pennsylvania DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	**NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER**	Application No.	**PA0218863**
Facility Type	**Industrial**		APS ID	**1033945**
Major / Minor	**Major**		Authorization ID	**1477908**

Applicant and Facility Information

Applicant Name	**Fayette Power Company, LLC**	Facility Name	**Fayette Energy Facility**
Applicant Address	100 Energy Drive Masontown, PA 15461-2588	Facility Address	100 Energy Drive Masontown, PA 15461-2588
Applicant Contact	Ronald George	Facility Contact	Aaron Kitzmiller
Applicant Phone	(724) 583-8003	Facility Phone	724-583-8034
Applicant Email	Ronald.George@vistracorp.com	Facility Email	Aaron.kitzmiller@vistracorp.com
Client ID	287448	Site ID	547636
SIC Code	4911	Municipality	German Township
SIC Description	Trans. & Utilities - Electric Services	County	Fayette
Date Application Received	January 30, 2012	EPA Waived?	No
Date Application Accepted	February 28, 2024	If No, Reason	Major

Purpose of Application: Renewal NPDES permit coverage

Summary of Review

Site Summary:

The Department received an NPDES permit renewal application from Duke Energy Fayette II, LLC on January 30, 2012 for continued coverage of its Fayette Energy Facility (Fayette). The Department received a name change amendment application on October 22, 2015 to change the permittee name from Duke Energy Fayette II, LLC to Dynegy Fayette II, LLC. The Department received another name change amendment application on February 19, 2021 to change the permittee name from Dynegy Fayette II, LLC to Fayette Power Company, LLC. The Department received an updated renewal application from Fayette Power Company, LLC on June 1, 2021.

Fayette is an electrical power generation station using two natural gas-fired combined-cycle advance firing combustion turbines capable of producing 620 MW of electric power. Two combustion turbines produce 160 MW of power each by burning natural gas. Heat is recovered from the combustion turbine exhaust using two duct-fired heat recovery steam generators (HRSG). HRSGs produce steam for use by 300 MW steam turbine generators. The site has a SIC code of 4911, Electric services/Fossil Fuel Electric Power Generation.

Currently the site is classified as a Minor IW Facility with ELG; however, after reviewing and completing the EPA's NPDES Permit Rating Work Sheet (Attachment A), the site should be classified as Major IW Facility <250 MGD. The NPDES Permit Rating Work Sheet classifies steam electric power plants that has a power output of 500 MW or greater as a Major Facility. The site is capable of producing 620 MW of electric power; therefore, the facility should be considered a Major Facility.

The site was last inspection on December 10, 2019; no violations were noted. The site has no open violations.

Approve	Deny	Signatures	Date
X		Adam Olesnanik, P.E. / Environmental Engineer	April 9, 2024
X		Michael E. Fifth, P.E. / Environmental Engineer Manager	April 12, 2024

Summary of Review

The site has two Outfalls and two internal monitor points (IMPs). Outfall 001 discharges wastewater from the two IMPs (HRSG and cooling tower blowdown, demineralizer drain, atmospheric drain tank to cooling tower basin, and oil/water separator wastewater) and treated raw water. IMP 101 is the internal monitoring point for the HRSG and cooling tower blowdown, demineralizer drain, and atmospheric drain tank to cooling tower basin. IMP 201 is the internal monitor point of the oil/water separator wastewater. Outfall 001 discharges to the Monongahela River, designated in 25 PA Code Chapter 93 as a Warm Water Fishery (WWF). Outfall 002 is the site stormwater discharge. Outfall 002 discharges to an unnamed tributary to the Monongahela River, designed in 25 PA Code Chapter 93 as a Warm Water Fishery (WWF).

The boiler feed water treatment wastewater is pH-adjusted in the neutralization tank then pumped to and blended with the incoming water going to the clarifier and used in the plant's make-up water system. Process wastewater and cooling tower blowdown are dechlorinated, if needed, prior to IMP 101. Non-process wastewater from facility drains passes through an oil/water separator prior to IMP 201. Effluent from IMP 101 and 201 then discharge from Outfall 001.

The current permit has an additional IMP to Outfall 001, IMP 301. IMP 301 has been permanently eliminated. The discharge line of IMP 301 was permanently blanked on January 14, 2020. IMP 301 has not discharged since 2012. The wastewater that discharged via IMP 301 was the regeneration discharge from the neutralization tank. The water from IMP 301 was re-routed to blend with the incoming raw water for treatment and plant use.

Station stormwater flows to a stormwater detention basin prior to discharge from Outfall 002.

The site has one surface water cooling water intake structure (CWIS) on the Monongahela River at River Mile 78.8. The CWIS is a nearshore submerged structure, located approximately 105 ft offshore. The CWIS withdraws Monongahela River water from the Maxwell Pool through a submerged wedge screen. The CWIS has a design intake flow of 8.0 MGD, an average intake flow of 3.6 MGD, an estimated through screen velocity of 0.36 fps and 95 to 98 percent of the water is used for cooling.

