Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Amendment, Major**	**NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER**	Application No.	**PA0001937 A-2**
Facility Type	**Industrial**		APS ID	**1123667**
Major / Minor	**Minor**		Authorization ID	**1502921**

Applicant and Facility Information

Applicant Name	**Pennsylvania Transformer Technology, LLC**	Facility Name	**Canonsburg Plant**
Applicant Address	30 Curry Avenue Canonsburg, PA 15317-1786	Facility Address	30 Curry Avenue Canonsburg, PA 15317-0440
Applicant Contact	Kevin Adams	Facility Contact	***same as applicant***
Applicant Phone	(724) 873-2329	Facility Phone	***same as applicant***
Applicant Email	kadams@patransformer.com	Facility Email	***same as applicant***
Client ID	84104	Site ID	241871
SIC Code	3612, 3613	Municipality	Cecil Township, Canonsburg Borough
SIC Description	Power, Distribution and Specialty Transformers; Switchgear and Switchboard Apparatus	County	Washington
Date Application Received	October 15, 2024	EPA Waived?	No
Date Application Accepted	October 16, 2024	If No, Reason	TMDL
Purpose of Application	Modification of water quality-based effluent limits based on site-specific data collection.		

Summary of Review

On October 15, 2024, on behalf of Pennsylvania Transformer Technology, LLC (PTT), GES, Inc. submitted an application to amend NPDES Permit PA0001937 for discharges from PTT's Canonsburg Plant. On February 16, 2021, DEP renewed PA0001937 (2021 Permit) and included a schedule of compliance for new water quality-based effluent limitations (WQBELs) because PTT was not expected to achieve the new WQBELs on the effective date of the permit. Among other things, the 2021 Permit required PTT to collect site-specific data for the following: discharge pollutant concentration coefficients of variability, discharge and background Total Hardness concentrations, background / ambient pollutant concentrations, chemical translators, the slope and width of the receiving waters, the velocity of the receiving waters, the acute and chronic partial mix factors, and volatilization rates. The permit also required PTT to perform a Toxics Reduction Evaluation (TRE) including identification of the sources of toxic pollutants in the effluent (those subject to new WQBELs), an evaluation of methods to reduce or eliminate those sources to comply with the new WQBELs and the feasibility of those methods, and an evaluation of options for treatment to achieve the new WQBELs and the feasibility of those treatment options.

Pursuant to the requirements of the 2021 Permit, PTT's amendment application was accompanied by a WQBEL Compliance Report summarizing the findings of both the site-specific data collection and the TRE. The report also included all supporting data and calculations for the site-specific data summary.

DEP has reviewed the WQBEL Compliance Report and has modified WQBELs and/or water quality-based reporting requirements for Outfalls 001, 002, 003, 004, 005, 006, and Internal Monitoring Points 102 and 104 based on PTT's/GES's findings.

Toxics Reduction Evaluation (TRE)

Approve	Deny	Signatures	Date
✓		Ryan C. Decker, P.E. / Environmental Engineer	February 28, 2025
X		Michael E. Fifth, P.E. / Environmental Engineer Manager	March 7, 2025

Summary of Review

The WQBEL Compliance Report included a section on the TRE as required by the 2021 Permit. The permit's TRE condition required the following:

> The permittee shall conduct a TRE in accordance with DEP's *Water Quality Toxics Management Strategy, Appendix C, Permittee Guidance for Conducting a Toxics Reduction Evaluation (TRE)* (361-0100-003). The permittee shall investigate and address the following as part of the TRE:
>
> 1. The source(s) of the toxic pollutants in the effluent through a comprehensive review of influent and effluent quality and contributors to the facility, if applicable.
>
> 2. An evaluation of approaches and strategies that exist to reduce or eliminate sources in order to achieve the final WQBELs.
>
> 3. An evaluation of approaches and strategies that exist to provide treatment to achieve the final WQBELs.
>
> 4. An analysis of the feasibility of the approaches and strategies identified in paragraphs 2 and 3, above.
>
> The permittee shall develop a TRE work plan and submit the work plan to DEP for review and comment when requested by DEP. DEP's approval of the work plan is not necessary prior to commencing the TRE.

PTT"s TRE in the WQBEL Compliance Report concludes, among other things, the following:

- Groundwater is sampled and reported on a semi-annual basis to continue evaluating the dissolved phase hydrocarbon plumes.
- Targeted removal/reduction efforts have been limited and are largely impractical because affected groundwater spans a relatively large area beneath current facility buildings and because challenging geology and hydrogeology limits available recovery options.
- Affected groundwater is currently treated and discharged through various systems across the facility as a method of source control rather than source reduction.
- PTT revisited previously proposed methods of source elimination such as segregation of storm water and impacted groundwater prior to combination inside the storm water conveyance system beneath the facility and modifications to existing pump and treat systems. Combining groundwater and storm water inside the storm water conveyance system beneath the facility remains unfeasible due to physical/geological constraints and cost effectiveness.
- Evaluation and approaches to eliminate historical impacted groundwater sources is ongoing as various constituents, from multiple locations across the facility, likely requiring different remedial technologies, must be considered.

With respect to the last item above and pursuant to the December 4, 2020 First Amendment to the Consent Order and Agreement entered into by DEP and PTT, PTT is currently implementing the following actions:

- Evaluation of light non-aqueous phase liquids (LNAPL) within the abandoned/former tank farm including a proposed LNAPL Recovery System. The recovery system will operate for a period of six months to evaluate the effectiveness of the planned remedy.
- Evaluation of the unnamed tributary passing through the facility with respects to tetrachloroethene (PCE). The purpose of the investigation is to determine the source of PCE within the system.
- Evaluation for operation of recovery wells in the area of the guardhouse. The operation of the recovery wells will evaluate the effectiveness of treatment for the dissolved phase hydrocarbon plume which discharges to Chartiers Creek.

PTT anticipates that it will be able to comply with most of the modified WQBELs (including those for which compliance will continue to be evaluated by reporting non-detect values at the level of DEP's Target QLs and those that will be above Target QLs) except for the modified WQBELs for benzo(a)anthracene, 3,4-benzofluoranthene, benzo(k)fluoranthene, and bis(2-

Summary of Review

ethylhexyl)phthalate at Internal Monitoring Point 102, which is the monitoring point for overflows from Sump 001B. The WQBEL Compliance Report states that PTT will continue to evaluate potential options to manage overflow water consistent with the COA.

Since TRE-related projects have not concluded, the amended permit will continue to require PTT to conduct TRE activities and to submit a report of ongoing and completed TRE activities with the NPDES permit renewal application.

To the extent that PTT expects ongoing non-compliance with the requirements of the amended permit, the First Amendment to the COA addresses the anticipated non-compliance which enables DEP to take an action on the permit. PTT's obligations under the Consent Order and Agreement, as amended, terminate on December 31, 2027.

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.	001	Design Flow (MGD)	0.72
Latitude	40° 16’ 0”	Longitude	80° 10’ 20”
Quad Name	Canonsburg	Quad Code	1604
Wastewater Description:	Treated contaminated groundwater and storm water		
Receiving Waters	Chartiers Creek	Stream Code	36777
NHD Com ID	134396089	RMI	27.59
Drainage Area	87	Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)	2.00	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	916	Slope (ft/ft)	0.002
Watershed No.	20F	Chapter 93 Class.	
Existing Use	WWF	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Pathogens; PCB; Turbidity, Nutrients, Siltation		
Source(s) of Impairment	Unknown; Habitat Modification		
TMDL Status	Final04/09/2001, Final04/09/2003	Name	Chartiers Creek, Chartiers Creek Watershed
Nearest Downstream Public Water Supply Intake	West View Borough Municipal Authority		
PWS Waters	Ohio River	Flow at Intake (cfs)	
PWS RMI	4.9	Distance from Outfall (mi)	approx. 30

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	002	Design Flow (MGD)	Variable; 0.066 (estimate)
Latitude	40° 16’ 15”	Longitude	80° 10’ 08”
Quad Name	Canonsburg	Quad Code	1604
Wastewater Description:	Contaminated groundwater and storm water overflows from Sump 001B (IMP 102) and contaminated groundwater, uncontaminated storm water from roof drains, and fire line leakage from IMP 202		
Receiving Waters	Unnamed trib. to Chartiers Creek	Stream Code	None
NHD Com ID		RMI	
Drainage Area	87.5	Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)	2.00	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	913.9	Slope (ft/ft)	0.002
Watershed No.	20F	Chapter 93 Class.	
Existing Use	WWF	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Pathogens; PCB; Turbidity, Nutrients, Siltation		
Source(s) of Impairment	Unknown; Habitat Modification		
TMDL Status	Final04/09/2001, Final04/09/2003	Name	Chartiers Creek, Chartiers Creek Watershed
Nearest Downstream Public Water Supply Intake	West View Borough Municipal Authority		
PWS Waters	Ohio River	Flow at Intake (cfs)	
PWS RMI	4.9	Distance from Outfall (mi)	approx. 30

Discharge, Receiving Waters and Water Supply Information			
IMP No.	102	Design Flow (MGD)	0.025
Latitude	° ’ ”	Longitude	° ’ ”
Quad Name	Canonsburg	Quad Code	1604
Wastewater Description:	Overflows of contaminated groundwater and contaminated storm water from Sump 001B		
Receiving Waters	Unnamed trib. to Chartiers Creek through Outfall 002	Stream Code	37035

Discharge, Receiving Waters and Water Supply Information			
IMP No.	202	Design Flow (MGD)	Variable
Latitude	° ’ ”	Longitude	° ’ ”
Quad Name	Canonsburg	Quad Code	1604
Wastewater Description:	Contaminated groundwater, uncontaminated storm water from roof drains and fire line leakage		
Receiving Waters	Unnamed trib. to Chartiers Creek through Outfall 002	Stream Code	37035

Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	0.0144
Latitude	40° 16’ 00”	Longitude	80° 10’ 20”
Quad Name	Canonsburg	Quad Code	1604
Wastewater Description:	Treated contaminated groundwater and storm water runoff from the Building 20/25 Groundwater Recovery System and Tank Farm Area Collection System		
Receiving Waters	Chartiers Creek	Stream Code	36777
NHD Com ID	134396089	RMI	27.59
Drainage Area	87	Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)	2.00	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	916	Slope (ft/ft)	0.002
Watershed No.	20F	Chapter 93 Class.	
Existing Use	WWF	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Pathogens; PCB; Turbidity, Nutrients, Siltation		
Source(s) of Impairment	Unknown; Habitat Modification		
TMDL Status	Final04/09/2001, Final04/09/2003	Name	Chartiers Creek, Chartiers Creek Watershed
Nearest Downstream Public Water Supply Intake	West View Borough Municipal Authority		
PWS Waters	Ohio River	Flow at Intake (cfs)	
PWS RMI	4.9	Distance from Outfall (mi)	approx. 30

Discharge, Receiving Waters and Water Supply Information

Outfall No.	004	Design Flow (MGD)	Variable; 0.096 (estimate)
Latitude	40° 16’ 00”	Longitude	80° 10’ 20”
Quad Name	Canonsburg	Quad Code	1604
Wastewater Description:	Contaminated groundwater and storm water overflows from Sump 001A (IMP 104) and storm water from IMP 204		
Receiving Waters	Chartiers Creek	Stream Code	36777
NHD Com ID	134396089	RMI	27.59
Drainage Area	87	Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)	2.00	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	916	Slope (ft/ft)	0.002
Watershed No.	20F	Chapter 93 Class.	
Existing Use	WWF	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Pathogens; PCB; Turbidity, Nutrients, Siltation		
Source(s) of Impairment	Unknown; Habitat Modification		
TMDL Status	Final04/09/2001, Final04/09/2003	Name	Chartiers Creek, Chartiers Creek Watershed
Nearest Downstream Public Water Supply Intake	West View Borough Municipal Authority		
PWS Waters	Ohio River	Flow at Intake (cfs)	
PWS RMI	4.9	Distance from Outfall (mi)	approx. 30

Discharge, Receiving Waters and Water Supply Information			
IMP No.	104	Design Flow (MGD)	0.032
Latitude	° ’ ”	Longitude	° ’ ”
Quad Name	Canonsburg	Quad Code	1604
Wastewater Description:	Overflows of contaminated groundwater and contaminated storm water from Sump 001A		
Receiving Waters	Chartiers Creek through Outfall 004	Stream Code	36777

Discharge, Receiving Waters and Water Supply Information			
IMP No.	204	Design Flow (MGD)	Variable
Latitude	° ’ ”	Longitude	° ’ ”
Quad Name	Canonsburg	Quad Code	1604
Wastewater Description:	Contaminated groundwater and storm water from roof drains		
Receiving Waters	Chartiers Creek through Outfall 004	Stream Code	36777

Discharge, Receiving Waters and Water Supply Information

Outfall No.	005	Design Flow (MGD)	Variable
Latitude	40° 16’ 07”	Longitude	80° 10’ 05”
Quad Name	Canonsburg	Quad Code	1604
Wastewater Description:	Storm water runoff from the parking lots and surface runoff		
Receiving Waters	Chartiers Creek	Stream Code	36777
NHD Com ID	134396089	RMI	27.13
Drainage Area	87.5	Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)	2.00	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)		Slope (ft/ft)	0.002
Watershed No.	20F	Chapter 93 Class.	
Existing Use	WWF	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Pathogens; PCB; Turbidity, Nutrients, Siltation		
Source(s) of Impairment	Unknown; Habitat Modification		
TMDL Status	Final04/09/2001, Final04/09/2003	Name	Chartiers Creek, Chartiers Creek Watershed
Nearest Downstream Public Water Supply Intake	West View Borough Municipal Authority		
PWS Waters	Ohio River	Flow at Intake (cfs)	
PWS RMI	4.9	Distance from Outfall (mi)	approx. 30

Discharge, Receiving Waters and Water Supply Information

Outfall No.	006	Design Flow (MGD)	0.288
Latitude	40° 16’ 00”	Longitude	80° 10’ 14”
Quad Name	Canonsburg	Quad Code	1604
Wastewater Description:	Contaminated groundwater infiltration into the Abandoned Sanitary Sewer System and from the Guardhouse Seep Extraction System		
Receiving Waters	Chartiers Creek	Stream Code	36777
NHD Com ID	134396089	RMI	27.59
Drainage Area	87	Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)	2.00	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)		Slope (ft/ft)	0.002
Watershed No.	20F	Chapter 93 Class.	
Existing Use	WWF	Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Pathogens; PCB; Turbidity, Nutrients, Siltation		
Source(s) of Impairment	Unknown; Habitat Modification		
TMDL Status	Final04/09/2001, Final04/09/2003	Name	Chartiers Creek, Chartiers Creek Watershed
Nearest Downstream Public Water Supply Intake	West View Borough Municipal Authority		
PWS Waters	Ohio River	Flow at Intake (cfs)	
PWS RMI	4.9	Distance from Outfall (mi)	approx. 30

Compliance History

Effluent Violations for Outfall 001, from: February 1, 2024 To: December 31, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Trichloroethylene	08/31/24	Avg Mo	< 6.45	ug/L	5.0	ug/L
Trichloroethylene	08/31/24	Daily Max	12.4	ug/L	10.0	ug/L

Effluent Violations for Outfall 002, from: February 1, 2024 To: December 31, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Hexavalent Chromium	04/30/24	Avg Mo	< 22.5	ug/L	20.6	ug/L
Total Lead	04/30/24	Avg Mo	< 7.77	ug/L	6.32	ug/L
Total Lead	04/30/24	Daily Max	< 18.00	ug/L	9.86	ug/L
Tetrachloroethylene	09/30/24	Avg Mo	10.80	ug/L	5.32	ug/L
Tetrachloroethylene	05/31/24	Avg Mo	6.69	ug/L	5.32	ug/L
Tetrachloroethylene	03/31/24	Avg Mo	12.10	ug/L	5.32	ug/L
Tetrachloroethylene	04/30/24	Avg Mo	12.20	ug/L	5.32	ug/L
Tetrachloroethylene	08/31/24	Avg Mo	6.22	ug/L	5.32	ug/L
Tetrachloroethylene	05/31/24	Avg Mo	6.69	ug/L	5.32	ug/L
Tetrachloroethylene	03/31/24	Daily Max	20.10	ug/L	8.29	ug/L
Tetrachloroethylene	09/30/24	Daily Max	14.40	ug/L	8.29	ug/L
Tetrachloroethylene	05/31/24	Daily Max	11.60	ug/L	8.29	ug/L
Tetrachloroethylene	04/30/24	Daily Max	25.30	ug/L	8.29	ug/L
Tetrachloroethylene	02/29/24	Daily Max	9.52	ug/L	8.29	ug/L
Tetrachloroethylene	05/31/24	Daily Max	11.60	ug/L	8.29	ug/L

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Vinyl Chloride	06/30/24	Avg Mo	< 1.34	ug/L	.5	ug/L
Vinyl Chloride	03/31/24	Avg Mo	3.90	ug/L	.5	ug/L
Vinyl Chloride	05/31/24	Avg Mo	2.72	ug/L	.5	ug/L
Vinyl Chloride	02/29/24	Avg Mo	< 1.28	ug/L	.5	ug/L
Vinyl Chloride	04/30/24	Avg Mo	< 2.71	ug/L	.5	ug/L
Vinyl Chloride	10/31/24	Avg Mo	< 1.31	ug/L	.5	ug/L
Vinyl Chloride	08/31/24	Avg Mo	< 3.94	ug/L	.5	ug/L
Vinyl Chloride	05/31/24	Avg Mo	2.72	ug/L	.5	ug/L
Vinyl Chloride	09/30/24	Avg Mo	9.73	ug/L	.5	ug/L
Vinyl Chloride	07/31/24	Avg Mo	< 1.55	ug/L	.5	ug/L
Vinyl Chloride	08/31/24	Daily Max	7.08	ug/L	.5	ug/L
Vinyl Chloride	02/29/24	Daily Max	< 1.91	ug/L	.5	ug/L
Vinyl Chloride	03/31/24	Daily Max	6.97	ug/L	.5	ug/L
Vinyl Chloride	05/31/24	Daily Max	4.21	ug/L	.5	ug/L
Vinyl Chloride	06/30/24	Daily Max	< 1.80	ug/L	.5	ug/L
Vinyl Chloride	10/31/24	Daily Max	3.70	ug/L	.5	ug/L
Vinyl Chloride	09/30/24	Daily Max	12.4	ug/L	.5	ug/L
Vinyl Chloride	07/31/24	Daily Max	3.15	ug/L	.5	ug/L
Vinyl Chloride	05/31/24	Daily Max	4.21	ug/L	.5	ug/L
Vinyl Chloride	04/30/24	Daily Max	< 6.12	ug/L	.5	ug/L

Effluent Violations for Outfall 102, from: February 1, 2024 To: December 31, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Oil and Grease	05/31/24	Avg Mo	< 5.6	mg/L	5.0	mg/L
Oil and Grease	05/31/24	Avg Mo	< 5.6	mg/L	5.0	mg/L
Oil and Grease	06/30/24	Avg Mo	< 5.2	mg/L	5.0	mg/L
Oil and Grease	07/31/24	Avg Mo	< 5.2	mg/L	5.0	mg/L
Oil and Grease	05/31/24	Daily Max	10.1	mg/L	10.0	mg/L
Oil and Grease	05/31/24	Daily Max	10.1	mg/L	10.0	mg/L
PCB-1260	03/31/24	Daily Max	< 0.310	ug/L	.25	ug/L
PCB-1260	07/31/24	Daily Max	0.4500	ug/L	.25	ug/L
Trichloroethylene	03/31/24	Avg Mo	< 5.01	ug/L	5.0	ug/L
Trichloroethylene	02/29/24	Avg Mo	7.85	ug/L	5.0	ug/L
Trichloroethylene	05/31/24	Daily Max	12.0	ug/L	10.0	ug/L
Trichloroethylene	05/31/24	Daily Max	12.0	ug/L	10.0	ug/L
Trichloroethylene	02/29/24	Daily Max	15.6	ug/L	10.0	ug/L
Trichloroethylene	03/31/24	Daily Max	< 11.0	ug/L	10.0	ug/L

Effluent Violations for Outfall 104, from: February 1, 2024 To: December 31, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
PCB-1260	05/31/24	Avg Mo	0.331	ug/L	.25	ug/L
PCB-1260	05/31/24	Avg Mo	0.331	ug/L	.25	ug/L
PCB-1260	08/31/24	Daily Max	0.280	ug/L	.25	ug/L
PCB-1260	05/31/24	Daily Max	1.00	ug/L	.25	ug/L
PCB-1260	06/30/24	Daily Max	0.310	ug/L	.25	ug/L

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
PCB-1260	05/31/24	Daily Max	1.00	ug/L	.25	ug/L
PCB-1260	07/31/24	Daily Max	0.3300	ug/L	.25	ug/L

Effluent Violations for Outfall 202, from: February 1, 2024 To: December 31, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Tetrachloroethylene	03/31/24	Avg Mo	< 5.65	ug/L	5.32	ug/L
Tetrachloroethylene	04/30/24	Avg Mo	9.22	ug/L	5.32	ug/L
Tetrachloroethylene	04/30/24	Daily Max	13.1	ug/L	8.29	ug/L
Tetrachloroethylene	03/31/24	Daily Max	< 10.80	ug/L	8.29	ug/L

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.72
Latitude 40° 16' 0" **Longitude** -80° 10' 20"
Wastewater Description: Treated contaminated groundwater and storm water

Under the current permit, Outfall 001 will be subject to the following effluent limitations and monitoring requirements beginning March 1, 2025.

Table 1. Effluent Limits and Monitoring Requirements Effective March 1, 2025 for Outfall 001

Parameter	Mass (pounds)		Concentration (µg/L)			Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum		
Flow (MGD)	Report	Report	—	—	—	1/day	Measured
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	1/week	Grab
Oil and Grease (mg/L)	—	—	5.0	10.0	12.5	2/month	Grab
Copper, Total	—	—	18.2	28.4	45.5	1/week	24-Hr Comp.
Free Available Cyanide	—	—	11.2	17.5	28.0	1/week	24-Hr Comp.
Benzo(a)Anthracene	—	—	0.034	0.053	0.085	1/week	24-Hr Comp.
Benzo(k)Fluoranthene	—	—	0.034	0.053	0.085	1/week	24-Hr Comp.
3,4-Benzofluoranthene	—	—	0.034	0.053	0.085	1/week	24-Hr Comp.
Bis(2-Ethylhexyl)Phthalate	—	—	10.6	16.6	26.5	1/week	24-Hr Comp.
Chrysene	—	—	0.034	0.053	0.085	1/week	24-Hr Comp.
PCB-1260	—	—	0.000064	0.000128	0.00016	1/week	24-Hr Comp.
PCBs, Total	—	—	0.000064	0.000128	0.00016	1/week	24-Hr Comp.
Tetrachloroethylene	—	—	5.0	9.55	12.5	2/month	4 Grabs/24 Hrs
Trichloroethylene	—	—	5.0	10.0	12.5	2/month	4 Grabs/24 Hrs
Vinyl Chloride	—	—	0.222	0.346	0.555	2/month	4 Grabs/24 Hrs

Based on site-specific data in PTT's WQBEL Compliance Report, PTT seeks to modify the effluent limits in Table 1 to remove effluent limits for copper, benzo(a)anthracene, 3,4-benzofluoranthene, benzo(k)fluoranthene, bis(2-ethylhexyl)phthalate, chrysene, and vinyl chloride. WQBELs for free available cyanide would become more stringent.

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

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

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

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

- Establish limits in the permit where the maximum reported effluent concentration or calculated AMEC equals or exceeds 50% of the WQBEL. Use the average monthly, maximum daily, and instantaneous maximum (IMAX) limits for the permit as recommended by the TMS (or, if appropriate, use a multiplier of 2 times the average monthly limit for the maximum daily limit and 2.5 times the average monthly limit for IMAX).
- For non-conservative pollutants, establish monitoring requirements where the maximum reported effluent concentration or calculated AMEC is between 25% - 50% of the WQBEL.
- For conservative pollutants, establish monitoring requirements where the maximum reported effluent concentration or calculated AMEC is between 10% - 50% of the WQBEL.

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

Reasonable Potential Analysis and WQBEL Development for Outfall 001

Outfall 001 discharges to Chartiers Creek at river mile index 27.59, which is the same discharge location as Outfalls 003, 004, and 006. Since the TMS is a single discharge model and will not properly account for the combined effects of multiple discharges when calculating WQBELs, the normal TMS modeling procedure is modified. Modeling is still performed for each outfall, but the combined discharge flow of Outfalls 001, 003, 004 and 006 is used as the discharge flow for each model run. Also, the stream characteristics for each model run are the same since the discharge locations are the same. Input discharge concentrations, coefficients of variation, and chemical translators for each model run are specific to each outfall. As concentration limits, the WQBELs calculated for the combined flow can be imposed at any of the outfalls included in the combined flow analysis with the end-of-analysis comparison between outfall-specific discharge concentrations and the calculated WQBELs tailoring the reasonable potential analysis to each outfall's effluent characteristics. The combined discharge flow of Outfalls 001, 003, 004, and 006 is calculated as follows:

$$\underset{001}{0.72\ \text{MGD}} + \underset{003}{0.0144\ \text{MGD}} + \underset{004}{0.43\ \text{MGD}} + \underset{006}{0.288\ \text{MGD}} = 1.4524\ \text{MGD}$$

Table 2. TMS Inputs for Outfall 001

Discharge Characteristics		
Parameter	**Value**	
Discharge Flow (MGD)	1.4524	
Hardness (mg/L)	317.1	
pH (S.U.)	7.15	
Receiving Stream Characteristics		
Parameter	**Outfall 001**	**End of Segment**
Stream Code	36777	36777
River Mile Index	27.59	27.36
Drainage Area (mi^2)	87.4	87.5
Q_{7-10} (cfs)	2	2
Low-flow Yield (cfs/mi^2)	0.02288	0.02288
Elevation (ft)	906.75	905.0
Slope (ft/ft)	0.0014	0.0011
Width (ft)	9.26	2.63
Depth (ft)	0.09	0.08
Width/Depth Ratio (ft/ft)	18.625	17.541
Velocity (fps)	0.148	0.105
Hardness (mg/L)	288.2	
pH (S.U.)	6.97	
$Q_{harmonic}$ (cfs)	25.2	25.2

The Outfall 001 flow is the maximum capacity of the 001 Treatment System (500 gpm or 0.72 MGD). The Outfall 003 flow is the maximum capacity of the 003 Treatment System (10 gpm or 0.0144 MGD). There is no design flow for Outfall 004, so the flow was conservatively estimated to be the average of the maximum flows reported at Outfall 004 in 2022-2024. The Outfall 006 flow is the maximum system capacity of the 006 Treatment System (200 gpm or 0.288 MGD).

Site-specific inputs are based on those developed by GES, Inc. as reported in the WQBEL Compliance Report (see summary tables in **Attachment A**). Some of the site-specific receiving stream characteristics are reported in Table 2. Discharge concentrations and related inputs (coefficients of variation and metal translators) are those developed specifically for Outfall 001.

Output from the TMS model is included in **Attachment B** to this Fact Sheet. As explained previously, the TMS compares the input discharge concentrations to the calculated WQBELs using DEP's Reasonable Potential thresholds to evaluate the need to impose WQBELs or monitoring requirements in the permit. Based on the updated water quality modeling, WQBELs at Outfall 001 will change as shown in Table 3. All other effluent limits and reporting requirements will remain in effect.

