ft)	802	Slope (ft/ft)	0.0001
Watershed No.	17-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	

Nearest Downstream Public Water Supply Intake	Kittanning Suburb JT Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2070
PWS RMI	48.32	Distance from Outfall (mi)	7.25

Discharge, Receiving Waters and Water Supply Information

Outfall No.	015 (IMP 115, 215, and 315)	Design Flow (MGD)	0.029
Latitude	40º 54' 59"	Longitude	-79º 27' 58"
Quad Name	Templeton	Quad Code	1110
Wastewater Description:	IW Process Effluent without ELG (Coal Combustion By-Product Leachate), Stormwater		

Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123864268	RMI	54.71
Drainage Area	8830	Yield (cfs/mi^2)	0.23
Q_{7-10} Flow (cfs)	2070	Q_{7-10} Basis	US Army Corps of Engineers
Elevation (ft)	802	Slope (ft/ft)	0.0001
Watershed No.	17-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	

Nearest Downstream Public Water Supply Intake	Kittanning Suburb JT Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2070
PWS RMI	48.32	Distance from Outfall (mi)	6.39

Discharge, Receiving Waters and Water Supply Information

Outfall No.	016	Design Flow (MGD)	0
Latitude	40º 55' 03"	Longitude	-79º 28' 09"
Quad Name	Templeton	Quad Code	1110
Wastewater Description:	IW Process Effluent without ELG (Coal Combustion Residual Leachate)		
Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123864270	RMI	54.78
Drainage Area	8830	Yield (cfs/mi^2)	0.23
Q_{7-10} Flow (cfs)	2070	Q_{7-10} Basis	US Army Corps of Engineers
Elevation (ft)	802	Slope (ft/ft)	0.0001
Watershed No.	17-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Nearest Downstream Public Water Supply Intake	Kittanning Suburb JT Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2070
PWS RMI	48.32	Distance from Outfall (mi)	6.46

Development of Effluent Limitations

Outfall No. 006 **Design Flow (MGD)** 0
Latitude 40º 55' 47" **Longitude** -79º 27' 53"
Wastewater Description: Stormwater

Technology-Based Effluent limitations:

Outfall 006 will be subject to PAG-03 General Stormwater Permit conditions as a minimum requirement because the outfall discharges stormwater. The SIC code for the site is 4911 (Steam Electric Generating Facilities) and corresponding appendix that would apply to the facility is Appendix H of the PAG-03. The proposed monitoring requirements are shown in Table 1 below.

Table 1: PAG-03 Appendix (H) Monitoring Requirements

Parameters	Mass (lb/day)		Concentration (mg/l)			
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX
Total Suspended Solids (TSS) (mg/L)	XXX	XXX	XXX	XXX	Report	XXX
Oil and Grease (mg/L)	XXX	XXX	XXX	XXX	Report	XXX
Total Iron (mg/L)	XXX	XXX	XXX	XXX	Report	XXX

Water Quality-Based Effluent limitations:

Water quality analyses are typically performed under low-flow (Q7-10) conditions. Stormwater discharges occur at variable rates and frequencies but not however during Q7-10 conditions. Since the discharges from Outfall 006 are composed entirely of stormwater, a formal water quality analysis cannot be accurately conducted. Accordingly, water quality-based effluent limitations based on water quality analyses are not proposed.

Anti-Backsliding

The previous permit did not have any effluent limitations imposed on Outfall 006.

Final Effluent Limitations

Due to the elimination of process wastewaters; and in accordance with the Department's rationale provided in this Fact Sheet, effluent limitations are not proposed. Monitoring Requirements for Outfall 006 are displayed in Table 2 below. The monitoring frequency imposed at this outfall will reflect what is required in the PAG-03 general permit, semi-annual monitoring. A Part C condition is included in the Draft permit stating that in the event that stormwater discharge concentrations for a parameter exceeds the benchmark values in the Part C condition at the same outfall for two or more consecutive monitoring periods, the permittee shall develop a corrective action plan to reduce the concentrations of the parameters in stormwater discharges.

Table 2: Proposed Effluent Monitoring Requirements at Outfall 006

Parameters	Concentration (mg/l)				Sample Frequency	Sample Type
	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	Report	XXX	1/6 Months	Grab
Total Suspended Solids (TSS) (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab
Oil and Grease (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab
Total Iron (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab

Development of Effluent Limitations

IMP No.	106	**Design Flow (MGD)**	0
Latitude	40º 55' 47"	**Longitude**	-79º 27' 53"

Wastewater Description: Stormwater

Technology-Based Effluent limitations:

IMP 106 will be subject to PAG-03 General Stormwater Permit conditions as a minimum requirement because the outfall discharges stormwater. The SIC code for the site is 4911 (Steam Electric Generating Facilities) and corresponding appendix that would apply to the facility is Appendix H of the PAG-03. The proposed monitoring requirements are shown in Table 3 below.

Table 3: PAG-03 Appendix (H) Monitoring Requirements

Parameters	Mass (lb/day)		Concentration (mg/l)			
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX
Total Suspended Solids (TSS) (mg/L)	XXX	XXX	XXX	XXX	Report	XXX
Oil and Grease (mg/L)	XXX	XXX	XXX	XXX	Report	XXX
Total Iron (mg/L)	XXX	XXX	XXX	XXX	Report	XXX

Water Quality-Based Effluent limitations:

Water quality analyses are typically performed under low-flow (Q7-10) conditions. Stormwater discharges occur at variable rates and frequencies but not however during Q7-10 conditions. Since the discharges from IMP 106 are composed entirely of stormwater, a formal water quality analysis cannot be accurately conducted. Accordingly, water quality-based effluent limitations based on water quality analyses are not proposed.

Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l). The previous permit did not have any effluent limitations imposed on IMP 106; however, the permit did contain the following part C condition. This Part C condition will not be included in the draft NPDES permit because the type of wastewater has changed and now IMP 106 discharges stormwater only.

> Any discharge from Internal Monitoring Points 106 and 110 shall be subject to the limitations set forth for Outfall 009 with the frequency of sampling 1/discharge/day; unless the discharge is caused by precipitation or snowmelt equal to greater than the volume of runoff associated with 10 yeart-24 hour precipitation event. In such situations the discharge shall not be subject to the limitations set forth for Outfall 009 with respect to suspended solids and oil and grease. The exemption from the suspended solids and oil and grease limitations shall be available only if the facilities are designed, constructed and maintained to contain or treat the volume of water which would fall on the areas covered by this permit during a 10-year 24-hour or larger precipitation event. The permittee shall have the burden of demonstrating that the prerequisites to this exemption have been met.

Final Effluent Limitations

Due to the elimination of process wastewaters; and in accordance with the Department's rationale provided in this Fact Sheet, effluent limitations are not proposed. Monitoring Requirements for IMP 106 are displayed in Table 4 below. The monitoring frequency imposed at this IMP will be once per discharge because the discharge is an emergency overflow. A Part C condition is included in the Draft permit stating that in the event that stormwater discharge concentrations for a parameter exceeds the benchmark values in the Part C condition at the same outfall for two or more consecutive monitoring periods, the permittee shall develop a corrective action plan to reduce the concentrations of the parameters in stormwater discharges.

Table 4: Proposed Effluent Monitoring Requirements at IMP 106

Parameters	Concentration (mg/l)				Sample Frequency	Sample Type
	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	Report	XXX	1/ Discharge	Grab
Total Suspended Solids (TSS) (mg/L)	XXX	XXX	Report	XXX	1/ Discharge	Grab
Oil and Grease (mg/L)	XXX	XXX	Report	XXX	1/ Discharge	Grab
Total Iron (mg/L)	XXX	XXX	Report	XXX	1/ Discharge	Grab

Development of Effluent Limitations

Outfall No. 007 **Design Flow (MGD)** 0
Latitude 40º 55' 43" **Longitude** -79º 27' 53"
Wastewater Description: Stormwater

Technology-Based Effluent limitations:

Outfall 007 will be subject to PAG-03 General Stormwater Permit conditions as a minimum requirement because the outfall discharges stormwater. The SIC code for the site is 4911 (Steam Electric Generating Facilities) and corresponding appendix that would apply to the facility is Appendix H of the PAG-03. The proposed monitoring requirements are shown in Table 5 below.

Table 5: PAG-03 Appendix (H) Monitoring Requirements

Parameters	Mass (lb/day)		Concentration (mg/l)			
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX
Total Suspended Solids (TSS) (mg/L)	XXX	XXX	XXX	XXX	Report	XXX
Oil and Grease (mg/L)	XXX	XXX	XXX	XXX	Report	XXX
Total Iron (mg/L)	XXX	XXX	XXX	XXX	Report	XXX

Water Quality-Based Effluent limitations:

Water quality analyses are typically performed under low-flow (Q7-10) conditions. Stormwater discharges occur at variable rates and frequencies but not however during Q7-10 conditions. Since the discharges from Outfall 007 are composed entirely of stormwater, a formal water quality analysis cannot be accurately conducted. Accordingly, water quality-based effluent limitations based on water quality analyses are not proposed.

Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l). The previous limitations for Outfall 007 are displayed below in Table 6. However, the discharge previously consisted of intake screen backwash water and is now Stormwater only; therefore, these limits are no longer applicable to the discharges from Outfall 007.

Table 6: Effluent Limitations in the Current Permit for Outfall 007

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	XXX	XXX	2/month	Estimate
The discharge via this outfall shall consist of intake screen backwash water only. Debris collected from the screens shall not be returned to water ways.					

Final Effluent Limitations

Due to the elimination of process wastewaters; and in accordance with the Department's rationale provided in this Fact Sheet, effluent limitations are not proposed. Monitoring Requirements for Outfall 007 are displayed in Table 7 below. The monitoring frequency imposed at this outfall will reflect what is required in the PAG-03 general permit, semi-annual monitoring. A Part C condition is included in the Draft permit stating that in the event that stormwater discharge concentrations for a parameter exceeds the benchmark values in the Part C condition at the same outfall for two or more consecutive monitoring periods, the permittee shall develop a corrective action plan to reduce the concentrations of the parameters in stormwater discharges.

Table 7: Proposed Effluent Monitoring Requirements at Outfall 007

Parameters	Concentration (mg/l)				Sample Frequency	Sample Type
	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	Report	XXX	1/6 Months	Grab
Total Suspended Solids (TSS) (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab
Oil and Grease (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab
Total Iron (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab

Development of Effluent Limitations

Outfall No. 008 **Design Flow (MGD)** 0
Latitude 40º 55' 42" **Longitude** -79º 27' 54"
Wastewater Description: Stormwater

Technology-Based Effluent limitations:

Outfall 008 will be subject to PAG-03 General Stormwater Permit conditions as a minimum requirement because the outfall discharges stormwater. The SIC code for the site is 4911 (Steam Electric Generating Facilities) and corresponding appendix that would apply to the facility is Appendix H of the PAG-03. The proposed monitoring requirements are shown in Table 8 below.

Table 8: PAG-03 Appendix (H) Monitoring Requirements

Parameters	Mass (lb/day)		Concentration (mg/l)			
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX
Total Suspended Solids (TSS) (mg/L)	XXX	XXX	XXX	XXX	Report	XXX
Oil and Grease (mg/L)	XXX	XXX	XXX	XXX	Report	XXX
Total Iron (mg/L)	XXX	XXX	XXX	XXX	Report	XXX

Water Quality-Based Effluent limitations:

Water quality analyses are typically performed under low-flow (Q7-10) conditions. Stormwater discharges occur at variable rates and frequencies but not however during Q7-10 conditions. Since the discharges from Outfall 008 are composed entirely of stormwater, a formal water quality analysis cannot be accurately conducted. Accordingly, water quality-based effluent limitations based on water quality analyses are not proposed.

Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l). The previous limitations for Outfall 008 are displayed below in Table 9. However, the discharge was previous the emergency overflow from Hydrobin and Decant (Ash Basin) and is now Stormwater only; therefore, these limits are no longer applicable to the discharges from Outfall 008.

Table 9: Effluent Limitations in the Current Permit for Outfall 008

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	XXX	XXX	1/discharge	Estimate
Total Suspended Solids	30	XXX	100	1/discharge	Grab
Oil and Grease	15	XXX	20	1/discharge	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			1/discharge	Grab

Final Effluent Limitations

Due to the elimination of process wastewaters; and in accordance with the Department's rationale provided in this Fact Sheet, effluent limitations are not proposed. Monitoring Requirements for Outfall 008 are displayed in Table 10 below. The monitoring frequency imposed at this outfall will reflect what is required in the PAG-03 general permit, semi-annual monitoring. A Part C condition is included in the Draft permit stating that in the event that stormwater discharge concentrations for a parameter exceeds the benchmark values in the Part C condition at the same outfall for two or more consecutive monitoring periods, the permittee shall develop a corrective action plan to reduce the concentrations of the parameters in stormwater discharges.