<u>Cooling Water Intake Structure:</u>

On August 15, 2014, EPA promulgated Clean Water Act Section 316(b) regulations applicable to cooling water intake structures. The regulations established best technology available ("BTA") standards to reduce impingement mortality and entrainment of all life stages of fish and shellfish at existing power generating and manufacturing facilities. The Final Rule took effect on October 14, 2014. Regulations implementing the 2014 Final Rule (and the previously promulgated Phase I Rule) are provided in 40 CFR Part 125, Subparts I and J for new facilities and existing facilities, respectively. Associated NPDES permit application requirements for facilities with cooling water intake structures are provided in 40 CFR Part 122, Subpart B – Permit Application and Special NPDES Program Requirements (§ 122.21(r)).

Fayette is a "new facility" as defined in 40 CFR § 125.83. As a new facility, the site is subject to 40 CFR Part 125, Subpart I – Requirements Applicable to Cooling Water Intake Structures for New Facilities Under Section 316(b) of the Clean Water Act (§§ 125.80 – 125.89) if the facility meets the rule's applicability criteria. Pursuant to the applicability criteria given by § 125.81(a), the Fayette Energy Facility is subject to the requirements of §§ 125.84 – 125.89 if:

(1) The facility is a point source that uses or proposes to use a cooling water intake structure;

(2) The facility has at least one cooling water intake structure that uses at least 25 percent of the water it withdraws for cooling purposes. The threshold requirement that at least 25 percent of water withdrawn be used for cooling purposes must be measured on an average monthly basis. A new facility meets the 25 percent cooling water threshold if, based on the new facility's design, any monthly average over a year for the percentage of cooling water withdrawn is expected to equal to exceed 25 percent of the total water withdrawn.

(3) The facility has a design intake flow (DIF) greater than two (2) million gallons per day (MGD).

Fayette is a point source as defined in 40 CFR § 122.2. The site uses more than 25% of the water it withdraws for cooling purposes (98%). And the site uses a cooling water intake structure with a Design Intake Flow greater than 2 MGD (8.0 MGD). Therefore, the site is subject to the requirements of §§ 125.84 – 125.89.

Fayette has one cooling water intake structure which supplies the facility with water drawn from the Monongahela River. Fayette was designed and built to comply with the Federal Phase I Rule for BTA for CWIS as the facility construction began after January 17, 2002. Fayette has chosen to comply with the Track I requirements in §§ 125.84(b). Fayette has met the

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requirements in 40 CFR 125.84(b)(6) by submitting the required application information from 40 CFR 125.122.21(r) and §§ 125.86(b); Source Waterbody Physical Data Study, Cooling water Intake Structure Data Study, Source Waterbody Baseline Biological Characterization Study, Track I Application Requirements and Biological Monitoring. To meet the requirements in 40 CFR 125.84(b)(7) and (8), the NPDES permit will include the requirements to implement monitoring requirements specified in §§ 125.87 and record-keeping requirements specified in §§ 125.88.

The intake screen is located approximately 105 feet offshore and west of the pumphouse. The submerged screen is arranged into a tee section with the center line elevation of approximately 752 feet. The intake screen has a diameter of 33.27 in and is 98.25 in long with two screen sections having lengths of 34.25 in each. The screen is made out of Z-alloy, a copper-nickel alloy, to prevent bio-growth and is equipped with 0.125 in. slot openings that result in a percent open area of approximately 68.64 percent. The screen is mounted on a 24-in. diameter carbon steel intake pipe that leads approximately 370 feet into the pump house. The screen is equipped with a 4-in. air burst line system that is designed to blow debris off and away from the screen allowing water to flow more freely through the screen. The air burst system operates on a 24-hour cycle or when the head loss across the screen activates the system. Commercial divers are also brought in to inspect and remove any materials from the intake screen, as needed.

Based on the dimension of the intake screen, the total effective open area of the intake is 34.2 square feet. Velocity through the submerged intake screen was calculated based on the station's DIF flow of 5,600 gpm (8.0 MGD). The estimated intake through-screen velocity (TSV) under clean intake screen operation was calculated to be 0.36 fps. The air burst system typically activates cleaning well before TSV approaches 0.5 fps.

Inside the site's intake pump house, three raw water pumps are supplied by a 24-in waterline from the intake screen that delivers the river water to 20-in. waterlines that supply each pump. The raw water pumps supply water to the treatment system through a 20-in. force main. The water is treated by a clarifier and a multi-media gravity filter before being stored in the make-up water storage tank. It is then pumped and used for fire protection, service water, make-up water to the cooling tower, and make-up water to the HRSGs after being processed by the demineralizing system.