Table 3. Outfall 001 WQBELs and Monitoring Requirements

Parameter	Current WQBELs (µg/L)			New WQBELs (µg/L)		
	Avg. Mo.	Daily Max	IMAX	Avg. Mo.	Daily Max	IMAX
Copper, Total	18.2	28.4	45.5	—	—	—
Cyanide, Free	11.2	17.5	28.0	7.56	11.8	18.9
Benzo(a)Anthracene	0.034	0.053	0.085	—	—	—
3,4-Benzofluoranthene	0.034	0.053	0.085	—	—	—
Benzo(k)Fluoranthene	0.034	0.053	0.085	—	—	—
Bis(2-Ethylhexyl)Phthalate	10.6	16.6	26.5	—	—	—
Chrysene	0.034	0.053	0.085	—	—	—
Vinyl Chloride	0.222	0.346	0.555	—	—	—

Final effluent limits and monitoring requirements for Outfall 001 as modified in response to PTT's amendment application and WQBEL Compliance Report are summarized in Table 4.

Table 4. Final Effluent Limits and Monitoring Requirements for Outfall 001

Parameter	Mass (pounds)		Concentration (µg/L)			Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum		
Flow (MGD)	Report	Report	—	—	—	1/day	Measured
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	1/week	Grab
Oil and Grease (mg/L)	—	—	5.0	10.0	12.5	2/month	Grab
Free Available Cyanide	—	—	7.56	11.8	18.9	1/week	24-Hr Comp.
PCB-1260	—	—	0.000064	0.000128	0.00016	1/week	24-Hr Comp.
PCBs, Total	—	—	0.000064	0.000128	0.00016	1/week	24-Hr Comp.
Tetrachloroethylene	—	—	5.0	9.55	12.5	2/month	4 Grabs/24 Hrs
Trichloroethylene	—	—	5.0	10.0	12.5	2/month	4 Grabs/24 Hrs

Existing measurement frequencies and sampling types will remain unchanged.

Development of Effluent Limitations

Outfall No. 002 **Design Flow (MGD)** 0.253
Latitude 40° 16' 15.00" **Longitude** -80° 10' 8.00"
Wastewater Description: Contaminated groundwater and storm water overflows from Sump 001B (IMP 102) and contaminated groundwater, uncontaminated storm water from roof drains, and fire line leakage from IMP 202

Under the current permit, Outfall 002 is subject to the following effluent limitations and monitoring requirements.

Table 5. Effluent Limits and Monitoring Requirements for Outfall 002

Parameter	Mass (pounds)		Concentration (µg/L)			Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum		
Flow (MGD)	Report	Report	—	—	—	1/day	Measured
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	1/week	Grab
Oil and Grease (mg/L)	—	—	5.0	10.0	—	2/month	Grab
Aluminum, Total	—	—	Report	Report	—	1/week	24-Hr Comp.
Chromium, Hexavalent	—	—	20.6	32.2	51.5	1/week	24-Hr Comp.
Iron, Total	—	—	Report	Report	—	1/week	24-Hr Comp.
Lead, Total	—	—	6.32	9.86	15.8	1/week	24-Hr Comp.
Selenium, Total	—	—	9.91	15.5	24.8	1/week	24-Hr Comp.
Benzo(a)Anthracene	—	—	0.029	0.046	0.073	1/week	24-Hr Comp.
Benzo(a)Pyrene			0.029	0.046	0.073	1/week	24-Hr Comp.
Benzo(k)Fluoranthene	—	—	0.029	0.046	0.073	1/week	24-Hr Comp.
3,4-Benzofluoranthene	—	—	0.029	0.046	0.073	1/week	24-Hr Comp.
Chlorodibromomethane	—	—	3.08	4.81	7.70	1/week	4 Grabs/24 Hrs
Dichlorobromomethane	—	—	4.24	6.61	10.6	1/week	4 Grabs/24 Hrs
Bis(2-Ethylhexyl)Phthalate	—	—	Report	Report	—	1/week	24-Hr Comp.
Chloroform	—	—	43.9	68.5	110	1/week	4 Grabs/24 Hrs
Chrysene	—	—	0.029	0.046	0.073	1/week	24-Hr Comp.
Dibenzo(a,h)Anthracene	—	—	0.029	0.046	0.073	1/week	24-Hr Comp.
Indeno(1,2,3-cd)Pyrene	—	—	0.029	0.046	0.073	1/week	24-Hr Comp.
PCB-1260	—	—	0.000064	0.000128	0.00016	1/week	24-Hr Comp.
PCBs, Total	—	—	0.000064	0.000128	0.00016	1/week	24-Hr Comp.
Tetrachloroethylene	—	—	5.32	8.29	13.3	2/month	4 Grabs/24 Hrs
Trichloroethylene	—	—	19.3	30.1	48.3	2/month	4 Grabs/24 Hrs
Vinyl Chloride	—	—	0.193	0.301	0.483	2/month	4 Grabs/24 Hrs

Based on site-specific data in PTT's WQBEL Compliance Report, PTT seeks to modify the effluent limits in Table 5 to remove effluent limits for hexavalent chromium, lead, selenium, chloroform, chlorodibromomethane, and dichlorobromomethane. Effluent limits for benzo(a)anthracene, 3,4-benzofluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, and vinyl chloride would become less stringent and effluent limits for benzo(a)pyrene and dibenzo(a,h)anthracene would become more stringent.

Reasonable Potential Analysis and WQBEL Development for Outfall 002

Table 6. TMS Inputs for Outfall 002

Discharge Characteristics		
Parameter	**Value**	
Discharge Flow (MGD)	0.253	
Hardness (mg/L)	390.3	
pH (S.U.)	7.17	
Receiving Stream Characteristics		
Parameter	**Outfall 002**	**End of Segment**
Stream Code	36777	36777
River Mile Index	27.36	27.3
Drainage Area (mi^2)	87.5	87.5
Q_{7-10} (cfs)	2	2
Low-flow Yield (cfs/mi^2)	0.02286	0.02286
Elevation (ft)	905.5	905
Slope (ft/ft)	0.0011	0.0011
Width (ft)	2.63	2.63
Depth (ft)	0.08	0.08
Width/Depth Ratio (ft/ft)	17.541	17.541
Velocity (fps)	0.105	0.105
Hardness (mg/L)	288.2	
pH (S.U.)	6.97	
$Q_{harmonic}$ (cfs)	25.2	25.2

Output from the TMS model is included in **Attachment B** to this Fact Sheet. As explained previously, the TMS compares the input discharge concentrations to the calculated WQBELs using DEP's Reasonable Potential thresholds to evaluate the need to impose WQBELs or monitoring requirements in the permit.

Based on the updated water quality modeling, WQBELs at Outfall 002 will change as shown in Table 7. All other effluent limits and existing monitoring frequencies and sample types will remain in effect.

Table 7. Outfall 002 Effluent Limits and Monitoring Requirements

Parameter	**Current WQBELs (µg/L)**			**New WQBELs (µg/L)**		
	Avg. Mo.	**Daily Max**	**IMAX**	**Avg. Mo.**	**Daily Max**	**IMAX**
Hexavalent Chromium	20.06	32.2	51.5	Report	Report	Report
Lead, Total	6.32	9.86	15.8	—	—	—
Selenium, Total	9.91	15.5	24.8	—	—	—
Benzo(a)Anthracene	0.029	0.046	0.073	0.065	0.1	0.16
Benzo(a)Pyrene	0.029	0.046	0.073	0.007	0.01	0.016
3,4-Benzofluoranthene	0.029	0.046	0.073	0.065	0.1	0.16
Benzo(k)Fluoranthene	0.029	0.046	0.073	0.65	1.02	1.63
Chloroform	43.9	68.5	110.0	—	—	—
Chrysene	0.029	0.046	0.073	Report	Report	Report
Chlorodibromomethane	3.08	4.81	7.70	—	—	—
Dibenzo(a,h)Anthracene	0.029	0.046	0.073	0.007	0.01	0.016
Dichlorobromomethane	4.24	6.61	10.6	—	—	—
Indeno(1,2,3-cd)Pyrene	0.029	0.046	0.073	0.065	0.1	0.16
Vinyl Chloride	0.193	0.301	0.483	1.31	1.86	3.27

Final effluent limits for Outfall 002 are summarized in Table 8.

Table 8. Final Effluent Limits and Monitoring Requirements for Outfall 002

Parameter	Mass (pounds)		Concentration (µg/L)			Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum		
Flow (MGD)	Report	Report	—	—	—	1/day	Measured
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	1/week	Grab
Oil and Grease (mg/L)	—	—	5.0	10.0	—	2/month	Grab
Aluminum, Total	—	—	Report	Report	—	1/week	24-Hr Comp.
Chromium, Hexavalent	—	—	Report	Report	—	1/week	24-Hr Comp.
Iron, Total	—	—	Report	Report	—	1/week	24-Hr Comp.
Benzo(a)Anthracene	—	—	0.065	0.10	0.16	1/week	24-Hr Comp.
Benzo(a)Pyrene			0.007	0.01	0.016	1/week	24-Hr Comp.
Benzo(k)Fluoranthene	—	—	0.65	1.02	1.63	1/week	24-Hr Comp.
3,4-Benzofluoranthene	—	—	0.065	0.10	0.16	1/week	24-Hr Comp.
Bis(2-Ethylhexyl)Phthalate	—	—	Report	Report	—	1/week	24-Hr Comp.
Chrysene	—	—	Report	Report	—	1/week	24-Hr Comp.
Dibenzo(a,h)Anthracene	—	—	0.007	0.01	0.016	1/week	24-Hr Comp.
Indeno(1,2,3-cd)Pyrene	—	—	0.065	0.10	0.16	1/week	24-Hr Comp.
PCB-1260	—	—	0.000064	0.000128	0.00016	1/week	24-Hr Comp.
PCBs, Total	—	—	0.000064	0.000128	0.00016	1/week	24-Hr Comp.
Tetrachloroethylene	—	—	5.32	8.29	13.3	2/month	4 Grabs/24 Hrs
Trichloroethylene	—	—	19.3	30.1	48.3	2/month	4 Grabs/24 Hrs
Vinyl Chloride	—	—	1.31	1.86	3.27	2/month	4 Grabs/24 Hrs

Existing measurement frequencies and sampling types will remain unchanged.

Development of Effluent Limitations

IMP No. 102 **Design Flow (MGD)** 0.025
Wastewater Description: Overflows of contaminated groundwater and contaminated storm water from Sump 001B

Under the current permit, Internal Monitoring Point 102 will be subject to the following effluent limitations and monitoring requirements beginning March 1, 2025.

Table 19. Effluent Limits and Monitoring Requirements Effective March 1, 2025 for IMP 102

Parameter	Mass (pounds)		Concentration (µg/L)			Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum		
Flow (MGD)	Report	Report	—	—	—	Continuous	Measured
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	2/discharge	Grab
Oil and Grease (mg/L)	—	—	5.0	10.0	—	2/discharge	Grab
Fecal Coliform (No./100mL)	—	—	Report	Report	—	2/discharge	Grab
Arsenic, Total	—	—	Report	Report	—	2/discharge	Grab
Copper, Total	—	—	18.2	28.4	45.5	2/discharge	Grab
Free Available Cyanide	—	—	11.2	17.5	28.0	2/discharge	Grab
Cyanide, Total	—	—	Report	Report	—	2/discharge	Grab
Selenium, Total	—	—	Report	Report	—	2/discharge	Grab
Zinc, Total	—	—	Report	Report	—	2/discharge	Grab
Benzo(a)Anthracene	—	—	0.034	0.053	0.085	2/discharge	Grab
Benzo(k)Fluoranthene	—	—	0.034	0.053	0.085	2/discharge	Grab
3,4-Benzofluoranthene	—	—	0.034	0.053	0.085	2/discharge	Grab
Bis(2-Ethylhexyl)Phthalate	—	—	10.6	16.6	26.5	2/discharge	Grab
Chloroform	—	—	Report	Report	—	2/discharge	Grab
Chrysene	—	—	0.034	0.053	0.085	2discharge	Grab
PCB-1260	—	—	0.000064	0.000128	0.00016	2discharge	Grab
PCBs, Total	—	—	0.000064	0.000128	0.00016	2discharge	Grab
cis-1,2-Dichloroethyolene	—	—	Report	Report	—	2discharge	Grab
trans-1,2-Dichloroethyolene	—	—	Report	Report	—	2discharge	Grab
Tetrachloroethylene	—	—	5.0	9.55	12.5	2discharge	Grab
Trichloroethylene	—	—	5.0	10.0	12.5	2discharge	Grab
Vinyl Chloride	—	—	0.222	0.346	0.555	2discharge	Grab

Based on site-specific data in PTT's WQBEL Compliance Report, PTT seeks to modify the effluent limits in **Table 19** to remove effluent limits for copper, free available cyanide, and chrysene. Effluent limits for benzo(a)anthracene, 3,4-benzofluoranthene, benzo(k)fluoranthene, and bis(2-ethylhexyl)phthalate would become less stringent and effluent limits for vinyl chloride would be replaced with a reporting requirement.

Pursuant to bypass requirements under 40 CFR § 122.41(m)(2), effluent limits imposed at IMP 102 are the same as those imposed at Outfall 001. Sections 102.A and 102.B of the Fact Sheet for the permit renewal in 2021 explained:

Section 102.A:

> A discharge resulting from a bypass[1] or overflow of one of the wastewater collection sumps would be composed of the same wastewaters that are discharged at Outfall 001, albeit not having undergone treatment. Such bypasses are allowed as long as they comply with bypass requirements per 40 CFR § 122.41(m)(2), which states:
>
> > *Bypass not exceeding limitations.* The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation.

[1] *Bypass* is defined at 40 CFR § 122.41(m)(1)(i) as "the intentional diversion of waste streams from any portion of a treatment facility."

For IMP 102, the effluent limitations that cannot be exceeded are those imposed at Outfall 001. An overflow of Sump 001B would constitute a bypass of Treatment System 001 and that bypass would be allowed as long as: 1) the discharge complies with effluent limits that would have been applicable to the wastewater had it been treated by Treatment System 001 and 2) the bypass is necessary for maintenance and operational purposes. DEP considers the bypasses to be essential in order to maintain the structural integrity of the collection and treatment systems that can only handle flows up to those systems' design capacities; a controlled bypass through a dedicated outfall pipe is preferable to an uncontrolled overflow. However, any bypass is undesirable, particularly given the highly toxic nature of PCBs present in the raw wastewater.

Based on these factors, the TBELs imposed at Outfall 001 also will be imposed at IMP 102. Note that the pollutants of concern at IMP 102 are the same as those at Outfall 001 because the wastewaters are from the same source.

Section 102.B:

As discussed in Section 102.A, waste streams diverted from any portion of a treatment facility cannot cause effluent limitations to be exceeded; this requirement is not limited to TBELs since treatment facilities must also be capable of meeting any WQBELs imposed on the discharges. Therefore, the WQBELs and related monitoring requirements imposed at Outfall 001 will be imposed at IMP 102 also.

Consistent with the preceding citations, effluent limits at IMP 102 were imposed based on the concept that effluent discharging through IMP 102 would normally discharge through Outfall 001 and be subject to 1) treatment by the 001 Treatment System and 2) the effluent limits at Outfall 001. This concept still applies. PTT performed a separate reasonable potential analysis to complete the WQBEL Compliance Report including site-specific data collection for IMP 102 and modeling using the flow rates of overflows from Sump 001B reported from 2022-2024. However, to the extent that IMP 102's wastewaters are subject to WQBELs (apart from WQBELs carried over from Outfall 001 pursuant to bypass requirements), WQBELs applicable to IMP 102's wastewaters are developed at Outfall 002 where wastewaters monitored at IMP 102 discharge to waters of the Commonwealth. Therefore, a separate water quality analysis is not necessary.

WQBELs at IMP 102 are modified to be equivalent to those calculated for Outfall 001 (see **Table 4** in this Fact Sheet) based on site-specific data for Outfall 001. As a result, Free Available Cyanide limits will change to those calculated for Outfall 001 in response to the WQBEL Compliance Report. Final effluent limits for IMP 102 are summarized in **Table 20**.

Table 20. Final Effluent Limits and Monitoring Requirements for IMP 102

Parameter	Mass (pounds)		Concentration (µg/L)			Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum		
Flow (MGD)	Report	Report	—	—	—	Continuous	Measured
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	2/discharge	Grab
Oil and Grease (mg/L)	—	—	5.0	10.0	—	2/discharge	Grab
Fecal Coliform (No./100mL)	—	—	Report	Report	—	2/discharge	Grab
Arsenic, Total	—	—	Report	Report	—	2/discharge	Grab
Free Available Cyanide	—	—	7.56	11.8	18.9	2/discharge	Grab
Cyanide, Total	—	—	Report	Report	—	2/discharge	Grab
Selenium, Total	—	—	Report	Report	—	2/discharge	Grab
Zinc, Total	—	—	Report	Report	—	2/discharge	Grab
Chloroform	—	—	Report	Report	—	2/discharge	Grab
PCB-1260	—	—	0.000064	0.000128	0.00016	2discharge	Grab
PCBs, Total	—	—	0.000064	0.000128	0.00016	2discharge	Grab
cis-1,2-Dichloroethyolene	—	—	Report	Report	—	2discharge	Grab
trans-1,2-Dichloroethyolene	—	—	Report	Report	—	2discharge	Grab
Tetrachloroethylene	—	—	5.0	9.55	12.5	2discharge	Grab
Trichloroethylene	—	—	5.0	10.0	12.5	2discharge	Grab

Existing measurement frequencies and sampling types will remain unchanged.

Development of Effluent Limitations

Outfall No. 003 **Design Flow (MGD)** 0.0144
Latitude 40° 16' 0" **Longitude** -80° 10' 20"
Wastewater Description: Treated contaminated groundwater and storm water runoff from the Building 20/25 Groundwater Recovery System and Tank Farm Area Collection System

Under the current permit, Outfall 003 will be subject to the following effluent limitations and monitoring requirements beginning March 1, 2025.

Table 9. Effluent Limits and Monitoring Requirements Effective March 1, 2025 for Outfall 003

Parameter	Mass (pounds)		Concentration (µg/L)			Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum		
Flow (MGD)	Report	Report	—	—	—	1/day	Measured
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	1/week	Grab
Oil and Grease (mg/L)	—	—	5.0	10.0	—	2/month	Grab
Lead, Total	—	—	6.86	10.7	17.2	1/week	24-Hr Comp.
Benzo(a)Anthracene	—	—	0.034	0.053	0.085	1/week	24-Hr Comp.
Benzo(a)Pyrene	—	—	Report	Report	—	1/week	24-Hr Comp.
Benzo(k)Fluoranthene	—	—	0.034	0.053	0.085	1/week	24-Hr Comp.
3,4-Benzofluoranthene	—	—	0.034	0.053	0.085	1/week	24-Hr Comp.
Bis(2-Ethylhexyl)Phthalate	—	—	Report	Report	—	1/week	24-Hr Comp.
Chrysene	—	—	0.034	0.053	0.085	1/week	24-Hr Comp.
Dibenzo(a,h)Anthracene	—	—	Report	Report	—	1/week	24-Hr Comp.
Indeno(1,2,3-cd)Pyrene	—	—	0.034	0.053	0.085	1/week	24-Hr Comp.
PCB-1260	—	—	0.000064	0.000128	0.00016	1/week	24-Hr Comp.
PCBs, Total	—	—	0.000064	0.000128	0.00016	1/week	24-Hr Comp.
Tetrachloroethylene	—	—	5.0	9.55	12.5	2/month	4 Grabs/24 Hrs
Trichloroethylene	—	—	5.0	10.0	12.5	2/month	4 Grabs/24 Hrs
Vinyl Chloride	—	—	Report	Report	—	2/month	4 Grabs/24 Hrs

Based on site-specific data in PTT's WQBEL Compliance Report, PTT seeks to modify the effluent limits in Table 9 to remove effluent limits for lead. Effluent limits for benzo(k)fluoranthene and chrysene would become less stringent and effluent limits for benzo(a)anthracene, 3,4-benzofluoranthene, and indeno(1,2,3-cd)pyrene would become more stringent.

Reasonable Potential Analysis and WQBEL Development for Outfall 003

As described previously, Outfalls 001, 003, 004, and 006 discharge to Chartiers Creek at the same location. Since the TMS is a single discharge model that will not properly account for the combined effects of multiple discharges when calculating WQBELs, discharges from those outfalls are modeled together as one discharge. The need for effluent limits at each outfall is determined based on a comparison of effluent limits calculated for the combined discharge and the discharge concentrations at each outfall. For Outfall 003, the site-specific receiving stream characteristics are the same as those reported in Table 2. Discharge concentrations and related inputs (coefficients of variation and metal translators) are those developed specifically for Outfall 003 (see **Attachment A**).

Output from the TMS model is included in **Attachment B** to this Fact Sheet. Based on the updated water quality modeling, WQBELs at Outfall 003 will change as shown in Table 10. All other effluent limits will remain in effect.

Table 10. Outfall 003 WQBELs and Monitoring Requirements

Parameter	Current WQBELs / Reporting Requirements (µg/L)			New WQBELs (µg/L)		
	Avg. Mo.	Daily Max	IMAX	Avg. Mo.	Daily Max	IMAX
Lead, Total	6.86	10.7	17.2	—	—	—
Benzo(a)Anthracene	0.034	0.053	0.085	0.012	0.019	0.031

Table 10 (cont'd). Outfall 003 WQBELs and Monitoring Requirements

Parameter	Current WQBELs (µg/L)			New WQBELs (µg/L)		
	Avg. Mo.	Daily Max	IMAX	Avg. Mo.	Daily Max	IMAX
Benzo(k)Fluoranthene	0.034	0.053	0.085	0.12	0.19	0.31
3,4-Benzofluoranthene	0.034	0.053	0.085	0.012	0.019	0.031
Chrysene	0.034	0.053	0.085	1.47	2.68	3.66
Indeno(1,2,3-cd)Pyrene	0.034	0.053	0.085	0.012	0.019	0.031

Final effluent limits for Outfall 003 are summarized in Table 11.

Table 11. Final Effluent Limits and Monitoring Requirements for Outfall 003

Parameter	Mass (pounds)		Concentration (µg/L)			Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum		
Flow (MGD)	Report	Report	—	—	—	1/day	Measured
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	1/week	Grab
Oil and Grease (mg/L)	—	—	5.0	10.0	—	2/month	Grab
Benzo(a)Anthracene	—	—	0.012	0.019	0.031	1/week	24-Hr Comp.
Benzo(a)Pyrene	—	—	Report	Report	—	1/week	24-Hr Comp.
Benzo(k)Fluoranthene	—	—	0.12	0.19	0.31	1/week	24-Hr Comp.
3,4-Benzofluoranthene	—	—	0.012	0.019	0.031	1/week	24-Hr Comp.
Bis(2-Ethylhexyl)Phthalate	—	—	Report	Report	—	1/week	24-Hr Comp.
Chrysene	—	—	1.47	2.68	3.66	1/week	24-Hr Comp.
Dibenzo(a,h)Anthracene	—	—	Report	Report	—	1/week	24-Hr Comp.
Indeno(1,2,3-cd)Pyrene	—	—	0.012	0.019	0.031	1/week	24-Hr Comp.
PCB-1260	—	—	0.000064	0.000128	0.00016	1/week	24-Hr Comp.
PCBs, Total	—	—	0.000064	0.000128	0.00016	1/week	24-Hr Comp.
Tetrachloroethylene	—	—	5.0	9.55	12.5	2/month	4 Grabs/24 Hrs
Trichloroethylene	—	—	5.0	10.0	12.5	2/month	4 Grabs/24 Hrs
Vinyl Chloride	—	—	Report	Report	—	2/month	4 Grabs/24 Hrs

Existing measurement frequencies and sampling types will remain unchanged.

Effluent limits for benzo(a)anthracene, benzo(k)fluoranthene, 3,4-benzofluoranthene, chrysene, and indeno(1,2,3-cd)pyrene continue to be less than DEP's Target QLs for those parameters, so PTT will continue to be required to demonstrate compliance with the modified WQBELs by reporting that effluent concentrations are not detectable at the level of DEP's Target QLs for those parameters.

Development of Effluent Limitations

Outfall No. 004 **Design Flow (MGD)** 0.43
Latitude 40° 16' 00" **Longitude** -80° 10' 20"
Wastewater Description: Contaminated groundwater and storm water overflows from Sump 001A (IMP 104) and storm water from IMP 204

Under the current permit, Outfall 004 will be subject to the following effluent limitations and monitoring requirements beginning March 1, 2025.

Table 12. Effluent Limits and Monitoring Requirements Effective March 1, 2025 for Outfall 004

Parameter	Mass (pounds)		Concentration (µg/L)			Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum		
Flow (MGD)	Report	Report	—	—	—	2/month	Measured
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	2/month	Grab
Oil and Grease (mg/L)	—	—	5.0	10.0	—	2/month	Grab
Aluminum, Total	—	—	Report	Report	—	2/month	Grab
Cadmium, Total	—	—	0.584	0.911	1.45	2/month	Grab
Chromium, Hexavalent	—	—	21.2	33.0	53.0	2/month	Grab
Free Available Cyanide	—	—	11.2	17.5	28.0	2/month	Grab
Lead, Total	—	—	6.86	10.7	17.2	2/month	Grab
Zinc, Total			156	243	390	2/month	Grab
Benzo(a)Anthracene	—	—	0.034	0.053	0.085	2/month	Grab
Benzo(a)Pyrene	—	—	0.034	0.053	0.085	2/month	Grab
Benzo(k)Fluoranthene	—	—	0.034	0.053	0.085	2/month	Grab
3,4-Benzofluoranthene	—	—	0.034	0.053	0.085	2/month	Grab
Chrysene	—	—	0.034	0.053	0.085	2/month	Grab
Indeno(1,2,3-cd)Pyrene	—	—	0.034	0.053	0.085	2/month	Grab
PCB-1260	—	—	0.000064	0.000128	0.00016	2/month	Grab
PCBs, Total	—	—	0.000064	0.000128	0.00016	2/month	Grab
Tetrachloroethylene	—	—	5.0	9.55	12.5	2/month	Grab
Trichloroethylene	—	—	5.0	10.0	12.5	2/month	Grab
Vinyl Chloride	—	—	Report	Report	—	2/month	Grab

Based on site-specific data in PTT's WQBEL Compliance Report, PTT seeks to modify the effluent limits in Table 12 to remove effluent limits for cadmium. Also, effluent limits for lead, zinc, benzo(k)fluoranthene, and chrysene would become less stringent and effluent limits for free available cyanide, benzo(a)anthracene, benzo(a)pyrene, 3,4-benzofluoranthene, and indeno(1,2,3-cd)pyrene would become more stringent. Average monthly and instantaneous maximum limits for hexavalent chromium would become more stringent and daily maximum limits would become less stringent.

Reasonable Potential Analysis and WQBEL Development for Outfall 004

As described previously, Outfalls 001, 003, 004, and 006 discharge to Chartiers Creek at the same location. Since the TMS is a single discharge model that will not properly account for the combined effects of multiple discharges when calculating WQBELs, discharges from those outfalls are modeled together as one discharge. The need for effluent limits at each outfall is determined based on a comparison of the effluent limits calculated for the combined discharge and the discharge concentrations at each outfall. For Outfall 004, the site-specific receiving stream characteristics are the same as those reported in Table 2. Discharge concentrations and related inputs (coefficients of variation and metal translators) are those developed specifically for Outfall 004 (see **Attachment A**).