Table 10: Proposed Effluent Monitoring Requirements at Outfall 008

Parameters	Concentration (mg/l)				Sample Frequency	Sample Type
	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	Report	XXX	1/6 Months	Grab
Total Suspended Solids (TSS) (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab
Oil and Grease (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab
Total Iron (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab

Development of Effluent Limitations

Outfall No. 010 **Design Flow (MGD)** 0
Latitude 40º 55' 39" **Longitude** -79º 27' 55"
Wastewater Description: Stormwater

Technology-Based Effluent limitations:

Outfall 010 will be subject to PAG-03 General Stormwater Permit conditions as a minimum requirement because the outfall discharges stormwater. The SIC code for the site is 4911 (Steam Electric Generating Facilities) and corresponding appendix that would apply to the facility is Appendix H of the PAG-03. The proposed monitoring requirements are shown in Table 11 below.

Table 11: PAG-03 Appendix (H) Monitoring Requirements

Parameters	Mass (lb/day)		Concentration (mg/l)			
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX
Total Suspended Solids (TSS) (mg/L)	XXX	XXX	XXX	XXX	Report	XXX
Oil and Grease (mg/L)	XXX	XXX	XXX	XXX	Report	XXX
Total Iron (mg/L)	XXX	XXX	XXX	XXX	Report	XXX

Water Quality-Based Effluent limitations:

Water quality analyses are typically performed under low-flow (Q7-10) conditions. Stormwater discharges occur at variable rates and frequencies but not however during Q7-10 conditions. Since the discharges from Outfall 010 are composed entirely of stormwater, a formal water quality analysis cannot be accurately conducted. Accordingly, water quality-based effluent limitations based on water quality analyses are not proposed.

Anti-Backsliding

The previous permit did not have any effluent limitations imposed on Outfall 010.

Final Effluent Limitations

Due to the elimination of process wastewaters; and in accordance with the Department's rationale provided in this Fact Sheet, effluent limitations are not proposed. Monitoring Requirements for Outfall 010 are displayed in Table 12 below. The monitoring frequency imposed at this outfall will reflect what is required in the PAG-03 general permit, semi-annual monitoring. A Part C condition is included in the Draft permit stating that in the event that stormwater discharge concentrations for a parameter exceeds the benchmark values in the Part C condition at the same outfall for two or more consecutive monitoring periods, the permittee shall develop a Corrective Action Plan to reduce the concentrations of the parameters in stormwater discharges.

Table 12: Proposed Effluent Monitoring Requirements at Outfall 010

Parameters	Concentration (mg/l)				Sample Frequency	Sample Type
	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	Report	XXX	1/6 Months	Grab
Total Suspended Solids (TSS) (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab
Oil and Grease (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab
Total Iron (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab

Development of Effluent Limitations

IMP No. 110 **Design Flow (MGD)** 0
Latitude 40º 55' 39" **Longitude** -79º 27' 55"
Wastewater Description: Stormwater

Technology-Based Effluent limitations:

IMP 110 will be subject to PAG-03 General Stormwater Permit conditions as a minimum requirement because the outfall discharges stormwater. The SIC code for the site is 4911 (Steam Electric Generating Facilities) and corresponding appendix that would apply to the facility is Appendix H of the PAG-03. The proposed monitoring requirements are shown in Table 13 below.

Table 13: PAG-03 Appendix (H) Monitoring Requirements

Parameters	Mass (lb/day)		Concentration (mg/l)			
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX
Total Suspended Solids (TSS) (mg/L)	XXX	XXX	XXX	XXX	Report	XXX
Oil and Grease (mg/L)	XXX	XXX	XXX	XXX	Report	XXX
Total Iron (mg/L)	XXX	XXX	XXX	XXX	Report	XXX

Water Quality-Based Effluent limitations:

Water quality analyses are typically performed under low-flow (Q7-10) conditions. Stormwater discharges occur at variable rates and frequencies but not however during Q7-10 conditions. Since the discharges from IMP 110 are composed entirely of stormwater, a formal water quality analysis cannot be accurately conducted. Accordingly, water quality-based effluent limitations based on water quality analyses are not proposed.

Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l). The previous permit did not have any effluent limitations imposed on IMP 110; however, the permit did contain the following part C condition. This Part C condition will not be included in the draft NPDES permit because the type of wastewater has changed and now IMP 110 only discharges stormwater.

> Any discharge from Internal Monitoring Points 106 and 110 shall be subject to the limitations set forth for Outfall 009 with the frequency of sampling 1/discharge/day; unless the discharge is caused by precipitation or snowmelt equal to greater than the volume of runoff associated with 10 yeart-24 hour precipitation event. In such situations the discharge shall not be subject to the limitations set forth for Outfall 009 with respect to suspended solids and oil and grease. The exemption form the suspended solids and oil and grease limitations shall be available only if the facilities are designed, constructed and maintained to contain or treat the volume of water which would fall on the areas covered by this permit during a 10-year 24-hour or larger precipitation event. The permittee shall have the burden of demonstrating that the prerequisites to this exemption have been met.

Final Effluent Limitations

Due to the elimination of process wastewaters; and in accordance with the Department's rationale provided in this Fact Sheet, effluent limitations are not proposed. Monitoring Requirements for IMP 110 are displayed in Table 14 below. The monitoring frequency imposed at this IMP will be once per discharge because the discharge is an emergency overflow. A Part C condition is included in the Draft permit stating that in the event that stormwater discharge concentrations for a parameter exceeds the benchmark values in the Part C condition at the same outfall for two or more consecutive monitoring periods, the permittee shall develop a corrective action plan to reduce the concentrations of the parameters in stormwater discharges.

Table 14: Proposed Effluent Monitoring Requirements at IMP 110

Parameters	Concentration (mg/l)				Sample Frequency	Sample Type
	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	Report	XXX	1/6 Months	Grab
Total Suspended Solids (TSS) (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab
Oil and Grease (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab
Total Iron (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab

Development of Effluent Limitations

Outfall No. 011 **Design Flow (MGD)** 0
Latitude 40º 55' 43" **Longitude** -79º 27' 53"
Wastewater Description: Stormwater

Technology-Based Effluent limitations:

Outfall 011 will be subject to PAG-03 General Stormwater Permit conditions as a minimum requirement because the outfall discharges stormwater. The SIC code for the site is 4911 (Steam Electric Generating Facilities) and corresponding appendix that would apply to the facility is Appendix H of the PAG-03. The proposed monitoring requirements are shown in Table 15 below.

Table 15: PAG-03 Appendix (H) Monitoring Requirements

Parameters	Mass (lb/day)		Concentration (mg/l)			
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX
Total Suspended Solids (TSS) (mg/L)	XXX	XXX	XXX	XXX	Report	XXX
Oil and Grease (mg/L)	XXX	XXX	XXX	XXX	Report	XXX
Total Iron (mg/L)	XXX	XXX	XXX	XXX	Report	XXX

Water Quality-Based Effluent limitations:

Water quality analyses are typically performed under low-flow (Q7-10) conditions. Stormwater discharges occur at variable rates and frequencies but not however during Q7-10 conditions. Since the discharges from Outfall 011 are composed entirely of stormwater, a formal water quality analysis cannot be accurately conducted. Accordingly, water quality-based effluent limitations based on water quality analyses are not proposed.

Anti-Backsliding

The previous permit did not have any effluent limitations imposed on Outfall 011.

Final Effluent Limitations

Due to the elimination of process wastewaters; and in accordance with the Department's rationale provided in this Fact Sheet, effluent limitations are not proposed. Monitoring Requirements for Outfall 011 are displayed in Table 16 below. The monitoring frequency imposed at this outfall will reflect what is required in the PAG-03 general permit, semi-annual monitoring. A Part C condition is included in the Draft permit stating that in the event that stormwater discharge concentrations for a parameter exceeds the benchmark values in the Part C condition at the same outfall for two or more consecutive monitoring periods, the permittee shall develop a corrective action plan to reduce the concentrations of the parameters in stormwater discharges.

Table 16: Proposed Effluent Monitoring Requirements at Outfall 011

Parameters	Concentration (mg/l)				Sample Frequency	Sample Type
	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	Report	XXX	1/6 Months	Grab
Total Suspended Solids (TSS) (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab
Oil and Grease (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab
Total Iron (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab

Development of Effluent Limitations

Outfall No. 012 **Design Flow (MGD)** 0
Latitude 40º 54' 55" **Longitude** -79º 28' 12"
Wastewater Description: Stormwater

Technology-Based Effluent limitations:

Outfall 012 will be subject to PAG-03 General Stormwater Permit conditions as a minimum requirement because the outfall discharges stormwater. The SIC code for the site is 4911 (Steam Electric Generating Facilities) and corresponding appendix that would apply to the facility is Appendix H of the PAG-03. The proposed monitoring requirements are shown in Table 17 below.

Table 17: PAG-03 Appendix (H) Monitoring Requirements

Parameters	Mass (lb/day)		Concentration (mg/l)			
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX
Total Suspended Solids (TSS) (mg/L)	XXX	XXX	XXX	XXX	Report	XXX
Oil and Grease (mg/L)	XXX	XXX	XXX	XXX	Report	XXX
Total Iron (mg/L)	XXX	XXX	XXX	XXX	Report	XXX

Water Quality-Based Effluent limitations:

Water quality analyses are typically performed under low-flow (Q7-10) conditions. Stormwater discharges occur at variable rates and frequencies but not however during Q7-10 conditions. Since the discharges from Outfall 012 are composed entirely of stormwater, a formal water quality analysis cannot be accurately conducted. Accordingly, water quality-based effluent limitations based on water quality analyses are not proposed.

Anti-Backsliding

The previous permit did not have any effluent limitations imposed on Outfall 012.

Final Effluent Limitations

Due to the elimination of process wastewaters; and in accordance with the Department's rationale provided in this Fact Sheet, effluent limitations are not proposed. Monitoring Requirements for Outfall 012 are displayed in Table 18 below. The monitoring frequency imposed at this outfall will reflect what is required in the PAG-03 general permit, semi-annual monitoring. A Part C condition is included in the Draft permit stating that in the event that stormwater discharge concentrations for a parameter exceeds the benchmark values in the Part C condition at the same outfall for two or more consecutive monitoring periods, the permittee shall develop and submit to the Department a Corrective Action Plan to reduce the concentrations of the parameters in stormwater discharges.

Table 18: Proposed Effluent Monitoring Requirements at Outfall 012

Parameters	Concentration (mg/l)				Sample Frequency	Sample Type
	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	Report	XXX	1/6 Months	Grab
Total Suspended Solids (TSS) (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab
Oil and Grease (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab
Total Iron (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab

Development of Effluent Limitations

Outfall No. 013 **Design Flow (MGD)** 0.042
Latitude 40º 54' 16" **Longitude** -79º 28' 07"
Wastewater Description: IW Process Effluent without ELG (Coal Combustion Biproduct Leachate), Stormwater

Technology-Based Effluent limitations:

Regulatory Effluent Standards and Monitoring Requirements

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

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code § 95.2(1).

Table 19: Regulatory Effluent Standards and Monitoring Requirements for Outfall 013

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
pH	Not less than 6.0 nor greater than 9.0		S.U.

Water Quality-Based Effluent limitations:

Toxics Management Spread Sheet

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

Reasonable Potential Analysis and WQBEL Development for Outfall 013

Discharges from Outfall 013 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are entered into the Toxics Management Spread Sheet. The maximum reported value of the parameters from the application form or from previous DMRs is used as the input concentration in the Toxics Management Spread Sheet. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion are considered to be pollutants of concern. [This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion]. The Toxics Management Spread Sheet is run with the discharge and receiving stream characteristics shown in Table 20. For IW discharges, the design flow used in modeling is the average flow during production or operation taken from the permit application. Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis. All the parameters are evaluated using the model to determine the water quality-based effluent limits applicable to the discharge and the receiving stream. The spreadsheet then compares the reported discharge concentrations to the calculated water quality-based effluent limitations to determine if a reasonable potential exists to exceed the calculated WQBELs. Effluent limitations are established in the draft permit where a pollutant's maximum reported discharge concentration equals or exceeds 50% of the WQBEL. For non-conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 25% - 50% of the WQBEL. For conservative pollutants, monitoring

requirements are established where the maximum reported concentration is between 10% - 50% of the WQBEL. The information described above including the maximum reported discharge concentrations, the most stringent water quality criteria, the pollutant-of-concern (reasonable potential) determinations, the calculated WQBELs, and the WQBEL/monitoring recommendations are displayed in the Toxics Management Spread Sheet in Attachment B of this Fact Sheet. The Toxics Management Spread Sheet did not recommend any WQBELs for Outfall 013.