A maximum of two pumps are operated at a time, with the third acting as a spare. Each raw water pump is designed for 3,000 gpm at 430 ft total dynamic head. The maximum DIF of the CWIS is 5,600 gpm (8.0 MGD). Under normal operations, the maximum operating flow is limited by the treatment equipment hydraulically downstream of the raw water pumps. However, under rare or emergency conditions, the withdrawal rate can reach its DIF. The CWIS is in operation 24 hours per day, 7 days a week, 365 days a year.

Based on the average annual intake flows, the facility withdraws on average 0.05 percent of the Monongahela River flow, therefore, the site withdraws less than five percent of the Monongahela River flow and meets the requirements under 40 CFR 125.84(b)(3).

The steam turbine generator (STG) uses a wet mechanical draft cooling tower with a closed cycle recirculating system to remove waste heat. The heated water from the steam condenser is pumped to the distribution deck at the top of the cooling tower and flows down under gravity to a cold-water basin beneath the tower from which it is returned to the inlet of the condenser. The STG uses 10-cell linear, induced mechanical-draft, counter-flow cooling to remove waste heat from the condenser. This cooling tower utilizes ten single-speed, reversible, 30 feet wide motor-driven bladed fans and is 480 feet long, 48 feet wide, and approximately 43.5 ft high. Below the cooling tower is the cold-water basin that collects and stores water cascading through the tower. Water pumps within the circulating water system circulate cooling water from the cooling tower basin to the condenser and then return it to the cooling tower. The cooling tower circulation water is a closed-loop system that only requires make-up water gravity fed from the plant's 700,000-gallon storage tank. The operation of the cooling tower results in over 97% reduction in cooling water withdrawal when compared to a hypothetical unit operating once-through cooling mode. By using closed-cycle cooling, the site meets the requirements under 40 CFR 125.84(b)(1).

Submerged cylindrical wedge wire intake screens are classified as exclusion technologies, and the hydraulic area of influence (AOI) and through-screen velocity (TSV) should virtually eliminate impingement of healthy fish and shellfish classified by the USEPA to be of impingeable size. The TSV of the Fayette intake screen was calculated at 0.36 fps, below the 0.5 fps intake velocity at which the USEPA considers to be a de minimis value and meeting the requirement under 40 CFR 125.84(b)(2).

Entrainment is reduced due to the closed-cycle cooling towers. The physical and hydraulic conditions of wedge wire screen are considered to be biologically effective at reducing entrainment of fish and early life stage organisms in the makeup,

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service, and fire water. The low 0.36 fps TSV, and a sweeping current past the screens, reduces the probability of organism entrainment. In December 2019 ASA Analysis and Communication, Inc. (ASA) conducted a cooling water intake structure study at Fayette. ASA's report cited previous studies conducted by Electric Power Research Institute (EPRI) (2003) that identified that under 0.5 fps TSV conditions with adequate sweeping currents, the AOI of a wedge wire screen is approximately 20 in. from the screen face. Through Computational Fluid Dynamics modeling and laboratory evaluations, EPRI determined that an organism's probability of entrainment decreases with increasing distance from the screen face. Due to the limited mobility of early stage organisms that probability of exposure of entrainment is subject to this AOI. Larger larvae with active mobility are expected to have the swimming capability to actively avoid the AOI due to the TSV. Otto et al. speculated that early life stage larvae acquired the swimming capability to avoid entrainment at low velocities. This field evaluation found that larvae above length of 6 to 8 mm were not entrained through the 1-mm intake screen with a design TSV of slightly less than 0.4 fps. Relevant taxa and their susceptibility to impingement and entrainment at Fayette was determined through the Source Water Baseline Biological Characterization Data Report, required by 40 CFR 125.122.21(r)(4). With the potential presence of multiple sportfish and a PA-endangered species within the vicinity of Fayette, Fayette has installed and operates a wedge wire screen to meet the Design and Construction Technology Plan requirements under the Phase I Rule. With the implementation of the wedge wire screen, Fayette meets the requirements under 40 CFR 125.84(b)(4) and (5) to select and implement technologies or operational measures for minimizing impingement mortality and entrainment. <u>Recommendations:</u> Draft Permit Issuance is recommended. <u>Public Participation:</u> 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 & 201)	Design Flow (MGD)	0.973
Latitude	39º 52' 01"	Longitude	-79º 55' 49"
Quad Name	Masontown	Quad Code	2006
Wastewater Description:	IW Process Effluent with ELG		

Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99416266	RMI	78.6
Drainage Area	4530	Yield (cfs/mi^2)	0.117
Q_{7-10} Flow (cfs)	530	Q_{7-10} Basis	USACE
Elevation (ft)	765	Slope (ft/ft)	0.0001
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status	Final	Name	Monongahela River TMDL

Nearest Downstream Public Water Supply Intake	Municipal Authority of Carmichaels (1.0 MGD intake)		
PWS Waters	Monongahela River	Flow at Intake (cfs)	530
PWS RMI	75.6	Distance from Outfall (mi)	3.0

