Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0254771**
Facility Type	**Industrial**	APS ID	**1144801**
Major / Minor	**Major**	Authorization ID	**1540015**

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

Applicant and Facility Information

Applicant Name	**Tenaska Pennsylvania Partners, LLC**	Facility Name	**Tenaska Westmoreland Generating Station**
Applicant Address	14302 FNB Parkway	Facility Address	446 Smithton Pike
	Omaha, NE 68154-5212		Smithton, PA 15479-8733
Applicant Contact	Buck Hunt	Facility Contact	Robert Mayfield
Applicant Phone	(402) 691-9500	Facility Phone	(724) 405-6300
Applicant email	bhunt@tenaska.com	Facility email	rmayfield@tenaska.com
Client ID	270882	Site ID	718112
SIC Code	4911	Municipality	South Huntingdon Township
SIC Description	Trans. & Utilities - Electric Services	County	Westmoreland
Date Application Received	August 28, 2025	EPA Waived?	No
Date Application Accepted		If No, Reason	Major Facility

Purpose of Application: Renewal NPDES Permit Coverage

Summary of Review

On August 28, 2025, Tenaska Pennsylvania Partners, LLC submitted an application to renew the NPDES Permit PA0254771. The Facility has a SIC Code of 4911 (Electric services) and a NAICS Code of 221112 (Fossil fuel electric power generation). The Tenaska Westmoreland Generating Station (TWGS) is a combined cycle, natural gas-fired electric power generating station, and has an operational capacity of 925 megawatts (MW).

Wastewaters generated at the Facility include process waste streams, blowdown from cooling towers, boilers, and evaporative coolers and water treatment wastes. Boiler blowdown water and process water from the Heat Recovery Steam Generators (HRSG) sump is directed to the cooling towers. Process wastewater is collected in a series of drains and routed to the wastewater sump. Process wastewater includes low volume waste sources, plant service water, wash water, neutralized effluent from ion exchange treatment, chemical storage drains, and contact storm water, which accumulate within containment areas.

To prevent the release of non-petroleum hazardous chemicals to the environment, the Circulating Water (CW) Building Sump is designed to neutralize acid, caustic and hypochlorite chemicals prior to discharge to the station Wastewater Sump and Outfall 001.

The facility was last inspected by James Stewart, on October 22, 2024, with no violations noted.

The facility has no open violations.

Approve	Deny	Signatures	Date
X		Angela Rohrer / Environmental Engineering Specialist	December 10, 2025
X		Michael E. Fifth, P.E. / Environmental Engineer Manager	December 12, 2025

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

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001 (IMP 101, IMP 201)	Design Flow (MGD)	1.6
Latitude	40º 09' 40.09"	Longitude	-79º 45' 27.72"
Quad Name	Donora	Quad Code	1707
Wastewater Description:	Cooling tower blowdown, low volume waste streams and stormwater throughout TWGS collected in the Flow Equalization Basin (EQB)		

Receiving Waters	Youghiogheny River (WWF)	Stream Code	37456
NHD Com ID	69914339	RMI	24.0
Drainage Area	1,520 mi^2	Yield (cfs/mi^2)	0.3355
Q_{7-10} Flow (cfs)	510	Q_{7-10} Basis	US Army Corp of Engineers
Elevation (ft)	769	Slope (ft/ft)	0.0003
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Not Assessed		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

Nearest Downstream Public Water Supply Intake	West County Municipal Authority-McKeesport (10 MGD)		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	390
PWS RMI	1.4	Distance from Outfall (mi)	22.6

Outfalls not exposed to industrial activities that discharge uncontaminated stormwater

Discharge, Receiving Waters and Water Supply Information						
Outfall No.	**Latitude**	**Longitude**	**Receiving Waters**	**Stream Code**	**RMI**	**Wastewater Description**
002	40° 10’ 30.66”	-79° 41’ 57.52”	UNT to Barren Run	37880	1.83	Stormwater collected in stormwater basin #1 from vegetated areas east and south of the switchyard, the eastern end of the TWGS entrance driveway, and roadways on the southern end of TWGS.
003	40° 10’ 30.66”	-79° 41’ 57.52”	UNT to Barren Run	37880	1.83	Emergency overflow (vegetated weir) for stormwater Basin #1 (outfall 002).
004	40° 10’ 25.24”	-79° 41’ 31.42”	Barren Run	37870	4.99	Stormwater collected in stormwater basin #2 from roadways on the northern end of TWGS and from vegetated areas north and east of TWGS.
005	40° 10’ 25.24”	-79° 41’ 31.42”	Barren Run	37870	4.99	Emergency overflow (vegetated weir) for stormwater Basin #2 (outfall 004)
006	40° 10’ 46.49”	-79° 42’ 30.67”	UNT to Youghiogheny River	37859	45.10	Stormwater collected in stormwater basin #3 from the western end of the TWGS entrance driveway and from vegetated areas south of the TWGS entrance driveway.
007	40° 10’ 46.49”	-79° 42’ 30.67”	UNT to Youghiogheny River	37859	45.10	Emergency overflow (vegetated weir) for stormwater Basin #3 (outfall 006).
008	40° 10’ 24.63”	-79° 41’ 51.46”	UNT to Barren Run	37880	0.47	Stormwater from the switchyard.
009	40° 10’ 50.72”	-79° 42’ 31.29”	UNT to Youghiogheny River	37859	45.10	Stormwater from vegetated areas north of the TWGS entrance driveway.

Changes Since Last Permit Issuance: None

Treatment Facility Summary				
Treatment Facility Name: Tenaska Westmoreland Generating Station				
WQM Permit No.	**Issuance Date**			
6513200	12/17/2015			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg. Annual Flow (MGD)**
Industrial	pH adjustment, dichlorination	Dechlorination, pH adjustment	None	1.2
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
3.2				

Changes Since Last Permit Issuance: None

Other Comments: None

Development of Effluent Limitations

Outfall No.	001	**Design Flow (MGD)**	1.6
Latitude	40° 09' 40.09"	**Longitude**	-79° 45' 27.72"
Wastewater Description:	Cooling tower blowdown, low volume wastewater, ultra-filtration reject wastewater, reverse osmosis reject wastewater, Flow Equalization Basin (EQB) discharge consisting of stormwater associated with industrial activity.		

Outfall 001 samples are collected at the Tenaska Westmoreland Generating Station (40° 10' 28.41", -79° 41' 49.90"). The pipeline distance from TWGS to the outfall at the Youghiogheny River is approximately four miles.

Technology-Based Limitations

The effluent of Outfall 001 consists of cooling tower blowdown, low volume wastewater, ultra-filtration reject wastewater, reverse osmosis reject wastewater, EQB discharge consisting of stormwater associated with industrial activity. The cooling tower blowdown is monitored at internal monitoring point (IMP) 101 and goes through a batch treatment for pH and chlorine. The treatment process is monitored at the blowdown sump for the levels of pH and chlorine. The batch is only discharged if both parameters are within acceptable effluent limit ranges. If one or both the parameters are out of the effluent limit ranges, the water in the blowdown sump is recirculated back to the head of the treatment process for another round of treatment. This process continues until concentrations are within acceptable effluent limit ranges.

Some low volume wastewaters are treated in the oil/water separator then piped to the Plant Sump. Other low volume wastewaters as well as reject wastewaters from ultrafiltration and reverse osmosis are piped directly to the Plant Sump. Discharges from the Plant Sump are monitored at IMP 201.

The industrial activity wastewaters of IMPs 101 and 201 are subject to Steam Electric ELG requirements prior to comingling.

Regulatory Effluent Standards and Monitoring Requirements

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

Industrial waste discharges shall not contain more than 7 milligrams per liter of dissolved iron per 25 Pa. Code § 95.2(4).

Pennsylvania regulations at 25 Pa. Code § 92a.48(b) require the imposition of technology-based TRC limits for facilities that use chlorination and that are not already subject to TRC limits based on applicable federal ELGs or a facility-specific BPJ evaluation.

Temperature limits will be imposed per the Department's "*Implementation Guidance for Temperature Criteria*." As a policy, DEP normally imposes a maximum temperature limit of 110°F on discharges that contain residual heat. The limit is intended as a safety measure to protect sampling personnel or anyone who may come into contact with the heated discharge where it enters the receiving water.