Output from the TMS model is included in **Attachment B** to this Fact Sheet. Based on the updated water quality modeling, WQBELs at Outfall 004 will change as shown in Table 13. All other effluent limits will remain in effect.

Table 13. Outfall 004 WQBELs and Monitoring Requirements

Parameter	Current WQBELs (µg/L)			New WQBELs (µg/L)		
	Avg. Mo.	Daily Max	IMAX	Avg. Mo.	Daily Max	IMAX
Cadmium, Total	6.86	10.7	17.2	Report	Report	—
Chromium, Hexavalent	0.034	0.053	0.085	19.6	35.7	49.1
Free Available Cyanide	11.2	17.5	28.0	7.56	11.8	18.9
Lead, Total	6.86	10.7	17.2	23.4	26.3	58.4
Zinc, Total	156	243	390	447	779	1117
Benzo(a)Anthracene	0.034	0.053	0.085	0.012	0.022	0.031
Benzo(a)Pyrene	0.034	0.053	0.085	0.001	0.002	0.003
Benzo(k)Fluoranthene	0.034	0.053	0.085	0.12	0.18	0.31
3,4-Benzofluoranthene	0.034	0.053	0.085	0.012	0.019	0.031
Chrysene	0.034	0.053	0.085	1.47	2.68	3.66
Indeno(1,2,3-cd)Pyrene	0.034	0.053	0.085	0.012	0.022	0.031

Final effluent limits for Outfall 004 are summarized in Table 14.

Table 14. Final Effluent Limits and Monitoring Requirements for Outfall 004

Parameter	Mass (pounds)		Concentration (µg/L)			Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum		
Flow (MGD)	Report	Report	—	—	—	2/month	Measured
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	2/month	Grab
Oil and Grease (mg/L)	—	—	5.0	10.0	—	2/month	Grab
Aluminum, Total	—	—	Report	Report	—	2/month	Grab
Cadmium, Total	—	—	Report	Report	—	2/month	Grab
Chromium, Hexavalent	—	—	19.6	35.7	49.1	2/month	Grab
Free Available Cyanide	—	—	7.56	11.8	18.9	2/month	Grab
Lead, Total	—	—	23.4	26.3	58.4	2/month	Grab
Zinc, Total			447	779	1117	2/month	Grab
Benzo(a)Anthracene	—	—	0.012	0.022	0.031	2/month	Grab
Benzo(a)Pyrene	—	—	0.001	0.002	0.003	2/month	Grab
Benzo(k)Fluoranthene	—	—	0.12	0.18	0.31	2/month	Grab
3,4-Benzofluoranthene	—	—	0.012	0.019	0.031	2/month	Grab
Chrysene	—	—	1.47	2.68	3.66	2/month	Grab
Indeno(1,2,3-cd)Pyrene	—	—	0.012	0.022	0.031	2/month	Grab
PCB-1260	—	—	0.000064	0.000128	0.00016	2/month	Grab
PCBs, Total	—	—	0.000064	0.000128	0.00016	2/month	Grab
Tetrachloroethylene	—	—	5.0	9.55	12.5	2/month	Grab
Trichloroethylene	—	—	5.0	10.0	12.5	2/month	Grab
Vinyl Chloride	—	—	Report	Report	—	2/month	Grab

Existing measurement frequencies and sampling types will remain unchanged.

Effluent limits for benzo(a)anthracene, benzo(a)pyrene, benzo(k)fluoranthene, 3,4-benzofluoranthene, chrysene, and indeno(1,2,3-cd)pyrene continue to be less than DEP's Target QLs for those parameters, so PTT will continue to be required to demonstrate compliance with the modified WQBELs by reporting that effluent concentrations are not detectable at the level of DEP's Target QLs for those parameters.

Development of Effluent Limitations

IMP No. 104 **Design Flow (MGD)** 0.032
Wastewater Description: Overflows of contaminated groundwater and contaminated storm water from Sump 001A

Table 21. Effluent Limits and Monitoring Requirements Effective March 1, 2025 for IMP 104

Parameter	Mass (pounds)		Concentration (µg/L)			Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum		
Flow (MGD)	Report	Report	—	—	—	Continuous	Measured
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	2/discharge	Grab
Oil and Grease (mg/L)	—	—	5.0	10.0	—	2/discharge	Grab
Fecal Coliform (No./100mL)	—	—	Report	Report	—	2/discharge	Grab
Arsenic, Total	—	—	Report	Report	—	2/discharge	Grab
Copper, Total	—	—	18.2	28.4	45.5	2/discharge	Grab
Free Available Cyanide	—	—	11.2	17.5	28.0	2/discharge	Grab
Cyanide, Total	—	—	Report	Report	—	2/discharge	Grab
Selenium, Total	—	—	Report	Report	—	2/discharge	Grab
Zinc, Total	—	—	Report	Report	—	2/discharge	Grab
Benzo(a)Anthracene	—	—	0.034	0.053	0.085	2/discharge	Grab
Benzo(k)Fluoranthene	—	—	0.034	0.053	0.085	2/discharge	Grab
3,4-Benzofluoranthene	—	—	0.034	0.053	0.085	2/discharge	Grab
Bis(2-Ethylhexyl)Phthalate	—	—	10.6	16.6	26.5	2/discharge	Grab
Chloroform	—	—	Report	Report	—	2/discharge	Grab
Chrysene	—	—	0.034	0.053	0.085	2discharge	Grab
PCB-1260	—	—	0.000064	0.000128	0.00016	2discharge	Grab
PCBs, Total	—	—	0.000064	0.000128	0.00016	2discharge	Grab
cis-1,2-Dichloroethyolene	—	—	Report	Report	—	2discharge	Grab
trans-1,2-Dichloroethyolene	—	—	Report	Report	—	2discharge	Grab
Tetrachloroethylene	—	—	5.0	9.55	12.5	2discharge	Grab
Trichloroethylene	—	—	5.0	10.0	12.5	2discharge	Grab
Vinyl Chloride	—	—	0.222	0.346	0.555	2discharge	Grab

Based on site-specific data in PTT's WQBEL Compliance Report, PTT seeks to modify the effluent limits in **Table 21** to remove effluent limits for copper, free available cyanide, bis(2-ethylhexyl)phthalate, chrysene, and vinyl chloride. Effluent limits for benzo(a)anthracene and 3,4-benzofluoranthene would become less stringent and effluent limits for benzo(k)fluoranthene would be replaced with a reporting requirement.

Pursuant to bypass requirements under 40 CFR § 122.41(m)(2), effluent limits imposed at IMP 104 are the same as those imposed at Outfall 001. PTT performed a separate reasonable potential analysis to complete the WQBEL Compliance Report including site-specific data collection for IMP 104 and modeling using the flow rates of overflows from Sump 001A reported from 2022-2024. However, to the extent that IMP 104's wastewaters are subject to WQBELs (apart from WQBELs carried over from Outfall 001 pursuant to bypass requirements), WQBELs applicable to IMP 104's wastewaters are developed at Outfall 004 where wastewaters monitored at IMP 104 discharge to waters of the Commonwealth. Therefore, a separate water quality analysis is not necessary.

WQBELs at IMP 104 are modified to be equivalent to those calculated for Outfall 001 (see **Table 4** in this Fact Sheet) based on site-specific data for Outfall 001. As a result, Free Available Cyanide limits will change to those calculated for Outfall 001 in response to the WQBEL Compliance Report. Final effluent limits for IMP 104 are summarized in **Table 22**.

Table 22. Final Effluent Limits and Monitoring Requirements for IMP 104

Parameter	Mass (pounds)		Concentration (µg/L)			Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum		
Flow (MGD)	Report	Report	—	—	—	Continuous	Measured

Table 22 (cont'd). Final Effluent Limits and Monitoring Requirements for IMP 104

Parameter	Mass (pounds)		Concentration (µg/L)			Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum		
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	2/discharge	Grab
Oil and Grease (mg/L)	—	—	5.0	10.0	—	2/discharge	Grab
Fecal Coliform (No./100mL)	—	—	Report	Report	—	2/discharge	Grab
Arsenic, Total	—	—	Report	Report	—	2/discharge	Grab
Free Available Cyanide	—	—	7.56	11.8	18.9	2/discharge	Grab
Cyanide, Total	—	—	Report	Report	—	2/discharge	Grab
Selenium, Total	—	—	Report	Report	—	2/discharge	Grab
Zinc, Total	—	—	Report	Report	—	2/discharge	Grab
Chloroform	—	—	Report	Report	—	2/discharge	Grab
PCB-1260	—	—	0.000064	0.000128	0.00016	2discharge	Grab
PCBs, Total	—	—	0.000064	0.000128	0.00016	2discharge	Grab
cis-1,2-Dichloroethyolene	—	—	Report	Report	—	2discharge	Grab
trans-1,2-Dichloroethyolene	—	—	Report	Report	—	2discharge	Grab
Tetrachloroethylene	—	—	5.0	9.55	12.5	2discharge	Grab
Trichloroethylene	—	—	5.0	10.0	12.5	2discharge	Grab

Existing measurement frequencies and sampling types will remain unchanged.

Development of Effluent Limitations

Outfall No. 005 **Design Flow (MGD)** Variable
Latitude 40° 16' 07.00" **Longitude** -80° 10' 05.00"
Wastewater Description: Storm water runoff from the parking lots and surface runoff

Under the current permit, Outfall 005 will be subject to the following effluent limitations and monitoring requirements beginning March 1, 2025.

Table 15. Effluent Limits and Monitoring Requirements Effective March 1, 2025 for Outfall 005

Parameter	Mass (pounds)		Concentration (mg/L)			Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum		
Flow (MGD)	Report	Report	—	—	—	2/month	Measured
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	2/month	Grab
Oil and Grease	—	—	15.0	—	30.0	2/month	Grab
Fecal Coliform (No./100mL)	—	—	Report	Report	—	2/month	Grab
Aluminum, Total	—	—	0.75	0.75	—	2/month	Grab
Chromium, Total	—	—	Report	Report	—	2/month	Grab
Free Available Cyanide	—	—	Report	Report	—	2/month	Grab
Cyanide, Total	—	—	Report	Report	—	2/month	Grab
Fluoride, Total	—	—	Report	Report	—	2/month	Grab
Iron, Dissolved	—	—	Report	Report	—	2/month	Grab
Iron, Total	—	—	1.5	3.0	—	2/month	Grab
Lead, Total	—	—	Report	Report	—	2/month	Grab
Manganese, Total	—	—	1.0	2.0	—	2/month	Grab
Mercury, Total	—	—	Report	Report	—	2/month	Grab
Nickel, Total	—	—	Report	Report	—	2/month	Grab
Sulfate, Total	—	—	Report	Report	—	2/month	Grab
Zinc, Total	—	—	Report	Report	—	2/month	Grab
PCB-1260 (µg/L)	—	—	0.000064	0.000128	0.00016	2/month	Grab
PCBs, Total (µg/L)	—	—	0.000064	0.000128	0.00016	2/month	Grab

As communicated to PTT on October 4, 2021 in response to PTT's site-specific data collection studies and toxics reduction evaluation work plan, the site-specific data collection requirements in Part C, Condition II of the permit were imposed for pollutants with WQBELs developed using PENTOXSD and default input data for certain variables such as discharge coefficients of variation and stream hardness. However, the aluminum and iron WQBELs at Outfall 005 were based on the Chartiers Creek Watershed Total Maximum Daily Load and were not developed using PENTOXSD. Consequently, the WQBELs for aluminum and iron at Outfall 005 should have been excluded from the site-specific data collection requirements of Part C, Condition II. Since input data for variables in PENTOXSD were not used to establish effluent limitations for aluminum and iron, DEP indicated that it would exercise its discretion and not require PTT to collect the site-specific data required by Part C, Condition II of the permit for aluminum and iron at Outfall 005.

PTT did collect some site-specific data for Outfall 005 and modeled the discharge using DEP's Toxics Management Spreadsheet. Based on the results of the modeling, WQBELs for aluminum and iron would not apply. However, the WQBELs for those parameters were not based on a localized water quality analysis using PENTOXSD; they were based on the acid mine drainage TMDL for Chartiers Creek. DEP's Response to PTT Comment 7 in DEP's December 2020 Fact Sheet Addendum is reproduced below to clarify the basis for the current limits.

> When the permit was drafted in 2016, DEP considered PTTI to be a contributor to the impairment [of Chartiers Creek] because the TMDL's metals are present in PTTI's effluent in concentrations greater than water quality criteria. This was explained on p.51 of the Fact Sheet:
>
> > Unlike other outfalls from the Canonsburg Plant, Outfall 005's effluent contains elevated concentrations (i.e., concentrations greater than water quality criteria) of aluminum and iron with both metals averaging to approximately 3.0 mg/L based on the last five years of DMR data; average manganese concentrations are

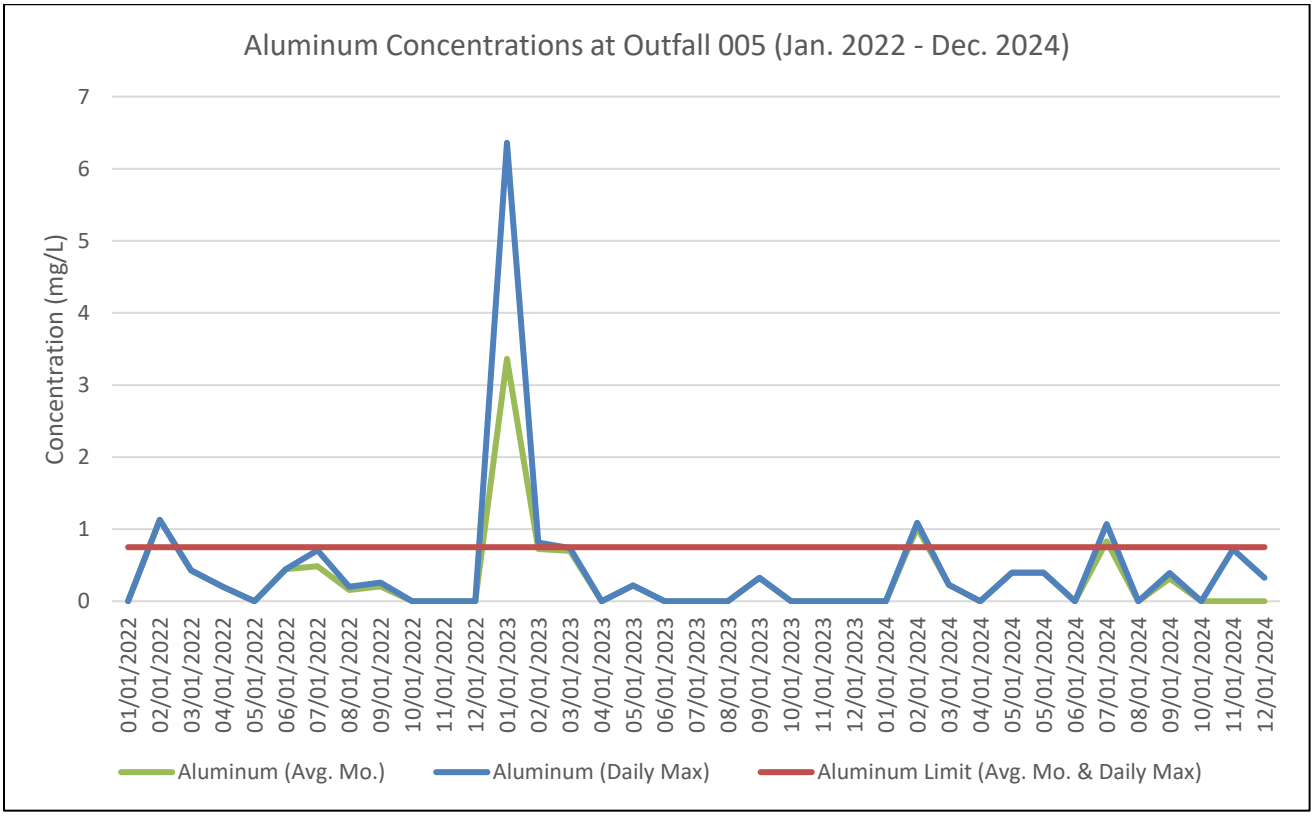
about 0.25 mg/L with only a few results exceeding the 1.0 mg/L manganese criterion. Since discharges at these levels would contribute to the acid mine drainage-based aquatic life use impairment of the Chartiers Creek watershed, it is necessary to limit discharges of these metals. Limiting aluminum, iron and manganese is appropriate even though Outfall 005 only discharges storm water because critical loading in the Chartiers Creek watershed can occur during both low and high flows (many of the abandoned mines contributing to the impairment discharge during high flow conditions).

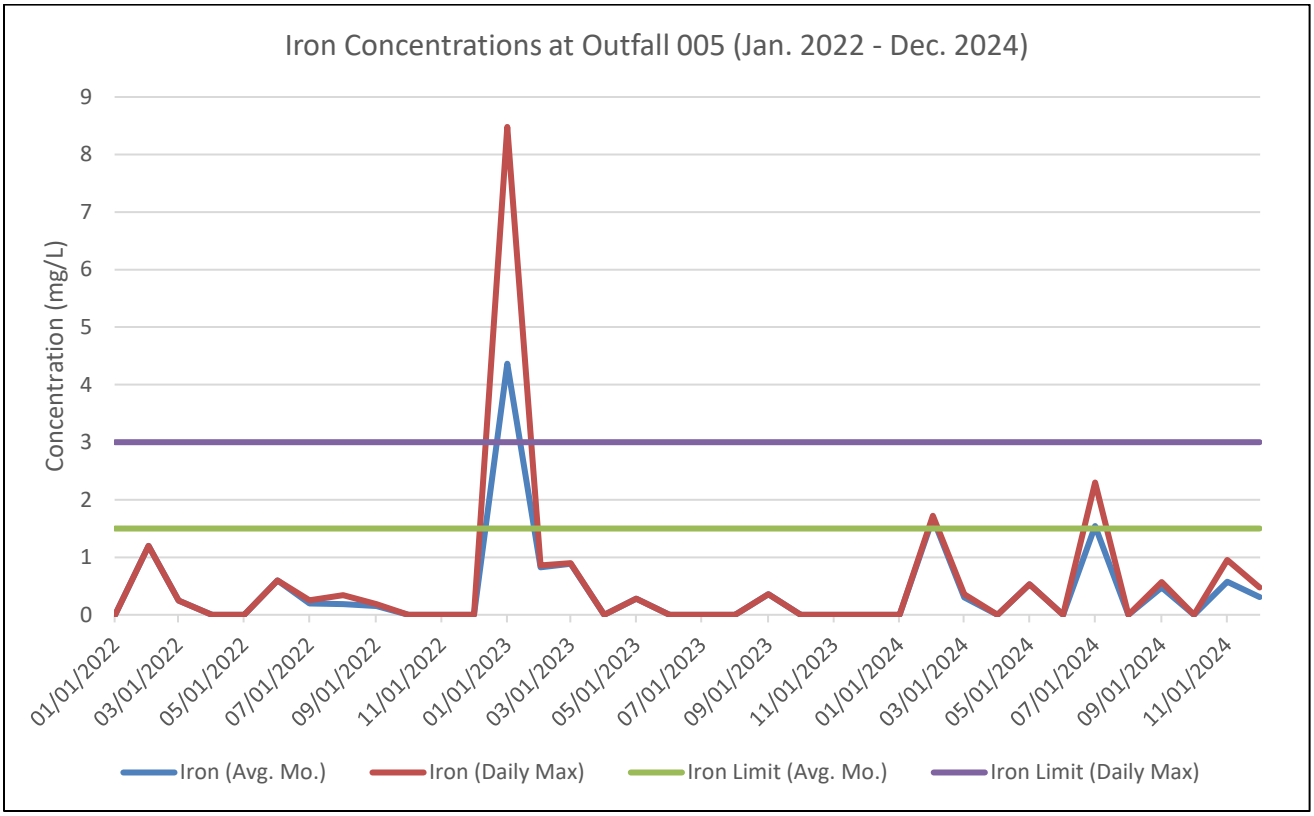
In Comment 7, PTTI requested time to demonstrate that metals concentrations have decreased. More than three years have passed since DEP received PTTI's comment letter. DMR data show that effluent concentrations, on average, have decreased. The following table summarizes the long-term average concentrations of aluminum, iron, and manganese for the five-year period preceding the paving of the employee parking lot in November 2015 and for the three-year period after November 2015.

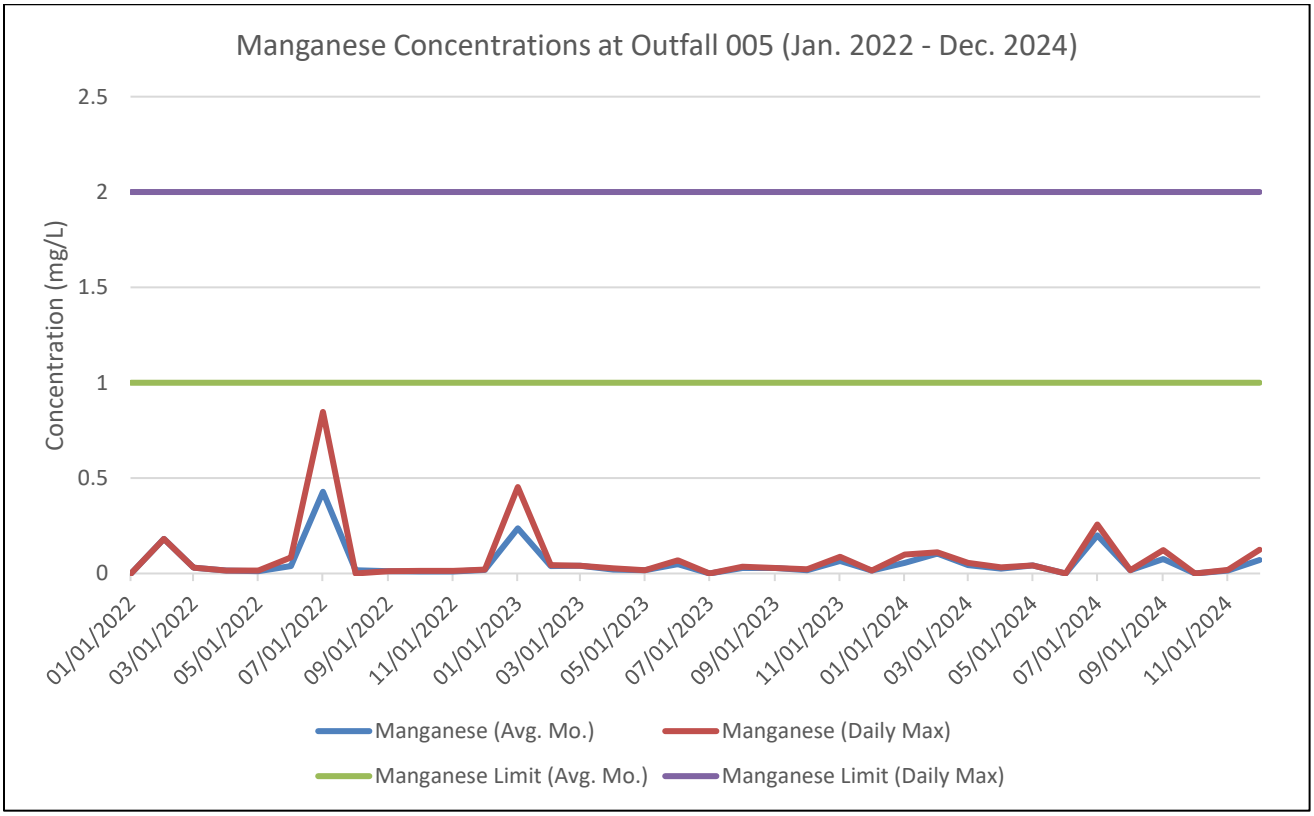
Parameter	Outfall 005 Long-Term Average Concentration (mg/L)		Effluent Limits (mg/L)	
	Pre-November 2015	Post-November 2015	Average Monthly	Maximum Daily
Aluminum	3.28	0.654	0.75	0.75
Iron	3.25	1.05	1.5	3.0
Manganese	0.335	0.069	1.0	2.0

Since PTTI has not reported any recent elevated manganese concentrations that would have violated the manganese WQBELs, the manganese WQBELs will take effect immediately. A compliance schedule will be allowed for the aluminum and iron WQBELs because DMR results indicate that the concentrations of those metals intermittently exceed the WQBELs and PTTI may not be able to comply immediately. PTTI should evaluate possible sources of aluminum and iron and implement best management practices to minimize the potential for elevated discharge concentrations in storm water runoff.

PTT's data show that the long-term average effluent concentrations of aluminum, iron, and manganese at Outfall 005 are similar to those reported previously for the three-year period after November 2015. The long-term average concentrations are less than the WQBELs that will take effect on March 1, 2025. However, PTT intermittently reports results that exceed those WQBELs.







Since the limits originate from the Chartiers Creek TMDL and Outfall 005's discharges intermittently exceed the WQBELs, the WQBELs will not be removed from the permit. However, since 1) the long-term average concentrations comply with the WQBELs, 2) the results of PTT's modeling showing that limits are not necessary based on local mixing conditions, and (3) the source of Outfall 005's effluent is storm water, the monitoring frequencies for aluminum, iron, and manganese will be reduced to 2/6 months. All other effluent limits and monitoring requirements remain unchanged.

Development of Effluent Limitations

Outfall No. 006 **Design Flow (MGD)** 0.288
Latitude 40° 16' 00" **Longitude** -80° 10' 14"
Wastewater Description: Contaminated groundwater infiltration into the Abandoned Sanitary Sewer System and from the Guardhouse Seep Extraction System

Under the current permit, Outfall 006 will be subject to the following effluent limitations and monitoring requirements beginning March 1, 2025.