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	002	Design Flow (MGD)	0
Latitude	39º 51' 42"	Longitude	-79º 55' 00"
Quad Name	Masontown	Quad Code	2006
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary to Monongahela River (WWF)	Stream Code	41154
NHD Com ID	99416208	RMI	0.88
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	SILTATION		
Source(s) of Impairment	HABITAT MODIFICATION - OTHER THAN HYDROMODIFICATION		
TMDL Status		Name	

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.973
Latitude 39º 52' 01" **Longitude** -79º 55' 49"
Wastewater Description: IW Process Effluent with ELG – wastewater from IMP 101 and IMP 201, and treated raw water

Technology-Based Limitations

Federal Effluent Limitations Guidelines (ELGs)

The process wastewater related to 40 CFR 423 Steam Electric Generating Category that discharge via Outfall 001 is monitored at internal monitoring points. The ELGs applicable to this process discharge will be imposed at the IMPs.

Regulatory Effluent Standards and Monitoring Requirements

25 PA Code Chapter 92 requires pH requirements to be a minimum of 6.0 and a maximum of 9.0 S.U. for all industrial waste process and non-process discharges.

Flow Reporting requirements are in accordance with the 25 PA Code Chapter 92 regulations.

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.

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 which is displayed in Table 1 below.

25 PA Code Chapter 95.10 requires Total Dissolved Solids (TDS) monitoring at a minimum if the TDS concentration in the discharge exceeds 1,000 mg/L. Per the application, the maximum discharge concentration of TDS was reported as 1,550 mg/L, therefore TDS monitoring will be imposed.

Table 1: Regulatory Effluent Standards and Monitoring Requirements

Parameter	Monthly Average	Daily Maximum	Instantaneous Maximum	Units
Flow	Monitor and Report		-	MGD
Temperature	-	-	110	°F
TRC	0.5		1.6	mg/L
TDS	Monitor and Report			mg/L
pH	Between 6.0 and 9.0			S.U.

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.

Fayette Power Company’s application was submitted before the NPDES permit application forms were updated to require sampling for PFOA, PFOS, PFBS, and HFPO-DA. Also, according to EPA’s guidance, Fayette Power Company does not operate in one of the industries EPA expects to be a source for PFAS. Therefore, annual reporting of PFOA, PFOS, PFBS, and HFPO-DA will be required consistent with Section II.I.b of SOP BCW-PMT-032. Even though Fayette Power Company did not report results for PFOA, PFOS, PFBS, and HFPO-DA on the permit application, as a facility operating in a suspected non-source industry, it is reasonable to conclude that if Fayette Power Company did report results for PFOA, PFOS, PFBS, and HFPO-DA on the application, the results may have been non-detect values, which would subject Fayette Power Company to the annual monitoring requirements described in Section II.I.b of the SOP.

As stated in Section II.I.c of the SOP, if non-detect values at or below DEP’s Target QLs are reported for four consecutive monitoring periods (i.e., four consecutive annual results in Fayette Power Company’s case), then the monitoring may be discontinued.

<u>Toxics Management Spread Sheet</u>

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 2. 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. Based on the results from Toxics Management Spread Sheet no water quality-based effluent limitations or monitoring requirements are prescribed for the discharges from Outfall 001.

Table 2: TMS Inputs for Outfall 001

Parameter	Value
River Mile Index	78.6
Discharge Flow (MGD)	0.67
Basin/Stream Characteristics	
Parameter	**Value**
Area in Square Miles	4530
Q_{7-10} (cfs)	530
Low-flow yield (cfs/mi^2)	0.117
Elevation (ft)	765
Slope	0.0001

Total Residual Chlorine

To determine if WQBELs are required for discharges containing total residual chlorine (TRC), a discharge evaluation is performed using a DEP program called TRC_CALC created with Microsoft Excel for Windows. TRC_CALC calculates TRC Waste Load Allocations (WLAs) through the application of a mass balance model which considers TRC losses due to stream and discharge chlorine demands and first-order chlorine decay. Input values for the program include flow rates and chlorine demands for the receiving stream and the discharge, the number of samples taken per month, coefficients of TRC variability, partial mix factors, and an optional factor of safety. The mass balance model calculates WLAs for acute and chronic criteria that are then converted to long term averages using calculated multipliers. The multipliers are functions of the number of samples taken per month and the TRC variability coefficients (normally kept at default values unless site specific information is available). The most stringent limitation between the acute and chronic long-term averages is converted to an average monthly limit for comparison to the BAT average monthly limit of 0.5 mg/l from 25Pa. Code § 92a.48(b)(2). The more stringent of these average monthly TRC limitations is imposed in the permit. The results of the modeling, included in Attachment D, indicate that WQBELs are not required for TRC at Outfall 001.