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

Table 1: Regulatory Effluent Standards and Monitoring Requirements for Outfall 001

Parameter	Monthly Average	Daily Maximum	IMAX	Units
Flow	Monitor and Report		XXX	MGD
Temperature	XXX	XXX	110	°F
Dissolved Iron	-	XXX	7.0	mg/L
Total Residual Chlorine	0.5	1.0	XXX	mg/L
pH	Not less than 6.0 nor greater than 9.0			S.U.

Stormwater

Outfall 001 will be subject to PAG-03 General Stormwater Permit conditions because it discharges stormwater associated with industrial activity. Based on the site's SIC code, the corresponding appendix that would apply to the facility is Appendix H of the PAG-03. The proposed monitoring requirements are shown in Table 2 below. The benchmark values listed below are not effluent limitations, and exceedances do not constitute permit violations. However, if the permittee's sampling demonstrates exceedances of benchmark values for two consecutive monitoring periods, the permittee shall submit a Corrective Action Plan. This requirement will be included in Part C of the permit.

Table 2: PAG-03 Appendix (H) Monitoring Requirements

Parameters	Monitoring Requirements		Benchmark Values
	Minimum Measurement Frequency	Sample Type	
Total Nitrogen (mg/L)	1 / 6 Months	Calculation	XXX
Total Phosphorus (mg/L)	1 / 6 Months	Grab	XXX
pH (S.U)	1 / 6 Months	Grab	9.0
Total Suspended Solids (TSS) (mg/L)	1 / 6 Months	Grab	100.0
Oil and Grease (mg/L)	1 / 6 Months	Grab	30.0
Total Iron (mg/L)	1 / 6 Months	Grab	XXX

All industrial stormwater within the generating station from impervious surfaces drains to the Flow Equalization Basin (EQB). The EQB is a retention basin in which stormwater is either manually pumped out of the basin for discharge via Outfall 001 in conjunction with the discharge of IMP 101 or pumped out during a storm event. Based on the capacity of this basin, stormwater is rarely pumped from the basin. As a result, if no industrial stormwater discharge occurs during the monitoring period, the facility may use code GG on the DMRs.

Per- and Polyfluoroalkyl Substances (PFAS)

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

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

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

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

c. In all cases the application manager will include a condition in the permit that the permittee may cease monitoring for PFOA, PFOS, HFPO-DA and PFBS when the permittee reports non-detect values at or below the Target QL for four consecutive monitoring periods for each PFAS parameter that is analyzed. Use the following language: The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 consecutive monitoring periods indicate non-detects at or below Quantitation Limits of 4.0 ng/L for PFOA, 3.7 ng/L for PFOS, 3.5 ng/L for PFBS and 6.4 ng/L for HFPO-DA. When monitoring is discontinued, permittees should enter a No Discharge Indicator (NODI) Code of “GG” on DMRs.

Sample data revealed PFAS detection, triggering quarterly reporting of PFOA, PFOS, PFBS, and HFPO-DA, consistent with Section II.I.b of SOP BCW-PMT-032. Furthermore, the Draft Permit will include a Part C condition requiring a PFAS Reduction Plan.

Water Quality-Based Limitations

Toxics Management Spread Sheet

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

Reasonable Potential Analysis and WQBEL Development for Outfall 001

Discharges from Outfall 001 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are entered into the Toxics Management Spread Sheet. The maximum reported value of the parameters from the application form or from previous DMRs is used as the input concentration in the Toxics Management Spread Sheet. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion are considered to be pollutants of concern. [This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion]. The Toxics Management Spread Sheet is run with the discharge and receiving stream characteristics shown in Table 3. For IW discharges, the design flow used in modeling is the average flow during production or operation taken from the permit application. Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis. All the parameters are evaluated using the model to determine the water quality-based effluent limits applicable to the discharge and the receiving stream. The spreadsheet then compares the reported discharge concentrations to the calculated water quality-based effluent limitations to determine if a reasonable potential exists to exceed the calculated WQBELs. Effluent limitations are established in the draft permit where a pollutant’s maximum reported discharge concentration equals or exceeds 50% of the WQBEL. For non-conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 25% - 50% of the WQBEL. For conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 10% - 50% of the WQBEL. The information described above including the maximum reported discharge concentrations, the most stringent water quality criteria, the pollutant-of-concern (reasonable potential) determinations, the calculated WQBELs, and the WQBEL/monitoring recommendations are displayed in the Toxics Management Spread Sheet in Attachment C of this Fact Sheet. The Toxics Management Spread Sheet did not recommend any WQBELs for Outfall 001.

Table 3: TMS Inputs

Parameter	Value
River Mile Index	24.0
Discharge Flow (MGD)	1.6
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	1,520
Q_{7-10} (cfs)	510
Low-flow yield (cfs/mi^2)	0.3355
Elevation (ft)	769
Slope	0.00031

Thermal WQBELs for Heated Discharges

Thermal WQBELs are evaluated using DEP's "Thermal Discharge Limit Calculation Spreadsheet" created with Microsoft Excel for Windows. The program calculates temperature WLAs through the application of a heat transfer equation, which takes two forms in the program depending on the source of the facility's cooling water. In Case 1, intake water to a facility is from the receiving stream. In Case 2, intake water is from a source other than the receiving stream (e.g., municipal water supply). The determination of which case applies to a given discharge is determined by the input data which include the receiving stream flow rate (Q_{7-10} or the minimum regulated flow for large rivers), the stream intake flow rate, external source intake flow rates, consumptive flow rates and site-specific ambient stream temperatures. Case 1 limits are generally expressed as heat rejection rates while Case 2 limits are usually expressed as temperatures.

Since the temperature criteria from 25 Pa. Code Chapter 93.7(a) are expressed on monthly and semi-monthly bases for three different aquatic life-uses—cold water fishes, warm water fishes and trout stocking—the program generates monthly and semi-monthly limits for each use. DEP selects the output that corresponds to the aquatic life-use of the receiving stream and consequently which limits apply to the discharge. Temperature WLAs are bounded by an upper limit of 110°F for the safety of sampling personnel and anyone who may come into contact with the heated discharge where it enters the receiving water. If no WLAs below 110°F are calculated, an instantaneous maximum limit of 110°F is recommended by the program.

Discharges from Outfall 001 are classified under Case 2 because water is obtained via municipal water supply. The results of the thermal analysis, included in Attachment D, indicate that no WQBELs for temperature are required at outfall 001. Therefore, the 110°F daily maximum temperature limit will be imposed at outfall 001.

Anti-Backsliding

The previous permit limitations are displayed below in Table 4 and can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l).

Table 4: Current Effluent Limitations for Outfall 001

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample type
Flow (MGD)	XXX	Report	XXX	XXX	1/day	Measured
pH (S.U.)	6.0	XXX	XXX	9.0	1/day	Grab
Temperature (ºF)	XXX	XXX	XXX	110.0	1/day	I-S

Parameter	Instant. Minimum	Monthly Average	Daily Maximum	Instant. Maximum	Monitor Frequency	Sample type
Total Dissolved Solids (mg/L)	XXX	2000.0	4000.0	XXX	2/month	Grab

Proposed Effluent Limitations for Outfall 001

Table 5 outlines the proposed effluent limitations and monitoring requirements for Outfall 001, reflecting the most stringent values from the limitation analysis.

Table 5: Proposed Final Limitations at Outfall 001

Parameter	Mass Units (lb/day)		Concentrations (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Sample Frequency	Sample Type
Flow (MGD)	Report	Report	-	-	-	-	1/day	Measured
pH (S.U.)	-	-	6.0	-	-	9.0	1/day	Grab
Temperature (ºF)	-	-	-	-	-	110.0	1/day	I-S
Total Dissolved Solids				2000.0	4000.0	-	2/month	Grab
Total Nitrogen	-	-	-	-	Report	-	1/6 months	Grab
Total Phosphorus	-	-	-	-	Report	-	1/6 months	Grab
Total Suspended Solids (TSS)	-	-	-	-	Report	-	1/6 months	Grab
Oil and Grease	-	-	-	-	Report	-	1/6 months	Grab
Total Iron	-	-	-	-	Report	-	1/6 months	Grab
PFOA (ng/L)	-	-	-	-	Report	-	1/quarter	Grab
PFOS (ng/L)	-	-	-	-	Report	-	1/quarter	Grab
PFBS (ng/L)	-	-	-	-	Report	-	1/quarter	Grab
HFPO-DA (ng/L)	-	-	-	-	Report	-	1/quarter	Grab

Development of Effluent Limitations

IMP No.	101	**Design Flow (MGD)**	1.2
Latitude	40° 10' 27.37"	**Longitude**	-79° 41' 46.78"

Wastewater Description: Cooling tower blowdown.