Table 20: TMS Inputs for Outfall 013

Parameter	**Value**
River Mile Index	53.83
Discharge Flow (MGD)	0.042
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	8,830
Q_{7-10} (cfs)	2070
Low-flow yield (cfs/mi^2)	0.23
Elevation (ft)	802
Slope	0.0001

Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l). The previous limitations for Outfall 013 are displayed below in Table 21.

Table 21: Effluent Limitations in the Current Permit for Outfall 013

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	XXX	XXX	2/Month	Estimate
Total Suspended Solids	30	100	XXX	2/Month	24-hr composite
Total Iron	3.5	7.0	XXX	2/Month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			2/Month	Grab

Final Effluent Limitations

The proposed effluent limitations and monitoring requirements for Outfall 013 are shown below in Table 22. The limits are the most stringent values from the above limitation analysis.

Table 22: Proposed Effluent Limitations for Outfall 013

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	XXX	XXX	2/Month	Estimate
Total Suspended Solids	30	100	XXX	2/Month	24-hr composite
Total Iron	3.5	7.0	XXX	2/Month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			2/Month	Grab

Development of Effluent Limitations

Outfall No. 014 **Design Flow (MGD)** 0
Latitude 40º 55' 44" **Longitude** -79º 27' 53"
Wastewater Description: Stormwater

Technology-Based Effluent limitations:

Outfall 014 will be subject to PAG-03 General Stormwater Permit conditions as a minimum requirement because the outfall discharges stormwater. The SIC code for the site is 4911 (Steam Electric Generating Facilities) and corresponding appendix that would apply to the facility is Appendix H of the PAG-03. The proposed monitoring requirements are shown in Table 23 below.

Table 23: PAG-03 Appendix (H) Monitoring Requirements

Parameters	Mass (lb/day)		Concentration (mg/l)			
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX
Total Suspended Solids (TSS) (mg/L)	XXX	XXX	XXX	XXX	Report	XXX
Oil and Grease (mg/L)	XXX	XXX	XXX	XXX	Report	XXX
Total Iron (mg/L)	XXX	XXX	XXX	XXX	Report	XXX

Water Quality-Based Effluent limitations:

Water quality analyses are typically performed under low-flow (Q7-10) conditions. Stormwater discharges occur at variable rates and frequencies but not however during Q7-10 conditions. Since the discharges from Outfall 014 are composed entirely of stormwater, a formal water quality analysis cannot be accurately conducted. Accordingly, water quality-based effluent limitations based on water quality analyses are not proposed.

Anti-Backsliding

The previous permit did not have any effluent limitations imposed on Outfall 014.

Final Effluent Limitations

Due to the elimination of process wastewaters; and in accordance with the Department's rationale provided in this Fact Sheet, effluent limitations are not proposed. Monitoring Requirements for Outfall 014 are displayed in Table 24 below. The monitoring frequency imposed at this outfall will reflect what is required in the PAG-03 general permit, semi-annual monitoring. A Part C condition is included in the Draft permit stating that in the event that stormwater discharge concentrations for a parameter exceeds the benchmark values in the Part C condition at the same outfall for two or more consecutive monitoring periods, the permittee shall develop and submit to the Department a Corrective Action Plan to reduce the concentrations of the parameters in stormwater discharges.

Table 24: Proposed Effluent Monitoring Requirements at Outfall 014

Parameters	Concentration (mg/l)				Sample Frequency	Sample Type
	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	Report	XXX	1/6 Months	Grab
Total Suspended Solids (TSS) (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab
Oil and Grease (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab
Total Iron (mg/L)	XXX	XXX	Report	XXX	1/6 Months	Grab

Development of Effluent Limitations

Outfall No.	015	**Design Flow (MGD)**	0.029
Latitude	40º 54' 59"	**Longitude**	-79º 27' 58"

Wastewater Description: IW Process Effluent without ELG (Coal Combustion By-Product Leachate), Stormwater

This outfall discharges wastewater from IMPs 115, 215, and 315. No limitation will be directly imposed at Outfall 015. Specific permit limits and monitoring requirements for the discharges to Outfall 015 are imposed at the Internal Monitoring Points.

Development of Effluent Limitations

IMP No.	115	**Design Flow (MGD)**	0.029
Latitude	40º 54' 59"	**Longitude**	-79º 27' 58"

Wastewater Description: Coal Combustion By-Product Leachate surface impoundment discharge

Technology-Based Effluent limitations:

Regulatory Effluent Standards and Monitoring Requirements

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

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code § 95.2(1).

Table 25: Regulatory Effluent Standards and Monitoring Requirements for IMP 115

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
pH	Not less than 6.0 nor greater than 9.0		S.U.

Water Quality-Based Effluent limitations:

Toxics Management Spread Sheet

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

Reasonable Potential Analysis and WQBEL Development for IMP 115

Discharges from Outfall 013 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are entered into the Toxics Management Spread Sheet. The maximum reported value of the parameters from the application form or from previous DMRs is used as the input concentration in the Toxics Management Spread Sheet. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion are considered to be pollutants of concern. [This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion]. The Toxics Management Spread Sheet is run with the discharge and receiving stream characteristics shown in Table 26. For IW discharges, the design flow used in modeling is the average flow during production or operation taken from the permit application. Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis. All the parameters are evaluated using the model to determine the water quality-based effluent limits applicable to the discharge and the receiving stream. The spreadsheet then compares the reported discharge concentrations to the calculated water quality-based effluent limitations to determine if a reasonable potential exists to exceed the calculated WQBELs. Effluent limitations are established in the draft permit where a pollutant’s maximum reported discharge concentration equals or exceeds 50% of the WQBEL. For non-conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 25% - 50% of the WQBEL. For conservative pollutants, monitoring

requirements are established where the maximum reported concentration is between 10% - 50% of the WQBEL. The information described above including the maximum reported discharge concentrations, the most stringent water quality criteria, the pollutant-of-concern (reasonable potential) determinations, the calculated WQBELs, and the WQBEL/monitoring recommendations are displayed in the Toxics Management Spread Sheet in Attachment C of this Fact Sheet. The Toxics Management Spread Sheet did not recommend any WQBELs for IMP 115.

Table 26: TMS Inputs for IMP 115

Parameter	**Value**
River Mile Index	54.71
Discharge Flow (MGD)	0.029
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	8830
Q_{7-10} (cfs)	2070
Low-flow yield (cfs/mi^2)	0.23
Elevation (ft)	802
Slope	0.0001

Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l). The previous limitations for IMP 115 are displayed below in Table 27.

Table 27: Effluent Limitations in the Current Permit for IMP 115

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	XXX	XXX	2/month	Estimate
Total Suspended Solids	30	100	XXX	2/month	24-hr Composite
Total Iron	3.5	7.0	XXX	2/month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			2/month	Grab

Final Effluent Limitations

The proposed effluent limitations and monitoring requirements for IMP 115 are shown below in Table 28. The limits are the most stringent values from the above limitation analysis.

Table 28: Proposed Effluent Limitations for IMP 115

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	XXX	XXX	2/Month	Estimate
Total Suspended Solids	30	100	XXX	2/Month	24-hr composite
Total Iron	3.5	7.0	XXX	2/Month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			2/Month	Grab

Development of Effluent Limitations

IMP No. 215 **Design Flow (MGD)** 0
Latitude 40º 54' 59" **Longitude** -79º 27' 58"
Wastewater Description: Coal Combustion By-Product Leachate surface impoundment detection zone

Technology-Based Effluent limitations:

Regulatory Effluent Standards and Monitoring Requirements

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

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code § 95.2(1).

Table 29: Regulatory Effluent Standards and Monitoring Requirements for IMP 215

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
pH	Not less than 6.0 nor greater than 9.0		S.U.

Water Quality-Based Effluent limitations:

The discharge from IMP 215 is not expected to occur frequently, and IMP 215 has not discharge in the past five years. Because the discharge is so infrequent, no water quality analysis cannot be conducted for this discharge.

Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l). The previous limitations for IMP 215 are displayed below in Table 30.

Table 30: Effluent Limitations in the Current Permit for IMP 115

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	XXX	XXX	2/month	Estimate
Total Suspended Solids	30	100	XXX	2/month	24-hr Composite
Total Iron	3.5	7.0	XXX	2/month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			2/month	Grab

Proposed Effluent Limitations:

IMP 215 received the discharge from the Coal Combustion By-Product Leachate Surface Impoundment detection zone. The wastewater that would discharge via IMP 215 is the wastewater that would normally discharge via Outfall 015, especially IMP 115. Because the wastewater that would discharge via IMP 215 is the same as IMP 115, the limitations imposed on IMP 215 will be the same as IMP 115. These are the same limitations currently imposed at IMP 115. The proposed limitation for IMP 215 are displayed below in Table 31.

Table 31: Effluent Limitations in the Current Permit for IMP 215

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	XXX	XXX	2/Month	Estimate
Total Suspended Solids	35	100	XXX	2/Month	Grab
Total Iron	3.5	7.0	XXX	2/Month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			2/Month	Grab

Development of Effluent Limitations

IMP No. 315 **Design Flow (MGD)** 0
Latitude 40º 54' 59" **Longitude** -79º 27' 58"
Wastewater Description: Coal Combustion By-Product Leachate surface impoundment underdrain

Technology-Based Effluent limitations:

Regulatory Effluent Standards and Monitoring Requirements

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

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code § 95.2(1).

Table 32: Regulatory Effluent Standards and Monitoring Requirements for IMP 315

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
pH	Not less than 6.0 nor greater than 9.0		S.U.

Water Quality-Based Effluent limitations:

The discharge from IMP 315 is not expected to occur frequently, and IMP 315 has not discharge in the past five years. Because the discharge is so infrequent, no water quality analysis cannot be conducted for this discharge.

Anti-Backsliding

The previous permit did not have any effluent limitations imposed on IMP 315.

Proposed Effluent Limitations:

IMP 315 discharges from the Coal Combustion By-Product Leachate Surface Impoundment underdrain. IMP 315 has not discharged in the past five year but if it would, the discharge would be uncontaminated groundwater. The previous permit did not have any effluent limitations imposed on IMP 315. However, to ensure no leachate is being discharged via IMP 315, the Department is proposing to impose the same limitations as IMP 115 to IMP 315. If the discharge from IMP 315 would contain leachate, the wastewater that would discharge would be similar to the discharge that would normally discharge via IMP 115. The proposed limitation for IMP 315 are displayed below in Table 33.

Table 33: Effluent Limitations in the Current Permit for IMP 315

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	XXX	XXX	2/Month	Estimate
Total Suspended Solids	35	100	XXX	2/Month	Grab
Total Iron	3.5	7.0	XXX	2/Month	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			2/Month	Grab

Development of Effluent Limitations

Outfall No. 016 **Design Flow (MGD)** 0
Latitude 40º 55' 3" **Longitude** -79º 28' 9"
Wastewater Description: Coal Combustion By-Product Leachate Surface impoundment emergency overflow

Technology-Based Effluent limitations:

Regulatory Effluent Standards and Monitoring Requirements

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

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code § 95.2(1).

Table 34: Regulatory Effluent Standards and Monitoring Requirements for Outfall 016

Parameter	Monthly Average	Daily Maximum	Units
Flow	Monitor and Report		MGD
pH	Not less than 6.0 nor greater than 9.0		S.U.

Water Quality-Based Effluent limitations:

The discharge from Outfall 016 is not expected to occur frequently, and Outfall 016 has not discharge in the past five years. Because the discharge is so infrequent, no water quality analysis cannot be conducted for this discharge.

Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l). The previous limitations for Outfall 016 are displayed below in Table 35.

Table 35: Effluent Limitations in the Current Permit for Outfall 016

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	XXX	XXX	2/Discharge	Estimate
Total Suspended Solids	30	100	XXX	2/Discharge	Grab
Total Iron	3.5	7.0	XXX	2/Discharge	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			2/Discharge	Grab

Proposed Effluent Limitations:

Outfall 016 received the emergency overflow discharge from the Coal Combustion By-Product Leachate Surface Impoundment. The wastewater that would discharge via Outfall 016 is the wastewater that would normally discharge via Outfall 015, specially IMP 115. Because the wastewater that would discharge via Outfall 016 is the same as IMP 115, the limitations imposed on Outfall 016 will be the same as IMP 115, except for a sample frequency of twice per discharge. These are the same limitation currently imposed at Outfall 016. The proposed limitation for Outfall 016 are displayed below in Table 36.