Table 16. Effluent Limits and Monitoring Requirements Effective March 1, 2025 for Outfall 006

Parameter	Mass (pounds)		Concentration (µg/L)			Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum		
Flow (MGD)	Report	Report	—	—	—	1/day	Measured
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	1/week	Grab
Oil and Grease (mg/L)	—	—	5.0	10.0	—	2/month	Grab
Fecal Coliform (No./100mL)	—	—	Report	Report	—	1/week	Grab
Copper, Total	—	—	18.2	28.4	45.5	1/week	24-Hr Comp.
Free Available Cyanide	—	—	11.2	17.5	28.0	1/week	24-Hr Comp.
4,6-dinitro-o-cresol	—	—	28.0	43.7	70.0	1/week	24-Hr Comp.
3,3-Dichlorobenzidine	—	—	0.186	0.291	0.465	1/week	24-Hr Comp.
Pentachlorophenol	—	—	2.40	3.74	6.00	1/week	24-Hr Comp.
2,4,6-Trichlorophenol	—	—	12.4	19.4	31.0	1/week	24-Hr Comp.
Acrolein	—	—	3.90	6.08	9.75	1/week	4 Grabs/24 Hrs
Acrylonitrile	—	—	0.453	0.706	1.13	1/week	4 Grabs/24 Hrs
1,3-Dichloropropylene	—	—	3.02	4.71	7.55	1/week	4 Grabs/24 Hrs
Hexachlorobenzene	—	—	0.002	0.004	0.005	1/week	24-Hr Comp.
Benzene	—	—	Report	Report	—	1/week	4 Grabs/24 Hrs
Benzidine	—	—	0.0008	0.001	0.002	1/week	24-Hr Comp.
Benzo(a)Anthracene	—	—	0.034	0.053	0.085	1/week	24-Hr Comp.
Benzo(a)Pyrene	—	—	0.034	0.053	0.085	1/week	24-Hr Comp.
Benzo(k)Fluoranthene	—	—	0.034	0.053	0.085	1/week	24-Hr Comp.
3,4-Benzofluoranthene	—	—	0.034	0.053	0.085	1/week	24-Hr Comp.
Bromoform	—	—	Report	Report	—	1/week	4 Grabs/24 Hrs
Carbon Tetrachloride	—	—	2.04	3.18	5.10	1/week	4 Grabs/24 Hrs
Chlorodibromomethane	—	—	3.55	5.54	8.88	1/week	4 Grabs/24 Hrs
1,1,2-Trichloroethane	—	—	5.24	8.17	13.1	1/week	4 Grabs/24 Hrs
1,2-Dichloroethane	—	—	3.37	5.26	8.43	1/week	4 Grabs/24 Hrs
1,2-Diphenylhydrazine	—	—	0.319	0.498	0.798	1/week	24-Hr Comp.
Dichlorobromomethane	—	—	4.88	7.62	12.2	1/week	4 Grabs/24 Hrs
1,1,2,2-Tetrachloroethane	—	—	1.51	2.35	3.78	1/week	4 Grabs/24 Hrs
Bis(2-Chloroethyl)Ether	—	—	0.266	0.415	0.665	1/week	24-Hr Comp.
Bis(2-Ethylhexyl)Phthalate	—	—	10.6	16.6	26.5	1/week	24-Hr Comp.
Chrysene	—	—	0.034	0.053	0.085	1/week	24-Hr Comp.
Dibenzo(a,h)Anthracene	—	—	0.034	0.053	0.085	1/week	24-Hr Comp.
Hexachlorobutadiene			3.91	6.09	9.78	1/week	24-Hr Comp.
Hexachlorocyclopentadiene	—	—	2.16	3.37	5.40	1/week	24-Hr Comp.
Hexachloroethane	—	—	12.4	19.4	31.0	1/week	24-Hr Comp.
Indeno(1,2,3-cd)Pyrene	—	—	0.034	0.053	0.085	1/week	24-Hr Comp.
Methylene Chloride	—	—	Report	Report	—	1/week	4 Grabs/24 Hrs
N-Nitrosodimethylamine	—	—	0.006	0.010	0.015	1/week	24-Hr Comp.
N-Nitrosodi-N-Propylamine	—	—	0.044	0.069	0.110	1/week	24-Hr Comp.
N-Nitrosodiphenylamine	—	—	Report	Report	—	1/week	24-Hr Comp.

Table 16 (cont'd). Effluent Limits and Monitoring Requirements Effective March 1, 2025 for Outfall 006

Parameter	Mass (pounds)		Concentration (µg/L)			Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum		
PCB-1260	—	—	0.000064	0.000128	0.00016	1/week	24-Hr Comp.
PCBs, Total	—	—	0.000064	0.000128	0.00016	1/week	24-Hr Comp.
Phenanthrene	—	—	2.16	3.37	5.40	1/week	24-Hr Comp.
Tetrachloroethylene	—	—	5.0	9.55	12.5	1/week	4 Grabs/24 Hrs
Trichloroethylene	—	—	5.0	10.0	12.5	1/week	4 Grabs/24 Hrs
Vinyl Chloride	—	—	0.222	0.346	0.555	1/week	4 Grabs/24 Hrs

Based on site-specific data in PTT's WQBEL Compliance Report, PTT seeks to modify the effluent limits in **Table 16** to remove effluent limits for 2,4,6-trichlorophenol, acrolein, acrylonitrile, benzidine, carbon tetrachloride, chlorodibromomethane, dichlorobromomethane, 1,2-dichloroethane, 1,3-dichloropropylene, 1,2-diphenylhydrazine, bis(2-ethylhexyl)ether, bis(2-ethylhexyl)phthalate, hexachloroethane, n-nitrosodimethylamine,n-nitrosodi-n-propylene, 1,1,2,2-tetrachloroethane, 1,1,2-trichloroethane, and vinyl chloride. Also, effluent limits for benzo(k)fluoranthene and chrysene would become less stringent and effluent limits for free available cyanide, 4,6-dinitro-o-cresol, 3,3-dichlorobenzidine, pentachlorophenol, benzo(a)anthracene, benzo(a)pyrene, 3,4-benzofluoranthene, dibenzo(a,h)anthracene, hexachlorobutadiene, hexachlorocyclopentadiene, and phenanthrene would become more stringent.

Reasonable Potential Analysis and WQBEL Development for Outfall 006

As described previously, Outfalls 001, 003, 004, and 006 discharge to Chartiers Creek at the same location. Since the TMS is a single discharge model that will not properly account for the combined effects of multiple discharges when calculating WQBELs, discharges from those outfalls are modeled together as one discharge. The need for effluent limits at each outfall is determined based on a comparison of effluent limits calculated for the combined discharge and the discharge concentrations at each outfall. For Outfall 006, the site-specific receiving stream characteristics are the same as those reported in Table 2. Discharge concentrations and related inputs (coefficients of variation and metal translators) are those developed specifically for Outfall 006 (see **Attachment A**).

Output from the TMS model is included in **Attachment B** to this Fact Sheet. Based on the updated water quality modeling, WQBELs at Outfall 006 will change as shown in **Table 17**. All other effluent limits will remain in effect.

Table 17. Outfall 006 WQBELs and Monitoring Requirements

Parameter	Current WQBELs (µg/L)			New WQBELs (µg/L)		
	Avg. Mo.	Daily Max	IMAX	Avg. Mo.	Daily Max	IMAX
Copper, Total	18.2	28.4	45.5	—	—	—
Free Available Cyanide	11.2	17.5	28.0	7.56	11.8	18.9
4,6-dinitro-o-cresol	28.0	43.7	70.0	3.78	5.9	9.45
3,3-Dichlorobenzidine	0.186	0.291	0.465	—	—	—
Pentachlorophenol	2.40	3.74	6.00	0.37	0.57	0.92
2,4,6-Trichlorophenol	12.4	19.4	31.0	—	—	—
Acrolein	3.90	6.08	9.75	—	—	—
Acrylonitrile	0.453	0.706	1.13	—	—	—
1,3-Dichloropropylene	3.02	4.71	7.55	—	—	—
Hexachlorobenzene	0.002	0.004	0.005	—	—	—
Benzidine	0.0008	0.001	0.002	—	—	—
Benzo(a)Anthracene	0.034	0.053	0.085	0.012	0.019	0.031
Benzo(a)Pyrene	0.034	0.053	0.085	0.001	0.002	0.003
Benzo(k)Fluoranthene	0.034	0.053	0.085	0.12	0.19	0.31
3,4-Benzofluoranthene	0.034	0.053	0.085	0.012	0.019	0.031
Carbon Tetrachloride	2.04	3.18	5.10	—	—	—
Chlorodibromomethane	3.55	5.54	8.88	—	—	—
1,1,2-Trichloroethane	5.24	8.17	13.1	—	—	—

Table 17 (cont'd). Outfall 006 WQBELs and Monitoring Requirements

Parameter	Current WQBELs / Reporting Requirements (µg/L)			New WQBELs (µg/L)		
	Avg. Mo.	Daily Max	IMAX	Avg. Mo.	Daily Max	IMAX
1,2-Dichloroethane	3.37	5.26	8.43	—	—	—
1,2-Diphenylhydrazine	0.319	0.498	0.798	—	—	—
Dichlorobromomethane	4.88	7.62	12.2	—	—	—
1,1,2,2-Tetrachloroethane	1.51	2.35	3.78	—	—	—
Bis(2-Chloroethyl)Ether	0.266	0.415	0.665	—	—	—
Bis(2-Ethylhexyl)Phthalate	10.6	16.6	26.5	—	—	—
Chrysene	0.034	0.053	0.085	1.47	2.29	3.66
Dibenzo(a,h)Anthracene	0.034	0.053	0.085	0.001	0.002	0.003
Hexachlorobutadiene	3.91	6.09	9.78	0.12	0.19	0.31
Hexachlorocyclopentadiene	2.16	3.37	5.40	1.89	2.95	4.73
Hexachloroethane	12.4	19.4	31.0	—	—	—
Indeno(1,2,3-cd)Pyrene	0.034	0.053	0.085	0.012	0.019	0.031
N-Nitrosodimethylamine	0.006	0.010	0.015	—	—	—
N-Nitrosodi-N-Propylamine	0.044	0.069	0.110	—	—	—
Phenanthrene	2.16	3.37	5.40	1.89	2.95	4.73
Vinyl Chloride	0.222	0.346	0.555	—	—	—

Final effluent limits for Outfall 006 are summarized in **Table 18**.

Table 18. Final Effluent Limits and Monitoring Requirements for Outfall 006

Parameter	Mass (pounds)		Concentration (µg/L)			Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum		
Flow (MGD)	Report	Report	—	—	—	1/day	Measured
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	1/week	Grab
Oil and Grease (mg/L)	—	—	5.0	10.0	—	2/month	Grab
Fecal Coliform (No./100mL)	—	—	Report	Report	—	1/week	Grab
Free Available Cyanide	—	—	7.56	11.8	18.9	1/week	24-Hr Comp.
4,6-dinitro-o-cresol	—	—	3.78	5.9	9.45	1/week	24-Hr Comp.
Pentachlorophenol	—	—	0.37	0.57	0.92	1/week	24-Hr Comp.
Benzene	—	—	Report	Report	—	1/week	4 Grabs/24 Hrs
Benzo(a)Anthracene	—	—	0.012	0.019	0.031	1/week	24-Hr Comp.
Benzo(a)Pyrene	—	—	0.001	0.002	0.003	1/week	24-Hr Comp.
Benzo(k)Fluoranthene	—	—	0.12	0.19	0.31	1/week	24-Hr Comp.
3,4-Benzofluoranthene	—	—	0.012	0.019	0.031	1/week	24-Hr Comp.
Bromoform	—	—	Report	Report	—	1/week	4 Grabs/24 Hrs
Chrysene	—	—	1.47	2.29	3.66	1/week	24-Hr Comp.
Dibenzo(a,h)Anthracene	—	—	0.001	0.002	0.003	1/week	24-Hr Comp.
Hexachlorobutadiene			0.12	0.19	0.31	1/week	24-Hr Comp.
Hexachlorocyclopentadiene	—	—	1.89	2.95	4.73	1/week	24-Hr Comp.
Indeno(1,2,3-cd)Pyrene	—	—	0.034	0.053	0.085	1/week	24-Hr Comp.
Methylene Chloride	—	—	Report	Report	—	1/week	4 Grabs/24 Hrs
N-Nitrosodiphenylamine	—	—	Report	Report	—	1/week	24-Hr Comp.
PCB-1260	—	—	0.000064	0.000128	0.00016	1/week	24-Hr Comp.
PCBs, Total	—	—	0.000064	0.000128	0.00016	1/week	24-Hr Comp.
Phenanthrene	—	—	1.89	2.95	4.73	1/week	24-Hr Comp.
Tetrachloroethylene	—	—	5.0	9.55	12.5	1/week	4 Grabs/24 Hrs
Trichloroethylene	—	—	5.0	10.0	12.5	1/week	4 Grabs/24 Hrs

Effluent limits for pentachlorophenol, benzo(a)anthracene, benzo(a)pyrene, benzo(k)fluoranthene, 3,4-benzofluoranthene, chrysene, dibenzo(a,h)anthracene, hexachlorobutadiene, hexachlorocyclopentadiene, and indeno(1,2,3-cd)pyrene are less than DEP's Target QLs for those parameters, so PTT will be required to demonstrate compliance with the modified WQBELs by reporting that effluent concentrations are not detectable at the level of DEP's Target QLs for those parameters.

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment B)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☒	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: Standard Operating Procedure for Clean Water Program New and Reissuance Industrial Waste and Industrial Stormwater Individual NPDES Permit Applications, SOP No. BCW-PMT-001, February 5, 2024, Version 1.7.
☒	SOP: Standard Operating Procedure for Clean Water Program Establishing Effluent Limitations for Individual Industrial Permits, SOP No. BCW-PMT-032, February 5, 2024, Version 1.7.
☐	Other:

ATTACHMENT A

Site-Specific Data Tables from PTT's WQBEL Compliance Report

WQBEL Compliance Report
Pennsylvania Transformer Technology, Inc.
Canonsburg, Pennsylvania

Table 1

Stream Stats Data Summary for Chartiers Creek at Outfall 001 and Outfall 002

StreamStats Output Report

	Outfall 001	Outfall 002
State/Region ID		
Workspace ID	PA20220506211910537000	PA20220506220923946000
Latitude	40.26678	40.26818
Longitude	-80.17048	-80.1664
Date-Time	5/6/2022 5:19:36 PM	5/6/2022 6:09:49 PM

Basin Characteristics

		Outfall 001		Outfall 002	
Parameter Code	**Parameter Description**	**Value**	**Unit**	**Value**	**Unit**
BSLOPD	Mean basin slope measured in degrees	7.308	degrees	7.307	degrees
BSLOPDRAW	Unadjusted basin slope, in degrees	7.5262	degrees	7.5252	degrees
BSLPDRPA20	Unadjusted basin slope, in degrees, from PA v1	8.6994	degrees	8.6989	degrees
CARBON	Percentage of area of carbonate rock	0	percent	0	percent
CENTROXA83	X coordinate of the centroid, in NAD_1983_Albers, meters	-192289.6	meters	-192285.4	meters
CENTROYA83	Basin centroid horizontal (y) location in NAD 1983 Albers	137932.1	meters	137934.79	meters
DRN	Drainage quality index from STATSGO	3.6	dimensionless	3.6	dimensionless
DRNAREA	Area that drains to a point on a stream	87.4	square miles	87.5	square miles
ELEV	Mean Basin Elevation	1162	feet	1161	feet
ELEVMAX	Maximum basin elevation	1513	feet	1513	feet
FOREST	Percentage of area covered by forest	38	percent	38	percent
GLACIATED	Percentage of basin area that was historically covered by glaciers	0	percent	0	percent
IMPNLCD01	Percentage of impervious area determined from NLCD 2001 impervious dataset	8	percent	8	percent
LC01DEV	Land-use from NLCD 2001 classes 21-24 (developed - open space to High intensity)	26	percent	26	percent
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	30	percent	30	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	9	percent	9	percent
LONG_OUT	Longitude of Basin Outlet	-80.17038	degrees	-80.16644	degrees
MAXTEMP	Mean annual maximum air temperature over basin area from PRISM 1971-2000 800-m grid	60.8	degrees F	60.8	degrees F
OUTLETXA83	X coordinate of the outlet, in NAD_1983_Albers,meters	-184582.4	meters	-184243.1	meters
OUTLETYA83	Y coordinate of the outlet, in NAD_1983_Albers, meters	142905.61	meters	143062.97	meters
PRECIP	Mean Annual Precipitation	39	inches	39	inches
ROCKDEP	Depth to rock	4.8	feet	4.8	feet
STORAGE	Percentage of area of storage (lakes ponds reservoirs wetlands)	0.4	percent	0.4	percent
STRDEN	Stream Density -- total length of streams divided by drainage area	1.98	miles/square mile	1.98	miles/square mile
STRMTOT	total length of all mapped streams (1:24,000-scale) in the basin	173.33	miles	173.57	miles
URBAN	Percentage of basin with urban development	24.5844	percent	24.6083	percent

Peak-Flow Statistics Parameters [100.0 Percent Peak Flow Region 2 SIR 2019 5094]

			Outfall 001			Outfall 002		
Parameter Code	**Parameter Name**	**Units**	**Value**	**Min Limit**	**Max Limit**	**Value**	**Min Limit**	**Max Limit**
DRNAREA	Drainage Area	Mile^2	87.4	0.92	1160	87.5	0.92	1160
STORAGE	Percent Storage	percent	0.4	0	8.9	0.4	0	8.9

Pil - Prediction Interval-lower, Plu - Predition Inetrval-upper, ASEp - Average Standard Error of prediction, SE - Standard Error (other --Stream Stats report)

WQBEL Compliance Report
Pennsylvania Transformer Technology, Inc.
Canonsburg, Pennsylvania

Table 1

Stream Stats Data Summary for Chartiers Creek at Outfall 001 and Outfall 002

Peak-Flow Statistics Flow Report [100.0 Percent Peak Flow Region 2 SIR 2019 5094]

			Outfall 001		Outfall 002	
	Statistic	**Unit**	**Value**	**ASEp**	**Value**	**ASEp**
	50-percent AEP flood	ft^3/s	2640	26.1	2650	26.1
	20-percent AEP flood	ft^3/s	4080	27	4080	27
	10-percent AEP flood	ft^3/s	5180	28.9	5180	28.9
	4-percent AEP flood	ft^3/s	6760	31.6	6760	31.6
	2-percent AEP flood	ft^3/s	8050	34.8	8060	34.8
	1-percent AEP flood	ft^3/s	9470	37.8	9480	37.8
	0.5-percent AEP flood	ft^3/s	11000	41.6	11000	41.6
	0.2-percent AEP flood	ft^3/s	13300	46.1	13300	46.1

Low-Flow Statistics Parameters [100.0 Percent Low Flow Region 4]

			Outfall 001			Outfall 002		
Parameter Code	**Parameter Name**	**Units**	**Value**	**Min Limit**	**Max Limit**	**Value**	**Min Limit**	**Max Limit**
DRNAREA	Drainage Area	Mile^2	87.4	2.26	1400	87.5	2.26	1400
ELEV	Mean Basin Elevation	feet	1162	1050	2580	1161	1050	2580

Low-Flow Statistics Flow Report [100.0 Percent Low Flow Region 4]

Statistic	**Unit**	**Value**	**SE**	**ASEp**	**Value**	**SE**	**ASEp**
7 Day 2 Year Low Flow	ft^3/s	4.45	43	43	4.46	43	43
30 Day 2 Year Low Flow	ft^3/s	6.96	38	38	6.96	38	38
7 Day 10 Year Low Flow	ft^3/s	2	66	66	2	66	66
30 Day 10 Year Low Flow	ft^3/s	3.05	54	54	3.05	54	54
90 Day 10 Year Low Flow	ft^3/s	4.99	41	41	4.99	41	41

Annual Flow Statistics Parameters [100.0 Percent Statewide Mean and Base Flow]

			Outfall 001			Outfall 002		
Parameter Code	**Parameter Name**	**Units**	**Value**	**Min Limit**	**Max Limit**	**Value**	**Min Limit**	**Max Limit**
DRNAREA	Drainage Area	Mile^2	87.4	2.26	1720	87.5	2.26	1720
ELEV	Mean Basin Elevation	feet	1162	130	2700	1161	130	2700
PRECIP	Mean Annual Precipitation	inches	39	33.1	50.4	39	33.1	50.4
FOREST	Percent Forest	percent	37.9956	5.1	100	37.9884	5.1	100
URBAN	Percent Urban	percent	24.5844	0	89	24.6083	0	89

Annual Flow Statistics Flow Report [100.0 Percent Statewide Mean and Base Flow]

Statistic	**Unit**	**Value**	**SE**	**ASEp**	**Value**	**SE**	**ASEp**
Mean Annual Flow	ft^3/s	117	12	12	117	12	12

General Flow Statistics Parameters [100.0 Percent Statewide Mean and Base Flow]

			Outfall 001			Outfall 002		
Parameter Code	Parameter Name	**Units**	**Value**	**Min Limit**	**Max Limit**	**Value**	**Min Limit**	**Max Limit**
DRNAREA	Drainage Area	Mile^2	87.4	2.26	1720	87.5	2.26	1720
PRECIP	Mean Annual Precipitation	inches	39	33.1	50.4	39	33.1	50.4
CARBON	Percent Carbonate	percent	0	0	99	0	0	99
FOREST	Percent Forest	percent	37.9956	5.1	100	37.9884	5.1	100
URBAN	Percent Urban	percent	24.5844	0	89	24.6083	0	89

Pil - Prediction Interval-lower, Plu - Preditionl Inetrval-upper, ASEp - Average Standard Error of prediction, SE - Standard Error (other --Stream Stats report)

WQBEL Compliance Report
Pennsylvania Transformer Technology, Inc.
Canonsburg, Pennsylvania

Table 1

Stream Stats Data Summary for Chartiers Creek at Outfall 001 and Outfall 002

General Flow Statistics Flow Report [100.0 Percent Statewide Mean and Base Flow]

Statistic	Unit	Outfall 001 Value	Outfall 001 SE	Outfall 001 ASEp	Outfall 002 Value	Outfall 002 SE	Outfall 002 ASEp
Harmonic Mean Stream flow	ft^3/s	25.2	38	38	25.2	38	38

Base Flow Statistics Parameters [100.0 Percent Statewide Mean and Base Flow]

Parameter Code	Parameter Name	Units	Outfall 001 Value	Outfall 001 Min Limit	Outfall 001 Max Limit	Outfall 002 Value	Outfall 002 Min Limit	Outfall 002 Max Limit
DRNAREA	Drainage Area	Mile^2	87.4	2.26	1720	87.5	2.26	1720
PRECIP	Mean Annual Precipitation	inches	39	33.1	50.4	39	33.1	50.4
CARBON	Percent Carbonate	percent	0	0	99	0	0	99
FOREST	Percent Forest	percent	37.9956	5.1	100	37.9884	5.1	100
URBAN	Percent Urban	percent	24.5844	0	89	24.6083	0	89

Base Flow Statistics Flow Report [100.0 Percent Statewide Mean and Base Flow]

Statistic	Unit	Outfall 001 Value	Outfall 001 SE	Outfall 001 ASEp	Outfall 002 Value	Outfall 002 SE	Outfall 002 ASEp
Base Flow 10 Year Recurrence Interval	ft^3/s	34.4	21	21	34.5	21	21
Base Flow 25 Year Recurrence Interval	ft^3/s	30.2	21	21	30.2	21	21
Base Flow 50 Year Recurrence Interval	ft^3/s	27.8	23	23	27.8	23	23

Bankfull Statistics Parameters [100.0 Percent Statewide Bankfull Noncarbonate 2018 5066]

Parameter Code	Parameter Name	Units	Outfall 001 Value	Outfall 001 Min Limit	Outfall 001 Max Limit	Outfall 002 Value	Outfall 002 Min Limit	Outfall 002 Max Limit
DRNAREA	Drainage Area	Mile^2	87.4	2.62	207	87.5	2.62	207
CARBON	Percent Carbonate	percent	0			0		

Bankfull Statistics Parameters [100.0 Percent Appalachian Highlands D Bieger 2015]

Parameter Code	Parameter Name	Units	Outfall 001 Value	Outfall 001 Min Limit	Outfall 001 Max Limit	Outfall 002 Value	Outfall 002 Min Limit	Outfall 002 Max Limit
DRNAREA	Drainage Area	Mile^2	87.4	0.07722	940.1535	87.5	0.07722	940.1535

Bankfull Statistics Parameters [100.0 Percent Appalachian Plateaus P Bieger 2015]

Parameter Code	Parameter Name	Units	Outfall 001 Value	Outfall 001 Min Limit	Outfall 001 Max Limit	Outfall 002 Value	Outfall 002 Min Limit	Outfall 002 Max Limit
DRNAREA	Drainage Area	Mile^2	87.4	0.081081	536.9956	87.5	0.081081	536.9956

Bankfull Statistics Parameters [100.0 Percent USA Bieger 2015]

Parameter Code	Parameter Name	Units	Outfall 001 Value	Outfall 001 Min Limit	Outfall 001 Max Limit	Outfall 002 Value	Outfall 002 Min Limit	Outfall 002 Max Limit
DRNAREA	Drainage Area	Mile^2	87.4	0.07722	59927.739	87.5	0.07722	59927.739

Bankfull Statistics Flow Report [100.0 Percent Statewide Bankfull Noncarbonate 2018 5066]

Statistic	Unit	Outfall 001 Value	Outfall 001 SE	Outfall 002 Value	Outfall 002 SE
Bankfull Area	ft^2	430	64	430	64
Bankfull Streamflow	ft^3/s	2140	74	2140	74
Bankfull Width	ft	111	59	111	59
Bankfull Depth	ft	3.82	56	3.82	56

Pil - Prediction Interval-lower, Plu - Preditionl Inetrval-upper, ASEp - Average Standard Error of prediction, SE - Standard Error (other --Stream Stats report)

WQBEL Compliance Report
Pennsylvania Transformer Technology, Inc.
Canonsburg, Pennsylvania

Table 1

Stream Stats Data Summary for Chartiers Creek at Outfall 001 and Outfall 002

Bankfull Statistics Flow Report [100.0 Percent Appalachian Highlands D Bieger 2015]

Statistic	Unit	Outfall 001 Value	Outfall 002 Value
Bieger_D_channel_width	ft	97.1	97.2
Bieger_D_channel_depth	ft	4.04	4.05
Bieger_D_channel_cross_sectional_area	ft^2	401	402

Bankfull Statistics Flow Report [100.0 Percent Appalachian Plateaus P Bieger 2015]

Statistic	Unit	Outfall 001 Value	Outfall 002 Value
Bieger_P_channel_width	ft	107	107
Bieger_P_channel_depth	ft	4.11	4.11
Bieger_P_channel_cross_sectional_area	ft^2	438	438

Bankfull Statistics Flow Report {100.0 Percent USA Bieger 2015]

Statistic	Unit	Outfall 001 Value	Outfall 002 Value
Bieger_USA_channel_width	ft	59.7	59.8
Bieger_USA_channel_depth	ft	3.12	3.12
Bieger_USA_channel_cross_sectional_area	ft^2	191	191

Bankfull Statistics Flow Report [Area-Averaged]

Statistic	Unit	Outfall 001 Value	Outfall 001 SE	Outfall 002 Value	Outfall 002 SE
Bankfull Area	ft^2	430	64	430	64
Bankfull Streamflow	ft^3/s	2140	74	2140	74
Bankfull Width	ft	111	59	111	59
Bankfull Depth	ft	3.82	56	3.82	56
Bieger_D_channel_width	ft	97.1		97.2	
Bieger_D_channel_depth	ft	4.04		4.05	
Bieger_D_channel_cross_sectional_area	ft^2	401		402	
Bieger_P_channel_width	ft	107		107	
Bieger_P_channel_depth	ft	4.11		4.11	
Bieger_P_channel_cross_sectional_area	ft^2	438		438	
Bieger_USA_channel_width	ft	59.7		59.8	
Bieger_USA_channel_depth	ft	3.12		3.12	
Bieger_USA_channel_cross_sectional_area	ft^2	191		191	

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Application Version: 4.8.1, StreamStats Services Version: 1.2.22, NSS Services Version: 2.1.2

Pil - Prediction Interval-lower, Piu - Predition Inetrval-upper, ASEp - Average Standard Error of prediction, SE - Standard Error (other --Stream Stats report)

WQBEL Compliance Report
Pennsylvania Transformer Technology, Inc.
Canonsburg, Pennsylvania

Table 2

Cross Section Measurement Data
Chartiers Creek

Outfall #001			
Measurement	**Distance (feet)**	**Depth (feet)**	**velocity (fps)**
0	53.6		
1	51	0.42	0
2	48.5	0.64	0.1
3	46	0.72	0.6
4	43.5	0.58	0.6
5	42	0.5	0.6
6	39.5	0.52	0.8
7	37	0.52	1.3
8	34.5	0.52	1.7
9	32	0.5	1
10	29.5	0.64	1.1
11	27	0.7	1
12	24.5	0.72	1.1
13	22	0.6	1.3
14	19.5	0.55	1
15	17	0.6	0.6
16	14.5	0.56	0.8
17	12	0.5	0.8
18	9.5	0.36	0.6
19	7	0.28	0.6
20	4.5	0.18	0.2
21	2	0.2	0
22	0		
23			
24			