Technology-Based Limitations

Federal Effluent Limitations Guidelines (ELGs)

The facility is subject the ELG's New Source Performance Standards (NSPS) for cooling tower blowdown in 40 CFR 423.15(b) as follows:

- ***40 CFR 423.15 (b)(1). pH:*** The pH of all discharges, except once through cooling water, shall be within the range of 6.0-9.0.

- ***40 CFR 423.15 (b)(2). PCBs:*** There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

- ***40 CFR 423.15 (b)(10)(i). Cooling tower blowdown.*** The quantity of pollutants discharged in cooling tower blowdown shall not exceed the quantity determined by multiplying the flow of cooling tower blowdown times the concentration listed below:

  Table 6: Requirements under 40 CFR 423.15 (b)(10)(i)

Pollutant or pollutant property	NSPS			
	Monthly Average	Daily Maximum	IMAX	Units
Free available chlorine	0.2	XXX	0.5	mg/L
The 126 priority pollutants (appendix A) contained in chemicals added for cooling tower maintenance, except:	([1])	([1])	XXX	XXX
Chromium, Total	0.2	0.2	XXX	mg/L
Zinc, Total	1.0	1.0	XXX	mg/L

([1]) No detectable amount

- ***40 CFR 423.15 (b)(10)(ii).*** Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Regional Administrator or state, if the state has NPDES permit issuing authority, that the units in a particular location cannot operate at or below this level of chlorination.

- ***40 CFR 423.15 (b)(10)(iii).*** At the permitting authority's discretion, instead of the monitoring in 40 CFR 122.11(b), compliance with the standards for the 126 priority pollutants in paragraph (b)(10)(i) of this section may be determined by engineering calculations demonstrating that the regulated pollutants are not detectable in the final discharge by the analytical methods in 40 CFR part 136.

- ***40 CFR 423.15 (b)(17).*** At the permitting authority's discretion, the quantity of pollutant allowed to be discharged may be expressed as a concentration limitation instead of any mass based limitations specified in paragraphs (b)(3) through (16) of this section. Concentration limits shall be based on the concentrations specified in this section.

Regulatory Effluent Standards and Monitoring Requirements

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

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code § 95.2(1) as indicated in Table 7.

Table 7: Regulatory Effluent Standards and Monitoring Requirements for IMP 101

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

Per- and Polyfluoroalkyl Substances (PFAS)

PFAS reporting requirements were already considered for Outfall 001. Therefore, PFAS reporting requirements will not be imposed for IMP 101.

Water Quality-Based Limitations

Toxics Management Spread Sheet

Water quality-based effluent limitations WQBELs are typically evaluated at the point of discharge, rather than at internal monitoring points (IMPs). Accordingly, water quality limits will be evaluated at Outfall 001, where wastewater from IMP 101 and other internal wastewater streams commingle prior to discharge to Commonwealth waters.

Anti-Backsliding

Previous effluent limits and monitoring requirements can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l) and are displayed below in Table 8.

Table 8: Current Limitations at IMP 101

Parameter	Mass Units (lb/day)		Concentrations (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Sample Frequency	Sample Type
pH (S.U.)	-	-	6.0	-	-	9.0	1/week	Grab
Free Available Chlorine	-	-	-	0.2	-	0.5	1/week	Grab
Chromium, Total	-	-	-	0.2	0.2	-	1/week	Grab
Zinc, Total	-	-	-	1.0	1.0	-	1/week	Grab

Proposed Effluent Limitations for IMP 101

Table 9 outlines the proposed effluent limitations and monitoring requirements for Outfall 001, reflecting the most stringent values from the limitation analysis.

- In the permit renewal application, TPP requests that PA DEP continue the waiver of the 2-hour per day limit for chlorinating the cooling tower.

  On August 6, 2019, PA DEP granted TPP a waiver to the 2-hour limit for chlorinating the cooling tower. As PA DEP described in this waiver, TPP is able to operate the cooling tower by reducing the overall quantity of chlorine (sodium hypochlorite) added to the cooling tower and reducing the chlorine concentration in the cooling tower while providing adequate macroinvertebrate control. Consequently, TPP is able to reduce the overall amount of sodium bisulfite used to dechlorinate cooling tower blowdown prior to discharge from Outfall 101. The Department approves the 2-hour limit for chlorinating the cooling tower during this permit cycle.

Table 9: Proposed Final Limitations at IMP 101

Parameter	Mass Units (lb/day)		Concentrations (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Sample Frequency	Sample Type
Flow	Report	Report	-	-	-	-	1/week	Measured
pH (S.U.)	-	-	6.0	-	-	9.0	1/week	Grab
Free Available Chlorine	-	-	-	0.2	-	0.5	1/week	Grab
Chromium, Total	-	-	-	0.2	0.2	-	1/week	Grab
Zinc, Total	-	-	-	1.0	1.0	-	1/week	Grab

Development of Effluent Limitations

IMP No. 201 **Design Flow (MGD)** 0.13248
Latitude 40° 10' 30.33" **Longitude** -79° 41' 45.2"
Wastewater Description: Low volume wastewater

Technology-Based Limitations

Federal Effluent Limitations Guidelines (ELGs)

The facility is subject the ELG's New Source Performance Standards (NSPS) for cooling tower blowdown in 40 CFR 423.15(b) as follows:

- ***40 CFR 423.15 (b)(1). pH:*** The pH of all discharges, except once through cooling water, shall be within the range of 6.0-9.0.
- ***40 CFR 423.15 (b)(2). PCBs:*** There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.
- ***40 CFR 423.15 (b)(3). Low volume waste sources.*** The quantity of pollutants discharged from low volume waste sources shall not exceed the quantity determined by multiplying the flow of low volume waste sources by the concentration listed in the following table:

  Table 10: Requirements under 40 CFR 423.15 (b)(3)

Pollutant or pollutant property	NSPS			
	Monthly Average	Daily Maximum	IMAX	Units
Total Suspended Solids (TSS)	30.0	100.0	XXX	mg/L
Oil and grease	15.0	20.0	XXX	mg/L

- ***40 CFR 423.15 (b)(17).*** At the permitting authority's discretion, the quantity of pollutant allowed to be discharged may be expressed as a concentration limitation instead of any mass based limitations specified in paragraphs (b)(3) through (16) of this section. Concentration limits shall be based on the concentrations specified in this section.

Regulatory Effluent Standards and Monitoring Requirements

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

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code § 95.2(1) as indicated in Table 11.

As oil-bearing wastewaters, discharges from IMP 101 are subject to effluent standards for oil and grease from 25 Pa. Code § 95.2(2).

Table 11: Regulatory Effluent Standards and Monitoring Requirements for IMP 201

Parameter	Monthly Average	Daily Maximum	IMAX	Units
Flow	Monitor and Report		XXX	MGD
Oil & Grease	15.0	30.0	XXX	mg/L
pH	Not less than 6.0 nor greater than 9.0			S.U.

Per- and Polyfluoroalkyl Substances (PFAS)

PFAS reporting requirements were already imposed at Outfall 001. Therefore, PFAS reporting requirements will not be imposed for IMP 201.

Water Quality-Based Limitations

Toxics Management Spread Sheet

Water quality-based effluent limitations WQBELs are typically evaluated at the point of discharge, rather than at internal monitoring points (IMPs). Accordingly, water quality limits will be evaluated at Outfall 001, where wastewater from IMP 201 and other internal wastewater streams commingle prior to discharge to Commonwealth waters.

Anti-Backsliding

Previous effluent limits and monitoring requirements can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l) and are displayed below in Table 12.

Table 12: Current Limitations at IMP 201

Parameter	Mass Units (lb/day)		Concentrations (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Sample Frequency	Sample Type
pH (S.U.)	-	-	6.0	-	-	9.0	1/week	Grab
Total Suspended Solids (TSS)	-	-	-	30.0	100.0	-	1/week	Grab
Oil and grease	-	-	-	15.0	20.0	-	1/week	Grab

Proposed Effluent Limitations for IMP 201

Table 13 outlines the proposed effluent limitations and monitoring requirements for Outfall 001, reflecting the most stringent values from the limitation analysis.