Thermal WQBELs for Heated Discharges

Thermal WQBELs are evaluated using a DEP program called "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 1 because water is obtained via an intake structure owned by the permittee on the Monongahela River. The results of the thermal analysis, included in Attachment E, indicate that WQBELs for temperature are not required at Outfall 001. Therefore, because no WLAs below 110°F were calculated, an instantaneous maximum limit of 110°F will be imposed.

Total Maximum Daily Loads

The Monongahela River has a TMDL for PCBs and Chlordane. The TMDL outlines a plan to achieve water quality standards in the water body. The TMDL applies only to discharges of PCBs and chlordane to the Monongahela River and does not provide waste load allocations for either. The TMDL goal is for levels of PCB and chlordane in the water column to be equal to or less than the Commonwealth's water quality criteria. The production and use of PCB in the United States was banned in July of 1979. In addition, the TMDL acknowledges that there are no longer any known point sources of either pollutant in the watershed and the TMDL is expected to achieve implementation through "natural attenuation". While it is now illegal to manufacture, distribute, or use PCBs in the United states, these synthetic oils were used in the past. However, this site has not been shown to have PCBs in its discharge and has not been known to use PCBs. Neither chlordane nor PCB's are used, generated, or stored at the site; nor is there any evidence to suggest that PCBs and chlordane were ever used, generated, or stored onsite in the past. Additionally, because the site is subject to the Steam Electric Generation Effluent Limitation Guidelines, a Part C condition is included in the permit for the exclusion of the discharge of PCB compounds. Based upon these considerations, the Monongahela River TMDL is not applicable to site's discharges.

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 3.

Table 3: Existing Effluent Limitation for Outfall 001

Parameters	Mass (lb/day)		Concentration (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	2/Month	estimate
Temperature (°F)	XXX	XXX	XXX	XXX	XXX	110	2/Month	I-S
Total Residual Chlorine	XXX	XXX	XXX	0.5	XXX	1.0	2/Month	Grab
Total Suspended Solids	XXX	XXX	XXX	Monitor	Monitor	XXX	2/Month	Grab
Oil and Grease	XXX	XXX	XXX	Monitor	Monitor	XXX	2/Month	Grab
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	2/Month	Grab

Proposed Effluent Limitations

The proposed effluent limitations and monitoring requirements for Outfall 001 are shown below in Table 4. The limits are the most stringent values from the above limitation analysis.

Table 4: Proposed Effluent Limitation for Outfall 001

Parameters	Mass (lb/day)		Concentration (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	2/Month	estimate
Temperature (°F)	XXX	XXX	XXX	XXX	XXX	110	2/Month	I-S
Total Residual Chlorine	XXX	XXX	XXX	0.5	XXX	1.0	2/Month	Grab
Total Dissolved Solids	XXX	XXX	XXX	Monitor	Monitor	XXX	2/Month	Grab
Total Suspended Solids	XXX	XXX	XXX	Monitor	Monitor	XXX	2/Month	Grab
Oil and Grease	XXX	XXX	XXX	Monitor	Monitor	XXX	2/Month	Grab
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	2/Month	Grab
PFOA (ng/L)	XXX	XXX	XXX	XXX	Monitor	XXX	1/year	Grab
PFOS (ng/L)	XXX	XXX	XXX	XXX	Monitor	XXX	1/year	Grab
PFBS (ng/L)	XXX	XXX	XXX	XXX	Monitor	XXX	1/year	Grab
HFPO-DA (ng/L)	XXX	XXX	XXX	XXX	Monitor	XXX	1/year	Grab

Development of Effluent Limitations

IMP.	101	**Design Flow (MGD)**	0.688
Latitude	39º 52' 01"	**Longitude**	-79º 55' 49"
Wastewater Description:	IW Process Effluent with ELG – HRSG Blowdown, blowdown from cooling towers, demineralizer drain, and atmospheric drain tank to cooling tower basin		

Technology-Based Limitations

Regulatory Effluent Standards and Monitoring Requirements

25 PA Code Chapter 92 requires pH requirements to be a minimum of 6.0 and a maximum of 9.0 S.U. for all industrial waste process and non-process discharges.

Flow Reporting requirements is in accordance with the 25 PA Code Chapter 92 regulations.

Federal Effluent Limitation Guidelines (ELGs)

Discharges from IMP 101 consists of Low Volume Waste and Cooling Tower Blowdown and is subject to the steam electric ELG 40 CFR 423. The discharge is considered a new source and is subject to the ELG's New Source Performance Standards (NSPS) effluent limitations in 40 CFR 423.15 (a) (1,2,3 and 10) (1982 NSPS). Applicable effluent limitations are shown in Table 5.