Table 36: Effluent Limitations in the Current Permit for Outfall 016

Parameter	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	XXX	XXX	2/Discharge	Estimate
Total Suspended Solids	35	100	XXX	2/Discharge	Grab
Total Iron	3.5	7.0	XXX	2/Discharge	Grab
pH (S.U.)	Not less than 6.0 nor greater than 9.0			2/Discharge	Grab

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment **B & C**)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 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:
☐	Other:

Attachments

Attachment A: StreamStats Report

Attachment B: Outfall 013 Toxics Management Spreadsheet

Attachment C: Outfall 015 Toxics Management Spreadsheet

Attachment D: Site Line Diagram

Attachment E: NPDES Permit Rating Work

Attachment A:

StreamStats Report

StreamStats Report

Region ID: PA
Workspace ID: PA20220201162531222000
Clicked Point (Latitude, Longitude): 40.92953, -79.46325
Time: 2022-02-01 11:25:56 -0500

Base Flow Statistics Parameters [100.0 Percent (8830 square miles) Statewide Mean and Base Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	8830	square miles	2.26	1720
PRECIP	Mean Annual Precipitation	44	inches	33.1	50.4
CARBON	Percent Carbonate	0	percent	0	99
FOREST	Percent Forest	75.3533	percent	5.1	100
URBAN	Percent Urban	1.7307	percent	0	89

Attachment B:

Outfall 013 Toxics Management Spreadsheet

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Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Armstrong Power Station** NPDES Permit No.: **PA0002917** Outfall No.: **013**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Coal Combustion Biproduct Landfill Leach**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.042	969	7						

					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		1765									
	Chloride (PWS)	mg/L		17.3									
	Bromide	mg/L		3.7									
	Sulfate (PWS)	mg/L		933									
	Fluoride (PWS)	mg/L		0.115									
Group 2	Total Aluminum	µg/L		259									
	Total Antimony	µg/L		1.142									
	Total Arsenic	µg/L		12.557									
	Total Barium	µg/L		30.152									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L		7070									
	Total Cadmium	µg/L	<	0.9									
	Total Chromium (III)	µg/L	<	4									
	Hexavalent Chromium	µg/L	<	20									
	Total Cobalt	µg/L	<	1									
	Total Copper	µg/L	<	100									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	10									
	Dissolved Iron	µg/L		50									
	Total Iron	µg/L		457									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		150									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		6.018									
	Total Phenols (Phenolics) (PWS)	µg/L	<	5									
	Total Selenium	µg/L	<	100									
	Total Silver	µg/L	<	5									
	Total Thallium	µg/L		1.213									
	Total Zinc	µg/L	<	500									
	Total Molybdenum	µg/L		650.397									
	Acrolein	µg/L	<	2									
	Acrylamide	µg/L	<	1000									
	Acrylonitrile	µg/L	<	1									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.5									

Group 3	Carbon Tetrachloride	µg/L	<	0.5										
	Chlorobenzene	µg/L		0.5										
	Chlorodibromomethane	µg/L	<	0.5										
	Chloroethane	µg/L	<	0.5										
	2-Chloroethyl Vinyl Ether	µg/L	<	1										
	Chloroform	µg/L	<	0.5										
	Dichlorobromomethane	µg/L	<	0.5										
	1,1-Dichloroethane	µg/L	<	0.5										
	1,2-Dichloroethane	µg/L	<	0.5										
	1,1-Dichloroethylene	µg/L	<	0.5										
	1,2-Dichloropropane	µg/L	<	0.5										
	1,3-Dichloropropylene	µg/L	<	0.5										
	1,4-Dioxane	µg/L	<	1										
	Ethylbenzene	µg/L	<	0.5										
	Methyl Bromide	µg/L	<	0.5										
	Methyl Chloride	µg/L	<	0.5										
	Methylene Chloride	µg/L	<	0.5										
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5										
	Tetrachloroethylene	µg/L	<	0.5										
	Toluene	µg/L	<	0.5										
	1,2-trans-Dichloroethylene	µg/L	<	0.5										
	1,1,1-Trichloroethane	µg/L	<	0.5										
	1,1,2-Trichloroethane	µg/L	<	0.5										
	Trichloroethylene	µg/L	<	0.5										
	Vinyl Chloride	µg/L	<	0.5										
Group 4	2-Chlorophenol	µg/L	<	0.5										
	2,4-Dichlorophenol	µg/L	<	0.5										
	2,4-Dimethylphenol	µg/L	<	0.5										
	4,6-Dinitro-o-Cresol	µg/L	<											
	2,4-Dinitrophenol	µg/L	<	2										
	2-Nitrophenol	µg/L	<	1										
	4-Nitrophenol	µg/L	<	1										
	p-Chloro-m-Cresol	µg/L	<	0.2										
	Pentachlorophenol	µg/L	<	1										
	Phenol	µg/L	<	1										
	2,4,6-Trichlorophenol	µg/L	<	0.5										
Group 5	Acenaphthene	µg/L	<	0.2										
	Acenaphthylene	µg/L	<	0.5										
	Anthracene	µg/L	<	0.2										
	Benzidine	µg/L	<	0.5										
	Benzo(a)Anthracene	µg/L	<	0.2										
	Benzo(a)Pyrene	µg/L	<	0.2										
	3,4-Benzofluoranthene	µg/L	<	0.2										
	Benzo(ghi)Perylene	µg/L	<	0.2										
	Benzo(k)Fluoranthene	µg/L	<	0.2										
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.2										
	Bis(2-Chloroethyl)Ether	µg/L	<	0.2										
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.2										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	5										
	4-Bromophenyl Phenyl Ether	µg/L	<	0.2										
	Butyl Benzyl Phthalate	µg/L	<	2										
	2-Chloronaphthalene	µg/L	<	0.2										
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.2										
	Chrysene	µg/L	<	0.2										
	Dibenzo(a,h)Anthrancene	µg/L	<	0.2										
	1,2-Dichlorobenzene	µg/L	<	0.2										
	1,3-Dichlorobenzene	µg/L	<	0.2										
	1,4-Dichlorobenzene	µg/L	<	0.2										
	3,3-Dichlorobenzidine	µg/L	<	0.5										
	Diethyl Phthalate	µg/L	<	2										
	Dimethyl Phthalate	µg/L	<	2										
	Di-n-Butyl Phthalate	µg/L	<	2										
	2,4-Dinitrotoluene	µg/L	<	0.5										

	2,6-Dinitrotoluene	µg/L	<	0.5										
	Di-n-Octyl Phthalate	µg/L	<	2										
	1,2-Diphenylhydrazine	µg/L	<	0.2										
	Fluoranthene	µg/L	<	0.2										
	Fluorene	µg/L	<	0.2										
	Hexachlorobenzene	µg/L	<	0.2										
	Hexachlorobutadiene	µg/L	<	0.2										
	Hexachlorocyclopentadiene	µg/L	<	0.5										
	Hexachloroethane	µg/L	<	0.2										
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.2										
	Isophorone	µg/L	<	0.5										
	Naphthalene	µg/L	<	0.2										
	Nitrobenzene	µg/L	<	0.5										
	n-Nitrosodimethylamine	µg/L	<	0.2										
	n-Nitrosodi-n-Propylamine	µg/L	<	0.2										
	n-Nitrosodiphenylamine	µg/L	<	0.2										
	Phenanthrene	µg/L	<	0.2										
	Pyrene	µg/L	<	0.2										
	1,2,4-Trichlorobenzene	µg/L	<	0.2										
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	<	0.25										
	PCB-1221	µg/L	<	0.25										
	PCB-1232	µg/L	<	0.25										
	PCB-1242	µg/L	<	0.25										
	PCB-1248	µg/L	<	0.25										
	PCB-1254	µg/L	<	0.25										
	PCB-1260	µg/L	<	0.25										
	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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Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Armstrong Power Station, NPDES Permit No. PA0002917, Outfall 013

Instructions | Discharge | Stream

Receiving Surface Water Name: Allegheny River

No. Reaches to Model: 1

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	042122	53.83	802	8830			Yes
End of Reach 1	042122	53.13	801	8831			Yes

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

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	53.83	0.1	2070			1674	20					100	7		
End of Reach 1	53.13	0.1	2070			1208	20								

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	53.83														
End of Reach 1	53.13														

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Toxics Management Spreadsheet
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Model Results

Armstrong Power Station, NPDES Permit No. PA0002917, Outfall 013

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.076 Analysis Hardness (mg/l): 100.36 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
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	1,811,971	
Total Antimony	0	0		0	1,100	1,100	2,657,558	
Total Arsenic	0	0		0	340	340	821,427	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	50,735,197	
Total Boron	0	0		0	8,100	8,100	19,569,290	
Total Cadmium	0	0		0	2.021	2.14	5,173	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	571.441	1,808	4,368,926	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	39,364	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	229,516	
Total Copper	0	0		0	13.485	14.0	33,936	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	64.834	82.0	198,155	Chem Translator of 0.79 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	3,979	Chem Translator of 0.85 applied
Total Nickel	0	0		0	469.660	471	1,136,955	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	3.237	3.81	9,200	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	157,038	
Total Zinc	0	0		0	117.537	120	290,354	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	7,248	

Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	650	650	1,570,375	
Benzene	0	0		0	640	640	1,546,216	
Bromoform	0	0		0	1,800	1,800	4,348,731	
Carbon Tetrachloride	0	0		0	2,800	2,800	6,764,693	
Chlorobenzene	0	0		0	1,200	1,200	2,899,154	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	43,487,312	
Chloroform	0	0		0	1,900	1,900	4,590,327	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	36,239,426	
1,1-Dichloroethylene	0	0		0	7,500	7,500	18,119,713	
1,2-Dichloropropane	0	0		0	11,000	11,000	26,575,579	
1,3-Dichloropropylene	0	0		0	310	310	748,948	
Ethylbenzene	0	0		0	2,900	2,900	7,006,289	
Methyl Bromide	0	0		0	550	550	1,328,779	
Methyl Chloride	0	0		0	28,000	28,000	67,646,929	
Methylene Chloride	0	0		0	12,000	12,000	28,991,541	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	2,415,962	
Tetrachloroethylene	0	0		0	700	700	1,691,173	
Toluene	0	0		0	1,700	1,700	4,107,135	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	16,428,540	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	7,247,885	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	8,214,270	
Trichloroethylene	0	0		0	2,300	2,300	5,556,712	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	1,352,939	
2,4-Dichlorophenol	0	0		0	1,700	1,700	4,107,135	
2,4-Dimethylphenol	0	0		0	660	660	1,594,535	
2,4-Dinitrophenol	0	0		0	660	660	1,594,535	
2-Nitrophenol	0	0		0	8,000	8,000	19,327,694	
4-Nitrophenol	0	0		0	2,300	2,300	5,556,712	
p-Chloro-m-Cresol	0	0		0	160	160	386,554	
Pentachlorophenol	0	0		0	8.723	8.72	21,075	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	1,111,342	
Acenaphthene	0	0		0	83	83.0	200,525	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	724,789	
Benzo(a)Anthracene	0	0		0	0.5	0.5	1,208	
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	72,478,853	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	10,871,828	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	652,310	
Butyl Benzyl Phthalate	0	0		0	140	140	338,235	

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	1,981,089	
1,3-Dichlorobenzene	0	0		0	350	350	845,587	
1,4-Dichlorobenzene	0	0		0	730	730	1,763,652	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	9,663,847	
Dimethyl Phthalate	0	0		0	2,500	2,500	6,039,904	
Di-n-Butyl Phthalate	0	0		0	110	110	265,756	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	3,865,539	
2,6-Dinitrotoluene	0	0		0	990	990	2,391,802	
1,2-Diphenylhydrazine	0	0		0	15	15.0	36,239	
Fluoranthene	0	0		0	200	200	483,192	
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	24,160	
Hexachlorocyclopentadiene	0	0		0	5	5.0	12,080	
Hexachloroethane	0	0		0	60	60.0	144,958	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	24,159,618	
Naphthalene	0	0		0	140	140	338,235	
Nitrobenzene	0	0		0	4,000	4,000	9,663,847	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	41,071,350	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	724,789	
Phenanthrene	0	0		0	5	5.0	12,080	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	314,075	