Outfall #002			
Measurement	**Distance (feet)**	**Depth (feet)**	**velocity (fps)**
0	37.5		
1	35.5	1.6	0.2
2	34	2.02	0.1
3	32.5	1.98	0.2
4	31	1.7	0.4
5	29.5	1.32	0.4
6	28	0.86	0.6
7	26.5	1.16	0.6
8	25	1.16	0.4
9	23.5	1.2	0.6
10	22	0.98	0.8
11	20.5	1	1
12	19	1.16	0.8
13	17.5	0.81	1.1
14	16	1.4	0.8
15	14.5	1.38	1
16	13	1.38	1.1
17	11.5	1.16	1.1
18	**10**	0.96	1
19	8.5	0.82	1
20	7	0.68	1
21	5.5	0.48	1
22	4	0.34	0.8
23	2.5	0.18	0.4
24	0		

Total width (feet)	**Wetted Perimeter (feet)**	**Average Depth (feet)**	**Average Velocity (fps)**
53.6	53.67	0.51	0.790

Total width (feet)	**Wetted Perimeter (feet)**	**Average Depth (feet)**	**Average Velocity (fps)**
37.5	38.54	1.12	0.713

		Outfall #001	**Outfall #002**
Cross-sectional Area (A) = width x average depth	=	27.627 ft^2	43.115 ft^2
Hydraulic Radius (R) = Cross-sectional Area (A) / Wetted Perimeter (P)	=	0.515 ft	1.119 ft

Notes:
fps = feet per second
Measurement Date: August 19, 2022

WQBEL Compliance Report
Pennsylvania Transformer Technology, Inc.
Canonsburg, Pennsylvania

Table 3A

Daily CV Outfall Data Summary - Continuous Discharge Locations

Analyte	Units	Outfall 001 - Continuous Discharge Location											
		Week #1 6/21-22/22	Week #2 6/28-29/22	Week #3 (7/5-6/22)	Week #4 7/12-13/22	Week #5 7/19-20/22	Week #6 7/26-27/22	Week #7 8/2-3/22	Week #8 8/9-10/22	Week#9 8/16-17/22	Week #10 8/23-24/22	Week #11 8/30-31/22	Week #12 9/6-7/22
Copper, Total	µg/L	0.707	0.421	2.79	< 0.107	0.251	1.51	0.907	0.448	0.436	0.352	0.515	0.155
Free Available Cyanide	µg/L	< 8	< 8	< 8	< 8	< 5	< 8	< 8	< 8	< 8	< 8	< 8	< 8
Benzo(a)anthracene	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.50	< 2.53	< 2.50	< 2.50	< 2.50
3,4-Benzofluoranthene	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.50	< 2.53	< 2.50	< 2.50	< 2.50
Benzo(k)fluoranthene	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.50	< 2.53	< 2.50	< 2.50	< 2.50
Chrysene	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.50	< 2.53	< 2.50	< 2.50	< 2.50
Bis(2-Ethylhexyl)Phthalate	µg/L	< 2.38	24.7	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.50	< 2.53	< 2.50	< 2.50	3.65
Vinyl Chloride	µg/L	< 0.160	< 0.160	< 0.160	< 0.160	< 0.160	< 0.160	< 0.160	< 0.160	< 0.160	< 0.160	< 0.160	< 0.160
pH	SU	7.01	7.52	7.55	7.21	7.42	7.28	6.49	7.01	6.87	6.88	7.29	7.27
Discharge Flow	MGD	0.028	0.051	0.075	0.019	0.053	0.083	0.068	0.031	0.008	0.059	0.101	0.059
Analyte	Units	Outfall 002 - Continuous Discharge Location											
		Week #1 6/21-22/22	Week #2 6/28-29/22	Week #3 7/5-6/22	Week #4 7/12-13/22	Week #5 7/19-20/22	Week #6 7/26-27/22	Week #7 8/2-3/22	Week #8 8/9-10/22	Week#9 8/16-17/22	Week #10 8/23-24/22	Week #11 8/30-31/22	Week #12 9/6-7/22
Hexavalent Chromium	µg/L	10	7	< 4	5	< 2	6	8	< 2	< 4	< 4	6	< 2
Total Lead	µg/L	0.208	0.317	0.922	1.55	0.436	0.518	0.737	0.283	0.697	0.327	1.21	0.603
Total Selenium	µg/L	1.38	1.3	1.22	1.27	1.02	0.929	0.423	1.25	1.04	0.828	0.501	0.929
Benzo(a)Anthracene	µg/L	< 2.40	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.50	< 2.55	< 2.50	< 2.50	< 2.50
Benzo(a)pyrene	µg/L	< 2.40	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.50	< 2.55	< 2.50	< 2.50	< 2.50
3,4-Benzofluoranthene	µg/L	< 2.40	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.50	< 2.55	< 2.50	< 2.50	< 2.50
Benzo(k)Fluoranthene	µg/L	< 2.40	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.50	< 2.55	< 2.50	< 2.50	< 2.50
Chrysene	µg/L	< 2.40	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.50	< 2.55	< 2.50	< 2.50	< 2.50
Dibenzo(a,h)Anthracene	µg/L	< 2.40	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.50	< 2.55	< 2.50	< 2.50	< 2.50
Indeno(1,2,3-cd)Pyrene	µg/L	< 2.40	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.50	< 2.55	< 2.50	< 2.50	< 2.50
Dichlorodibromomethane	µg/L	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
Chlorodibromomethane	µg/L	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
Chloroform	µg/L	< 0.10	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
Vinyl Chloride	µg/L	< 0.160	< 0.160	< 0.160	< 0.160	0.890	0.625	< 0.160	0.210	< 0.160	< 0.160	0.203	0.550
pH	SU	7.34	7.46	7.49	7.56	7.21	7.10	6.77	7.13	6.90	7.00	7.14	6.97
Discharge Flow	MGD	0.011	0.033	0.045	0.0073	0.247	0.194	0.089	0.024	0.035	0.013	0.207	0.043
Analyte	Units	Outfall 003 - Continuous Discharge Location											
		Week #1 6/21-22/22	Week #2 6/28-29/22	Week #3 7/5-6/22	Week #4 7/12-13/22	Week #5 7/19-20/22	Week #6 7/26-27/22	Week #7 8/2-3/22	Week #8 8/9-10/22	Week#9 8/16-17/22	Week #10 8/23-24/22	Week #11 8/30-31/22	Week #12 9/6-7/22
Total Lead	µg/L	< 0.051	0.107	0.071	< 0.051	0.14	< 0.051	0.059	0.140	< 0.051	< 0.051	< 0.051	< 0.051
Benzo(a)Anthracene	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.40	< 2.50	< 2.55	< 2.50	< 2.50	< 2.50
3,4-Benzofluoranthene	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.40	< 2.50	< 2.55	< 2.50	< 2.50	< 2.50
Benzo(k)Fluoranthene	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.40	< 2.50	< 2.55	< 2.50	< 2.50	< 2.50
Chrysene	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.40	< 2.50	< 2.55	< 2.50	< 2.50	< 2.50
Indeno(1,2,3-cd)Pyrene	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.40	< 2.50	< 2.55	< 2.50	< 2.50	< 2.50
pH	SU	7.38	7.34	7.47	7.39	7.47	7.16	7.11	7.06	6.98	6.98	6.98	7.08
Discharge Flow	MGD	0.0002	0.0002	0.0004	0.0001	0.0001	0.0002	0.0002	0.0001	0.0006	0.0001	0.0005	0.00001

WQBEL Compliance Report
Pennsylvania Transformer Technology, Inc.
Canonsburg, Pennsylvania

Table 3A

Daily CV Outfall Data Summary - Continuous Discharge Locations

Analyte	Units	Outfall 006 - Continuous Discharge Location											
		Week #1 6/21-22/22	Week #2 6/28-29/22	Week #3 7/5-6/22	Week #4 7/12-13/22	Week #5 7/19-20/22	Week #6 7/26-27/22	Week #7 8/2-3/22	Week #8 8/9-10/22	Week#9 8/16-17/22	Week #10 8/23-24/22	Week #11 8/30-31/22	Week #12 9/6-7/22
Free Available Cyanide	µg/L	< 8	< 8	< 8	< 8	< 5	< 8	< 8	< 8	< 8	< 8	< 8	< 8
Total Copper	µg/L	0.995	0.809	2.02	0.265	0.690	0.812	2.47	0.946	0.655	0.618	1.39	1.01
Benzidine	µg/L	< 11.9	< 11.8	< 11.8	< 11.8	< 11.8	< 11.8	< 11.8	< 12.6	< 12.5	< 12.5	< 12.5	< 12.5
Benzo(a)anthracene	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.53	< 2.50	< 2.50	< 2.50	< 2.50
Benzo(a)pyrene	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.53	< 2.50	< 2.50	< 2.50	< 2.50
3,4-Benzofluoranthene	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.53	< 2.50	< 2.50	< 2.50	< 2.50
Benzo(k)fluoranthene	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.53	< 2.50	< 2.50	< 2.50	< 2.50
Bis(2-chloroethyl)ether	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.53	< 2.50	< 2.50	< 2.50	< 2.50
Chrysene	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.53	< 2.50	< 2.50	< 2.50	< 2.50
Dibenzo(a,h)Anthracene	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.53	< 2.50	< 2.50	< 2.50	< 2.50
3,3-Dichlorobenzidine	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.53	< 2.50	< 2.50	< 2.50	< 2.50
1,2 Diphenylhydrazine	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.53	< 2.50	< 2.50	< 2.50	< 2.50
Bis(2-Ethylhexyl)Phthalate	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.53	< 2.50	< 2.50	< 2.50	< 2.50
Hexachlorobenzene	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.53	< 2.50	< 2.50	< 2.50	< 2.50
Hexachlorobutadiene	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.53	< 2.50	< 2.50	< 2.50	< 2.50
Hexachlorocyclopentadiene	µg/L	< 4.76	< 4.74	< 4.74	< 4.74	< 4.74	< 4.74	< 4.74	< 5.05	< 5.00	< 5.00	< 5.00	< 5.00
Hexachloroethane	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.53	< 2.50	< 2.50	< 2.50	< 2.50
4,6-dinitro-o-cresol	µg/L	< 11.9	< 11.8	< 11.8	< 11.8	< 11.8	< 11.8	< 11.8	< 12.6	< 12.5	< 12.5	< 12.5	< 12.5
N-Nitrosodimethylamine	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.53	< 2.50	< 2.50	< 2.50	< 2.50
N-Nitrosodi-N-propylamine	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.53	< 2.50	< 2.50	< 2.50	< 2.50
Pentachlorophenol	µg/L	<11.9	< 11.8	< 11.8	< 11.8	< 11.8	< 11.8	< 11.8	< 12.6	< 12.5	< 12.5	< 12.5	< 12.5
Phenanthrene	µg/L	<2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.53	< 2.50	< 2.50	< 2.50	< 2.50
2,4,6-Trichlorophenol	µg/L	< 2.38	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.37	< 2.53	< 2.50	< 2.50	< 2.50	< 2.50
Acrolein	µg/L	< 1.90	< 1.90	< 1.90	< 1.90	< 1.90	< 1.90	< 1.90	< 1.90	< 1.90	< 1.90	< 1.90	< 1.90
Acrylonitrile	µg/L	< 2.50	< 2.50	< 2.50	< 2.50	< 2.50	< 2.50	< 2.50	< 2.50	< 2.50	< 2.50	< 2.50	< 2.50
Carbon Tetrachloride	µg/L	< 0.190	< 0.190	< 0.190	< 0.190	< 0.190	< 0.190	< 0.190	< 0.190	< 0.190	< 0.190	< 0.190	< 0.190
Dichlorobromomethane	µg/L	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
Chlorodibromomethane	µg/L	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
1,2 Dichloroethane	µg/L	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
1,3 Dichloropropylene	µg/L	< 0.220	< 0.220	< 0.220	< 0.220	< 0.220	< 0.220	< 0.220	< 0.220	< 0.220	< 0.220	< 0.220	< 0.200
1,1,2 -Trichloroethane	µg/L	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
1,1,2,2-Tetrachloroethane	µg/L	< 0.140	< 0.140	< 0.140	< 0.140	< 0.140	< 0.140	< 0.140	< 0.140	< 0.140	< 0.140	< 0.140	< 0.140
Vinyl Chloride	µg/L	< 0.160	< 0.160	< 0.160	< 0.160	< 0.160	< 0.160	< 0.160	< 0.160	< 0.160	< 0.160	< 0.160	< 0.160
pH	SU	7.37	7.56	7.34	7.42	7.39	7.14	7.25	7.14	7.06	7.09	7.14	7.10
Discharge Flow	MGD	0.013	0.017	0.026	0.009	0.026	0.016	0.016	0.010	0.017	0.008	0.005	0.013

Notes:
µg/L = micrograms per Liter
MGD = million gallons per day
SU = standard units
<# - less than the laboratory reporting limit or method detection limit of X

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Pennsylvania Transformer Technology, Inc.
Canonsburgh, Pennsylvania

Table 3B

Daily CV Outfall Data Summary - Batch Discharge Locations

Analyte	Units	Outfall 004 - Batch Discharge Location											
		Week #1 7/18/22	Week #2 7/25/22	Week #3 8/11/22	Week #4 8/29/22	Week #5 9/19/22	Week #6 5/28/21	Week #7 6/10/21	Week #8 7/1/21	Week #9 8/11/21	Week #10 8/18/21	Week #11 9/1/21	Week #12 12/06/21
Hexavalent Chromium	µg/L	< 2	9	< 4	8	< 4	40	< 15	< 15	40	< 15	< 15	< 2
Free Available Cyanide	µg/L	< 5	< 8	< 8	< 8	< 8	< 20	< 20	< 10	< 6.0	< 6.0	< 6.0	< 6.0
Total Cadmium	µg/L	0.118	0.065	0.079	0.087	0.101	1.11	< 0.8	< 0.8	0.159	< 0.8	< 0.8	<0.8
Total Lead	µg/L	0.254	3.85	1.73	2.09	0.263	28.9	< 0.8	1.52	0.779	1.11	1.01	1.14
Total Zinc	µg/L	40	40	49	29	28	269	78	25	77	35	24	39
Benzo(a)Anthracene	µg/L	< 2.37	< 2.37	< 2.40	< 2.84	< 2.50	10.8	6.45	< 1.02	< 0.51	< 0.51	< 0.51	< 2.50
Benzo(a)Pyrene	µg/L	< 2.37	< 2.37	< 2.40	< 2.84	< 2.50	4.48	5.11	< 1.02	0.811	< 0.51	< 0.51	< 2.50
3,4-Benzofluoranthene	µg/L	< 2.37	< 2.37	< 2.40	< 2.84	< 2.50	1.69	2.81	< 1.02	1.16	< 0.51	< 0.51	< 2.50
Benzo(k)Fluoranthene	µg/L	< 2.37	< 2.37	< 2.40	< 2.84	< 2.50	1.69	2.81	< 1.02	< 0.51	< 0.51	< 0.51	< 2.50
Chrysene	µg/L	< 2.37	< 2.37	< 2.40	< 2.84	< 2.50	12.3	6.19	< 1.02	< 0.51	< 0.51	< 0.51	< 2.50
Indeno(1,2,3-cd)Pyrene	µg/L	< 2.37	< 2.37	< 2.40	< 2.84	< 2.50	2.47	3.59	< 1.02	0.765	< 0.51	< 0.51	< 2.50
pH	SU	7.62	7.62	7.95	7.88	8.29	6.93	8.74	7.85	8.34	7.58	8.10	8.81
Discharge Flow	MGD	0.0827	0.0644	0.0054	0.0129	0.0258	0.083	0.017	0.145	0.090	0.068	0.497	0.021
		Outfall 005- Batch Discharge Location											
Analyte	Units	Week #1 7/18/22	Week #2 7/25/22	Week #3 8/5/22	Week #4 8/11/22	Week #5 8/29/22	Week #6 9/19/22	Week #7 7/1/21	Week #8 8/11/21	Week #9 8/18/21	Week #10 10/22/21	Week #11 11/18/21	Week #12 12/06/21
Total Aluminum	µg/L	262	709	161	203	105	152	< 200	< 200	< 200	< 200	< 200	252
Total Iron	µg/L	254	137	118	340	101	122	< 200	< 200	< 200	< 200	< 200	218
pH	SU	7.63	7.34	7.56	7.83	7.64	8.19	7.86	8.2	7.78	8.44	8.86	8.11
Discharge Flow	MGD	0.0002	0.0014	0.0001	0.0002	0.0003	0.001	0.0001	0.0002	0.0002	0.0001	0.00006	0.0001
		Outfall 102- Batch Discharge Location											
Analyte	Units	Week #1 7/18/22	Week #2 7/21/22	Week #3 7/23/22	Week #4 7/28/22	Week #5 8/5/22	Week #6 8/22/22	Week #7 8/29/22	Week #8 9/4/22	event #9 9/19/22	Week #10 8/20/21	Week #11 10/25/21	Week #12 11/01/21
Copper, Total	µg/L	4.95	24.8	5.57	114	115	51.2	102	7.48	8.79	5.72	3.94	7.04
Free Available Cyanide	µg/L	< 5	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 6	< 6	< 6
Benzo(a)anthracene	µg/L	< 4.74	< 2.37	< 2.40	< 4.74	< 2.40	< 2.50	< 5.0	< 2.50	< 2.50	< 0.5	< 0.5	< 0.5
3,4-Benzofluoranthene	µg/L	< 4.74	< 2.37	< 2.40	< 4.74	< 2.40	< 2.50	< 5.0	< 2.50	< 2.50	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	µg/L	< 4.74	< 2.37	< 2.40	< 4.74	< 2.40	< 2.50	< 5.0	< 2.50	< 2.50	< 0.5	< 0.5	< 0.5
Chrysene	µg/L	< 4.74	< 2.37	< 2.40	< 4.74	< 2.40	< 2.50	< 5.0	< 2.50	< 2.50	< 0.5	< 0.5	< 0.5
Bis(2-Ethylhexyl)Phthalate	µg/L	< 4.74	4.35	5.53	14.1	14.7	8.73	21	26.1	12.8	< 5	92.6	17.5
Vinyl Chloride	µg/L	2.76	0.510	2.78	0.450	0.538	1.46	0.898	0.670	0.503	13.5	12.7	37.5
pH	SU	6.87	7.61	7.61	7.57	7.52	7.54	7.7	7.24	8.07	7.85	8.33	8.51
Discharge Flow	MGD	0.5651	0.5651	0.5651	0.5651	0.0199	0.1511	0.0776	0.0285	0.0285	0.3138	0.126	1.528

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Table 3B

Daily CV Outfall Data Summary - Batch Discharge Locations

Analyte	Units	Outfall 104- Batch Discharge Location											
		Week #1 7/17/22	Week #2 7/28/22	Week #3 8/18/22	Week #4 8/21/22	Week #5 8/30/22	Week #6 09/01/21	Week #7 12/25/21	Week #8 5/6/22	Week #9 4/20/22	Week #10 3/14/22	Week #11 1/6/22	Week #12 10/1/22
Copper, Total	µg/L	3.00	7.66	3.88	3.9	2.4	9.18	2.06	2.44	2.91	1.81	5.45	2
Free Available Cyanide	µg/L	< 10.0	< 8	< 8	< 8	< 8	< 6	< 6	< 8	11	< 6	< 6	< 6
Benzo(a)anthracene	µg/L	< 2.37	< 2.37	< 2.37	< 2.50	< 2.55	< 0.500	< 0.500	< 0.474	< 0.505	< 0.532	< 0.500	< 2.50
3,4-Benzofluoranthene	µg/L	< 2.37	< 2.37	< 2.37	< 2.50	< 2.55	< 0.500	< 0.500	< 0.474	< 0.505	< 0.532	< 0.500	< 2.50
Benzo(k)fluoranthene	µg/L	< 2.37	< 2.37	< 2.37	< 2.50	< 2.55	< 0.500	< 0.500	< 0.474	< 0.505	< 0.532	< 0.500	< 2.50
Chrysene	µg/L	< 2.37	< 2.37	< 2.37	< 2.50	< 2.55	< 0.500	< 0.500	< 0.474	< 0.505	< 0.532	< 0.500	< 2.50
Bis(2-Ethylhexyl)Phthalate	µg/L	< 2.37	< 2.37	< 2.37	< 2.50	< 2.55	< 5.00	8.58	< 4.74	< 5.05	< 5.32	9.57	< 2.50
Vinyl Chloride	µg/L	< 0.160	< 0.160	< 0.160	< 0.160	< 0.160	< 1	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.160
pH	SU	7.52	7.69	7.00	7.21	7.63	7.68	8.67	6.89	6.97	7.51	8.18	8.16
Discharge Flow	MGD	0.0021	0.0021	0.0014	0.0014	0.0014	0.00006	0.0036	0.0084	0.0045	0.0005	0.0085	0.0022

Notes:
µg/L = micrograms per Liter
MGD = million gallons per day
SU = standard units
<# = less than the laboratory reporting limit or method detection limit of #

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Pennsylvania Transformer Technology, Inc.
Canonsburg, Pennsylvania

Table 4A

Hourly CV Outfall Data Summary - Continuous Discharge Locations

Analyte	Units	Outfall 001 - Continuous Discharge Location			
		Day #1 7/11/22	Day #2 7/12/22	Day #3 7/13/22	Day #4 7/14/22
Copper, Total	µg/L	0.866	1.36	6.39	0.279
Free Available Cyanide	µg/L	< 0.008	< 0.008	< 0.008	< 0.008
Benzo(a)Anthracene	µg/L	< 2.37	< 2.37	< 2.47	< 2.37
3,4-Benzofluoranthene	µg/L	< 2.37	< 2.37	< 2.47	< 2.37
Benzo(k)fluoranthene	µg/L	< 2.37	< 2.37	< 2.47	< 2.37
Chrysene	µg/L	< 2.37	< 2.37	< 2.47	< 2.37
Bis(2-Ethylhexyl)Phthalate	µg/L	3.51	< 2.37	< 2.47	< 2.37
Vinyl Chloride	µg/L	< 0.160	< 0.160	< 0.160	< 0.160
Discharge Flow	MGD	0.082	0.025	0.012	0.031
Analyte	**Units**	**Outfall 002 - Continuous Discharge Location**			
		Day #1 7/11/22	Day #2 7/12/22	Day #3 7/13/22	Day #4 7/14/22
Hexavalent Chromium	µg/L	< 2	3	6	< 4
Total Lead	µg/L	0.455	0.333	0.383	0.514
Total Selenium	µg/L	1.31	1.32	1.29	1.03
Benzo(a)Anthracene	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
Benzo(a)pyrene	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
3,4-Benzofluoranthene	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
Benzo(k)Fluoranthene	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
Chrysene	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
Dibenzo(a,h)Anthracene	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
Indeno(1,2,3-cd)Pyrene	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
Dichlorodibromomethane	µg/L	< 0.200	< 0.200	< 0.200	< 0.200
Chlorodibromomethane	µg/L	< 0.200	< 0.200	< 0.200	< 0.200
Chloroform	µg/L	< 0.100	< 0.100	< 0.100	< 0.100
Vinyl Chloride	µg/L	< 0.160	< 0.160	< 0.160	< 0.160
Discharge Flow	MGD	0.043	0.008	0.006	0.008
Analyte	**Units**	**Outfall 003 - Continuous Discharge Location**			
		Day #1 7/11/22	Day #2 7/12/22	Day #3 7/13/22	Day #4 7/14/22
Total Lead	µg/L	< 0.051	0.058	< 0.051	0.092
Benzo(a)Anthracene	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
3,4-Benzofluoranthene	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
Benzo(k)Fluoranthene	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
Chrysene	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
Indeno(1,2,3-cd)Pyrene	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
Discharge Flow	MGD	0.0004	0.0001	0.0001	0.0001

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Table 4A

Hourly CV Outfall Data Summary - Continuous Discharge Locations

Analyte	Units	Outfall 006 - Continuous Discharge Location			
		Day #1 7/11/22	Day #2 7/12/22	Day #3 7/13/22	Day #4 7/14/22
Free Available Cyanide	µg/L	< 0.008	< 0.008	< 0.008	< 0.008
Total Copper	µg/L	0.407	0.367	0.370	0.390
Benzidine	µg/L	< 11.8	< 11.8	< 11.8	< 11.8
Benzo(a)anthracene	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
Benzo(a)pyrene	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
3,4-Benzofluoranthene	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
Benzo(k)fluoranthene	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
Bis(2-chloroethyl)ether	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
Chrysene	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
Dibenzo(a,h)Anthracene	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
3,3-Dichlorobenzidine	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
1,2 Diphenylhydrazine	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
Bis(2-Ethylhexyl)Phthalate	µg/L	< 2.37	4.13	4.13	< 2.37
Hexachlorobenzene	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
Hexachlorobutadiene	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
Hexachlorocyclopentadiene	µg/L	< 4.74	< 4.74	< 4.74	< 4.74
Hexachloroethane	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
4,6-dinitro-o-cresol	µg/L	< 11.8	< 11.8	< 11.8	< 11.8
N-Nitrosodimethylamine	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
N-Nitrosodi-N-propylamine	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
Pentachlorophenol	µg/L	< 11.8	< 11.8	< 11.8	< 11.8
Phenanthrene	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
2,4,6-Trichlorophenol	µg/L	< 2.37	< 2.37	< 2.37	< 2.37
Acrolein	µg/L	< 1.90	< 1.90	< 1.90	< 1.90
Acrylonitrile	µg/L	< 2.50	< 2.50	< 2.50	< 2.50
Carbon Tetrachloride	µg/L	< 0.190	< 0.190	< 0.190	< 0.190
Dichlorobromomethane	µg/L	< 0.200	< 0.200	< 0.200	< 0.200
Chlorodibromomethane	µg/L	< 0.200	< 0.200	< 0.200	< 0.200
1,2 Dichloroethane	µg/L	< 0.200	< 0.200	< 0.200	< 0.200
1,3 Dichloropropylene	µg/L	< 0.220	< 0.220	< 0.220	< 0.220
1,1,2 -Trichloroethane	µg/L	< 0.100	< 0.100	< 0.100	< 0.100
1,1,2,2-Tetrachloroethane	µg/L	< 0.140	< 0.140	< 0.140	< 0.140
Vinyl Chloride	µg/L	< 0.160	< 0.160	< 0.160	< 0.160
Discharge Flow	MGD	0.027	0.010	0.009	0.009

Notes:
µg/L = micrograms per Liter
MGD = million gallons per day
<# = less than the laboratory reporting limit of #

WQBEL Compliance Report
Pennsylvania Transformer Technology, Inc.
Canonsburg, Pennsylvania