Table 5: Federal Effluent Limitation Guidelines

Parameters	Concentration (mg/L)			
	Minimum	Average Monthly	Daily Maximum	Instant. Maximum
TSS	XXX	30.0	100.0	XXX
Oil and Grease	XXX	15.0	20.0	XXX
Free Available Chlorine	XXX	0.2	XXX	0.5
Total Chromium	XXX	0.2	0.2	XXX
Total Zinc	XXX	1.0	1.0	XXX
pH (S.U.)	6.0	XXX	9.0	XXX

In addition to the ELG's numerical limits, other conditions specified are included in Part C. Specifically they require that, "There shall be no discharge of polychlorinated biphenyl compounds" (40 CFR 423.15(a)(2)), "Neither free available nor total residual chlorine may be discharged from any unit for more than two hours in any one day" (40 CFR 423.15 (a)(10)(ii), and "The 126 priority pollutants (Appendix A) contained in chemicals added for cooling tower maintenance, except chromium and zinc 40 CFR 423.15 (a)(10)(iii)."

Because the site doesn't use any cooling tower maintenance chemicals that contain chromium or zinc, the Department has evaluated the need for these limits in the permit and after evaluation of EPA's Final Rulemaking on the matter, the Department finds merit in the removal of these limits. Volume 47, No. 224 of the Federal Register's Rules and Regulations as published on November 19, 1982 includes the Federal Effluent Limitation Guidelines for chromium and zinc. EPA's proposed rulemaking prohibited *"any discharge of cooling tower maintenance chemicals containing the 129 priority pollutants"* (defined earlier in the notice); including chromium and zinc. Many commenters indicated that there were (at that time) no acceptable substitutes for the use of chromium-based or zinc-based cooling tower maintenance chemicals. The EPA agreed with this position due in part to site specific conditions, including cooling water intake quality and the use of construction materials (i.e. for cooling water piping) that are susceptible to fouling corrosion. In addition, it was agreed that potential substitutes could be more toxic than the substances they were intended to replace. Therefore, the Federal Register states; *"the final BAT, NSPS and pretreatment standards allow for the discharge of chromium and zinc in cooling tower blowdown. The limitations are the same as those adopted in 1974 for BAT and are based upon pH adjustment, chemical precipitation, and sedimentation or filtration to remove precipitated metals".*

EPA's original intent was to restrict the discharge of all 129 Priority Toxic Pollutants (including chromium and zinc), a goal that Fayette has achieved. The company does not utilize chromium or zinc additives in its cooling water. Accordingly, total chromium and total zinc effluent limitations have been removed from the Draft Permit. The Department will however maintain a "Monitor and Report" requirement for these pollutants for at least one permit cycle to confirm their absence. In addition, a Part C Condition has been added to the Draft Permit restricting the use of chromium and zinc chemical additives without first obtaining written approval from the Department.

Water Quality-Based Limitations

Due to the nature of the discharge, water quality limitations are evaluated at Outfall 001.

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 6. In the 2002 permit, Zinc and Chromium received monitoring frequencies of once per six months because the permittee stated that the facility did not use cooling tower additives that contain chromium or zinc. In the 2007 permit, the sample frequency for zinc was increased to twice per month because there were a few violations of the zinc limitation during the 2002 to 2007 permit term.

Table 6: Existing Effluent Limitation for IMP 101

Parameters	Mass (lb/day)		Concentration (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	2/Month	Measure
Total Suspended Solids	XXX	XXX	XXX	30	100	XXX	2/Month	Grab
Oil and Grease	XXX	XXX	XXX	15	20	XXX	2/Month	Grab
Free Available Chlorine	XXX	XXX	XXX	0.2	XXX	0.5	2/Month	Grab
Total Chromium	XXX	XXX	XXX	0.2	0.2	XXX	1/6Month	24-hour composite
Total Zinc	XXX	XXX	XXX	1.0	1.0	XXX	2/Month	24-hour composite
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	2/Month	Grab

Proposed Effluent Limitations

The proposed effluent limitations and monitoring requirements for IMP 101 are shown below in Table 7. The limits are the most stringent values from the above limitation analysis. The limitations for zinc and chromium been replace with monitor and report requirements. A part C condition has been added that prevents the use of chemical additives that contain chromium and/or zinc. Additionally, the sample frequency for Zinc will be reduce to 1/6 months because the DMRs have shown consistent non-detect, with a few occasional detections less than 10% of the effluent limitation.

Table 7: Proposed Effluent Limitation for IMP 101

Parameters	Mass (lb/day)		Concentration (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	2/Month	Measure
Total Suspended Solids	XXX	XXX	XXX	30	100	XXX	2/Month	Grab
Oil and Grease	XXX	XXX	XXX	15	20	XXX	2/Month	Grab
Free Available Chlorine	XXX	XXX	XXX	0.2	XXX	0.5	2/Month	Grab
Total Chromium	XXX	XXX	XXX	XXX	Report	XXX	1/6Month	24-hour composite
Total Zinc	XXX	XXX	XXX	XXX	Report	XXX	1/6Month	24-hour composite
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	2/Month	Grab

Development of Effluent Limitations

IMP. 201 **Design Flow (MGD)** 0.036
Latitude 39º 52' 01" **Longitude** -79º 55' 49"
Wastewater Description: Non-Process – wastewater from Oil/Water Separator

Technology-Based Limitations

Regulatory Effluent Standards and Monitoring Requirements

25 PA Code Chapter 92 requires pH requirements to be a minimum of 6.0 and a maximum of 9.0 S.U. for all industrial waste process and non-process discharges.