☑ *CFC* CCT (min): 720 PMF: 0.525 Analysis Hardness (mg/l): 100.05 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
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	3,681,116	
Total Arsenic	0	0		0	150	150	2,509,852	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	68,602,618	
Total Boron	0	0		0	1,600	1,600	26,771,753	
Total Cadmium	0	0		0	0.246	0.27	4,530	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.146	86.2	1,442,601	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	173,933	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	317,915	

Total Copper	0	0		0	8.960	9.33	156,164	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	47,789,846	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.518	3.18	53,271	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	15,158	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.029	52.2	873,193	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	83,480	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	217,520	
Total Zinc	0	0		0	118.191	120	2,005,692	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	50,197	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	130	130	2,175,205	
Benzene	0	0		0	130	130	2,175,205	
Bromoform	0	0		0	370	370	6,190,968	
Carbon Tetrachloride	0	0		0	560	560	9,370,114	
Chlorobenzene	0	0		0	240	240	4,015,763	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	58,563,210	
Chloroform	0	0		0	390	390	6,525,615	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	51,870,272	
1,1-Dichloroethylene	0	0		0	1,500	1,500	25,098,519	
1,2-Dichloropropane	0	0		0	2,200	2,200	36,811,161	
1,3-Dichloropropylene	0	0		0	61	61.0	1,020,673	
Ethylbenzene	0	0		0	580	580	9,704,761	
Methyl Bromide	0	0		0	110	110	1,840,558	
Methyl Chloride	0	0		0	5,500	5,500	92,027,902	
Methylene Chloride	0	0		0	2,400	2,400	40,157,630	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	3,513,793	
Tetrachloroethylene	0	0		0	140	140	2,342,528	
Toluene	0	0		0	330	330	5,521,674	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	23,425,284	
1,1,1-Trichloroethane	0	0		0	610	610	10,206,731	
1,1,2-Trichloroethane	0	0		0	680	680	11,377,995	
Trichloroethylene	0	0		0	450	450	7,529,556	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	1,840,558	
2,4-Dichlorophenol	0	0		0	340	340	5,688,998	
2,4-Dimethylphenol	0	0		0	130	130	2,175,205	
2,4-Dinitrophenol	0	0		0	130	130	2,175,205	
2-Nitrophenol	0	0		0	1,600	1,600	26,771,753	
4-Nitrophenol	0	0		0	470	470	7,864,203	

p-Chloro-m-Cresol	0	0		0	500	500	8,366,173	
Pentachlorophenol	0	0		0	6.693	6.69	111,983	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	1,522,643	
Acenaphthene	0	0		0	17	17.0	284,450	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	987,208	
Benzo(a)Anthracene	0	0		0	0.1	0.1	1,673	
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	##########	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	15,226,435	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	903,547	
Butyl Benzyl Phthalate	0	0		0	35	35.0	585,632	
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	2,677,175	
1,3-Dichlorobenzene	0	0		0	69	69.0	1,154,532	
1,4-Dichlorobenzene	0	0		0	150	150	2,509,852	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	13,385,877	
Dimethyl Phthalate	0	0		0	500	500	8,366,173	
Di-n-Butyl Phthalate	0	0		0	21	21.0	351,379	
2,4-Dinitrotoluene	0	0		0	320	320	5,354,351	
2,6-Dinitrotoluene	0	0		0	200	200	3,346,469	
1,2-Diphenylhydrazine	0	0		0	3	3.0	50,197	
Fluoranthene	0	0		0	40	40.0	669,294	
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	33,465	
Hexachlorocyclopentadiene	0	0		0	1	1.0	16,732	
Hexachloroethane	0	0		0	12	12.0	200,788	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	35,137,926	
Naphthalene	0	0		0	43	43.0	719,491	
Nitrobenzene	0	0		0	810	810	13,553,200	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	56,889,976	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	987,208	
Phenanthrene	0	0		0	1	1.0	16,732	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	435,041	

☑ ***THH*** CCT (min): 720 PMF: 0.525 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	93,701	
Total Arsenic	0	0		0	10	10.0	167,323	
Total Barium	0	0		0	2,400	2,400	40,157,630	
Total Boron	0	0		0	3,100	3,100	51,870,272	
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	5,019,704	
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	16,732,346	
Total Mercury	0	0		0	0.050	0.05	837	
Total Nickel	0	0		0	610	610	10,206,731	
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	4,016	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	50,197	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	1,673,235	
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	N/A	N/A	N/A	
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	552,167	
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	1,137,800	
Methyl Bromide	0	0		0	100	100.0	1,673,235	
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	953,744	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	1,673,235	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	##########	
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	501,970	
2,4-Dichlorophenol	0	0		0	10	10.0	167,323	
2,4-Dimethylphenol	0	0		0	100	100.0	1,673,235	
2,4-Dinitrophenol	0	0		0	10	10.0	167,323	
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	66,929,383	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	1,171,264	
Anthracene	0	0		0	300	300	5,019,704	
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	3,346,469	
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	1,673	
2-Chloronaphthalene	0	0		0	800	800	13,385,877	
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	16,732,346	
1,3-Dichlorobenzene	0	0		0	7	7.0	117,126	
1,4-Dichlorobenzene	0	0		0	300	300	5,019,704	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	10,039,408	
Dimethyl Phthalate	0	0		0	2,000	2,000	33,464,692	
Di-n-Butyl Phthalate	0	0		0	20	20.0	334,647	
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	334,647	
Fluorene	0	0		0	50	50.0	836,617	
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	66,929	
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	568,900	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	167,323	
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	334,647	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	1,171	

☑ *CRL* CCT (min): 720 PMF: 0.741 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	
Acrylamide	0	0		0	0.07	0.07	4,692	
Acrylonitrile	0	0		0	0.06	0.06	4,022	
Benzene	0	0		0	0.58	0.58	38,876	
Bromoform	0	0		0	7	7.0	469,190	
Carbon Tetrachloride	0	0		0	0.4	0.4	26,811	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	53,622	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	382,054	
Dichlorobromomethane	0	0		0	0.95	0.95	63,676	
1,2-Dichloroethane	0	0		0	9.9	9.9	663,568	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	60,324	
1,3-Dichloropropylene	0	0		0	0.27	0.27	18,097	
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	1,340,542	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	13,405	
Tetrachloroethylene	0	0		0	10	10.0	670,271	
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	36,865	
Trichloroethylene	0	0		0	0.6	0.6	40,216	
Vinyl Chloride	0	0		0	0.02	0.02	1,341	
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	
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	2,011	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	100,541	
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	6.7	
Benzo(a)Anthracene	0	0		0	0.001	0.001	67.0	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	6.7	

3,4-Benzofluoranthene	0	0		0	0.001	0.001	67.0	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	670	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	2,011	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	21,449	
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	8,043	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	6.7	
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	3,351	
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	3,351	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	3,351	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	2,011	
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	5.36	
Hexachlorobutadiene	0	0		0	0.01	0.01	670	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	6,703	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	67.0	
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	46.9	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	335	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	221,189	
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

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	1,161,400	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	93,701	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	167,323	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	32,519,213	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	12,543,125	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	3,315	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	1,442,601	µg/L	Discharge Conc < TQL
Hexavalent Chromium	25,231	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	147,111	µg/L	Discharge Conc < TQL
Total Copper	21,752	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	5,019,704	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	47,789,846	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	53,271	µg/L	Discharge Conc < TQL
Total Manganese	16,732,346	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	837	µg/L	Discharge Conc < TQL
Total Nickel	728,742	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	83,480	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	5,897	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	4,016	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	186,105	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	4,646	µg/L	Discharge Conc < TQL
Acrylamide	4,692	µg/L	Discharge Conc ≤ 25% WQBEL
Acrylonitrile	4,022	µg/L	Discharge Conc < TQL
Benzene	38,876	µg/L	Discharge Conc < TQL
Bromoform	469,190	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	26,811	µg/L	Discharge Conc < TQL
Chlorobenzene	1,673,235	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorodibromomethane	53,622	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS

2-Chloroethyl Vinyl Ether	27,873,611	µg/L	Discharge Conc < TQL
Chloroform	382,054	µg/L	Discharge Conc < TQL
Dichlorobromomethane	63,676	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	663,568	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	552,167	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	60,324	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	18,097	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	1,137,800	µg/L	Discharge Conc < TQL
Methyl Bromide	851,694	µg/L	Discharge Conc < TQL
Methyl Chloride	43,358,950	µg/L	Discharge Conc < TQL
Methylene Chloride	1,340,542	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	13,405	µg/L	Discharge Conc < TQL
Tetrachloroethylene	670,271	µg/L	Discharge Conc < TQL
Toluene	953,744	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	1,673,235	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	4,645,602	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	36,865	µg/L	Discharge Conc < TQL
Trichloroethylene	40,216	µg/L	Discharge Conc < TQL
Vinyl Chloride	1,341	µg/L	Discharge Conc < TQL
2-Chlorophenol	501,970	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	167,323	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	1,022,032	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	167,323	µg/L	Discharge Conc < TQL
2-Nitrophenol	12,388,272	µg/L	Discharge Conc < TQL
4-Nitrophenol	3,561,628	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	247,765	µg/L	Discharge Conc < TQL
Pentachlorophenol	2,011	µg/L	Discharge Conc < TQL
Phenol	66,929,383	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	100,541	µg/L	Discharge Conc < TQL
Acenaphthene	128,528	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	5,019,704	µg/L	Discharge Conc < TQL
Benzidine	6.7	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	67.0	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	6.7	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	67.0	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	670	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	2,011	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	3,346,469	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	21,449	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	418,104	µg/L	Discharge Conc < TQL

Butyl Benzyl Phthalate	1,673	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	13,385,877	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	8,043	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	6.7	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	1,269,798	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	117,126	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	1,130,430	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	3,351	µg/L	Discharge Conc < TQL
Diethyl Phthalate	6,194,136	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	3,871,335	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	170,339	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	3,351	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	3,351	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	2,011	µg/L	Discharge Conc < TQL
Fluoranthene	309,707	µg/L	Discharge Conc < TQL
Fluorene	836,617	µg/L	Discharge Conc < TQL
Hexachlorobenzene	5.36	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	670	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	7,743	µg/L	Discharge Conc < TQL
Hexachloroethane	6,703	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	67.0	µg/L	Discharge Conc < TQL
Isophorone	568,900	µg/L	Discharge Conc < TQL
Naphthalene	216,795	µg/L	Discharge Conc < TQL
Nitrobenzene	167,323	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	46.9	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	335	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	221,189	µg/L	Discharge Conc < TQL
Phenanthrene	7,743	µg/L	Discharge Conc < TQL
Pyrene	334,647	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	1,171	µg/L	Discharge Conc < TQL
PCB-1016	N/A	N/A	No WQS
PCB-1221	N/A	N/A	No WQS
PCB-1232	N/A	N/A	No WQS
PCB-1242	N/A	N/A	No WQS
PCB-1248	N/A	N/A	No WQS
PCB-1254	N/A	N/A	No WQS
PCB-1260	N/A	N/A	No WQS

Attachment C:

Outfall 015 Toxics Management Spreadsheet

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Armstrong Power Station** NPDES Permit No.: **PA0002917** Outfall No.: **015**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Coal Combustion Biproduct Leachate**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.029	1620	7						

					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		3180									
	Chloride (PWS)	mg/L		26.8									
	Bromide	mg/L		3600									
	Sulfate (PWS)	mg/L		1570									
	Fluoride (PWS)	mg/L		0.265									
Group 2	Total Aluminum	µg/L		200									
	Total Antimony	µg/L	<	0.9									
	Total Arsenic	µg/L		22.63									
	Total Barium	µg/L		39.732									
	Total Beryllium	µg/L	<	10									
	Total Boron	µg/L		29400									
	Total Cadmium	µg/L		4.956									
	Total Chromium (III)	µg/L		4									
	Hexavalent Chromium	µg/L	<	20									
	Total Cobalt	µg/L	<	1									
	Total Copper	µg/L	<	50									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	10									
	Dissolved Iron	µg/L		70									
	Total Iron	µg/L		1290									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		370									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		7.689									
	Total Phenols (Phenolics) (PWS)	µg/L	<	5									
	Total Selenium	µg/L	<	50									
	Total Silver	µg/L	<	5									
	Total Thallium	µg/L	<	0.9									
	Total Zinc	µg/L		10									
	Total Molybdenum	µg/L		5924.01									
	Acrolein	µg/L	<	2									
	Acrylamide	µg/L	<	1000									
	Acrylonitrile	µg/L	<	1									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.5									