Table 13: Current Limitations at IMP 201

Parameter	Mass Units (lb/day)		Concentrations (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Sample Frequency	Sample Type
Flow	Report	Report	-	-	-	-	1/week	Measured
pH (S.U.)	-	-	6.0	-	-	9.0	1/week	Grab
Total Suspended Solids (TSS)	-	-	-	30.0	100.0	-	1/week	Grab
Oil and grease	-	-	-	15.0	20.0	-	1/week	Grab

Development of Effluent Limitations

Outfall No.	002	**Design Flow (MGD)**	0.0 (varied)
Latitude	40° 10’ 30.66”	**Longitude**	-79° 41’ 57.52”
Wastewater Description:	Stormwater		

Outfall No.	003	**Design Flow (MGD)**	0.0 (varied)
Latitude	40° 10’ 30.66”	**Longitude**	-79° 41’ 57.52”
Wastewater Description:	Stormwater		

Outfall No.	004	**Design Flow (MGD)**	0.0 (varied)
Latitude	40° 10’ 25.24”	**Longitude**	-79° 41’ 31.42”
Wastewater Description:	Stormwater		

Outfall No.	005	**Design Flow (MGD)**	0.0 (varied)
Latitude	40° 10’ 25.24”	**Longitude**	-79° 41’ 31.42”
Wastewater Description:	Stormwater		

Outfall No.	006	**Design Flow (MGD)**	0.0 (varied)
Latitude	40° 10’ 46.49”	**Longitude**	-79° 42’ 30.67”
Wastewater Description:	Stormwater		

Outfall No.	007	**Design Flow (MGD)**	0.0 (varied)
Latitude	40° 10’ 46.49”	**Longitude**	-79° 42’ 30.67”
Wastewater Description:	Stormwater		

Outfall No.	008	**Design Flow (MGD)**	0.0 (varied)
Latitude	40° 10’ 24.63”	**Longitude**	-79° 41’ 51.46”
Wastewater Description:	Stormwater		

Outfall No.	009	**Design Flow (MGD)**	0.0 (varied)
Latitude	40° 10’ 50.72”	**Longitude**	-79° 42’ 31.29”
Wastewater Description:	Stormwater		

Outfalls 002, 004, 006, 008 and 009 are outfalls remaining from the General Permit for Discharges Associated with Construction Activities – PAG-02 (NPDES Permit PAC 650097). Outfalls 003, 005 and 007, are emergency overflows associated with stormwater outfalls 002, 004 and 006, respectively. These emergency overflows are active only as a result of a greater-than design basis stormwater runoff event and will discharge uncontaminated stormwater not associated with industrial activities.

As required by that permit, a Post Construction Stormwater Management Plan (“PCSM”) was prepared and approved by the Westmoreland County Conservation District. The PCSM identifies the stormwater management BMPs to control the volume, rate and quality of the post- construction stormwater runoff. As required by that permit, the PCSM was recorded with the Westmoreland County Recorder of Deeds to ensure that the long-term operation and maintenance requirements for the PCSM BMPs are met.

TPP’s construction stormwater permit was terminated by the Westmoreland County Conservation District (WCCD) once all construction activities were complete and areas of disturbed ground were stabilized, as verified by WCCD. Because TPP “converted” pervious surfaces to impervious surfaces (bare ground to concrete and asphalt), the retention basins constructed to control stormwater runoff during construction remain in service to ensure that the volume and rate of stormwater flows off the property are commensurate to pre-construction stormwater volume and flow rates.

During the previous review it was determined that the E&S retention ponds are not required to be included in the NPDES Permit, since they are located outside of the well-defined limits of industrial activity for the Tenaska facility. The Department delegated Westmoreland County Conservation District (WCCD) with the regulatory authority of construction E&S structures. Tenaska obtained a construction permit from WCCD, which authorized these E&S structures. After the completion of construction, Tenaska developed the Post Construction Stormwater Management (PCSM) Best Management Practices (BMPs), which WCCD approved.

The drainage areas of the E&S retention ponds are not exposed to Tenaska's industrial activities. For this reason, these outfalls have been removed from the NPDES Permit. Removing these outfalls from the NPDES Permit does not impact the facility's ability to discharge from these E&S structures, since the operation and maintenance is authorized under the PCSM BMPs.

The exemption from monitoring requirements for these outfalls will be retained in the permit.

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment C)
☐	TRC Model Spreadsheet (see Attachment)
☒	Temperature Model Spreadsheet (see Attachment D)
☐	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:
☐	Other:

Attachments

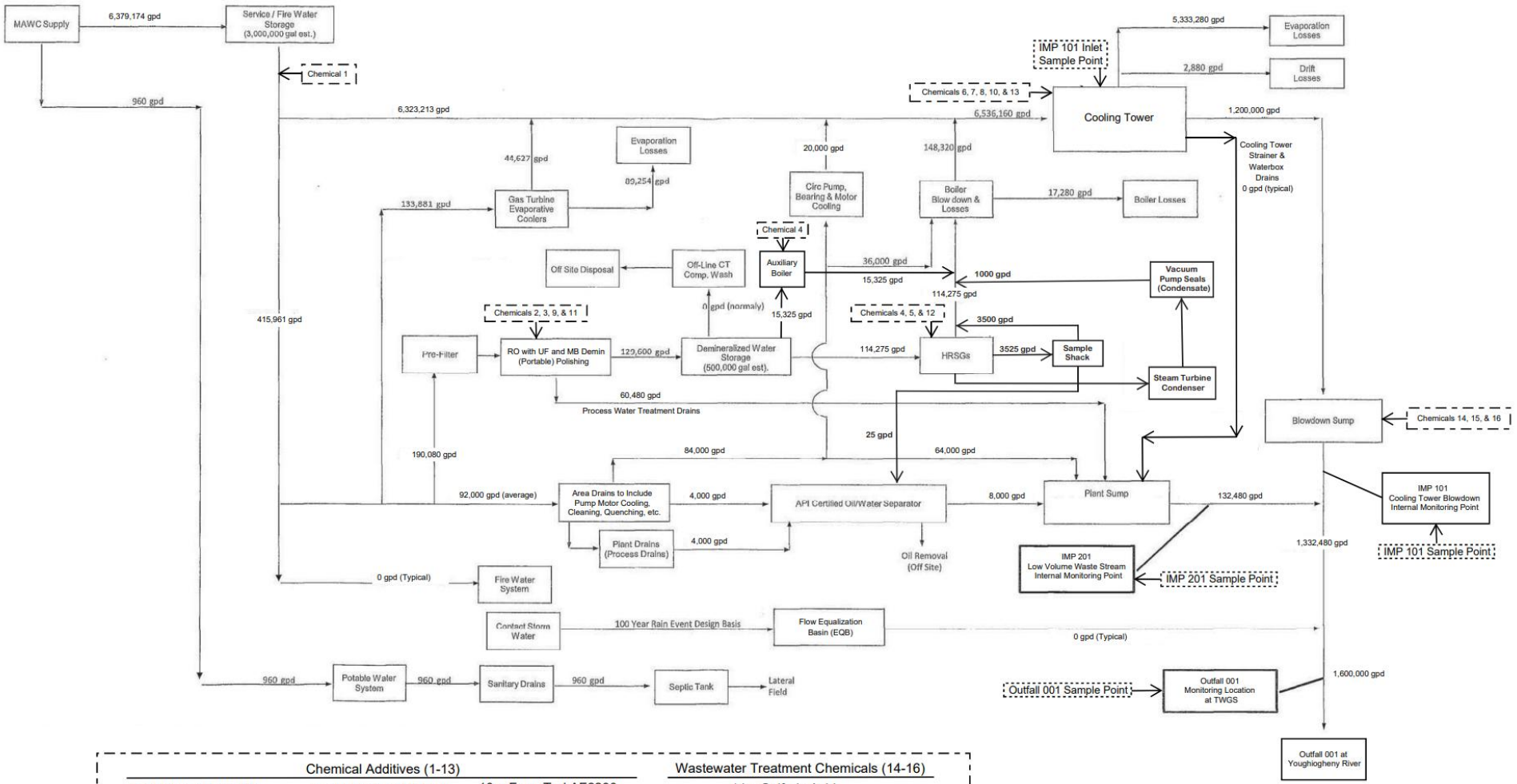
Attachment A: Flow Diagram

Attachment B: StreamStats Reports

Attachment C: Toxic Management Spreadsheet for Outfall 001

Attachment D: Temperature Modeling Results for Outfall 001

Attachment A: Flow Diagram



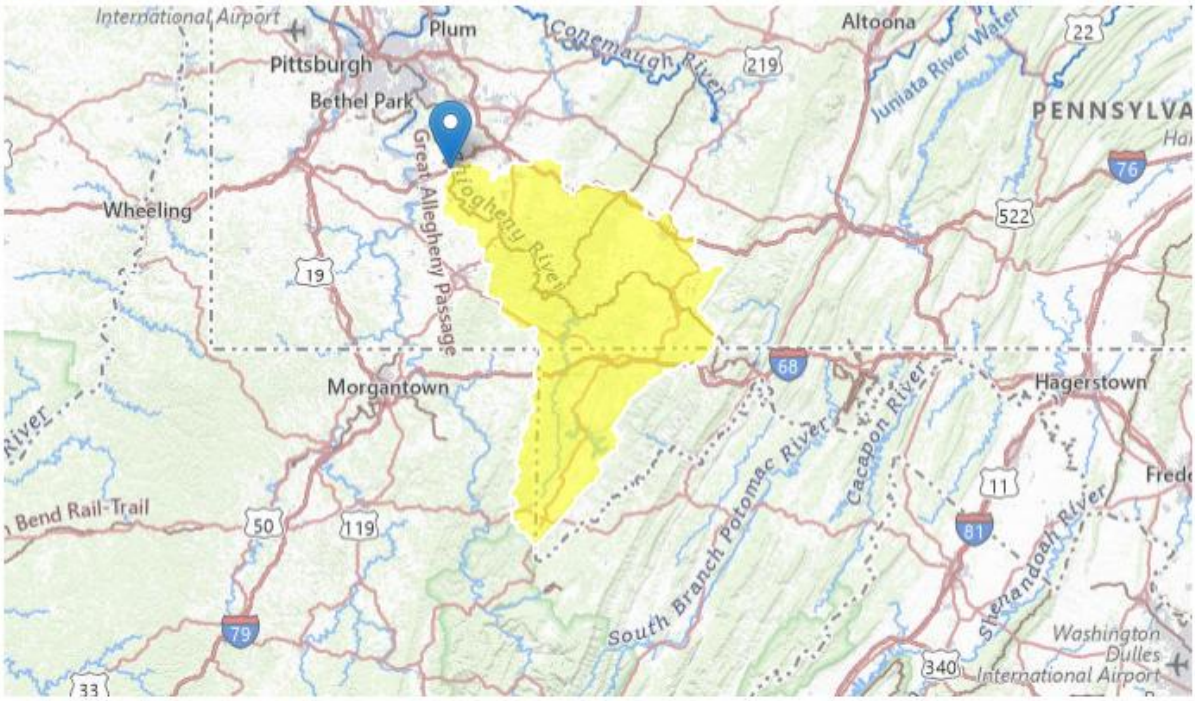
Chemical Additives (1-13)			Wastewater Treatment Chemicals (14-16)
1 = Flogard POT6100	5 = Optisperse HP3100	10 = FoamTrol AF2290	14 = Sulfuric Acid
2 = Hypersperse MDC714	6 = Depositrol BL5400	11 = Spectrus NX1106	15 = Sodium Hydroxide
3 = Betzdearborn DCL30	7 = Gengard GN7004	12 = Steamate PAP7010	16 = Sodium Bisulfite
4 = Steamate NA1321	8 = Spectrus BD1500	13 = Depositrol PY5206	
	9 = Biomate MBC2881		

August 2025

Attachment B: StreamStats Report

PA0254771 - Outfall 001 - StreamStats Report

Region ID: PA
Workspace ID: PA20251030190418636000
Clicked Point (Latitude, Longitude): 40.16097, -79.75823
Time: 2025-10-30 15:04:48 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	1520	square miles
ELEV	Mean Basin Elevation	2136	feet
FOREST	Percentage of area covered by forest	70.3197	percent
PRECIP	Mean Annual Precipitation	45	inches
URBAN	Percentage of basin with urban development	2.2285	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1520	square miles	2.26	1400
ELEV	Mean Basin Elevation	2136	feet	1050	2580

Low-Flow Statistics Disclaimers [Low Flow Region 4]

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

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	192	ft^3/s
30 Day 2 Year Low Flow	272	ft^3/s
7 Day 10 Year Low Flow	95.4	ft^3/s
30 Day 10 Year Low Flow	124	ft^3/s
90 Day 10 Year Low Flow	203	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Base Flow Statistics

Base Flow Statistics Parameters [Statewide Mean and Base Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CARBON	Percent Carbonate	0	percent	0	99
DRNAREA	Drainage Area	1520	square miles	2.26	1720
FOREST	Percent Forest	70.3197	percent	5.1	100

Attachment C: Toxic Management Spreadsheet for Outfall 001

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Toxics Management Spreadsheet
Version 1.4, May 2025

Discharge Information

Instructions | Discharge | Stream

Facility: **Tenaska Westmoreland Gnerating Station** NPDES Permit No.: **PA0254771** Outfall No.: **001**

Evaluation Type **Major Sewage / Industrial Waste** Wastewater Description: **Cooling tower blowdown, low volume wast**

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
1.6	470	8.21						

					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		1260									
	Chloride (PWS)	mg/L		184									
	Bromide	mg/L	<	0.5									
	Sulfate (PWS)	mg/L		406									
	Fluoride (PWS)	mg/L		0.46									
Group 2	Total Aluminum	µg/L		126									
	Total Antimony	µg/L	<	0.64									
	Total Arsenic	µg/L	<	2.5									
	Total Barium	µg/L		298									
	Total Beryllium	µg/L	<	0.5									
	Total Boron	µg/L		97.6									
	Total Cadmium	µg/L	<	0.5									
	Total Chromium (III)	µg/L	<	3.2									
	Hexavalent Chromium	µg/L	<	1									
	Total Cobalt	µg/L	<	2.5									
	Total Copper	µg/L		3.2									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	13									
	Dissolved Iron	µg/L	<	50									
	Total Iron	µg/L		47.5									
	Total Lead	µg/L	<	0.5									
	Total Manganese	µg/L		3.8									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		9.3									
	Total Phenols (Phenolics) (PWS)	µg/L	<	50									
	Total Selenium	µg/L	<	2.5									
	Total Silver	µg/L	<	0.6									
	Total Thallium	µg/L	<	0.2									
	Total Zinc	µg/L	<	5.6									
	Total Molybdenum	µg/L		12.3									
	Acrolein	µg/L	<	2									
	Acrylamide	µg/L	<	10									
	Acrylonitrile	µg/L	<	1									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	0.5									
	Carbon Tetrachloride	µg/L	<	0.5									
	Chlorobenzene	µg/L		0.5									
	Chlorodibromomethane	µg/L	<	0.5									
	Chloroethane	µg/L	<	1									
	2-Chloroethyl Vinyl Ether	µg/L	<	0.5									