Flow Reporting requirements is in accordance with the 25 PA Code Chapter 92 regulations.

Federal Effluent Limitation Guidelines (ELGs)

Steam Electric Generation 40 CFR 423

Discharges from IMP 201 consists of potentially oily low volume wastewater and is subject to the steam electric ELG 40 CFR 423. The discharge is considered a new source and is subject to the ELG's New Source Performance Standards (NSPS) effluent limitations in 40 CFR 423.15 (a) (1,2,3) (1982 NSPS). Applicable effluent limitations are shown in Table 8.

Table 8: Federal Effluent Limitation Guidelines

Parameters	Concentration (mg/L)			
	Minimum	Average Monthly	Daily Maximum	Instant. Maximum
Total Suspended Solids	XXX	30	100	XXX
Oil and Grease	XXX	15	20	XXX
pH (S.U.)	6.0	XXX	9.0	XXX

In addition to the ELG's numerical limits, Part C will also require that, "There shall be no discharge of polychlorinated biphenyl compounds" (40 CFR 423.15(a)(2)).

Water Quality-Based Limitations

Due to the nature of the discharge, water quality limitations are evaluated at Outfall 001.

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 9.

Table 9: Existing Effluent Limitation for IMP 201

Parameters	Mass (lb/day)		Concentration (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	2/Month	Estimate
Total Suspended Solids	XXX	XXX	XXX	30.0	100.0	XXX	2/Month	Grab
Oil and Grease	XXX	XXX	XXX	15.0	20.0	XXX	2/Month	Grab
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	2/Month	Grab

<u>Proposed Effluent Limitations</u>

The proposed effluent limitations and monitoring requirements for IMP 201 are shown below in Table 10. The limits are the most stringent values from the above limitation analysis.

Table 10: Existing Effluent Limitation for IMP 201

Parameters	Mass (lb/day)		Concentration (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	2/Month	Estimate
Total Suspended Solids	XXX	XXX	XXX	30.0	100.0	XXX	2/Month	Grab
Oil and Grease	XXX	XXX	XXX	15.0	20.0	XXX	2/Month	Grab
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	2/Month	Grab

Development of Effluent Limitations

Outfall No. 002 **Design Flow (MGD)** 0
Latitude 39º 51' 42" **Longitude** -79º 55' 00"
Wastewater Description: Stormwater

Technology-Based Limitations

The stormwater discharges from Outfall 002 will be subjected to the monitoring requirements in Appendix H of the PAG-03 General Stormwater Permit as a minimum requirement because the outfall receives stormwater. The SIC code for the site is 4911 and the corresponding appendix that would apply to the facility is Appendix H of the PAG-03, Steam Electric Generating Facilities, and the reporting requirements are in Table 11 below.

Table 11: Appendix H Stormwater Monitoring Requirements – Outfall 002

Parameter	Max Daily Concentration	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
Total Nitrogen *	Report	XXX	1/6 Months	Calculation
Total Phosphorus	Report	XXX	1/6 Months	Grab
pH (S.U.)	Report	9.0	1/6 Months	Grab
Total Suspended Solids (TSS)	Report	100	1/6 Months	Grab
Oil and Grease	Report	30	1/6 Months	Grab
Total Iron	Report	XXX	1/6 Months	Grab

*Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO_2+NO_3-N), where TKN and NO_2+NO_3-N are measured in the same sample.

Water Quality-Based Limitations

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

Anti-Backsliding

The limits in Table 12 below are from the current permit and are based on information that was provided in the previous permit application.

Table 12: Current Monitoring Requirements for Stormwater Outfall 002

Parameters	Mass (lb/day)		Concentration (mg/l)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	2/Quarter*	Estimate
Total Residual Chlorine	XXX	XXX	XXX	Report	XXX	Report	2/Quarter*	Grab

*Two samples will be taken during the same calendar month to calculate a monthly average. Flow will be measured concurrently.