Group 3	Carbon Tetrachloride	µg/L	<	0.5									
	Chlorobenzene	µg/L		0.5									
	Chlorodibromomethane	µg/L	<	0.5									
	Chloroethane	µg/L	<	0.5									
	2-Chloroethyl Vinyl Ether	µg/L	<	1									
	Chloroform	µg/L		0.5									
	Dichlorobromomethane	µg/L	<	0.5									
	1,1-Dichloroethane	µg/L	<	0.5									
	1,2-Dichloroethane	µg/L	<	0.5									
	1,1-Dichloroethylene	µg/L	<	0.5									
	1,2-Dichloropropane	µg/L	<	0.5									
	1,3-Dichloropropylene	µg/L	<	0.5									
	1,4-Dioxane	µg/L	<	1									
	Ethylbenzene	µg/L	<	0.5									
	Methyl Bromide	µg/L	<	0.5									
	Methyl Chloride	µg/L	<	0.5									
	Methylene Chloride	µg/L	<	0.5									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5									
	Tetrachloroethylene	µg/L	<	0.5									
	Toluene	µg/L	<	0.5									
	1,2-trans-Dichloroethylene	µg/L	<	0.5									
	1,1,1-Trichloroethane	µg/L	<	0.5									
	1,1,2-Trichloroethane	µg/L	<	0.5									
	Trichloroethylene	µg/L	<	0.5									
	Vinyl Chloride	µg/L	<	0.5									
Group 4	2-Chlorophenol	µg/L	<	0.5									
	2,4-Dichlorophenol	µg/L	<	0.5									
	2,4-Dimethylphenol	µg/L	<	0.5									
	4,6-Dinitro-o-Cresol	µg/L	<										
	2,4-Dinitrophenol	µg/L	<	2									
	2-Nitrophenol	µg/L	<	1									
	4-Nitrophenol	µg/L	<	1									
	p-Chloro-m-Cresol	µg/L	<	0.2									
	Pentachlorophenol	µg/L	<	1									
	Phenol	µg/L	<	1									
	2,4,6-Trichlorophenol	µg/L	<	0.5									
Group 5	Acenaphthene	µg/L	<	0.2									
	Acenaphthylene	µg/L	<	0.5									
	Anthracene	µg/L	<	0.2									
	Benzidine	µg/L	<	0.5									
	Benzo(a)Anthracene	µg/L	<	0.2									
	Benzo(a)Pyrene	µg/L	<	0.2									
	3,4-Benzofluoranthene	µg/L	<	0.2									
	Benzo(ghi)Perylene	µg/L	<	0.2									
	Benzo(k)Fluoranthene	µg/L	<	0.2									
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.2									
	Bis(2-Chloroethyl)Ether	µg/L	<	0.2									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.2									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	3									
	4-Bromophenyl Phenyl Ether	µg/L	<	0.2									
	Butyl Benzyl Phthalate	µg/L	<	4									
	2-Chloronaphthalene	µg/L	<	0.2									
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.2									
	Chrysene	µg/L	<	0.2									
	Dibenzo(a,h)Anthrancene	µg/L	<	0.2									
	1,2-Dichlorobenzene	µg/L	<	0.2									
	1,3-Dichlorobenzene	µg/L	<	0.2									
	1,4-Dichlorobenzene	µg/L	<	0.2									
	3,3-Dichlorobenzidine	µg/L	<	0.5									
	Diethyl Phthalate	µg/L	<	2									
	Dimethyl Phthalate	µg/L	<	2									
	Di-n-Butyl Phthalate	µg/L	<	4									
	2,4-Dinitrotoluene	µg/L	<	0.2									

	2,6-Dinitrotoluene	µg/L	<	0.2									
	Di-n-Octyl Phthalate	µg/L	<	2									
	1,2-Diphenylhydrazine	µg/L	<	0.2									
	Fluoranthene	µg/L	<	0.2									
	Fluorene	µg/L	<	0.2									
	Hexachlorobenzene	µg/L	<	0.2									
	Hexachlorobutadiene	µg/L	<	0.2									
	Hexachlorocyclopentadiene	µg/L	<	0.5									
	Hexachloroethane	µg/L	<	0.2									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.2									
	Isophorone	µg/L	<	0.5									
	Naphthalene	µg/L	<	0.2									
	Nitrobenzene	µg/L	<	0.5									
	n-Nitrosodimethylamine	µg/L	<	0.2									
	n-Nitrosodi-n-Propylamine	µg/L	<	0.2									
	n-Nitrosodiphenylamine	µg/L	<	0.2									
	Phenanthrene	µg/L	<	0.2									
	Pyrene	µg/L	<	0.2									
	1,2,4-Trichlorobenzene	µg/L	<	0.2									
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	<	0.25									
	PCB-1221	µg/L	<	0.25									
	PCB-1232	µg/L	<	0.25									
	PCB-1242	µg/L	<	0.25									
	PCB-1248	µg/L	<	0.25									
	PCB-1254	µg/L	<	0.25									
	PCB-1260	µg/L	<	0.25									
	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 1.3, March 2021

Stream / Surface Water Information

Armstrong Power Station, NPDES Permit No. PA0002917, Outfall 015

Instructions | Discharge | Stream

Receiving Surface Water Name: Allegheny River

No. Reaches to Model: 1

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	042122	54.71	802	8830			Yes
End of Reach 1	042122	53.71	801	8831			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	54.71	0.1	2070			930	20					100	7		
End of Reach 1	53.71	0.1	2070			1200	20								

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	54.71														
End of Reach 1	53.71														

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Armstrong Power Station, NPDES Permit No. PA0002917, Outfall 015

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.125 Analysis Hardness (mg/l): 100.26 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
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	4,319,575	
Total Antimony	0	0		0	1,100	1,100	6,335,377	
Total Arsenic	0	0		0	340	340	1,958,207	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	##########	
Total Boron	0	0		0	8,100	8,100	46,651,410	
Total Cadmium	0	0		0	2.019	2.14	12,319	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	570.995	1,807	10,406,981	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	93,840	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	547,146	
Total Copper	0	0		0	13.473	14.0	80,827	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	64.767	81.9	471,810	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	9,486	Chem Translator of 0.85 applied
Total Nickel	0	0		0	469.281	470	2,708,209	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	3.231	3.8	21,895	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	374,363	
Total Zinc	0	0		0	117.442	120	691,617	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	17,278	

Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	650	650	3,743,632	
Benzene	0	0		0	640	640	3,686,037	
Bromoform	0	0		0	1,800	1,800	10,366,980	
Carbon Tetrachloride	0	0		0	2,800	2,800	16,126,413	
Chlorobenzene	0	0		0	1,200	1,200	6,911,320	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	#########	
Chloroform	0	0		0	1,900	1,900	10,942,923	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	86,391,501	
1,1-Dichloroethylene	0	0		0	7,500	7,500	43,195,750	
1,2-Dichloropropane	0	0		0	11,000	11,000	63,353,767	
1,3-Dichloropropylene	0	0		0	310	310	1,785,424	
Ethylbenzene	0	0		0	2,900	2,900	16,702,357	
Methyl Bromide	0	0		0	550	550	3,167,688	
Methyl Chloride	0	0		0	28,000	28,000	#########	
Methylene Chloride	0	0		0	12,000	12,000	69,113,200	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	5,759,433	
Tetrachloroethylene	0	0		0	700	700	4,031,603	
Toluene	0	0		0	1,700	1,700	9,791,037	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	39,164,147	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	17,278,300	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	19,582,073	
Trichloroethylene	0	0		0	2,300	2,300	13,246,697	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	3,225,283	
2,4-Dichlorophenol	0	0		0	1,700	1,700	9,791,037	
2,4-Dimethylphenol	0	0		0	660	660	3,801,226	
2,4-Dinitrophenol	0	0		0	660	660	3,801,226	
2-Nitrophenol	0	0		0	8,000	8,000	46,075,467	
4-Nitrophenol	0	0		0	2,300	2,300	13,246,697	
p-Chloro-m-Cresol	0	0		0	160	160	921,509	
Pentachlorophenol	0	0		0	8.723	8.72	50,241	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	2,649,339	
Acenaphthene	0	0		0	83	83.0	478,033	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	1,727,830	
Benzo(a)Anthracene	0	0		0	0.5	0.5	2,880	
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	#########	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	25,917,450	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	1,555,047	
Butyl Benzyl Phthalate	0	0		0	140	140	806,321	

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	4,722,735	
1,3-Dichlorobenzene	0	0		0	350	350	2,015,802	
1,4-Dichlorobenzene	0	0		0	730	730	4,204,386	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	23,037,733	
Dimethyl Phthalate	0	0		0	2,500	2,500	14,398,583	
Di-n-Butyl Phthalate	0	0		0	110	110	633,538	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	9,215,093	
2,6-Dinitrotoluene	0	0		0	990	990	5,701,839	
1,2-Diphenylhydrazine	0	0		0	15	15.0	86,392	
Fluoranthene	0	0		0	200	200	1,151,887	
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	57,594	
Hexachlorocyclopentadiene	0	0		0	5	5.0	28,797	
Hexachloroethane	0	0		0	60	60.0	345,566	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	57,594,334	
Naphthalene	0	0		0	140	140	806,321	
Nitrobenzene	0	0		0	4,000	4,000	23,037,733	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	97,910,367	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	1,727,830	
Phenanthrene	0	0		0	5	5.0	28,797	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	748,726	

☑ *CFC* CCT (min): 720 PMF: 0.865 Analysis Hardness (mg/l): 100.04 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	8,777,251	
Total Arsenic	0	0		0	150	150	5,984,489	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	##########	
Total Boron	0	0		0	1,600	1,600	63,834,555	
Total Cadmium	0	0		0	0.246	0.27	10,800	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.138	86.2	3,439,349	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	414,726	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	758,035	

Total Copper	0	0		0	8.959	9.33	372,313	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	69,212,208	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.518	3.18	126,996	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	36,142	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.023	52.2	2,081,798	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	199,050	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	518,656	
Total Zinc	0	0		0	118.177	120	4,781,810	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	119,690	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	130	130	5,186,558	
Benzene	0	0		0	130	130	5,186,558	
Bromoform	0	0		0	370	370	14,761,741	
Carbon Tetrachloride	0	0		0	560	560	22,342,094	
Chlorobenzene	0	0		0	240	240	9,575,183	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	#########	
Chloroform	0	0		0	390	390	15,559,673	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	#########	
1,1-Dichloroethylene	0	0		0	1,500	1,500	59,844,895	
1,2-Dichloropropane	0	0		0	2,200	2,200	87,772,513	
1,3-Dichloropropylene	0	0		0	61	61.0	2,433,692	
Ethylbenzene	0	0		0	580	580	23,140,026	
Methyl Bromide	0	0		0	110	110	4,388,626	
Methyl Chloride	0	0		0	5,500	5,500	#########	
Methylene Chloride	0	0		0	2,400	2,400	95,751,832	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	8,378,285	
Tetrachloroethylene	0	0		0	140	140	5,585,524	
Toluene	0	0		0	330	330	13,165,877	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	55,855,235	
1,1,1-Trichloroethane	0	0		0	610	610	24,336,924	
1,1,2-Trichloroethane	0	0		0	680	680	27,129,686	
Trichloroethylene	0	0		0	450	450	17,953,468	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	4,388,626	
2,4-Dichlorophenol	0	0		0	340	340	13,564,843	
2,4-Dimethylphenol	0	0		0	130	130	5,186,558	
2,4-Dinitrophenol	0	0		0	130	130	5,186,558	
2-Nitrophenol	0	0		0	1,600	1,600	63,834,555	
4-Nitrophenol	0	0		0	470	470	18,751,400	

p-Chloro-m-Cresol	0	0		0	500	500	19,948,298	
Pentachlorophenol	0	0		0	6.693	6.69	267,011	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	3,630,590	
Acenaphthene	0	0		0	17	17.0	678,242	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	2,353,899	
Benzo(a)Anthracene	0	0		0	0.1	0.1	3,990	
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	##########	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	36,305,903	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	2,154,416	
Butyl Benzyl Phthalate	0	0		0	35	35.0	1,396,381	
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	6,383,455	
1,3-Dichlorobenzene	0	0		0	69	69.0	2,752,865	
1,4-Dichlorobenzene	0	0		0	150	150	5,984,489	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	31,917,277	
Dimethyl Phthalate	0	0		0	500	500	19,948,298	
Di-n-Butyl Phthalate	0	0		0	21	21.0	837,829	
2,4-Dinitrotoluene	0	0		0	320	320	12,766,911	
2,6-Dinitrotoluene	0	0		0	200	200	7,979,319	
1,2-Diphenylhydrazine	0	0		0	3	3.0	119,690	
Fluoranthene	0	0		0	40	40.0	1,595,864	
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	79,793	
Hexachlorocyclopentadiene	0	0		0	1	1.0	39,897	
Hexachloroethane	0	0		0	12	12.0	478,759	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	83,782,853	
Naphthalene	0	0		0	43	43.0	1,715,554	
Nitrobenzene	0	0		0	810	810	32,316,243	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	##########	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	2,353,899	
Phenanthrene	0	0		0	1	1.0	39,897	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	1,037,312	