Table 4B

Hourly CV Outfall Data Summary - Batch Discharge Locations

		Outfall 004 - Batch Discharge Location
Analyte	**Units**	**8/11/2022**
Hexavalent Chromium	µg/L	< 4
Free Availablle Cyanide	µg/L	< 8
Total Cadmium	µg/L	0.079
Total Lead	µg/L	1.73
Total Zinc	µg/L	49
Benzo(a)Anthracene	µg/L	< 2.40
Benzo(a)pyrene	µg/L	< 2.40
3,4-Benzofluoranthene	µg/L	< 2.40
Benzo(k)Fluoranthene	µg/L	< 2.40
Chrysene	µg/L	< 2.40
Indeno(1,2,3-cd)Pyrene	µg/L	< 2.40
Discharge Flow	MGD	0.0054
		Outfall 005 - Batch Discharge Location
Analyte	**Units**	**8/11/2022**
Total Aluminum	µg/L	203
Total Iron	µg/L	340
Discharge Flow	MGD	0.0002
		Outfall 102 - Batch Discharge Location
Analyte	**Units**	**7/18/2022**
Copper, Total	µg/L	13
Free Available Cyanide	µg/L	< 5
Benzo(a)anthracene	µg/L	< 4.74
3,4-Benzofluoranthene	µg/L	< 4.74
Benzo(k)fluoranthene	µg/L	< 4.74
Chrysene	µg/L	< 4.74
Bis(2-Ethylhexyl)Phthalate	µg/L	< 4.74
Vinyl Chloride	µg/L	2.50
Discharge Flow	MGD	0.5651
		Outfall 104 - Batch Discharge Location
Analyte	**Units**	**7/17/2022**
Copper, Total	µg/L	3
Free Available Cyanide	µg/L	< 5
Benzo(a)anthracene	µg/L	< 2.37
3,4-Benzofluoranthene	µg/L	< 2.37
Benzo(k)fluoranthene	µg/L	< 2.37
Chrysene	µg/L	< 2.37
Bis(2-Ethylhexyl)Phthalate	µg/L	< 2.37
Vinyl Chloride	µg/L	< 0.160
Discharge Flow	MGD	0.0021

Notes:
µg/L = micrograms per Liter
MGD = million gallons per day
<# = less than the laboratory reporting limit of #

WQBEL Compliance Report
Pennsylvnia Technology Transformer, Inc.
Canonsburg, Pennsylvania

Table 5

Site-Specific Stream Water Quality Data Summary

Analyte	Units	Site-Specific Water Quality:Chartiers Creek (Upgradient of Outfall 001)									
		Week #1 6/20/22	Week #2 6/28/22	Week #3 7/5/22	Week #4 7/11/22	Week #5 7/20/22	Week #6 8/1/22	Week #7 8/8/22	Week #8 8/15/22	Week #9 8/24/22	Week #10 8/29/22
Alkalinity	mg CaCO3/L	189	172	192	157	166	168	173	171	166	155
Ammonia as Nitrogen	mg/L	< 0.30	< 0.30	< 0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Biochemical Oxygen Demand (BOD5)	mg/L	< 4.0	11.3	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Specific Conductivity*	ms/cm	1.14	1.24	1.36	1.18	1.27	1.41	1.12	1.46	1.04	1.24
Chloride	mg/L	95.3	76.4	100	114	86.5	107	92.3	113	89.5	107
Fecal Coliforms	MPN/100 ml	579	< 1	579	980	1046	579	770	613	387	613
Fluoride	mg/L	0.41	< 0.50	< 0.50	0.55	0.61	0.55	< 0.50	1.1	0.84	0.91
Hardness	mg/L	299	260	289	306	267	296	287	309	261	308
Surfactants - MBAS	mg/L	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
Nitrate as Nitrogen	mg/L	1.63	< 2.0	2.36	2.45	< 2.0	< 2.0	< 2.0	2.7	< 2.0	3.15
Nitrite as Nitrogen	mg/L	< 0.03	< 0.13	0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13
Osmotic Pressure	mOsm/kg	15	16	17	18	12	18	< 10	20	13	18
pH*	SU	6.28	7.32	6.88	7.13	6.72	7.26	6.98	7.01	7.09	7.05
Phenols	mg/L	< 0.0050	< 0.0050	< 0.0050	< 0.0056	0.0069	< 0.0050	< 0.0055	0.0065	< 0.0050	< 0.0050
Sulfate	mg/L	167	140	154	218	156	204	178	243	188	221
Total Suspended Solids	mg/L	< 5.0	< 5.0	< 5.0	6.5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Dissolved Solids	mg/L	596	546	616	702	580	676	558	698	574	722
Total Aluminum	mg/L	< 0.200	< 0.200	< 0.200	< 0.200	0.247	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
Dissolved Aluminum	mg/L	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
Total Copper	mg/L	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
Dissolved Copper	mg/L	< 0.007	< 0.007	0.007	0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
Total Iron	mg/L	0.412	0.476	0.553	0.531	0.641	0.444	0.498	0.458	0.458	0.449
Dissolved Iron	mg/L	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
Total Lead	mg/L	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
Dissolved Lead	mg/L	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
Total Manganese	mg/L	0.0579	0.0826	0.0913	0.0694	0.0816	0.0637	0.0741	0.0721	0.0663	0.0510
Dissolved Maganese	mg/L	0.001	0.075	0.081	0.043	0.053	0.060	0.061	0.065	0.057	0.051
Total Nickel	mg/L	< 0.0065	< 0.0065	< 0.0065	< 0.0065	< 0.0065	< 0.0065	< 0.0065	< 0.0065	< 0.0065	0.061
Total Phosphorus	mg/L	0.230	0.316	2.24	0.411	0.200	0.288	0.199	0.376	0.242	0.520
Total Selenium	mg/L	< 0.001	< 0.004	< 0.0020	< 0.002	< 0.002	< 0.002	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Dissolved Selenium	mg/L	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Total Zinc	mg/L	0.025	< 0.010	< 0.010	0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Dissolved Zinc	mg/L	0.031	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Flow*	ft^3 /sec	157	152	121	113	147	113	113	93.8	117	86.8

Notes:

mg/L = milligrams per Liter
mg CaCO3/L - milligrams per Liter of calcium carbonate
MPN/100 mL = most probable number per 100 milliliters
ms/cm = millisiemens per centimeter
SU = standard units
mOsm/kg - milliosmoles per kilogram
* = designates a field collected value
ft^3 /sec = cubic feet

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Table 6A

Site-Specific Hardness Data Summary - Normal Operations

Analyte	Units	Week #1 6/21-22/22	Week #2 6/28-29/22	Week #3 7/5-6/22	Week #4 7/12-13/22	Week #5 7/19-20/22	Week #6 7/26-27/22	Week #7 8/2-3/22	Week #8 8/9-10/22	Week#9 8/16-17/22	Week #10 8/23-24/22	Minimum	Maximum	Average
Outfall 001 (Normal Operation)														
Hardness	mg/L	393	270	397	390	161	279	328	310	322	321	161	397	317.1
Flow	MGD	0.028	0.051	0.075	0.019	0.053	0.083	0.068	0.031	0.008	0.059	0.008	0.083	0.0475
Outfall 002 (Normal Operation)														
Hardness	mg/L	447	393	415	421	342	420	269	445	421	330	269	447	390.3
Flow	MGD	0.011	0.033	0.045	0.0073	0.247	0.194	0.089	0.024	0.035	0.013	0.0073	0.247	0.06983
Outfall 003 (Normal Operation)														
Hardness	mg/L	270	251	234	229	219	237	261	247	271	263	219	271	248.2
Flow	MGD	0.0002	0.0002	0.0004	0.0001	0.0001	0.0002	0.0002	0.0001	0.0006	0.0001	0.0001	0.0006	0.00022
Outfall 006 (Normal Operation)														
Hardness	mg/L	423	312	416	440	273	376	334	423	365	340	273	440	370.2
Flow	MGD	0.013	0.0064	0.0092	0.0094	0.0236	0.014	0.016	0.0255	0.0289	0.0080	0.0064	0.0289	0.0154

mg/L = milligram per Liter
MGD = million gallons per day

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Table 6B

Site-Specific Hardness Data Summary - Rainfall Events

Analyte	Units	Event #1 7/18/22	Event #2 7/25/22	Event #3 8/11/22	Event #4 8/29/22	Event #5 9/19/22	Event #6 5/28/21	Event #7 6/10/21	Event #8 7/1/21	Event #9 8/11/21	Event #10 8/18/21	Minimum	Maximum	Average
Outfall 004 (During Rainfall Event)														
Hardness	mg/L	24.7	19.3	4.56	6.61	3.21	26.5	9.59	122	8.15	87.8	3.21	122	31.242
Flow	MGD	0.0827	0.0644	0.0054	0.0129	0.0258	0.083	0.017	0.145	0.0902	0.068	0.0054	0.145	0.05944

Analyte	Units	Event #1 7/18/22	Event #2 7/25/22	Event #3 8/5/22	Event #4 8/11/22	Event #5 8/29/22	Event #6 9/19/22	Event #7 7/1/21	Event #8 8/11/21	Event #9 8/18/21	Event #10 10/22/21	Minimum	Maximum	Average
Outfall 005 (During Rainfall Event)														
Hardness	mg/L	26.0	49.4	28.4	16.9	18.8	10.1	77.6	28.8	50.5	22.0	10.1	77.6	32.85
Flow	MGD	0.0002	0.0014	0.0001	0.0002	0.0003	0.0002	0.0001	0.0902	0.00029	0.0001	0.0001	0.0902	0.009309

Analyte	Units	Event #1 7/18/22	Event #2 7/21/22	Event #3 7/23/22	Event #4 7/28/22	Event #5 8/5/22	Event #6 8/22/22	Event #7 8/29/22	Event #8 9/24/22	Event #9 9/19/22	Event #10 8/20/21	Minimum	Maximum	Average
Outfall/IMP-102 (During Rainfall Event)														
Hardness	mg/L	59.3	48.2	63.5	83.9	152	63.8	68.4	81.5	37.1	221	37.1	221	87.87
Flow	MGD	0.5651	0.5651	0.5651	0.5651	0.0199	0.1511	0.0776	0.0285	0.0022	0.314	0.0022	0.5651	0.28537

Analyte	Units	Event #1 7/17/22	Event #2 7/28/22	Event #3 8/18/22*	Event #4 8/21/22	Event #5 8/30/22	Event #6 9/1/21	Event #7 10/25/21	Event #8 5/6/22	Event #9 4/20/22	Event #10 3/14/22	Minimum	Maximum	Average
Outfall/IMP-104 (During Rainfall Event)														
Hardness	mg/L	23.6	19.4	416	15.2	53	131	112	24	328	407	15.2	416	152.92
Flow	MGD	0.0021	0.0021	0.0014	0.0014	0.0014	0.00006	0.0035	0.0084	0.0045	0.005	0.00006	0.0084	0.002986

mg/L = milligram per Liter
MGD = million gallons per day
* = non-rain event (pump malfunction)

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Table 7A

Chemical Translator Data Summary

Downstream of Outfalls 001, 003, 004, and 006 (Downstream-01)

		Week #1 6/20/22	Week #2 6/28/22	Week #3 7/5/22	Week #4 7/11/22	Week #5 7/20/22	Week #5* 7/17/22	Week #6 8/1/22	Week #6* 7/25/22	Week #7 8/8/22	Week #7* 8/11/22	Week #8 8/15/22	Week # 9 8/24/22	Week #10 8/29/22	Week #10* 8/29/22
Total Hexavalent Chromium	µg/L	< 4	5 J	< 4	10 J	< 2	10 H,J	< 4	6 J	< 4	< 2	6 J	8 J	< 4	6 H,J
Total Cadmium	µg/L	< 0.600	0.054 J	0.05 J	0.063 J	< 0.038	0.063 J	0.053 L	0.098 J	< 0.038	0.084 J	0.046 J	0.048 J	0.05 J	0.07 J
Dissolved Cadmium	µg/L	< 0.600	<0.800	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800
Total Copper	µg/L	2.89	3.3	2.58	4.23	3.01 B2	5.38 B2	2.36	6.82 B2	2.68	6.11	2.52	2.92	3.11	3.62
Dissolved Copper	µg/L	7.66	< 7	2.21 B	4.41	2.58	3.48	2.12	3.31	1.89	4.14	2.13	2.10	2.33	2.94
Total Lead	µg/L	2.40	0.632	0.414	1.47	0.978	2.14	0.712	4.04	0.838	1.7	0.474	0.684	0.892	1.05
Dissolved Lead	µg/L	1440 D3	< 7	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800
Total Zinc	µg/L	< 20	6 J	< 5	26	6 J	20	6 J	25	5 J	19	6 J	6 J	10	11
Dissolved Zinc	µg/L	< 30	< 10 B1	< 10	25	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Flow	ft^3/sec	143	147	109	105	152	185	113	176	125	105	105	121	86.8	86.8

Downatream of Outfalls 002 and 005 (Downstream-02)

		Week #1 6/20/22	Week #2 6/28/22	Week #3 7/5/22	Week #4 7/11/22	Week #5 7/20/22	Week #5* 7/17/22	Week #6 8/1/22	Week #6* 7/25/22	Week #7 8/8/22	Week #7* 8/11/22	Week #8 8/15/22	Week # 9 8/24/22	Week #10 8/29/22	Week #10* 8/29/22
Total Hexavalent Chromium	µg/L	6 J	8 J	< 2	5 J	< 2	6 H,J	< 2	30 J	< 2	< 2	4 J	8 J	< 2	8 H,J
Total Aluminum	µg/L	< 160	131 J	324	109 J	484	1,230	514	2,950	361	426	122 J	504	192 J	1,020
Dissolved Aluminum	µg/L	< 200 Y	< 200	< 200	< 200	< 200	< 200	< 200	303	< 200	< 200	< 200	< 200	< 200	< 200
Total Copper	µg/L	2.92	3.16	2.9	3.05	3.31 B2	5.53	2.99	8.14 B2	9.77	4.92	2.59	3.48	4.25	7.64
Dissolved Copper	µg/L	4.1	2.52 B	2.63 B	2.6	2.4	3.26	1.73	2.14	2.00	2.78	1.97	2.02	2.43	3.00
Total Iron	µg/L	305	332	864	462	844	1,580	1,080	3,980	798	883	482	816	563	1,730
Dissolved Iron	µg/L	< 20 Y	118 J	44 J	29 J	28 J	27 J	35 J	51 J	34 J	27 J	36 J	25 J	22 J	30 J
Total Lead	µg/L	1.05	0.356	0.994	0.419	1.29	3.21	1.63	40.3	1.23	7.08	0.452	1.16	0.664	17.6
Dissolved Lead	µg/L	56.8	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800
Total Selenium	µg/L	0.53 Ja	0.789	0.558	0.722	0.559	0.478	< 0.407	0.489	< 0.407	0.735	0.654	0.462	0.456	< 0.407
Dissolved Selenium	µg/L	< 1.00	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Flow	ft^3/sec	143	147	109	105	147	162	113	176	125	101	105	121	86.8	86.8

Notes:
ug/L = micrograms per liter
ft3/sec = cubic feet per second
< = less than laboratory reporing limit of #
* = designates a rain event
H = Analyte was prepared and/or analyzed outside of the analytical method holding time.
J = Analyte concentration is estimated.
B = Analyte found in blank at or above the method acceptance limit.
B1 = Target analyte was detected in the method blank at or above the reporting limit. The sample concentration is below the reporting limit.
B2 = Target analyte was detected in the method blank at or above the reporting limit. The sample concentration is 10 times that found in the blank.
D3 = Dilution was performed due to high target analyte concentration.
Ja = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
Y = This analyte is not on the laboratory's current scope of accreditation.

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Table 7B

Chemical Translators - Site-Specific Calculations

Analyte [1,2,3,4]	Units	Downstream of Outfall 001 (Downstream-01)														
		Week #1 6/20/22	Week #2 6/28/22	Week #3 7/5/22	Week #4 7/11/22	Week #5 7/20/22	Week #5* 7/17/22	Week #6 8/1/22	Week #6* 7/25/22	Week #7 8/8/22	Week #7* 8/11/22	Week #8 8/15/22	Week # 9 8/24/22	Week #10 8/29/22	Week #10* 8/29/22	Geometric Mean of f_D
Dissolved Cadmium	µg/L	-	0.019	0.019	0.019	-	0.019	0.019	0.019	-	0.019	0.019	0.019	0.019	0.019	
Total Cadmium	µg/L	-	0.054	0.05	0.063	-	0.063	0.053	0.098	-	0.084	0.046	0.048	0.05	0.070	
f_D		-	0.35	0.38	0.30	-	0.30	0.36	0.19	-	0.23	0.41	0.40	0.38	0.27	**0.32**
Dissolved Copper	µg/L	7.66	1	2.21	4.41	2.58	3.48	2.12	3.31	1.89	4.14	2.13	2.10	2.33	2.94	
Total Copper	µg/L	2.89	3.3	2.58	4.23	3.01	5.38	2.36	6.82	2.68	6.11	2.52	2.92	3.11	3.62	
f_D		2.65	0.30	0.86	1.04	0.86	0.65	0.90	0.49	0.71	0.68	0.85	0.72	0.75	0.81	**0.78**
Dissolved Lead	µg/L	1440	1	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
Total Lead	µg/L	2.40	0.632	0.414	1.47	0.978	2.14	0.712	4.04	0.838	1.7	0.474	0.684	0.892	1.05	
f_D		--	1.58	0.97	0.27	0.41	0.19	0.56	0.10	0.48	0.24	0.84	0.58	0.45	0.38	**0.43**
Dissolved Zinc	µg/L	-	5	-	25	5	5	5	5	5	5	5	5	5	5	
Total Zinc	µg/L	-	6	-	26	6	20	6	25	5	19	6	6	10	11	
f_D		-	0.83	-	0.96	0.83	0.25	0.83	0.2	1	0.26	0.83	0.83	0.5	0.45	**0.57**

Analyte [1,2,3,4]	Units	Downstream of Outfall 002 (Downstream-02)														
		Week #1 6/20/22	Week #2 6/28/22	Week #3 7/5/22	Week #4 7/11/22	Week #5 7/20/22	Week #5* 7/17/22	Week #6 8/1/22	Week #6* 7/25/22	Week #7 8/8/22	Week #7* 8/11/22	Week #8 8/15/22	Week # 9 8/24/22	Week #10 8/29/22	Week #10* 8/29/22	Geometric Mean of f_D
Dissolved Aluminum	µg/L	-	100	100	100	100	100	100	303	100	100	100	100	100	100	
Total Aluminum	µg/L	-	131	324	109	484	1,230	514	2,950	361	426	122	504	192	1,020	
f_D		-	0.76	0.31	0.92	0.21	0.08	0.19	0.10	0.28	0.23	0.82	0.20	0.52	0.10	**0.27**
Dissolved Copper	µg/L	4.1	2.52	2.63	2.6	2.4	3.26	1.73	2.14	2.00	2.78	1.97	2.02	2.43	3.00	
Total Copper	µg/L	2.92	3.16	2.9	3.05	3.31	5.53	2.99	8.14	9.77	4.92	2.59	3.48	4.25	7.64	
f_D		1.40	0.80	0.91	0.85	0.73	0.59	0.58	0.26	0.20	0.57	0.76	0.58	0.57	0.39	**0.59**
Dissolved Iron	µg/L	10	118	44	29	28	27	35	51	34	27	36	25	22	30	
Total Iron	µg/L	305	332	864	462	844	1,580	1,080	3,980	798	883	482	816	563	1,730	
f_D		0.03	0.36	0.05	0.06	0.03	0.02	0.03	0.01	0.04	0.03	0.07	0.03	0.04	0.02	**0.04**
Dissolved Lead	µg/L	56.8	0.026	0.4	0.4	0.4	0.026	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
Total Lead	µg/L	1.05	0.356	0.994	0.419	1.29	3.21	1.63	40.3	1.23	7.08	0.452	1.16	0.664	17.6	
f_D		--	0.07	0.40	0.95	0.31	0.01	0.25	0.01	0.33	0.06	0.88	0.34	0.60	0.02	**0.15**
Dissolved Selenium	µg/L	0.5	0.204	0.204	0.204	0.204	0.204	-	0.204	-	0.204	0.204	0.204	0.204		
Total Selenium	µg/L	0.530	0.789	0.558	0.722	0.559	0.478	-	0.489	-	0.735	0.654	0.462	0.456	-	
f_D		0.94	0.26	0.37	0.28	0.36	0.43	-	0.42	-	0.28	0.31	0.44	0.45	-	**0.39**

Notes:
ug/L = micrograms per liter
< = less than laboratory reporing limit of #
- = non-detect value
-- = dissolved concentration higher than total not allowing for calculation

[1] Where both concentrations were non-detect, data set was not utilized in accordance with EPA document 823-B-96-007 (June, 1996) and data replaced with dashes.
[2] Where dissolved non-detect reporting limit values were reported higher than total concentrations, the method detection limit was used per the PADEP correspondence dated February 8, 2023.
[3] Where a constituent is reported as non-detect, half the reporting limit or method detection limit were used in accordance with EPA document 823-B-96-007 (June, 1996).
[4] Less than signs and laboratory qualifiers were omitted for calculation purposes.

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Table 8

Partial Mixing Factor Calculations

4.3 Design Stream Flow (qs)		**OF 001**	**OF 002**		
The discharge values calculated from the tracer test for each outfall	qs(tracer) =	15.91	13.11	cfs	Q from Dye Tracer Test
The discharge values calculated from the transect dimensions at each outfall	qs(transect) =	17.46	24.59	cfs	Q from Transect Measurements
Q7-10 design flow condition	$qr_{(7-10)}$ =	2	2	cfs	$Q_{(7-10)}$ from Stream Stats
Harmonic Mean Flow	qh =	25.2	25.2	cfs	Q_{hm} from Stream Stats
4.4 Discharge Analysis Flow (qd)		**OF 001**	**OF 002**		
4.4a = User enter the design discharge flow in cubic feet/second (cfs)	qd =	1.73016	0.1021	cfs	Discharge rates from PA0001937
qd in cfs = design discharge in million gallons/day (mgd) x 1.547					OF001 (0.72) + OF003 (0.0144) + OF004 (0.096)+ OF006(0.288) = 1.1184 mgd
1.547 = Conversion factor from mgd to cfs					OF002 (0.066 mgd)

4.5 Partial Mixing Factor (yc)

If a mix factor is entered for each criterion, then the value is used directly.
If complete mix times are entered instead of the mix factors, then they are used to compute the mixing factors.
If neither are entered, then the partial mix factors are estimated by first determining the complete mix time.
The complete mix time is computed using the width, depth and the slope.

Reach Slope (sl)		**OF 001**	**OF 002**		
4.51.a = User entered slope value (slr) in feet/foot	slr =	0.0014	0.0011	ft/ft	flood insurance study cross sections
		1.75	0.5	ft	Difference in streambed elevations
		1,240	460	ft	Distsance between cross sections
Reach Depth (d)		**OF 001**	**OF 002**		
4.5.2a = User entered depth (dr) in feet:	dr(Measured) =	0.51	1.12	ft	Average depth measured at each transect
4.5.2b = Calculated reach depth per the below equation.	Calculated d(tracer) =	0.93	1.17	ft	qs(tracer), wr and v(tracer)
d = ((qs+qd) / (v*w))	Calculated d(transect) =	0.97	1.54	ft	qs(transect), wr and v(transect)
	Calculated $d_{(7-10)}$ =	0.09	0.08	ft	$q_{(7-10)}$, wr, vr
where:	Calculated d(h) =	0.64	0.92	ft	qh, wr, vr

qs = Design stream flow from equations in Box 4.3 (cfs)
qd = Discharge analysis flow from equation 4.4a or 4.4b (cfs)
v = DEP Velocity Equation or entered by the user (ft/sec)
w = User-supplied width (ft)

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Table 8

Partial Mixing Factor Calculations

Reach Width (w)

4.5.3a = User entered reach width (wr)

4.5.3b = Calculated reach width per the below equation.

$w = (qs + qd) / (v \times d)$

where:

qs = Design stream flow from equations in Box 4.3 (cfs)
qd = Discharge analysis flow from equation 4.4a (cfs)
v = DEP Velocity Equation or entered by the user (ft/sec)
w = User-supplied depth (ft)

	OF 001	OF 002		
wr(Measured) =	53.67	38.54	ft	Measured at each transect
Calculated w(tracer) =	53.74	38.44	ft	qs(tracer), v(tracer), d(tracer)
Calculated w(transect) =	53.47	38.46	ft	qs(transect), v(transect), d(transect)
Calculated $w_{(7\text{-}10)}$ =	9.26	2.63	ft	$q_{(7\text{-}10)}$, dr, vr
Calculated w(h) =	53.26	38.57	ft	qh, dr, vr

Velocity vr = user entered or velocity equation

Measured velocity at each transect

DEP Velocity Equation:

$v = (A \times (qs + qd)^{0.56} \times (sl \times 5280)^{B} \times da^{C}) / 16.3636$

where:

16.3636 = the constant to convert miles/day to ft/second
qs = Design stream flow from equations in Box 4.3 (cfs)
qd = Discharge analysis flow from equation 4.4a or 4.4b (cfs)
sl = reach slope (ft/ft)
da = Drainage Area mi2
if Discharge area (da) < 500 sq mi, then
A = 2.62
B = 0.083
C = -0.22

	OF 001	OF 002		
vr(Measured) =	0.790	0.713	fps	Measured at each transect
Calculated v(tracer) =	0.353	0.294	fps	qs(tracer)
Calculated v(transect) =	0.370	0.417	fps	qs(transect)
Calculated $v_{(7\text{-}10)}$ =	0.148	0.105	fps	$q_{(7\text{-}10)}$
Calculated v(h) =	0.447	0.423	fps	qh

	OF 001	OF 002		
da =	87.4	87.5	mi^2	USGS Stream Stats

Width/Depth ratio (W_D)

$W\_D = [-0.0073 + 0.141 \times (qs + qd)^{-0.077} + 0.06 \times da^{-0.445} + 0.0001 \times (5280 \times sl)^{1.075}]^{-1.429}$

where:

qs = Design stream flow from equations in Box 4.3 (cfs)
qd = Discharge analysis flow from equation 4.4a or 4.4b (cfs)
sl = reach slope (ft/ft)
da = cumulative drainage area

	OF 001	OF 002		
W_D ratio (tracer)	22.043	21.419	ft_ft	qs(tracer)
W_D ratio (transect)	22.245	22.924	ft_ft	qs(transect)
W_D ratio (Q7-10)	18.625	17.541	ft_ft	$q_{(7\text{-}10)}$
W_D ratio (h)	23.076	22.984	ft_ft	qh

WQBEL Compliance Report
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Table 8

Partial Mixing Factor Calculations

Complete Mix Time (cmt)		OF 001	OF 002		
4.5.4a = complete mix time measured (minutes)	cmtr(Measured)	26.23	13.83	min.	Measured by the dye tracer test
4.5.4b = Calculation for cmt	cmt(tracer)	95.391	47.983		qs(tracer), w(tracer), d(tracer)
$cmt = (0.28 \times (w \times (qs / (qs + qd)))^2) / (0.6 \times d \times (\sqrt{32.2 \times d \times sl}) \times 60)$	cmt(transect)	90.895	32.014		qs(transect), w(transect), D(transect)
	cmt(7-10)	34.453	12.325		$s_{(7-10)}$, $w_{(7-10)}$, $d_{(7-10)}$
where:	cmt(hm)	179.05	69.444		qh, w(hm), d(hm)

qs = Design stream flow from equations in Box 4.3 (cfs)
qd = Discharge analysis flow from equation 4.4a or 4.4b (cfs)
sl = reach slope (ft/ft)
d = User-supplied stream depth (ft)
w = User-supplied width (ft)
0.28 = the degree of uniformity expected in the channel that also produces a complete mix relationship with the variability in instream concentration of 20%
0.6 = the amount of discharge diffusion associated with an average discharge

4.5.5 Partial Mixing Factor (yc): Represents the fraction of design stream flow (qs) that mixes with the discharge at the criteria compliance time (tc)

4.5.5a = User suppliedpartial mix factor (ycr) in decimal percent. yc = ycr

4.5.5b = user does not enter the partial mix factor yc = min [sqrt (tc/cmt) , 1]

where:

tc = Criteria compliance time (minutes)
cmt = complete mix time (minutes)
min [ ] = the minimum of the two values or expressions separated by a comma

Criteria compliance times (tc) for each criterion	
Acute Fish Criterion (AFC)	15 minutes
Chronic Fish Criterion (CFC)	720 minutes
Threshold Human Health (THH)	720 minutes
Carcinogenic Risk Level (CRL)	720 minutes

yc calculations via formula 4.5.5b	OF 001	OF 002
yc for AFC using Calculated cmt for $Q_{(7-10)}$	0.660	1
yc for cfc using calculated cmt for $Q_{(7-10)}$	1	1
yc for THH using the calculated cmt for $Q_{(7-10)}$	1	1
yc for THH using the calculated cmt for Q_h	1	1

Source:
PA Department of Environmental Protection, May 22, 2004. "*Technical Reference Guide PENTOXSD for Windows PA Single Discharge Wasteload Allocation Program for Toxics Version 2.0*," Bureau of Water Supply and Wastewater Management, Document number 391-2000-011.