Group 3	Chloroform	µg/L	<	12.8									
	Dichlorobromomethane	µg/L	<	1.1									
	1,1-Dichloroethane	µg/L	<	0.5									
	1,2-Dichloroethane	µg/L	<	0.5									
	1,1-Dichloroethylene	µg/L	<	0.5									
	1,2-Dichloropropane	µg/L	<	0.5									
	1,3-Dichloropropylene	µg/L	<	0.5									
	1,4-Dioxane	µg/L	<	3									
	Ethylbenzene	µg/L	<	0.5									
	Methyl Bromide	µg/L	<	1									
	Methyl Chloride	µg/L	<	0.5									
	Methylene Chloride	µg/L	<	0.5									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5									
	Tetrachloroethylene	µg/L	<	0.5									
	Toluene	µg/L	<	0.5									
	1,2-trans-Dichloroethylene	µg/L	<	0.5									
	1,1,1-Trichloroethane	µg/L	<	0.5									
	1,1,2-Trichloroethane	µg/L	<	0.5									
	Trichloroethylene	µg/L	<	0.5									
	Vinyl Chloride	µg/L	<	0.5									
Group 4	2-Chlorophenol	µg/L	<	1									
	2,4-Dichlorophenol	µg/L	<	1									
	2,4-Dimethylphenol	µg/L	<	1									
	4,6-Dinitro-o-Cresol	µg/L	<	2.5									
	2,4-Dinitrophenol	µg/L	<	2.5									
	2-Nitrophenol	µg/L	<	1									
	4-Nitrophenol	µg/L	<	1									
	p-Chloro-m-Cresol	µg/L	<	2									
	Pentachlorophenol	µg/L	<	2.5									
	Phenol	µg/L	<	1									
	2,4,6-Trichlorophenol	µg/L	<	1									
Group 5	Acenaphthene	µg/L	<	1									
	Acenaphthylene	µg/L	<	1									
	Anthracene	µg/L	<	1									
	Benzidine	µg/L	<	15.2									
	Benzo(a)Anthracene	µg/L	<	1									
	Benzo(a)Pyrene	µg/L	<	1									
	3,4-Benzofluoranthene	µg/L	<	1									
	Benzo(ghi)Perylene	µg/L	<	1									
	Benzo(k)Fluoranthene	µg/L	<	1									
	Bis(2-Chloroethoxy)Methane	µg/L	<	1									
	Bis(2-Chloroethyl)Ether	µg/L	<	1									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	1									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	2.5									
	4-Bromophenyl Phenyl Ether	µg/L	<	1									
	Butyl Benzyl Phthalate	µg/L	<	2.5									
	2-Chloronaphthalene	µg/L	<	1									
	4-Chlorophenyl Phenyl Ether	µg/L	<	1									
	Chrysene	µg/L	<	1									
	Dibenzo(a,h)Anthrancene	µg/L	<	1									
	1,2-Dichlorobenzene	µg/L	<	1									
	1,3-Dichlorobenzene	µg/L	<	1									
	1,4-Dichlorobenzene	µg/L	<	1									
	3,3-Dichlorobenzidine	µg/L	<	1									
	Diethyl Phthalate	µg/L	<	1									
	Dimethyl Phthalate	µg/L	<	1									
	Di-n-Butyl Phthalate	µg/L	<	1									
	2,4-Dinitrotoluene	µg/L	<	1									
	2,6-Dinitrotoluene	µg/L	<	1									
	Di-n-Octyl Phthalate	µg/L	<	2.5									
	1,2-Diphenylhydrazine	µg/L	<	1									
	Fluoranthene	µg/L	<	1									
	Fluorene	µg/L	<	1									
	Hexachlorobenzene	µg/L	<	1									
	Hexachlorobutadiene	µg/L	<	1									
	Hexachlorocyclopentadiene	µg/L	<	1									
	Hexachloroethane	µg/L	<	1									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	1									

	Isophorone	µg/L	<	1									
	Naphthalene	µg/L	<	2.5									
	Nitrobenzene	µg/L	<	1									
	n-Nitrosodimethylamine	µg/L	<	1									
	n-Nitrosodi-n-Propylamine	µg/L	<	1									
	n-Nitrosodiphenylamine	µg/L	<	1									
	Phenanthrene	µg/L	<	1									
	Pyrene	µg/L	<	1									
	1,2,4-Trichlorobenzene	µg/L	<	1									
Group 6	Aldrin	µg/L	<										
	alpha-BHC	µg/L	<										
	beta-BHC	µg/L	<										
	gamma-BHC	µg/L	<										
	delta BHC	µg/L	<										
	Chlordane	µg/L	<										
	4,4-DDT	µg/L	<										
	4,4-DDE	µg/L	<										
	4,4-DDD	µg/L	<										
	Dieldrin	µg/L	<										
	alpha-Endosulfan	µg/L	<										
	beta-Endosulfan	µg/L	<										
	Endosulfan Sulfate	µg/L	<										
	Endrin	µg/L	<										
	Endrin Aldehyde	µg/L	<										
	Heptachlor	µg/L	<										
	Heptachlor Epoxide	µg/L	<										
	PCB-1016	µg/L	<										
	PCB-1221	µg/L	<										
	PCB-1232	µg/L	<										
	PCB-1242	µg/L	<										
	PCB-1248	µg/L	<										
	PCB-1254	µg/L	<										
	PCB-1260	µg/L	<										
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<										
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

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Toxics Management Spreadsheet
Version 1.4, May 2025

Stream / Surface Water Information

Tenaska Westmoreland Gnerating Station, NPDES Permit No. PA0254771, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Youghiogheny River**

No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	037456	24	769	1520			Yes
End of Reach 1	037456	1.4	732	1760		10	Yes

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

Location	RMI	LFY (cfs/mi²)*	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	24	0.1	510			227	9					85	7		
End of Reach 1	1.4	0.1	510			223	9								

Q_h

Location	RMI	LFY (cfs/mi²)	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	24														
End of Reach 1	1.4														

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Toxics Management Spreadsheet
Version 1.4, May 2025

Model Results

Tenaska Westmoreland Gnerating Station, NPDES Permit No. PA0254771, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.319 Analysis Hardness (mg/l): 90.764 Analysis pH: 7.01

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	50,093	
Total Antimony	0	0		0	1,100	1,100	73,470	
Total Arsenic	0	0		0	340	340	22,709	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	1,402,607	
Total Boron	0	0		0	8,100	8,100	541,006	
Total Cadmium	0	0		0	1.833	1.93	129	Chem Translator of 0.948 applied
Total Chromium (III)	0	0		0	526.292	1,665	111,239	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	1,088	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	6,345	
Total Copper	0	0		0	12.266	12.8	853	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	58.105	72.2	4,820	Chem Translator of 0.805 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	110	Chem Translator of 0.85 applied
Total Nickel	0	0		0	431.381	432	28,870	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	2.723	3.2	214	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	4,341	
Total Zinc	0	0		0	107.943	110	7,372	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	200	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	650	650	43,414	

Benzene	0	0		0	640	640	42,746	
Bromoform	0	0		0	1,800	1,800	120,223	
Carbon Tetrachloride	0	0		0	2,800	2,800	187,014	
Chlorobenzene	0	0		0	1,200	1,200	80,149	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	1,202,235	
Chloroform	0	0		0	1,900	1,900	126,903	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	1,001,862	
1,1-Dichloroethylene	0	0		0	7,500	7,500	500,931	
1,2-Dichloropropane	0	0		0	11,000	11,000	734,699	
1,3-Dichloropropylene	0	0		0	310	310	20,705	
Ethylbenzene	0	0		0	2,900	2,900	193,693	
Methyl Bromide	0	0		0	550	550	36,735	
Methyl Chloride	0	0		0	28,000	28,000	1,870,143	
Methylene Chloride	0	0		0	12,000	12,000	801,490	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	66,791	
Tetrachloroethylene	0	0		0	700	700	46,754	
Toluene	0	0		0	1,700	1,700	113,544	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	454,178	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	200,372	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	227,089	
Trichloroethylene	0	0		0	2,300	2,300	153,619	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	37,403	
2,4-Dichlorophenol	0	0		0	1,700	1,700	113,544	
2,4-Dimethylphenol	0	0		0	660	660	44,082	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	5,343	
2,4-Dinitrophenol	0	0		0	660	660	44,082	
2-Nitrophenol	0	0		0	8,000	8,000	534,327	
4-Nitrophenol	0	0		0	2,300	2,300	153,619	
p-Chloro-m-Cresol	0	0		0	160	160	10,687	
Pentachlorophenol	0	0		0	8.777	8.78	586	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	30,724	
Acenaphthene	0	0		0	83	83.0	5,544	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	20,037	
Benzo(a)Anthracene	0	0		0	0.5	0.5	33.4	
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	2,003,724	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	300,559	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	18,034	
Butyl Benzyl Phthalate	0	0		0	140	140	9,351	

2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	54,768	
1,3-Dichlorobenzene	0	0		0	350	350	23,377	
1,4-Dichlorobenzene	0	0		0	730	730	48,757	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	267,163	
Dimethyl Phthalate	0	0		0	2,500	2,500	166,977	
Di-n-Butyl Phthalate	0	0		0	110	110	7,347	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	106,865	
2,6-Dinitrotoluene	0	0		0	990	990	66,123	
1,2-Diphenylhydrazine	0	0		0	15	15.0	1,002	
Fluoranthene	0	0		0	200	200	13,358	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	668	
Hexachlorocyclopentadiene	0	0		0	5	5.0	334	
Hexachloroethane	0	0		0	60	60.0	4,007	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	667,908	
Naphthalene	0	0		0	140	140	9,351	
Nitrobenzene	0	0		0	4,000	4,000	267,163	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	1,135,444	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	20,037	
Phenanthrene	0	0		0	5	5.0	334	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	8,683	

☑ ***CFC*** CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): 86.86 Analysis pH: 7.00

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	45,550	
Total Arsenic	0	0		0	150	150	31,057	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	848,880	
Total Boron	0	0		0	1,600	1,600	331,270	
Total Cadmium	0	0		0	0.223	0.24	50.5	Chem Translator of 0.915 applied
Total Chromium (III)	0	0		0	66.038	76.8	15,899	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	2,152	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	3,934	
Total Copper	0	0		0	7.940	8.27	1,712	Chem Translator of 0.96 applied

Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	310,566	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.158	2.66	551	Chem Translator of 0.812 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	188	Chem Translator of 0.85 applied
Total Nickel	0	0		0	46.163	46.3	9,587	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	1,033	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	2,692	
Total Zinc	0	0		0	104.846	106	22,016	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	621	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	130	130	26,916	
Benzene	0	0		0	130	130	26,916	
Bromoform	0	0		0	370	370	76,606	
Carbon Tetrachloride	0	0		0	560	560	115,945	
Chlorobenzene	0	0		0	240	240	49,691	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	724,654	
Chloroform	0	0		0	390	390	80,747	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	641,836	
1,1-Dichloroethylene	0	0		0	1,500	1,500	310,566	
1,2-Dichloropropane	0	0		0	2,200	2,200	455,497	
1,3-Dichloropropylene	0	0		0	61	61.0	12,630	
Ethylbenzene	0	0		0	580	580	120,085	
Methyl Bromide	0	0		0	110	110	22,775	
Methyl Chloride	0	0		0	5,500	5,500	1,138,742	
Methylene Chloride	0	0		0	2,400	2,400	496,905	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	43,479	
Tetrachloroethylene	0	0		0	140	140	28,986	
Toluene	0	0		0	330	330	68,325	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	289,862	
1,1,1-Trichloroethane	0	0		0	610	610	126,297	
1,1,2-Trichloroethane	0	0		0	680	680	140,790	
Trichloroethylene	0	0		0	450	450	93,170	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	22,775	
2,4-Dichlorophenol	0	0		0	340	340	70,395	
2,4-Dimethylphenol	0	0		0	130	130	26,916	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	3,313	
2,4-Dinitrophenol	0	0		0	130	130	26,916	
2-Nitrophenol	0	0		0	1,600	1,600	331,270	
4-Nitrophenol	0	0		0	470	470	97,311	
p-Chloro-m-Cresol	0	0		0	500	500	103,522	
Pentachlorophenol	0	0		0	6.734	6.73	1,394	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	18,841	

Acenaphthene	0	0		0	17	17.0	3,520	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	12,216	
Benzo(a)Anthracene	0	0		0	0.1	0.1	20.7	
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	1,242,264	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	188,410	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	11,180	
Butyl Benzyl Phthalate	0	0		0	35	35.0	7,247	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	33,127	
1,3-Dichlorobenzene	0	0		0	69	69.0	14,286	
1,4-Dichlorobenzene	0	0		0	150	150	31,057	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	165,635	
Dimethyl Phthalate	0	0		0	500	500	103,522	
Di-n-Butyl Phthalate	0	0		0	21	21.0	4,348	
2,4-Dinitrotoluene	0	0		0	320	320	66,254	
2,6-Dinitrotoluene	0	0		0	200	200	41,409	
1,2-Diphenylhydrazine	0	0		0	3	3.0	621	
Fluoranthene	0	0		0	40	40.0	8,282	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	414	
Hexachlorocyclopentadiene	0	0		0	1	1.0	207	
Hexachloroethane	0	0		0	12	12.0	2,485	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	434,792	
Naphthalene	0	0		0	43	43.0	8,903	
Nitrobenzene	0	0		0	810	810	167,706	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	703,949	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	12,216	
Phenanthrene	0	0		0	1	1.0	207	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	5,383	

☑ ***THH*** CCT (min): ###### 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 Dissolved Solids (PWS)	0	0		0	500,000	500,000	#########	WQC applied at RMI 1.4 with a design stream flow of 510 cfs
Chloride (PWS)	0	0		0	250,000	250,000	51,760,989	WQC applied at RMI 1.4 with a design stream flow of 510 cfs
Sulfate (PWS)	0	0		0	250,000	250,000	51,760,989	WQC applied at RMI 1.4 with a design stream flow of 510 cfs

Fluoride (PWS)	0	0		0	2,000	2,000	414,088	WQC applied at RMI 1.4 with a design stream flow of 510 cfs
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	1,159	
Total Arsenic	0	0		0	10	10.0	2,070	
Total Barium	0	0		0	2,400	2,400	496,905	
Total Boron	0	0		0	3,100	3,100	641,836	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	62,113	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	207,044	
Total Mercury	0	0		0	0.050	0.05	10.4	
Total Nickel	0	0		0	610	610	126,297	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	1,035	WQC applied at RMI 1.4 with a design stream flow of 510 cfs
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	49.7	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	621	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	20,704	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	1,180	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	6,832	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	14,079	
Methyl Bromide	0	0		0	100	100.0	20,704	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	N/A	N/A	N/A	
1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A	
Tetrachloroethylene	0	0		0	N/A	N/A	N/A	
Toluene	0	0		0	57	57.0	11,802	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	20,704	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	2,070,440	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	

2-Chlorophenol	0	0		0	30	30.0	6,211	
2,4-Dichlorophenol	0	0		0	10	10.0	2,070	
2,4-Dimethylphenol	0	0		0	100	100.0	20,704	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	414	
2,4-Dinitrophenol	0	0		0	10	10.0	2,070	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	828,176	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	14,493	
Anthracene	0	0		0	300	300	62,113	
Benzidine	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	41,409	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	20.7	
2-Chloronaphthalene	0	0		0	800	800	165,635	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	207,044	
1,3-Dichlorobenzene	0	0		0	7	7.0	1,449	
1,4-Dichlorobenzene	0	0		0	300	300	62,113	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	124,226	
Dimethyl Phthalate	0	0		0	2,000	2,000	414,088	
Di-n-Butyl Phthalate	0	0		0	20	20.0	4,141	
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A	
Fluoranthene	0	0		0	20	20.0	4,141	
Fluorene	0	0		0	50	50.0	10,352	
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	828	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	34	34.0	7,039	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	2,070	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	

Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	4,141	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	14.5	

☑ ***CRL*** CCT (min): 66.363 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 Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylamide	0	0		0	0.07	0.07	48.9	
Acrylonitrile	0	0		0	0.06	0.06	41.9	
Benzene	0	0		0	0.58	0.58	405	
Bromoform	0	0		0	7	7.0	4,892	
Carbon Tetrachloride	0	0		0	0.4	0.4	280	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	559	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	664	
1,2-Dichloroethane	0	0		0	9.9	9.9	6,919	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	629	
1,3-Dichloropropylene	0	0		0	0.27	0.27	189	
Ethylbenzene	0	0		0	N/A	N/A	N/A	

Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	13,978	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	140	
Tetrachloroethylene	0	0		0	10	10.0	6,989	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	384	
Trichloroethylene	0	0		0	0.6	0.6	419	
Vinyl Chloride	0	0		0	0.02	0.02	14.0	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	21.0	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	1,048	
Acenaphthene	0	0		0	N/A	N/A	N/A	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	0.07	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.7	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.07	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.7	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	6.99	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	21.0	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	224	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	83.9	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.07	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	34.9	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	34.9	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	34.9	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	21.0	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	

Hexachlorobenzene	0	0		0	0.00008	0.00008	0.056	
Hexachlorobutadiene	0	0		0	0.01	0.01	6.99	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	69.9	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.7	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.49	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	3.49	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	2,306	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

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

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	103,522	mg/L	Discharge Conc ≤ 10% WQBEL
Chloride (PWS)	51,761	mg/L	Discharge Conc ≤ 10% WQBEL
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	51,761	mg/L	Discharge Conc ≤ 10% WQBEL
Fluoride (PWS)	414	mg/L	Discharge Conc ≤ 10% WQBEL
Total Aluminum	32,108	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	496,905	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	331,270	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	50.5	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	15,899	µg/L	Discharge Conc < TQL
Hexavalent Chromium	698	µg/L	Discharge Conc < TQL
Total Cobalt	3,934	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	547	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	62,113	µg/L	Discharge Conc ≤ 10% WQBEL