☑ ***THH*** CCT (min): 720 PMF: 0.865 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	223,421	
Total Arsenic	0	0		0	10	10.0	398,966	
Total Barium	0	0		0	2,400	2,400	95,751,832	
Total Boron	0	0		0	3,100	3,100	#########	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	11,968,979	
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	39,896,597	
Total Mercury	0	0		0	0.050	0.05	1,995	
Total Nickel	0	0		0	610	610	24,336,924	
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	9,575	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	119,690	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	3,989,660	
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	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	1,316,588	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	

Ethylbenzene	0	0		0	68	68.0	2,712,969	
Methyl Bromide	0	0		0	100	100.0	3,989,660	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	N/A	N/A	N/A	
1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A	
Tetrachloroethylene	0	0		0	N/A	N/A	N/A	
Toluene	0	0		0	57	57.0	2,274,106	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	3,989,660	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	#########	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	30	30.0	1,196,898	
2,4-Dichlorophenol	0	0		0	10	10.0	398,966	
2,4-Dimethylphenol	0	0		0	100	100.0	3,989,660	
2,4-Dinitrophenol	0	0		0	10	10.0	398,966	
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	#########	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	2,792,762	
Anthracene	0	0		0	300	300	11,968,979	
Benzidine	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	7,979,319	
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	3,990	
2-Chloronaphthalene	0	0		0	800	800	31,917,277	
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	39,896,597	
1,3-Dichlorobenzene	0	0		0	7	7.0	279,276	
1,4-Dichlorobenzene	0	0		0	300	300	11,968,979	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	23,937,958	
Dimethyl Phthalate	0	0		0	2,000	2,000	79,793,193	
Di-n-Butyl Phthalate	0	0		0	20	20.0	797,932	
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	797,932	
Fluorene	0	0		0	50	50.0	1,994,830	
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	159,586	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	34	34.0	1,356,484	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	398,966	
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	797,932	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	2,793	

☑ *CRL* CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

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

Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylamide	0	0		0	0.07	0.07	9,170	
Acrylonitrile	0	0		0	0.06	0.06	7,860	
Benzene	0	0		0	0.58	0.58	75,978	
Bromoform	0	0		0	7	7.0	916,980	
Carbon Tetrachloride	0	0		0	0.4	0.4	52,399	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	104,798	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	746,684	
Dichlorobromomethane	0	0		0	0.95	0.95	124,447	
1,2-Dichloroethane	0	0		0	9.9	9.9	1,296,872	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	117,897	
1,3-Dichloropropylene	0	0		0	0.27	0.27	35,369	
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	2,619,943	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	26,199	
Tetrachloroethylene	0	0		0	10	10.0	1,309,972	
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	72,048	
Trichloroethylene	0	0		0	0.6	0.6	78,598	
Vinyl Chloride	0	0		0	0.02	0.02	2,620	
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	
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	3,930	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	196,496	
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	13.1	
Benzo(a)Anthracene	0	0		0	0.001	0.001	131	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	13.1	

3,4-Benzofluoranthene	0	0		0	0.001	0.001	131	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	1,310	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	3,930	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	41,919	
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	15,720	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	13.1	
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	6,550	
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	6,550	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	6,550	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	3,930	
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	10.5	
Hexachlorobutadiene	0	0		0	0.01	0.01	1,310	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	13,100	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	131	
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	91.7	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	655	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	432,291	
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

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

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

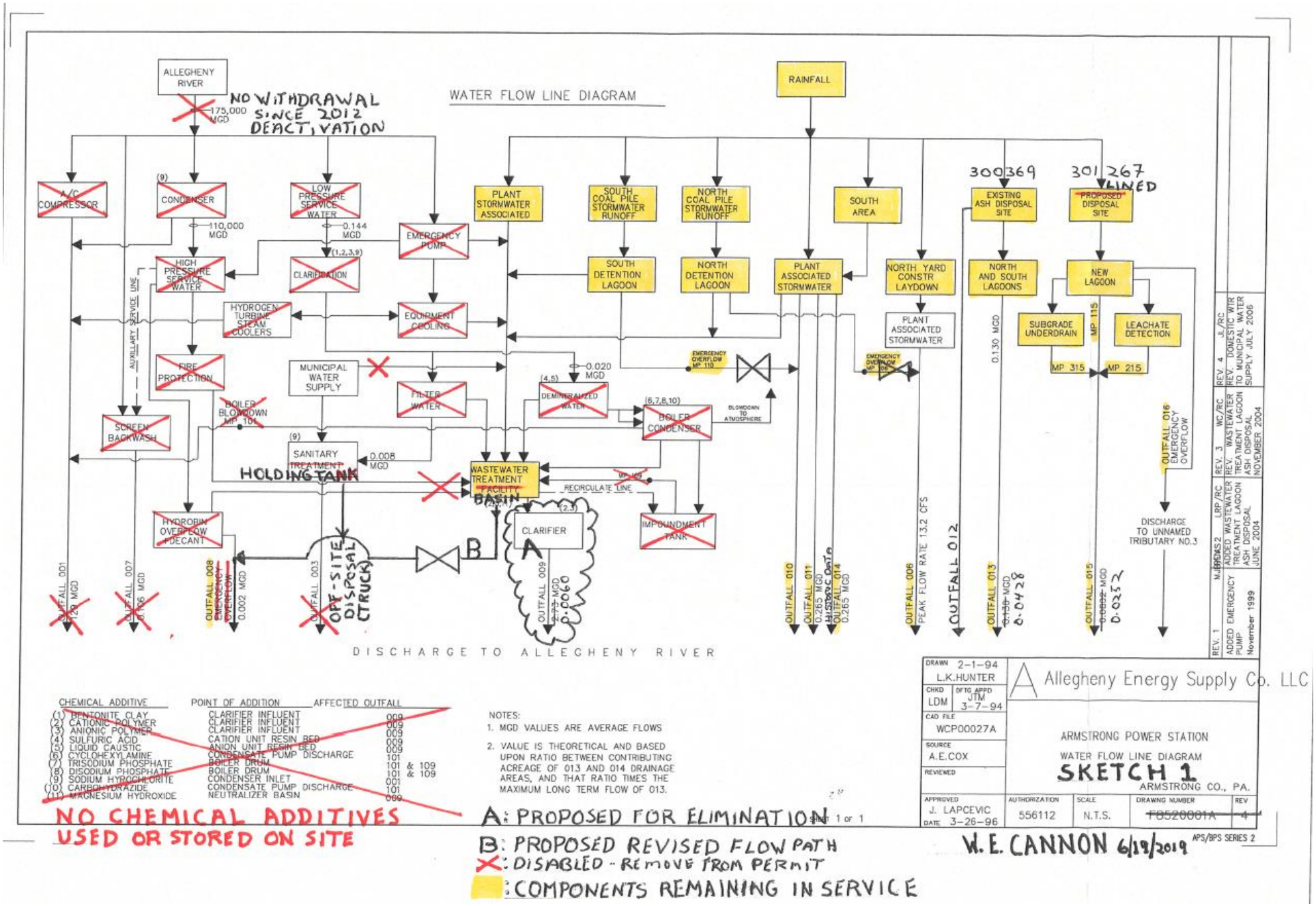
Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	2,768,673	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	398,966	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	77,522,849	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	29,901,670	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	7,896	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	3,439,349	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	60,148	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	350,699	µg/L	Discharge Conc < TQL
Total Copper	51,807	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	11,968,979	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	69,212,208	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	126,996	µg/L	Discharge Conc < TQL
Total Manganese	39,896,597	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	1,995	µg/L	Discharge Conc < TQL
Total Nickel	1,735,853	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	199,050	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	14,034	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	9,575	µg/L	Discharge Conc < TQL
Total Zinc	443,299	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	11,075	µg/L	Discharge Conc < TQL
Acrylamide	9,170	µg/L	Discharge Conc ≤ 25% WQBEL
Acrylonitrile	7,860	µg/L	Discharge Conc < TQL
Benzene	75,978	µg/L	Discharge Conc < TQL
Bromoform	916,980	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	52,399	µg/L	Discharge Conc < TQL
Chlorobenzene	3,989,660	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorodibromomethane	104,798	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS

2-Chloroethyl Vinyl Ether	66,448,157	µg/L	Discharge Conc < TQL
Chloroform	746,684	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	124,447	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	1,296,872	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	1,316,588	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	117,897	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	35,369	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	2,712,969	µg/L	Discharge Conc < TQL
Methyl Bromide	2,030,360	µg/L	Discharge Conc < TQL
Methyl Chloride	##########	µg/L	Discharge Conc < TQL
Methylene Chloride	2,619,943	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	26,199	µg/L	Discharge Conc < TQL
Tetrachloroethylene	1,309,972	µg/L	Discharge Conc < TQL
Toluene	2,274,106	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	3,989,660	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	11,074,693	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	72,048	µg/L	Discharge Conc < TQL
Trichloroethylene	78,598	µg/L	Discharge Conc < TQL
Vinyl Chloride	2,620	µg/L	Discharge Conc < TQL
2-Chlorophenol	1,196,898	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	398,966	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	2,436,432	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	398,966	µg/L	Discharge Conc < TQL
2-Nitrophenol	29,532,514	µg/L	Discharge Conc < TQL
4-Nitrophenol	8,490,598	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	590,650	µg/L	Discharge Conc < TQL
Pentachlorophenol	3,930	µg/L	Discharge Conc < TQL
Phenol	##########	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	196,496	µg/L	Discharge Conc < TQL
Acenaphthene	306,400	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	11,968,979	µg/L	Discharge Conc < TQL
Benzidine	13.1	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	131	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	13.1	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	131	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	1,310	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	3,930	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	7,979,319	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	41,919	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	996,722	µg/L	Discharge Conc < TQL

Butyl Benzyl Phthalate	3,990	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	31,917,277	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	15,720	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	13.1	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	3,027,083	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	279,276	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	2,694,842	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	6,550	µg/L	Discharge Conc < TQL
Diethyl Phthalate	14,766,257	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	9,228,911	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	406,072	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	6,550	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	6,550	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	3,930	µg/L	Discharge Conc < TQL
Fluoranthene	738,313	µg/L	Discharge Conc < TQL
Fluorene	1,994,830	µg/L	Discharge Conc < TQL
Hexachlorobenzene	10.5	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	1,310	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	18,458	µg/L	Discharge Conc < TQL
Hexachloroethane	13,100	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	131	µg/L	Discharge Conc < TQL
Isophorone	1,356,484	µg/L	Discharge Conc < TQL
Naphthalene	516,819	µg/L	Discharge Conc < TQL
Nitrobenzene	398,966	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	91.7	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	655	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	432,291	µg/L	Discharge Conc < TQL
Phenanthrene	18,458	µg/L	Discharge Conc < TQL
Pyrene	797,932	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	2,793	µg/L	Discharge Conc < TQL
PCB-1016	N/A	N/A	No WQS
PCB-1221	N/A	N/A	No WQS
PCB-1232	N/A	N/A	No WQS
PCB-1242	N/A	N/A	No WQS
PCB-1248	N/A	N/A	No WQS
PCB-1254	N/A	N/A	No WQS
PCB-1260	N/A	N/A	No WQS

Attachment D:

Site Line Diagram


WATER FLOW LINE DIAGRAM
ALLEGHENY RIVER
NO WITHDRAWAL SINCE 2012 DEACTIVATION
175,000 MGD
RAINFALL
A/C COMPRESSOR
CONDENSER
110,000 MGD
LOW PRESSURE SERVICE WATER
0.144 MGD
EMERGENCY PUMP
PLANT STORMWATER ASSOCIATED
SOUTH COAL PILE STORMWATER RUNOFF
NORTH COAL PILE STORMWATER RUNOFF
SOUTH AREA
300369
EXISTING ASH DISPOSAL SITE
301267 LINED
PROPOSED DISPOSAL SITE
HIGH PRESSURE SERVICE WATER
CLARIFICATION
SOUTH DETENTION LAGOON
NORTH DETENTION LAGOON
PLANT ASSOCIATED STORMWATER
NORTH YARD CONSTR LAYDOWN
NORTH AND SOUTH LAGOONS
NEW LAGOON
AUXILLARY SERVICE LINE
HYDROGEN TURBINE STEAM COOLERS
EQUIPMENT COOLING
PLANT ASSOCIATED STORMWATER
SUBGRADE UNDERDRAIN
LEACHATE DETECTION
FIRE PROTECTION
MUNICIPAL WATER SUPPLY
0.020 MGD
EMERGENCY OVERFLOW MP 110
MP 315
MP 115
MP 215
FILTER WATER
DEMINERALIZED WATER
BOILER CONDENSER
BLOWDOWN TO ATMOSPHERE
BOILER BLOWDOWN MP 101
SCREEN BACKWASH
SANITARY TREATMENT
0.008 MGD
HOLDING TANK
WASTEWATER TREATMENT FACILITY
BASIN
RECIRCULATE LINE
HYDROBIN OVERFLOW DECANT
CLARIFIER
IMPOUNDMENT TANK
OUTFALL 016 EMERGENCY OVERFLOW
DISCHARGE TO UNNAMED TRIBUTARY NO.3
OUTFALL 001
OUTFALL 007
OUTFALL 008 EMERGENCY OVERFLOW 0.002 MGD
OFF-SITE DISPOSAL (TRUCK)
OUTFALL 003
OUTFALL 009 0.0060
OUTFALL 010
OUTFALL 011 0.265 MGD
OUTFALL 014 0.265 MGD
OUTFALL 006 PEAK FLOW RATE 13.2 CFS
OUTFALL 012
OUTFALL 013 0.130 MGD 0.0428
OUTFALL 015 0.0352
DISCHARGE TO ALLEGHENY RIVER
CHEMICAL ADDITIVE
(1) BENTONITE CLAY
(2) CATIONIC POLYMER
(3) ANIONIC POLYMER
(4) SULFURIC ACID
(5) LIQUID CAUSTIC
(6) CYCLOHEXYLAMINE
(7) TRISODIUM PHOSPHATE
(8) DISODIUM PHOSPHATE
(9) SODIUM HYPOCHLORITE
(10) CARBOHYDRAZIDE
(11) MAGNESIUM HYDROXIDE
POINT OF ADDITION
CLARIFIER INFLUENT
CLARIFIER INFLUENT
CLARIFIER INFLUENT
CATION UNIT RESIN BED
ANION UNIT RESIN BED
CONDENSATE PUMP DISCHARGE
BOILER DRUM
BOILER DRUM
CONDENSER INLET
CONDENSATE PUMP DISCHARGE
NEUTRALIZER BASIN
AFFECTED OUTFALL
009
009
009
009
009
101
101 & 109
101 & 109
001
101
009
NO CHEMICAL ADDITIVES USED OR STORED ON SITE
NOTES:
1. MGD VALUES ARE AVERAGE FLOWS
2. VALUE IS THEORETICAL AND BASED UPON RATIO BETWEEN CONTRIBUTING ACREAGE OF 013 AND 014 DRAINAGE AREAS, AND THAT RATIO TIMES THE MAXIMUM LONG TERM FLOW OF 013.
A: PROPOSED FOR ELIMINATION
B: PROPOSED REVISED FLOW PATH
X: DISABLED - REMOVE FROM PERMIT
: COMPONENTS REMAINING IN SERVICE
Sheet 1 of 1
DRAWN 2-1-94 L.K.HUNTER
CHKD LDM
DFTG APPD JTM 3-7-94
CAD FILE WCP00027A
SOURCE A.E.COX
REVIEWED
APPROVED J. LAPCEVIC DATE 3-26-96
Allegheny Energy Supply Co. LLC
ARMSTRONG POWER STATION
WATER FLOW LINE DIAGRAM
SKETCH 1
ARMSTRONG CO., PA.
AUTHORIZATION 556112
SCALE N.T.S.
DRAWING NUMBER T0520001A
REV 4
REV. 4 JL/RC REV. DOMESTIC WTR TO MUNICIPAL WATER SUPPLY JULY 2006
REV. 3 WC/RC REV. WASTEWATER TREATMENT LAGOON ASH DISPOSAL NOVEMBER 2004
REV. 2 LRP/RC ADDED WASTEWATER TREATMENT LAGOON ASH DISPOSAL JUNE 2004
REV. 1 ADDED EMERGENCY PUMP November 1999
W.E. CANNON 6/19/2019
APS/BPS SERIES 2

Attachment E:

NPDES Permit Rating Work Sheet

NPDES Permit Rating Work Sheet

☐ Regular Addition
☐ Discretionary Addition
☐ Score change, but no status change
☑ Deletion

NPDES No.: PA0002917

Facility Name: Armstrong Power Station

City: Washington Township

Receiving Water: Allegheny River

Reach Number: 5010006000090

Is this facility a steam electric power plant (SIC=4911) with one or more of the following characteristics?

1. Power output 500 MW or greater (not using a cooling pond/lake)
2. A nuclear power plant
3. Cooling water discharge greater than 25% of the receiving stream's 7Q10 flow rate

☐ YES; score is 600 (**stop here**) ☑ NO (continue)

Is this permit for a municipal separate storm sewer serving a population greater than 100,000?

☐ YES; score is 700 (**stop here**)
☑ NO (continue)

FACTOR 1:Toxic Pollutant Potential

PCS SIC Code: _____ Primary SIC Code: 4911

Other SIC Codes: 4953 _____ _____ _____

Industrial Subcategory Code: 1 (Code 000 if no subcategory)

Determine the Toxicity potential from Appendix A. *(Be sure to use the TOTAL toxicity potential column and **check one**)*

Toxicity Group	Code	Points		Toxicity Group	Code	Points		Toxicity Group	Code	Points
☐ No process waste streams	0	0	☐	3.	3	15	☑	7	7	35
☐ 1.	1	5	☐	4.	4	20	☐	8.	8	40
☐ 2.	2	10	☐	5.	5	25	☐	9.	9	45
			☐	6.	6	30	☐	10.	10	50

Code Number Checked: 7

Total Points Factor 1: 35

FACTOR 2: Flow/Stream Flow Volume *(Complete either Section A or Section B; check only one)*

Section A - Wastewater Flow Only Considered

Wastewater type (See Instructions)			Code	Points
Type I:	Flow < 5 MGD	☐	11	0
	Flow 5 to 10 MGD	☐	12	10
	Flow>10 to 50 MGD	☐	13	20
	Flow> 50 MGD	☐	14	30
Type II:	Flow<1 MGD	☑	21	10
	Flow 1 to 5 MGD	☐	22	20
	Flow >5 to 10 MGD	☐	23	30
	Flow>10 MGD	☐	24	50
Type III:	Flow <1 MGD	☐	31	0
	Flow 1 to 5 MGD	☐	32	10
	Flow >5 to 10 MGD	☐	33	20
	Flow >10 MGD	☐	34	30

Section B - Wastewater and Stream Flow Considered

Wastewater type (See Instructions)	Percent of Instream Wastewater Concentration at Receiving Stream Low Flow		Code	Points
Type I/III:	<10%	☐	41	0
	≥10% to <50%	☐	42	10
	≥50%	☐	43	20
Type II	<10%	☐	51	0
	≥10% to <50%	☐	52	20
	≥50%	☐	53	30

Code Checked from Section A or B: 31

Total Points Factor 2: 10

1

NPDES Permit Rating Work Sheet

FACTOR 3: Conventional Pollutants NPDES No.: PA0002917
(only when limited by the permit)

A. Oxygen Demanding Pollutants (check one) ☐ BOD ☐ COD ☐ OTHER:

Permit Limits (check one)		Code	Points
☐	<100 lbs/day	1	0
☐	100 to 1000 lbs/day	2	5
☐	>1000 to 3000 lbs/day	3	15
☐	>3000 lbs/day	4	20

Code Checked:
Points Scored: 0

B. Total Suspended Solids (TSS)

Permit Limits (check one)		Code	Points
☑	<100 lbs/day	1	0
☐	100 to 1000 lbs/day	2	5
☐	>1000 to 5000 lbs/day	3	15
☐	>5000 lbs/day	4	20

Code Checked: 1
Points Scored: 0

C. Nitrogen Pollutants (check one) ☐ Ammonia ☐ OTHER:

Permit Limits (check one)	Nitrogen Equivalent	Code	Points
☐	<300 lbs/day	1	0
☐	300 to 1000 lbs/day	2	5
☐	>1000 to 3000 lbs/day	3	15
☐	>3000 lbs/day	4	20

Code Checked:
Points Scored: 0
Total Points Factor 3: 0

FACTOR 4: Public Health Impact
Is there a public drinking water supply located within 50 miles downstream of the effluent discharge (this includes any body of water to which the receiving water is a tributary)? A public drinking water supply may include infiltration galleries, or other methods of conveyance that ultimately get water from the above referenced supply.

☑ YES (if yes, check toxicity potential number below)
☐ NO (if no, go to Factor 5)

Determine the human health toxicity potential from Appendix A. Use the same SIC Code and subcategory reference as in Factor 1. (Be sure to use the human health toxicity group column and check one below)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
☐ No process waste streams	0	0	☐ 3.	3	0	☑ 7.	7	15
☐ 1.	1	0	☐ 4.	4	0	☐ 8.	8	20
☐ 2.	2	0	☐ 5.	5	5	☐ 9.	9	25
			☐ 6.	6	10	☐ 10.	10	30

Code Number Checked: 7
Total Points Factor 4: 15

NPDES Permit Rating Work Sheet

FACTOR 5: Water Quality Factors NPDES No.: PA0002917

A. Is (or will) one or more of the effluent discharge limits based on water quality factors of the receiving stream (rather than technology-based federal effluent guidelines, or technology-based state effluent guidelines), or has a wasteload allocation been assigned to the discharge?

	Code	Points
☐ YES	1	10
☑ NO	2	0

B. Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?

	Code	Points
☑ YES	1	0
☐ NO	2	5

C. Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?

	Code	Points
☐ YES	1	10
☑ NO	2	0

Code Number Checked: *A.* 2 *B.* 1 *C.* 2

Total Points Factor 5 *A.* 0 +*B.* 0 +*C.* 0 = 0

FACTOR 6: Proximity to Near Coastal Waters

A. Base Score: Enter flow code here (from Factor 2): 31

Enter the multiplication factor that corresponds to the flow code: 0.0

Check appropriate facility HPRI Code (from PCS):

	HPRI#	Code	HPRI Score
☐	1	1	20
☐	2	2	0
☐	3	3	30
☑	4	4	0
☐	5	5	20

Flow code	Multiplication Factor
11, 31, or 41	0.00
12, 32, or 42	0.05
13, 33, or 43	0.10
14 or 34	0.15
21 or 51	0.10
22 or 52	0.30
23 or 53	0.60
24	1.00

HPRI Code Checked: 4

Base Score (HPRI Score) 0 x (Multiplication Factor) 0.0 = 0 (Total Points)

B. Additional Points – NEP Program
For a facility that has an HPRI code of 3, does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions) or the Chesapeake Bay?

	Code	Points
☐ YES	1	10
☑ NO	2	0

C. Additional Points – Great Lakes Area of Concern
For a facility that has an HPRI code of 5, does the facility discharge any of the pollutants of concern into one of the Great Lakes' 31 areas of concern (see instructions)?

	Code	Points
☐ YES	1	10
☑ NO	2	0

Code Number Checked: *A.* 4 *B.* 2 *C.* 2

Total Points Factor 6 *A.* 0 +*B.* 0 +*C.* 0 = 0

NPDES Permit Rating Work Sheet

Score Summary

NPDES No.: PA0002917

Factor	Description	Total Points
1.	Toxic Pollutant Potential	35
2.	Flow/Streamflow Volume	10
3.	Conventional Pollutants	0
4.	Public Health Impacts	15
5.	Water Quality Factors	0
6.	Proximity to Near Coastal Waters	0
	TOTAL (Factors 1 through 6)	60

S1. Is the total score equal to or greater than 80? ☐ YES (Facility is a major) ☑ NO

S2. If the answer to the above question is no, would you like this facility to be discretionary major?

☑ NO

☐ YES (Add 500 points to the above score and provide reason below:

Reason:

NEW SCORE: 60

OLD SCORE: 600

Adam Olesnanik
Permit Reviewer's Name

(412) 442-4254
Phone Number

02/15/2022
Date