Pennsylvania Transformer Technology, LLC
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WQBEL Permit Limits_July 2024

Outfall	Constituent	PADEP Proposed 2025 NPDES Values			PTT Proposed NPDES Values [1]			Microbac Laboratory Reporting Limits (µg/L)
		Average Monthly (µg/L)	Maximum Daily (µg/L)	IMAX (µg/L)	Average Monthly (µg/L)	Maximum Daily (µg/L)	IMAX (µg/L)	
001	Total Copper	18.2	28.4	45.5	No Monitoring Required			--
	Free Available Cyanide	11.2	17.5	28.0	7.56	11.8	18.9	1.00
	Benzo(a)Anthracene	0.034	0.053	0.085	No Monitoring Required			--
	3,4-Benzofluoranthene	0.034	0.053	0.085	No Monitoring Required			--
	Benzo(k)Fluoranthene	0.034	0.053	0.085	No Monitoring Required			--
	Bis(2-Ethylhexyl)Phthalate	10.6	16.6	26.5	No Monitoring Required			--
	Chrysene	0.034	0.053	0.085	No Monitoring Required			--
	Vinyl Chloride	0.222	0.346	0.555	No Monitoring Required			--
002	Hexavalent Chromium	20.6	32.2	51.5	Report	Report	Report	--
	Total Lead	3.62	9.86	15.8	No Monitoring Required			--
	Total Selenium	9.91	15.5	24.8	No Monitoring Required			--
	Benzo(a)Anthracene	0.029	0.046	0.073	0.065	0.1	0.16	0.50
	Benzo(a)Pyrene	0.029	0.046	0.073	0.007	0.01	0.016	0.50
	3,4-Benzofluoranthene	0.029	0.046	0.073	0.065	0.1	0.16	0.50
	Benzo(k)Fluoranthene	0.029	0.046	0.073	0.65	1.02	1.63	0.50
	Chloroform	43.9	68.5	110	No Monitoring Required			--
	Chrysene	0.029	0.046	0.073	Report	Report	Report	--
	Chlorodibromomethane	3.08	4.81	7.70	No Monitoring Required			--
	Dibenzo(a,h)Anthracene	0.029	0.046	0.073	0.007	0.01	0.016	0.50
	Dichlorobromomethane	4.24	6.61	10.6	No Monitoring Required			--
	Ideno(1,2,3-cd)Pyrene	0.029	0.046	0.073	0.065	0.1	0.16	0.50
	Vinyl Chloride	0.193	0.301	0.483	1.31	1.86	3.27	0.50
003	Total Lead	6.86	10.7	17.2	No Monitoring Required			--
	Benzo(a)Anthracene	0.034	0.053	0.085	0.012	0.019	0.031	0.50
	3,4-Benzofluoranthene	0.034	0.053	0.085	0.012	0.019	0.031	0.50
	Benzo(k)Fluoranthene	0.034	0.053	0.085	0.12	0.19	0.31	0.50
	Chrysene	0.034	0.053	0.085	1.47	2.29	3.66	0.50
	Ideno(1,2,3-cd)Pyrene	0.034	0.053	0.085	0.012	0.019	0.031	0.50
004	Total Cadmium	0.584	0.911	1.46	Report	Report	Report	--
	Hexavalent Chromium	21.2	33.0	53.0	19.6	35.7	49.1	15.00
	Free Available Cyanide	11.2	17.5	28.0	7.56	11.8	18.9	1.00
	Total Lead	6.86	10.7	17.2	23.4	26.3	58.4	0.80
	Total Zinc	156	243	390	447	779	1117	10.00
	Benzo(a)Anthracene	0.034	0.053	0.085	0.012	0.022	0.031	0.50
	Benzo(a)Pyrene	0.034	0.053	0.085	0.001	0.002	0.003	0.50
	3,4-Benzofluoranthene	0.034	0.053	0.085	0.012	0.02	0.031	0.50
	Benzo(k)Fluoranthene	0.034	0.053	0.085	0.12	0.18	0.31	0.50
	Chrysene	0.034	0.053	0.085	1.47	2.68	3.66	0.50
	Ideno(1,2,3-cd)Pyrene	0.034	0.053	0.085	0.012	0.022	0.031	0.50
005	Total Aluminum	0.75	0.75	--	No Monitoring Required			--
	Total Iron	1.5	3.0	--	No Monitoring Required			--
006	Total Copper	18.2	28.4	45.5	No Monitoring Required			--
	Free Available Cyanide	11.2	17.5	28.0	7.56	11.8	18.9	1.00
	4,6-dinitro-o-cresol	28.0	43.7	70.0	3.78	5.9	9.45	2.00
	3,3-Dichlorobenzene	0.186	0.291	0.465	No Monitoring Required			--
	Pentachlorophenol	2.40	3.74	6.00	0.37	0.57	0.92	2.00
	2,4,6-Trichlorophenol	12.4	19.4	31.0	No Monitoring Required			--
	Acrolein	3.90	6.08	9.75	No Monitoring Required			--
	Acrylonitrile	0.453	0.706	1.13	No Monitoring Required			--
	Benzidine	0.0008	0.001	0.002	No Monitoring Required			--
	Benzo(a)Anthracene	0.034	0.053	0.085	0.012	0.019	0.031	0.50
	Benzo(a)Pyrene	0.034	0.053	0.085	0.001	0.002	0.003	0.50
	3,4-Benzofluoranthene	0.034	0.053	0.085	0.012	0.019	0.031	0.50
	Benzo(k)Fluoranthene	0.034	0.053	0.085	0.12	0.19	0.31	0.50
	Carbon Tetrachloride	2.04	3.18	5.10	No Monitoring Required			--
	Chlorodibromomethane	3.55	5.54	8.88	No Monitoring Required			--
	Dichlorobromomethane	4.88	7.62	12.2	No Monitoring Required			--
	1,2-Dichloroethane	3.37	5.26	8.43	No Monitoring Required			--
	1,3-Dichloropropylene	3.02	4.71	7.55	No Monitoring Required			--
	1,2-Diphenylhydrazine	0.319	0.498	0.798	No Monitoring Required			--
	Bis(2-Ethylhexyl)Ether	0.266	0.415	0.665	No Monitoring Required			--
	Bis(2-Ethylhexyl)Phthalate	10.6	16.6	26.5	No Monitoring Required			--
	Chrysene	0.034	0.053	0.085	1.47	2.29	3.66	0.50
	Dibenzo(a,h)Anthracene	0.034	0.053	0.085	0.001	0.002	0.003	0.50
	Hexachlorobenzene	0.002	0.004	0.005	No Monitoring Required			--
	Hexachlorobutadiene	3.91	6.09	9.78	0.12	0.19	0.31	0.50
	Hexachlorocyclopentadiene	2.16	3.37	5.40	1.89	2.95	4.73	2.00
	Hexachloroethane	12.4	19.4	31.0	No Monitoring Required			--
	N-Nitrosodimethylamine	0.006	0.010	0.015	No Monitoring Required			--
	N-Nitrosodi-N-Propylamine	0.044	0.069	0.110	No Monitoring Required			--
	Phenanthrene	2.16	3.37	5.40	1.89	2.95	4.73	0.50
	1,1,2,2-Tetrachloroethane	1.51	2.35	3.78	No Monitoring Required			--
	1,1,2-Trichloroethane	5.24	8.17	13.1	No Monitoring Required			--
	Vinyl Chloride	0.222	0.346	0.555	No Monitoring Required			--

Pennsylvania Transformer Technology, LLC
Canonsburg, Pennsylvania

WQBEL Permit Limits_July 2024

Outfall	Constituent	PADEP Proposed 2025 NPDES Values			PTT Proposed NPDES Values [1]			Microbac Laboratory Reporting Limits (µg/L)
		Average Monthly (µg/L)	Maximum Daily (µg/L)	IMAX (µg/L)	Average Monthly (µg/L)	Maximum Daily (µg/L)	IMAX (µg/L)	
102	Total Copper	18.2	28.4	45.5	No Monitoring Required			--
	Free Available Cyanide	11.2	17.5	28.0	No Monitoring Required			--
	Benzo(a)Anthracene	0.034	0.053	0.085	0.65	1.02	1.63	0.50
	3,4-Benzofluoranthene	0.034	0.053	0.085	0.65	1.02	1.63	0.50
	Benzo(k)Fluoranthene	0.034	0.053	0.085	6.53	10.2	16.3	0.50
	Bis(2-Ethylhexyl)Phthalate	10.6	16.6	26.5	14.7	27.1	36.8	5.00
	Chrysene	0.034	0.053	0.085	No Monitoring Required			--
	Vinyl Chloride	0.222	0.346	0.555	Report	Report	Report	--
104	Total Copper	18.2	28.4	45.5	No Monitoring Required			--
	Free Available Cyanide	11.2	17.5	28.0	No Monitoring Required			--
	Benzo(a)Anthracene	0.034	0.053	0.085	0.51	0.8	1.28	0.50
	3,4-Benzofluoranthene	0.034	0.053	0.085	0.51	0.8	1.28	0.50
	Benzo(k)Fluoranthene	0.034	0.053	0.085	Report	Report	Report	--
	Bis(2-Ethylhyxyl)Phthalate	10.6	16.6	26.5	No Monitoring Required			--
	Chrysene	0.034	0.053	0.085	No Monitoring Required			--
	Vinyl Chloride	0.222	0.346	0.555	No Monitoring Required			--

Notes:
µg/L = micrograms per Liter
IMAX = instantaneous maximum
RED = Decrease in proposed NPDES Values
GREEN = Increase in proposed NPDES values
-- = Not Applicable (no proposed NPDES Values for comparison)
Highlight = Constituents which have NPDES Values below laboratory reporting limits

1) Calculations used current NPDES Flow Assumptions for 001 (0.72), 003 (0.0144), and 006 (0.288). The system average (2022-2024) was used for 002 (0.253). The 2022-2024 values were used for 004 (0.43), 005 (0.0003), IMP102 (0.025), and IMP104 (0.032). Flow values were added for 001, 003, 004 and 006 per PADEP requirements.

ATTACHMENT B

Toxics Management Spreadsheet Results

OUTFALL 001

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: PTTI NPDES Permit No.: PA0001937 Outfall No.: 001

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: Treated groundwater and storm water

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
1.4524	317.1	7.15	0.66	1	1	1	34.453	

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L											
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	µg/L		2.79		3.5	10	2.09					0.78
	Free Cyanide	µg/L	<	8									
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L											
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	µg/L											
	Total Molybdenum	µg/L											
	Acrolein	µg/L											
	Acrylamide	µg/L											
	Acrylonitrile	µg/L											
	Benzene	µg/L											
	Bromoform	µg/L											
	Carbon Tetrachloride	µg/L											
	Chlorobenzene	µg/L											
	Chlorodibromomethane	µg/L											
	Chloroethane	µg/L											
	2-Chloroethyl Vinyl Ether	µg/L											

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

Group 3	Chloroform	µg/L											
	Dichlorobromomethane	µg/L											
	1,1-Dichloroethane	µg/L											
	1,2-Dichloroethane	µg/L											
	1,1-Dichloroethylene	µg/L											
	1,2-Dichloropropane	µg/L											
	1,3-Dichloropropylene	µg/L											
	1,4-Dioxane	µg/L											
	Ethylbenzene	µg/L											
	Methyl Bromide	µg/L											
	Methyl Chloride	µg/L											
	Methylene Chloride	µg/L											
	1,1,2,2-Tetrachloroethane	µg/L											
	Tetrachloroethylene	µg/L											
	Toluene	µg/L											
	1,2-trans-Dichloroethylene	µg/L											
	1,1,1-Trichloroethane	µg/L											
	1,1,2-Trichloroethane	µg/L											
	Trichloroethylene	µg/L											
	Vinyl Chloride	µg/L	<	0.16			0.5	0.5					
Group 4	2-Chlorophenol	µg/L											
	2,4-Dichlorophenol	µg/L											
	2,4-Dimethylphenol	µg/L											
	4,6-Dinitro-o-Cresol	µg/L											
	2,4-Dinitrophenol	µg/L											
	2-Nitrophenol	µg/L											
	4-Nitrophenol	µg/L											
	p-Chloro-m-Cresol	µg/L											
	Pentachlorophenol	µg/L											
	Phenol	µg/L											
	2,4,6-Trichlorophenol	µg/L											
Group 5	Acenaphthene	µg/L											
	Acenaphthylene	µg/L											
	Anthracene	µg/L											
	Benzidine	µg/L											
	Benzo(a)Anthracene	µg/L	<	2.5			0.5	0.5					
	Benzo(a)Pyrene	µg/L											
	3,4-Benzofluoranthene	µg/L	<	2.5			0.5	0.5					
	Benzo(ghi)Perylene	µg/L											
	Benzo(k)Fluoranthene	µg/L	<	2.5			0.5	0.5					
	Bis(2-Chloroethoxy)Methane	µg/L											
	Bis(2-Chloroethyl)Ether	µg/L											
	Bis(2-Chloroisopropyl)Ether	µg/L											
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	2.5			1.48	0.5					
	4-Bromophenyl Phenyl Ether	µg/L											
	Butyl Benzyl Phthalate	µg/L											
	2-Chloronaphthalene	µg/L											
	4-Chlorophenyl Phenyl Ether	µg/L											
	Chrysene	µg/L	<	2.5			0.5	0.5					
	Dibenzo(a,h)Anthrancene	µg/L											
	1,2-Dichlorobenzene	µg/L											
	1,3-Dichlorobenzene	µg/L											
	1,4-Dichlorobenzene	µg/L											
	3,3-Dichlorobenzidine	µg/L											
	Diethyl Phthalate	µg/L											
	Dimethyl Phthalate	µg/L											
	Di-n-Butyl Phthalate	µg/L											
	2,4-Dinitrotoluene	µg/L											
	2,6-Dinitrotoluene	µg/L											
	Di-n-Octyl Phthalate	µg/L											
	1,2-Diphenylhydrazine	µg/L											
	Fluoranthene	µg/L											
	Fluorene	µg/L											
	Hexachlorobenzene	µg/L											
	Hexachlorobutadiene	µg/L											
	Hexachlorocyclopentadiene	µg/L											
	Hexachloroethane	µg/L											
	Indeno(1,2,3-cd)Pyrene	µg/L											

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Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

PTTI, NPDES Permit No. PA0001937, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Chartiers Creek**

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	036777	27.59	906.75	87.4	0.0014		Yes
End of Reach 1	036777	27.36	905	87.5	0.0011	0	Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	27.59	0.1	2		18.625	9.26	0.09	0.148				288.2	6.97		
End of Reach 1	27.36	0.1	2		17.541	2.63	0.08	0.105				288.2	6.97		

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	27.59		25.2		23.076	53.26	0.64	0.447				100	7		
End of Reach 1	27.36		25.2		22.984	38.57	0.92	0.423				100	7		

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Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

PTTI, NPDES Permit No. PA0001937, Outfall 001

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

☑ ***Hydrodynamics***

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

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time	Complete Mix Time (min)
27.59	2		2	2.247	0.001	0.09	9.26	18.625	0.148	0.095	34.453
27.36	2	0.	2					17.541			

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time	Complete Mix Time (min)
27.59	25.20		25.20	2.247	0.001	0.205	9.26	23.076	0.447	0.031	179.05
27.36	25.2	0.	25.20					22.984	0.423		

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.660 Analysis Hardness (mg/l): 306.4 Analysis pH: 7.07

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	3.5	0		0	38.597	49.5	76.5	Chem Translator of 0.78 applied
Free Cyanide	0	0		0	22	22.0	34.9	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	0.5	0.5	0.79	
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-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	7,144	
Chrysene	0	0		0	N/A	N/A	N/A	

☑ ***CFC*** CCT (min): 34.453 PMF: 1 Analysis Hardness (mg/l): 303.49 Analysis pH: 7.06

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments

Total Copper	3.5	0		0	23.126	29.6	52.9	Chem Translator of 0.78 applied
Free Cyanide	0	0		0	5.2	5.2	9.83	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.19	
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-Ethylhexyl)Phthalate	0	0		0	910	910	1,720	
Chrysene	0	0		0	N/A	N/A	N/A	

☑ ***THH*** CCT (min): 34.453 THH PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A PWS PMF: 1

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	3.5	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	4	4.0	7.56	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	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-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	

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

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	3.5	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	0.02	0.02	0.24	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.012	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.012	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.12	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	3.91	
Chrysene	0	0		0	0.12	0.12	1.47	

☑ ***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
Free Cyanide	0.092	0.14	7.56	11.8	18.9	µg/L	7.56	THH	Discharge Conc ≥ 50% WQBEL (RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Copper	52.9	µg/L	Discharge Conc ≤ 10% WQBEL
Vinyl Chloride	N/A	N/A	Discharge Conc < TQL
Benzo(a)Anthracene	N/A	N/A	Discharge Conc < TQL
3,4-Benzofluoranthene	N/A	N/A	Discharge Conc < TQL
Benzo(k)Fluoranthene	N/A	N/A	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	N/A	N/A	Discharge Conc < TQL
Chrysene	N/A	N/A	Discharge Conc < TQL

OUTFALL 002

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: PTTI NPDES Permit No.: PA0001937 Outfall No.: 002

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: Treated groundwater and storm water

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
0.253	390.3	7.17	1	1	1	1	12.325	

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L											
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L		10			0.22	0.38					
	Total Cobalt	µg/L											
	Total Copper	µg/L											
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L		1.55			0.68	0.19					0.15
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L		1.36			0.02	0.12					0.39
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	µg/L											
	Total Molybdenum	µg/L											
	Acrolein	µg/L											
	Acrylamide	µg/L											
	Acrylonitrile	µg/L											
	Benzene	µg/L											
	Bromoform	µg/L											
	Carbon Tetrachloride	µg/L											
	Chlorobenzene	µg/L											
	Chlorodibromomethane	µg/L	<	0.2			0.5	0.5					
	Chloroethane	µg/L											
	2-Chloroethyl Vinyl Ether	µg/L											

Group 3	Chloroform	µg/L	<	0.1			0.5	0.5					
	Dichlorobromomethane	µg/L	<	0.2			0.5	0.5					
	1,1-Dichloroethane	µg/L											
	1,2-Dichloroethane	µg/L											
	1,1-Dichloroethylene	µg/L											
	1,2-Dichloropropane	µg/L											
	1,3-Dichloropropylene	µg/L											
	1,4-Dioxane	µg/L											
	Ethylbenzene	µg/L											
	Methyl Bromide	µg/L											
	Methyl Chloride	µg/L											
	Methylene Chloride	µg/L											
	1,1,2,2-Tetrachloroethane	µg/L											
	Tetrachloroethylene	µg/L											
	Toluene	µg/L											
	1,2-trans-Dichloroethylene	µg/L											
	1,1,1-Trichloroethane	µg/L											
	1,1,2-Trichloroethane	µg/L											
	Trichloroethylene	µg/L											
	Vinyl Chloride	µg/L		0.89			4.01	0.5					
Group 4	2-Chlorophenol	µg/L											
	2,4-Dichlorophenol	µg/L											
	2,4-Dimethylphenol	µg/L											
	4,6-Dinitro-o-Cresol	µg/L											
	2,4-Dinitrophenol	µg/L											
	2-Nitrophenol	µg/L											
	4-Nitrophenol	µg/L											
	p-Chloro-m-Cresol	µg/L											
	Pentachlorophenol	µg/L											
	Phenol	µg/L											
	2,4,6-Trichlorophenol	µg/L											
Group 5	Acenaphthene	µg/L											
	Acenaphthylene	µg/L											
	Anthracene	µg/L											
	Benzidine	µg/L											
	Benzo(a)Anthracene	µg/L	<	2.55			0.5	0.5					
	Benzo(a)Pyrene	µg/L	<	2.55			0.5	0.5					
	3,4-Benzofluoranthene	µg/L	<	2.55			0.5	0.5					
	Benzo(ghi)Perylene	µg/L											
	Benzo(k)Fluoranthene	µg/L	<	2.55			0.5	0.5					
	Bis(2-Chloroethoxy)Methane	µg/L											
	Bis(2-Chloroethyl)Ether	µg/L											
	Bis(2-Chloroisopropyl)Ether	µg/L											
	Bis(2-Ethylhexyl)Phthalate	µg/L											
	4-Bromophenyl Phenyl Ether	µg/L											
	Butyl Benzyl Phthalate	µg/L											
	2-Chloronaphthalene	µg/L											
	4-Chlorophenyl Phenyl Ether	µg/L											
	Chrysene	µg/L	<	2.55			0.5	0.5					
	Dibenzo(a,h)Anthrancene	µg/L	<	2.55			0.5	0.5					
	1,2-Dichlorobenzene	µg/L											
	1,3-Dichlorobenzene	µg/L											
	1,4-Dichlorobenzene	µg/L											
	3,3-Dichlorobenzidine	µg/L											
	Diethyl Phthalate	µg/L											
	Dimethyl Phthalate	µg/L											
	Di-n-Butyl Phthalate	µg/L											
	2,4-Dinitrotoluene	µg/L											
	2,6-Dinitrotoluene	µg/L											
	Di-n-Octyl Phthalate	µg/L											
	1,2-Diphenylhydrazine	µg/L											
	Fluoranthene	µg/L											
	Fluorene	µg/L											
	Hexachlorobenzene	µg/L											
	Hexachlorobutadiene	µg/L											
	Hexachlorocyclopentadiene	µg/L											
	Hexachloroethane	µg/L											
	Indeno(1,2,3-cd)Pyrene	µg/L	<	2.55			0.5	0.5					

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

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Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

PTTI, NPDES Permit No. PA0001937, Outfall 002

Instructions | Discharge | Stream

Receiving Surface Water Name: **Chartiers Creek**

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	036777	27.36	905.5	87.5	0.0011		Yes
End of Reach 1	036777	27.3	905	87.5	0.0011	0	Yes

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

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	27.36	0.1	2		17.541	2.63	0.08	0.105				288.2	6.97		
End of Reach 1	27.3	0.1	2		17.541	2.63	0.08	0.105				288.2	6.97		

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	27.36		25.2		22.984	38.57	0.92	0.423				100	7		
End of Reach 1	27.3		25.2		22.984	38.57	0.92	0.423				100	7		

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Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

PTTI, NPDES Permit No. PA0001937, Outfall 002

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

☑ ***Hydrodynamics***

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

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time	Complete Mix Time (min)
27.36	2		2	0.391	0.001	0.08	2.63	17.541	0.105	0.035	12.325
27.3	2	0.	2					17.541			

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time	Complete Mix Time (min)
27.36	25.20		25.20	0.391	0.001	0.227	2.63	22.984	0.423	0.009	69.444
27.3	25.2	0.	25.20					22.984	0.423		

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 12.325 PMF: 1 Analysis Hardness (mg/l): 304.91 Analysis pH: 7.00

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Hexavalent Chromium	0	0		0	16	16.3	99.6	Chem Translator of 0.982 applied
Total Lead	0	0		0	212.141	1,414	8,641	Chem Translator of 0.15 applied
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.39 applied
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	1,900	1,900	11,609	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	0.5	0.5	3.05	
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	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	

☑ ***CFC*** CCT (min): 12.325 PMF: 1 Analysis Hardness (mg/l): 304.91 Analysis pH: 7.00

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Hexavalent Chromium	0	0		0	10	10.4	63.5	Chem Translator of 0.962 applied
Total Lead	0	0		0	8.267	55.1	337	Chem Translator of 0.15 applied
Total Selenium	0	0		0	4.600	11.8	72.1	Chem Translator of 0.39 applied
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	390	390	2,383	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.61	
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	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	

☑ ***THH*** CCT (min): 12.325 THH PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A PWS PMF: 1

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	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	
Vinyl Chloride	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	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 69.444 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	52.3	
Chloroform	0	0		0	5.7	5.7	373	
Dichlorobromomethane	0	0		0	0.95	0.95	62.1	
Vinyl Chloride	0	0		0	0.02	0.02	1.31	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.065	

Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.007	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.065	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.65	
Chrysene	0	0		0	0.12	0.12	7.85	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.007	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.065	

☑ ***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
Hexavalent Chromium	Report	Report	Report	Report	Report	µg/L	58.1	AFC	Discharge Conc > 10% WQBEL (no RP)
Vinyl Chloride	0.003	0.004	1.31	1.86	3.27	µg/L	1.31	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(a)Anthracene	0.0001	0.0002	0.065	0.1	0.16	µg/L	0.065	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(a)Pyrene	0.00001	0.00002	0.007	0.01	0.016	µg/L	0.007	CRL	Discharge Conc ≥ 50% WQBEL (RP)
3,4-Benzofluoranthene	0.0001	0.0002	0.065	0.1	0.16	µg/L	0.065	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(k)Fluoranthene	0.001	0.002	0.65	1.02	1.63	µg/L	0.65	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Chrysene	Report	Report	Report	Report	Report	µg/L	7.85	CRL	Discharge Conc > 25% WQBEL (no RP)
Dibenzo(a,h)Anthrancene	0.00001	0.00002	0.007	0.01	0.016	µg/L	0.007	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Indeno(1,2,3-cd)Pyrene	0.0001	0.0002	0.065	0.1	0.16	µg/L	0.065	CRL	Discharge Conc ≥ 50% WQBEL (RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Lead	337	µg/L	Discharge Conc ≤ 10% WQBEL
Total Selenium	72.1	µg/L	Discharge Conc ≤ 10% WQBEL
Chlorodibromomethane	N/A	N/A	Discharge Conc < TQL
Chloroform	N/A	N/A	Discharge Conc < TQL
Dichlorobromomethane	N/A	N/A	Discharge Conc < TQL

OUTFALL 003

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: PTTI NPDES Permit No.: PA0001937 Outfall No.: 003

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: Treated groundwater and storm water

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
1.4524	284.2	7.2	0.66	1	1	1	34.453	

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L											
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	µg/L											
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L		0.14			10	0.5					0.43
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	µg/L											
	Total Molybdenum	µg/L											
	Acrolein	µg/L											
	Acrylamide	µg/L											
	Acrylonitrile	µg/L											
	Benzene	µg/L											
	Bromoform	µg/L											
	Carbon Tetrachloride	µg/L											
	Chlorobenzene	µg/L											
	Chlorodibromomethane	µg/L											
	Chloroethane	µg/L											
	2-Chloroethyl Vinyl Ether	µg/L											