Total Iron	310,566	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	551	µg/L	Discharge Conc < TQL
Total Manganese	207,044	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	10.4	µg/L	Discharge Conc < TQL
Total Nickel	9,587	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)	1,035	µg/L	Discharge Conc ≤ 10% WQBEL
Total Selenium	1,033	µg/L	Discharge Conc < TQL
Total Silver	137	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	49.7	µg/L	Discharge Conc < TQL
Total Zinc	4,725	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	128	µg/L	Discharge Conc < TQL
Acrylamide	48.9	µg/L	Discharge Conc ≤ 25% WQBEL
Acrylonitrile	41.9	µg/L	Discharge Conc < TQL
Benzene	405	µg/L	Discharge Conc < TQL
Bromoform	4,892	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	280	µg/L	Discharge Conc < TQL
Chlorobenzene	20,704	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorodibromomethane	559	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	724,654	µg/L	Discharge Conc < TQL
Chloroform	1,180	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	664	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	6,919	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	6,832	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	629	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	189	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	14,079	µg/L	Discharge Conc < TQL
Methyl Bromide	20,704	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Chloride	1,138,742	µg/L	Discharge Conc < TQL
Methylene Chloride	13,978	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	140	µg/L	Discharge Conc < TQL
Tetrachloroethylene	6,989	µg/L	Discharge Conc < TQL
Toluene	11,802	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	20,704	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	126,297	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	384	µg/L	Discharge Conc < TQL
Trichloroethylene	419	µg/L	Discharge Conc < TQL
Vinyl Chloride	14.0	µg/L	Discharge Conc < TQL
2-Chlorophenol	6,211	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	2,070	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	20,704	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	414	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	2,070	µg/L	Discharge Conc < TQL
2-Nitrophenol	331,270	µg/L	Discharge Conc < TQL
4-Nitrophenol	97,311	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	6,850	µg/L	Discharge Conc < TQL

Pentachlorophenol	21.0	µg/L	Discharge Conc < TQL
Phenol	828,176	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	1,048	µg/L	Discharge Conc < TQL
Acenaphthene	3,520	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	62,113	µg/L	Discharge Conc < TQL
Benzidine	0.07	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.7	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.07	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.7	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	6.99	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	21.0	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	41,409	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	224	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	11,180	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	20.7	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	165,635	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	83.9	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.07	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	33,127	µg/L	Discharge Conc ≤ 25% WQBEL
1,3-Dichlorobenzene	1,449	µg/L	Discharge Conc ≤ 25% WQBEL
1,4-Dichlorobenzene	31,057	µg/L	Discharge Conc ≤ 25% WQBEL
3,3-Dichlorobenzidine	34.9	µg/L	Discharge Conc < TQL
Diethyl Phthalate	124,226	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	103,522	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	4,141	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	34.9	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	34.9	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	21.0	µg/L	Discharge Conc < TQL
Fluoranthene	4,141	µg/L	Discharge Conc < TQL
Fluorene	10,352	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.056	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	6.99	µg/L	Discharge Conc ≤ 25% WQBEL
Hexachlorocyclopentadiene	207	µg/L	Discharge Conc < TQL
Hexachloroethane	69.9	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.7	µg/L	Discharge Conc < TQL
Isophorone	7,039	µg/L	Discharge Conc < TQL
Naphthalene	5,993	µg/L	Discharge Conc ≤ 25% WQBEL
Nitrobenzene	2,070	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.49	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	3.49	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	2,306	µg/L	Discharge Conc < TQL
Phenanthrene	207	µg/L	Discharge Conc < TQL
Pyrene	4,141	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	14.5	µg/L	Discharge Conc ≤ 25% WQBEL

ATTACHMENT D
Temperature Modeling Results for Outfall 001

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Instructions | *Inputs*

Facility: **Tenaska Westmoreland Generating Station**

Permit No.: **PA0254771**

Stream Name: **Youghiogheny River**

Analyst/Engineer: **Angela Rohrer**

Stream Q7-10 (cfs)*: **510.0**

Outfall No.: **001**

Analysis Type*: **WWF**

Facility Flows

Semi-Monthly Increment	Intake (Stream) (MGD)*	Intake (External) (MGD)*	Consumptive Loss (MGD)*	Discharge Flow (MGD)
Jan 1-31	0	1.6		1.6
Feb 1-29	0	1.6		1.6
Mar 1-31	0	1.6		1.6
Apr 1-15	0	1.6		1.6
Apr 16-30	0	1.6		1.6
May 1-15	0	1.6		1.6
May 16-31	0	1.6		1.6
Jun 1-15	0	1.6		1.6
Jun 16-30	0	1.6		1.6
Jul 1-31	0	1.6		1.6
Aug 1-15	0	1.6		1.6
Aug 16-31	0	1.6		1.6
Sep 1-15	0	1.6		1.6
Sep 16-30	0	1.6		1.6
Oct 1-15	0	1.6		1.6
Oct 16-31	0	1.6		1.6
Nov 1-15	0	1.6		1.6
Nov 16-30	0	1.6		1.6
Dec 1-31	0	1.6		1.6

Stream Flows

Q7-10 Multipliers (Default Shown)	PMF	Seasonal Stream Flow (cfs)	Downstream Stream Flow (cfs)
3.2	1.00	1632.00	1634.48
3.5	1.00	1785.00	1787.48
7	1.00	3570.00	3572.48
9.3	1.00	4743.00	4745.48
9.3	1.00	4743.00	4745.48
5.1	1.00	2601.00	2603.48
5.1	1.00	2601.00	2603.48
3	1.00	1530.00	1532.48
3	1.00	1530.00	1532.48
1.7	1.00	867.00	869.48
1.4	1.00	714.00	716.48
1.4	1.00	714.00	716.48
1.1	1.00	561.00	563.48
1.1	1.00	561.00	563.48
1.2	1.00	612.00	614.48
1.2	1.00	612.00	614.48
1.6	1.00	816.00	818.48
1.6	1.00	816.00	818.48
2.4	1.00	1224.00	1226.48

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Thermal Limits Spreadsheet
Version 1.0, April 2024

Instructions | Inputs | *Reference*

Semi-Monthly Increment	WWF Criteria (ºF)	CWF Criteria (ºF)	TSF Criteria (ºF)
Jan 1-31	40	38	40
Feb 1-29	40	38	40
Mar 1-31	46	42	46
Apr 1-15	52	48	52
Apr 16-30	58	52	58
May 1-15	64	54	64
May 16-31	72	58	68
Jun 1-15	80	60	70
Jun 16-30	84	64	72
Jul 1-31	87	66	74
Aug 1-15	87	66	80
Aug 16-31	87	66	87
Sep 1-15	84	64	84
Sep 16-30	78	60	78
Oct 1-15	72	54	72
Oct 16-31	66	50	66
Nov 1-15	58	46	58
Nov 16-30	50	42	50
Dec 1-31	42	40	42

Q7-10 Multipliers (Default Values)
3.2
3.5
7
9.3
9.3
5.1
5.1
3
3
1.7
1.4
1.4
1.1
1.1
1.2
1.2
1.6
1.6
2.4

Default Ambient Stream Temperature (°F)		
WWF	CWF	TSF
35	34	34
35	35	35
40	39	39
47	46	46
53	52	52
58	55	56
62	59	60
67	63	65
71	67	69
75	71	73
74	70	72
74	70	70
71	66	68
65	60	62
60	55	57
54	51	53
48	46	47
42	40	41
37	35	36

NOTES:
WWF= Warm water fishes
CWF= Cold water fishes
TSF= Trout stocking
Default PMF = 1

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Thermal Limits Spreadsheet
Version 1.0, April 2024

Instructions | *WWF Results*

Recommended Limits for Case 1 or Case 2

Semi-Monthly Increment	**WWF** Target Maximum Stream Temp. (ºF)	**Case 1** Daily WLA (Million BTUs/day)	**Case 2** Daily WLA (ºF)
Jan 1-31	40	N/A -- Case 2	110.0
Feb 1-29	40	N/A -- Case 2	110.0
Mar 1-31	46	N/A -- Case 2	110.0
Apr 1-15	52	N/A -- Case 2	110.0
Apr 16-30	58	N/A -- Case 2	110.0
May 1-15	64	N/A -- Case 2	110.0
May 16-31	72	N/A -- Case 2	110.0
Jun 1-15	80	N/A -- Case 2	110.0
Jun 16-30	84	N/A -- Case 2	110.0
Jul 1-31	87	N/A -- Case 2	110.0
Aug 1-15	87	N/A -- Case 2	110.0
Aug 16-31	87	N/A -- Case 2	110.0
Sep 1-15	84	N/A -- Case 2	110.0
Sep 16-30	78	N/A -- Case 2	110.0
Oct 1-15	72	N/A -- Case 2	110.0
Oct 16-31	66	N/A -- Case 2	110.0
Nov 1-15	58	N/A -- Case 2	110.0
Nov 16-30	50	N/A -- Case 2	110.0
Dec 1-31	42	N/A -- Case 2	110.0