Group 3	Chloroform	µg/L											
	Dichlorobromomethane	µg/L											
	1,1-Dichloroethane	µg/L											
	1,2-Dichloroethane	µg/L											
	1,1-Dichloroethylene	µg/L											
	1,2-Dichloropropane	µg/L											
	1,3-Dichloropropylene	µg/L											
	1,4-Dioxane	µg/L											
	Ethylbenzene	µg/L											
	Methyl Bromide	µg/L											
	Methyl Chloride	µg/L											
	Methylene Chloride	µg/L											
	1,1,2,2-Tetrachloroethane	µg/L											
	Tetrachloroethylene	µg/L											
	Toluene	µg/L											
	1,2-trans-Dichloroethylene	µg/L											
	1,1,1-Trichloroethane	µg/L											
	1,1,2-Trichloroethane	µg/L											
	Trichloroethylene	µg/L											
	Vinyl Chloride	µg/L											
Group 4	2-Chlorophenol	µg/L											
	2,4-Dichlorophenol	µg/L											
	2,4-Dimethylphenol	µg/L											
	4,6-Dinitro-o-Cresol	µg/L											
	2,4-Dinitrophenol	µg/L											
	2-Nitrophenol	µg/L											
	4-Nitrophenol	µg/L											
	p-Chloro-m-Cresol	µg/L											
	Pentachlorophenol	µg/L											
	Phenol	µg/L											
	2,4,6-Trichlorophenol	µg/L											
Group 5	Acenaphthene	µg/L											
	Acenaphthylene	µg/L											
	Anthracene	µg/L											
	Benzidine	µg/L											
	Benzo(a)Anthracene	µg/L	<	2.55			0.5	0.5					
	Benzo(a)Pyrene	µg/L											
	3,4-Benzofluoranthene	µg/L	<	2.55			0.5	0.5					
	Benzo(ghi)Perylene	µg/L											
	Benzo(k)Fluoranthene	µg/L	<	2.55			0.5	0.5					
	Bis(2-Chloroethoxy)Methane	µg/L											
	Bis(2-Chloroethyl)Ether	µg/L											
	Bis(2-Chloroisopropyl)Ether	µg/L											
	Bis(2-Ethylhexyl)Phthalate	µg/L											
	4-Bromophenyl Phenyl Ether	µg/L											
	Butyl Benzyl Phthalate	µg/L											
	2-Chloronaphthalene	µg/L											
	4-Chlorophenyl Phenyl Ether	µg/L											
	Chrysene	µg/L	<	2.55			0.5	0.5					
	Dibenzo(a,h)Anthrancene	µg/L											
	1,2-Dichlorobenzene	µg/L											
	1,3-Dichlorobenzene	µg/L											
	1,4-Dichlorobenzene	µg/L											
	3,3-Dichlorobenzidine	µg/L											
	Diethyl Phthalate	µg/L											
	Dimethyl Phthalate	µg/L											
	Di-n-Butyl Phthalate	µg/L											
	2,4-Dinitrotoluene	µg/L											
	2,6-Dinitrotoluene	µg/L											
	Di-n-Octyl Phthalate	µg/L											
	1,2-Diphenylhydrazine	µg/L											
	Fluoranthene	µg/L											
	Fluorene	µg/L											
	Hexachlorobenzene	µg/L											
	Hexachlorobutadiene	µg/L											
	Hexachlorocyclopentadiene	µg/L											
	Hexachloroethane	µg/L											
	Indeno(1,2,3-cd)Pyrene	µg/L	<	2.55			0.5	0.5					

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

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

PTTI, NPDES Permit No. PA0001937, Outfall 003

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Chartiers Creek**

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	036777	27.59	906.75	87.4	0.0014		Yes
End of Reach 1	036777	27.36	905	87.5	0.0011	0	Yes

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

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	27.59	0.1	2		18.625	9.26	0.09	0.148				288.2	6.972		
End of Reach 1	27.36	0.1	2		17.541	2.63	0.08	0.105				288.2	6.972		

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	27.59		25.2		23.076	53.26	0.64	0.447				100	7		
End of Reach 1	27.36		25.2		22.984	38.57	0.92	0.423				100	7		

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Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

PTTI, NPDES Permit No. PA0001937, Outfall 003

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

☑ ***Hydrodynamics***

Q_{7-10}

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time	Complete Mix Time (min)
27.59	2		2	2.247	0.001	0.09	9.26	18.625	0.148	0.095	34.453
27.36	2	0.	2					17.541			

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time	Complete Mix Time (min)
27.59	25.20		25.20	2.247	0.001	0.205	9.26	23.076	0.447	0.031	293.326
27.36	25.2	0.	25.20					22.984	0.423		

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.660 Analysis Hardness (mg/l): 285.68 Analysis pH: 7.10

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Lead	0	0		0	198.207	461	732	Chem Translator of 0.43 applied
Benzo(a)Anthracene	0	0		0	0.5	0.5	0.79	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	

☑ ***CFC*** CCT (min): 34.453 PMF: 1 Analysis Hardness (mg/l): 286.08 Analysis pH: 7.08

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments

Total Lead	0	0		0	7.735	18.0	34.0	Chem Translator of 0.43 applied
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.19	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	

☑ ***THH*** CCT (min): 34.453 THH PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A PWS PMF: 1

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Lead	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	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	
Chrysene	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	

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

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Lead	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.012	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.012	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.12	
Chrysene	0	0		0	0.12	0.12	1.47	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.012	

☑ ***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
Benzo(a)Anthracene	0.0001	0.0002	0.012	0.019	0.031	µg/L	0.012	CRL	Discharge Conc ≥ 50% WQBEL (RP)
3,4-Benzofluoranthene	0.0001	0.0002	0.012	0.019	0.031	µg/L	0.012	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(k)Fluoranthene	0.001	0.002	0.12	0.19	0.31	µg/L	0.12	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Chrysene	0.018	0.028	1.47	2.29	3.66	µg/L	1.47	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Indeno(1,2,3-cd)Pyrene	0.0001	0.0002	0.012	0.019	0.031	µg/L	0.012	CRL	Discharge Conc ≥ 50% WQBEL (RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Lead	34.0	µg/L	Discharge Conc ≤ 10% WQBEL

OUTFALL 004

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Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: PTTI NPDES Permit No.: PA0001937 Outfall No.: 004

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: Treated groundwater and storm water

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
1.4524	122	7.97	0.66	1	1	1	34.453	

	Discharge Pollutant	Units	Max Discharge Conc		0 if left blank: Trib Conc	0 if left blank: Stream Conc	0.5 if left blank: Daily CV	0.5 if left blank: Hourly CV	0 if left blank: Stream CV	0 if left blank: Fate Coeff	0 if left blank: FOS	1 if left blank: Criteria Mod	1 if left blank: Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L											
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L		1.11			8.29	0.5					0.32
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L		40			0.96	0.5					
	Total Cobalt	µg/L											
	Total Copper	µg/L											
	Free Cyanide	µg/L	<	20									
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L		28.9			10	0.5					0.43
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	µg/L		269		0.025	0.76	0.5					0.57
	Total Molybdenum	µg/L											
	Acrolein	µg/L											
	Acrylamide	µg/L											
	Acrylonitrile	µg/L											
	Benzene	µg/L											
	Bromoform	µg/L											
	Carbon Tetrachloride	µg/L											
	Chlorobenzene	µg/L											
	Chlorodibromomethane	µg/L											
	Chloroethane	µg/L											
	2-Chloroethyl Vinyl Ether	µg/L											

Group 3	Chloroform	µg/L											
	Dichlorobromomethane	µg/L											
	1,1-Dichloroethane	µg/L											
	1,2-Dichloroethane	µg/L											
	1,1-Dichloroethylene	µg/L											
	1,2-Dichloropropane	µg/L											
	1,3-Dichloropropylene	µg/L											
	1,4-Dioxane	µg/L											
	Ethylbenzene	µg/L											
	Methyl Bromide	µg/L											
	Methyl Chloride	µg/L											
	Methylene Chloride	µg/L											
	1,1,2,2-Tetrachloroethane	µg/L											
	Tetrachloroethylene	µg/L											
	Toluene	µg/L											
	1,2-trans-Dichloroethylene	µg/L											
	1,1,1-Trichloroethane	µg/L											
	1,1,2-Trichloroethane	µg/L											
	Trichloroethylene	µg/L											
	Vinyl Chloride	µg/L											
Group 4	2-Chlorophenol	µg/L											
	2,4-Dichlorophenol	µg/L											
	2,4-Dimethylphenol	µg/L											
	4,6-Dinitro-o-Cresol	µg/L											
	2,4-Dinitrophenol	µg/L											
	2-Nitrophenol	µg/L											
	4-Nitrophenol	µg/L											
	p-Chloro-m-Cresol	µg/L											
	Pentachlorophenol	µg/L											
	Phenol	µg/L											
	2,4,6-Trichlorophenol	µg/L											
Group 5	Acenaphthene	µg/L											
	Acenaphthylene	µg/L											
	Anthracene	µg/L											
	Benzidine	µg/L											
	Benzo(a)Anthracene	µg/L		6.45			0.89	0.5					
	Benzo(a)Pyrene	µg/L		5.11			1.52	0.5					
	3,4-Benzofluoranthene	µg/L		2.81			0.56	0.5					
	Benzo(ghi)Perylene	µg/L											
	Benzo(k)Fluoranthene	µg/L		2.81			0.44	0.5					
	Bis(2-Chloroethoxy)Methane	µg/L											
	Bis(2-Chloroethyl)Ether	µg/L											
	Bis(2-Chloroisopropyl)Ether	µg/L											
	Bis(2-Ethylhexyl)Phthalate	µg/L											
	4-Bromophenyl Phenyl Ether	µg/L											
	Butyl Benzyl Phthalate	µg/L											
	2-Chloronaphthalene	µg/L											
	4-Chlorophenyl Phenyl Ether	µg/L											
	Chrysene	µg/L		12.3			1	0.5					
	Dibenzo(a,h)Anthrancene	µg/L											
	1,2-Dichlorobenzene	µg/L											
	1,3-Dichlorobenzene	µg/L											
	1,4-Dichlorobenzene	µg/L											
	3,3-Dichlorobenzidine	µg/L											
	Diethyl Phthalate	µg/L											
	Dimethyl Phthalate	µg/L											
	Di-n-Butyl Phthalate	µg/L											
	2,4-Dinitrotoluene	µg/L											
	2,6-Dinitrotoluene	µg/L											
	Di-n-Octyl Phthalate	µg/L											
	1,2-Diphenylhydrazine	µg/L											
	Fluoranthene	µg/L											
	Fluorene	µg/L											
	Hexachlorobenzene	µg/L											
	Hexachlorobutadiene	µg/L											
	Hexachlorocyclopentadiene	µg/L											
	Hexachloroethane	µg/L											
	Indeno(1,2,3-cd)Pyrene	µg/L		3.59			1.02	0.5					

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

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Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

PTTI, NPDES Permit No. PA0001937, Outfall 004

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Chartiers Creek**

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	036777	27.59	906.75	87.4	0.0014		Yes
End of Reach 1	036777	27.36	905	87.5	0.0011	0	Yes

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

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	27.59	0.1	2		18.625	9.26	0.09	0.148				288.2	6.97		
End of Reach 1	27.36	0.1	2		17.541	2.63	0.08	0.105				288.2	6.97		

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	27.59		25.2		23.076	53.26	0.64	0.447				100	7		
End of Reach 1	27.36		25.2		22.984	38.57	0.92	0.423				100	7		

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

PTTI, NPDES Permit No. PA0001937, Outfall 004

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

☑ ***Hydrodynamics***

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

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time	Complete Mix Time (min)
27.59	2		2	2.247	0.001	0.09	9.26	18.625	0.148	0.095	34.453
27.36	2	0.	2					17.541			

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time	Complete Mix Time (min)
27.59	25.20		25.20	2.247	0.001	0.205	9.26	23.076	0.447	0.031	293.326
27.36	25.2	0.	25.20					22.984	0.423		

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.660 Analysis Hardness (mg/l): 183.51 Analysis pH: 7.33

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Cadmium	0	0		0	3.632	11.4	18.0	Chem Translator of 0.32 applied
Hexavalent Chromium	0	0		0	16	16.3	25.9	Chem Translator of 0.982 applied
Free Cyanide	0	0		0	22	22.0	34.9	
Total Lead	0	0		0	124.231	289	459	Chem Translator of 0.43 applied
Total Zinc	0.025	0		0	195.996	344	546	Chem Translator of 0.57 applied
Benzo(a)Anthracene	0	0		0	0.5	0.5	0.79	
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	
Chrysene	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	

☑ ***CFC*** CCT (min): 34.453 PMF: 1 Analysis Hardness (mg/l): 200.27 Analysis pH: 7.25

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments

Total Cadmium	0	0		0	0.398	1.24	2.35	Chem Translator of 0.32 applied
Hexavalent Chromium	0	0		0	10	10.4	19.6	Chem Translator of 0.962 applied
Free Cyanide	0	0		0	5.2	5.2	9.83	
Total Lead	0	0		0	5.313	12.4	23.4	Chem Translator of 0.43 applied
Total Zinc	0.025	0		0	212.790	373	706	Chem Translator of 0.57 applied
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.19	
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	
Chrysene	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	

☑ ***THH*** CCT (min): 34.453 THH PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A PWS PMF: 1

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Cadmium	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	4	4.0	7.56	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0.025	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	
Chrysene	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	

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

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Cadmium	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0.025	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.012	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.001	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.012	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.12	
Chrysene	0	0		0	0.12	0.12	1.47	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.012	

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

No. Samples/Month: 4

Mass Limits	*Concentration Limits*

Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Cadmium	Report	Report	Report	Report	Report	µg/L	2.35	CFC	Discharge Conc > 10% WQBEL (no RP)
Hexavalent Chromium	0.24	0.43	19.6	35.7	49.1	µg/L	19.6	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Free Cyanide	0.092	0.14	7.56	11.8	18.9	µg/L	7.56	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Lead	0.28	0.32	23.4	26.3	58.4	µg/L	23.4	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Zinc	5.41	9.43	447	779	1,117	µg/L	447	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(a)Anthracene	0.0001	0.0003	0.012	0.022	0.031	µg/L	0.012	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(a)Pyrene	0.00001	0.00003	0.001	0.002	0.003	µg/L	0.001	CRL	Discharge Conc ≥ 50% WQBEL (RP)
3,4-Benzofluoranthene	0.0001	0.0002	0.012	0.02	0.031	µg/L	0.012	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(k)Fluoranthene	0.001	0.002	0.12	0.18	0.31	µg/L	0.12	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Chrysene	0.018	0.032	1.47	2.68	3.66	µg/L	1.47	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Indeno(1,2,3-cd)Pyrene	0.0001	0.0003	0.012	0.022	0.031	µg/L	0.012	CRL	Discharge Conc ≥ 50% WQBEL (RP)

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

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

Pollutants	Governing WQBEL	Units	Comments

OUTFALL 006

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Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: PTTI NPDES Permit No.: PA0001937 Outfall No.: 006

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: Treated groundwater and storm water

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
1.4524	370.2	7.25	0.66	1	1	1	34.453	

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L											
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	µg/L		2.47			0.5	0.5					0.78
	Free Cyanide	µg/L	<	8			0.5	0.5					
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L											
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	µg/L											
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<	1.9			0.5	0.5					
	Acrylamide	µg/L											
	Acrylonitrile	µg/L	<	2.5			0.5	0.5					
	Benzene	µg/L											
	Bromoform	µg/L											
	Carbon Tetrachloride	µg/L	<	0.19			0.5	0.5					
	Chlorobenzene	µg/L											
	Chlorodibromomethane	µg/L	<	0.2			0.5	0.5					
	Chloroethane	µg/L											
	2-Chloroethyl Vinyl Ether	µg/L											

Group 3	Chloroform	µg/L												
	Dichlorobromomethane	µg/L	<	0.2			0.5	0.5						
	1,1-Dichloroethane	µg/L												
	1,2-Dichloroethane	µg/L	<	0.2			0.5	0.5						
	1,1-Dichloroethylene	µg/L												
	1,2-Dichloropropane	µg/L												
	1,3-Dichloropropylene	µg/L	<	0.22			0.5	0.5						
	1,4-Dioxane	µg/L												
	Ethylbenzene	µg/L												
	Methyl Bromide	µg/L												
	Methyl Chloride	µg/L												
	Methylene Chloride	µg/L												
	1,1,2,2-Tetrachloroethane	µg/L	<	0.14			0.5	0.5						
	Tetrachloroethylene	µg/L												
	Toluene	µg/L												
	1,2-trans-Dichloroethylene	µg/L												
	1,1,1-Trichloroethane	µg/L												
	1,1,2-Trichloroethane	µg/L	<	0.1			0.5	0.5						
	Trichloroethylene	µg/L												
	Vinyl Chloride	µg/L	<	0.16			0.5	0.5						
Group 4	2-Chlorophenol	µg/L												
	2,4-Dichlorophenol	µg/L												
	2,4-Dimethylphenol	µg/L												
	4,6-Dinitro-o-Cresol	µg/L	<	12.6			0.5	0.5						
	2,4-Dinitrophenol	µg/L												
	2-Nitrophenol	µg/L												
	4-Nitrophenol	µg/L												
	p-Chloro-m-Cresol	µg/L												
	Pentachlorophenol	µg/L	<	12.6			0.5	0.5						
	Phenol	µg/L												
	2,4,6-Trichlorophenol	µg/L	<	2.53			0.5	0.5						
Group 5	Acenaphthene	µg/L												
	Acenaphthylene	µg/L												
	Anthracene	µg/L												
	Benzidine	µg/L	<	12.6			0.5	0.5						
	Benzo(a)Anthracene	µg/L	<	2.53			0.5	0.5						
	Benzo(a)Pyrene	µg/L	<	2.53			0.5	0.5						
	3,4-Benzofluoranthene	µg/L	<	2.53			0.5	0.5						
	Benzo(ghi)Perylene	µg/L												
	Benzo(k)Fluoranthene	µg/L	<	2.53			0.5	0.5						
	Bis(2-Chloroethoxy)Methane	µg/L												
	Bis(2-Chloroethyl)Ether	µg/L	<	2.53			0.5	0.5						
	Bis(2-Chloroisopropyl)Ether	µg/L												
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	2.53			0.5	0.36						
	4-Bromophenyl Phenyl Ether	µg/L												
	Butyl Benzyl Phthalate	µg/L												
	2-Chloronaphthalene	µg/L												
	4-Chlorophenyl Phenyl Ether	µg/L												
	Chrysene	µg/L	<	2.53			0.5	0.5						
	Dibenzo(a,h)Anthrancene	µg/L	<	2.53			0.5	0.5						
	1,2-Dichlorobenzene	µg/L												
	1,3-Dichlorobenzene	µg/L												
	1,4-Dichlorobenzene	µg/L												
	3,3-Dichlorobenzidine	µg/L	<	2.53			0.5	0.5						
	Diethyl Phthalate	µg/L												
	Dimethyl Phthalate	µg/L												
	Di-n-Butyl Phthalate	µg/L												
	2,4-Dinitrotoluene	µg/L												
	2,6-Dinitrotoluene	µg/L												
	Di-n-Octyl Phthalate	µg/L												
	1,2-Diphenylhydrazine	µg/L	<	2.53			0.5	0.5						
	Fluoranthene	µg/L												
	Fluorene	µg/L												
	Hexachlorobenzene	µg/L	<	2.53			0.5	0.5						
	Hexachlorobutadiene	µg/L	<	2.53			0.5	0.5						
	Hexachlorocyclopentadiene	µg/L	<	5.05			0.5	0.5						
	Hexachloroethane	µg/L	<	2.53			0.5	0.5						
	Indeno(1,2,3-cd)Pyrene	µg/L												

	Isophorone	µg/L												
	Naphthalene	µg/L												
	Nitrobenzene	µg/L												
	n-Nitrosodimethylamine	µg/L	<	2.53			0.5	0.5						
	n-Nitrosodi-n-Propylamine	µg/L	<	2.53			0.5	0.5						
	n-Nitrosodiphenylamine	µg/L												
	Phenanthrene	µg/L	<	2.53			0.5	0.5						
	Pyrene	µg/L												
	1,2,4-Trichlorobenzene	µg/L												
Group 6	Aldrin	µg/L												
	alpha-BHC	µg/L												
	beta-BHC	µg/L												
	gamma-BHC	µg/L												
	delta BHC	µg/L												
	Chlordane	µg/L												
	4,4-DDT	µg/L												
	4,4-DDE	µg/L												
	4,4-DDD	µg/L												
	Dieldrin	µg/L												
	alpha-Endosulfan	µg/L												
	beta-Endosulfan	µg/L												
	Endosulfan Sulfate	µg/L												
	Endrin	µg/L												
	Endrin Aldehyde	µg/L												
	Heptachlor	µg/L												
	Heptachlor Epoxide	µg/L												
	PCB-1016	µg/L												
	PCB-1221	µg/L												
	PCB-1232	µg/L												
	PCB-1242	µg/L												
	PCB-1248	µg/L												
	PCB-1254	µg/L												
	PCB-1260	µg/L												
	PCBs, Total	µg/L												
	Toxaphene	µg/L												
	2,3,7,8-TCDD	ng/L												
Group 7	Gross Alpha	pCi/L												
	Total Beta	pCi/L												
	Radium 226/228	pCi/L												
	Total Strontium	µg/L												
	Total Uranium	µg/L												
	Osmotic Pressure	mOs/kg												
	Other (TYPE HERE)	mg/L												

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

PTTI, NPDES Permit No. PA0001937, Outfall 006

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Chartiers Creek**

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	036777	27.59	906.75	87.4	0.0014		Yes
End of Reach 1	036777	27.36	905	87.5	0.0011	0	Yes

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

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	27.59	0.1	2		18.625	9.26	0.09	0.148				288.2	6.97		
End of Reach 1	27.36	0.1	2		17.541	2.63	0.08	0.105				288.2	6.97		

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	27.59		25.2		23.076	53.26	0.64	0.447				100	7		
End of Reach 1	27.36		25.2		22.984	38.57	0.92	0.423				100	7		

Benzo(a)Anthracene	0	0		0	0.5	0.5	0.79	
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	47,625	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	7,144	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0		0	15	15.0	23.8	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	15.9	
Hexachlorocyclopentadiene	0	0		0	5	5.0	7.94	
Hexachloroethane	0	0		0	60	60.0	95.2	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	26,987	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	5	5.0	7.94	

☑ ***CFC*** CCT (min): 34.453 PMF: 1 Analysis Hardness (mg/l): 331.58 Analysis pH: 7.10

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	24.943	32.0	60.4	Chem Translator of 0.78 applied
Free Cyanide	0	0		0	5.2	5.2	9.83	
Acrolein	0	0		0	3	3.0	5.67	
Acrylonitrile	0	0		0	130	130	246	
Carbon Tetrachloride	0	0		0	560	560	1,058	
Chlorodibromomethane	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	3,100	3,100	5,859	
1,3-Dichloropropylene	0	0		0	61	61.0	115	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	397	
1,1,2-Trichloroethane	0	0		0	680	680	1,285	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	30.2	
Pentachlorophenol	0	0		0	7.585	7.58	14.3	
2,4,6-Trichlorophenol	0	0		0	91	91.0	172	
Benzidine	0	0		0	59	59.0	112	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.19	
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	11,341	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	1,720	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0		0	3	3.0	5.67	

Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	3.78	
Hexachlorocyclopentadiene	0	0		0	1	1.0	1.89	
Hexachloroethane	0	0		0	12	12.0	22.7	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	6,426	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	1	1.0	1.89	

☑ ***THH*** CCT (min): 34.453 THH PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A PWS PMF: 1

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	4	4.0	7.56	
Acrolein	0	0		0	3	3.0	5.67	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	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	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	3.78	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
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-Ethylhexyl)Phthalate	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	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A	
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	7.56	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	N/A	N/A	N/A	

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

Pollutants	Stream	Stream	Trib Conc	Fate	WQC	WQ Obj	WLA (µg/L)	Comments

Pollutants	Conc	CV	(µg/L)	Coef	(µg/L)	(µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	0.73	
Carbon Tetrachloride	0	0		0	0.4	0.4	4.89	
Chlorodibromomethane	0	0		0	0.8	0.8	9.77	
Dichlorobromomethane	0	0		0	0.95	0.95	11.6	
1,2-Dichloroethane	0	0		0	9.9	9.9	121	
1,3-Dichloropropylene	0	0		0	0.27	0.27	3.3	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	2.44	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	6.72	
Vinyl Chloride	0	0		0	0.02	0.02	0.24	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	0.37	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	18.3	
Benzidine	0	0		0	0.0001	0.0001	0.001	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.012	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.001	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.012	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.12	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.37	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	3.91	
Chrysene	0	0		0	0.12	0.12	1.47	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.001	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	0.61	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.37	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.001	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.12	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	1.22	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.009	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.061	
Phenanthrene	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
Free Cyanide	0.092	0.14	7.56	11.8	18.9	µg/L	7.56	THH	Discharge Conc ≥ 50% WQBEL (RP)
4,6-Dinitro-o-Cresol	0.046	0.071	3.78	5.9	9.45	µg/L	3.78	THH	Discharge Conc ≥ 50% WQBEL (RP)
Pentachlorophenol	0.004	0.007	0.37	0.57	0.92	µg/L	0.37	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(a)Anthracene	0.0001	0.0002	0.012	0.019	0.031	µg/L	0.012	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(a)Pyrene	0.00001	0.00002	0.001	0.002	0.003	µg/L	0.001	CRL	Discharge Conc ≥ 50% WQBEL (RP)
3,4-Benzofluoranthene	0.0001	0.0002	0.012	0.019	0.031	µg/L	0.012	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(k)Fluoranthene	0.001	0.002	0.12	0.19	0.31	µg/L	0.12	CRL	Discharge Conc ≥ 50% WQBEL (RP)

Chrysene	0.018	0.028	1.47	2.29	3.66	µg/L	1.47	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Dibenzo(a,h)Anthrancene	0.00001	0.00002	0.001	0.002	0.003	µg/L	0.001	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Hexachlorobutadiene	0.001	0.002	0.12	0.19	0.31	µg/L	0.12	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Hexachlorocyclopentadiene	0.023	0.036	1.89	2.95	4.73	µg/L	1.89	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Phenanthrene	0.023	0.036	1.89	2.95	4.73	µg/L	1.89	CFC	Discharge Conc ≥ 50% WQBEL (RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Copper	55.5	µg/L	Discharge Conc ≤ 10% WQBEL
Acrolein	N/A	N/A	Discharge Conc < TQL
Acrylonitrile	N/A	N/A	Discharge Conc < TQL
Carbon Tetrachloride	N/A	N/A	Discharge Conc < TQL
Chlorodibromomethane	N/A	N/A	Discharge Conc < TQL
Dichlorobromomethane	N/A	N/A	Discharge Conc < TQL
1,2-Dichloroethane	N/A	N/A	Discharge Conc < TQL
1,3-Dichloropropylene	N/A	N/A	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	2.44	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	6.72	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.24	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	18.3	µg/L	Discharge Conc < TQL
Benzidine	0.001	µg/L	Discharge Conc < TQL
Bis(2-Chloroethyl)Ether	0.37	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	3.91	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	0.61	µg/L	Discharge Conc < TQL
1,2-Diphenylhydrazine	0.37	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.001	µg/L	Discharge Conc < TQL
Hexachloroethane	1.22	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.009	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.061	µg/L	Discharge Conc < TQL