Final Effluent Limitations

The proposed effluent monitoring requirements for Outfall 002 are displayed in Table 13 below, they are the most stringent values from the above effluent limitation development. The flow monitoring requirement from the current permit has been removed from this outfall because flow monitoring is not appropriate for stormwater discharges. The TRC monitoring requirement from the previous permit has been remove because TRC is not a pollutant of concern in the stormwater discharges from Outfall 002. The Draft Permit requires a Corrective Action Plan when there are two consecutive exceedances of the benchmark values, which are also included in the Part C condition. The benchmark values are displayed below in Table 13. These values are not effluent limitations, an exceedance of the benchmark value is not a violation. As described above, if there are two consecutive exceedances of the benchmark value, a corrective action plan must be conducted to evaluate site stormwater controls and BMPs. Benchmark monitoring is a feedback tool, along with routine inspections and visual assessments, for assessing the effectiveness of stormwater controls and BMPs. An exceedance of the benchmark provides permittees with an indication that the facility's controls may not be sufficiently controlling pollutants in stormwater.

Table 13: Proposed Effluent Monitoring Requirements – Outfall 002

Parameter	Max Daily Concentration	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
Total Nitrogen *	Report	XXX	1/6 Months	Calculation
Total Phosphorus	Report	XXX	1/6 Months	Grab
pH (S.U.)	Report	9.0	1/6 Months	Grab
Total Suspended Solids (TSS)	Report	100	1/6 Months	Grab
Oil and Grease	Report	30	1/6 Months	Grab
Total Iron	Report	XXX	1/6 Months	Grab

*Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO_2+NO_3-N), where TKN and NO_2+NO_3-N are measured in the same sample.

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

NPDES Permit Rating Work Sheet

NPDES Permit Rating Work Sheet

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

NPDES No.: PA0218863

Facility Name: Fayette Energy Facility

City: German Township, Fayette County

Receiving Water: Monongahela River

Reach Number:

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

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

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

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

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

FACTOR 1: Toxic Pollutant Potential

PCS SIC Code: ______ Primary SIC Code: ______

Other SIC Codes: ______ ______ ______ ______

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

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

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

Code Number Checked:

Total Points Factor 1: 0

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

Section A - Wastewater Flow Only Considered

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

Section B - Wastewater and Stream Flow Considered

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

Code Checked from Section A or B:

Total Points Factor 2: 0

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NPDES Permit Rating Work Sheet

NPDES No.: PA0218863

FACTOR 3: Conventional Pollutants
(only when limited by the permit)

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

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

Code Checked:
Points Scored: 0

B. Total Suspended Solids (TSS)

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

Code Checked:
Points Scored: 0

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

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

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

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

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

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

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

Code Number Checked:
Total Points Factor 4: 0

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NPDES Permit Rating Work Sheet

FACTOR 5: Water Quality Factors NPDES No.: PA0218863

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

	Code	Points
☐ YES	1	10
☐ NO	2	0

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

	Code	Points
☐ YES	1	0
☐ NO	2	5

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

	Code	Points
☐ YES	1	10
☐ NO	2	0

Code Number Checked: *A.* ___ *B.* ___ *C.* ___

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

FACTOR 6: Proximity to Near Coastal Waters

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

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

Check appropriate facility HPRI Code (from PCS):

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

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

HPRI Code Checked: ___

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

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

	Code	Points
☐ YES	1	10
☐ NO	2	0

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

	Code	Points
☐ YES	1	10
☐ NO	2	0

Code Number Checked: *A.* ___ *B.* ___ *C.* ___

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

NPDES Permit Rating Work Sheet

Score Summary

NPDES No.: PA0218863

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

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

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

☐ NO

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

Reason:

NEW SCORE: 600

OLD SCORE:

Adam Olesnanik
Permit Reviewer's Name

(412) 442-4254
Phone Number

02/29/2024
Date

Reset Form

4

Attachment B:

Outfall 001 StreamStats Report

Outfall 001 StreamStats Report

Region ID: PA
Workspace ID: PA20240229190355096000
Clicked Point (Latitude, Longitude): 39.86709, -79.93079
Time: 2024-02-29 14:04:30 -0500

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	4530	square miles
ELEV	Mean Basin Elevation	1946	feet
FOREST	Percentage of area covered by forest	79.7051	percent
PRECIP	Mean Annual Precipitation	49	inches
URBAN	Percentage of basin with urban development	1.9011	percent

General Flow Statistics

General Flow Statistics Parameters [Statewide Mean and Base Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	4530	square miles	2.26	1720
PRECIP	Mean Annual Precipitation	49	inches	33.1	50.4
CARBON	Percent Carbonate	0	percent	0	99
FOREST	Percent Forest	79.7051	percent	5.1	100
URBAN	Percent Urban	1.9011	percent	0	89

General Flow Statistics Disclaimers [Statewide Mean and Base Flow]

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

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

Statistic	Value	Unit
Harmonic Mean Streamflow	4190	ft^3/s

General 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/)

Application Version: 4.19.4
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Attachment C:

Outfall 001 Toxics Management Spread Sheet

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Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Fayette Energy Facility** NPDES Permit No.: **PA0218863** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **ELG Wastewater - cooling tower blowdown**

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
0.67	845	8.13						

	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
Group 1	Total Dissolved Solids (PWS)	mg/L		1550									
	Chloride (PWS)	mg/L		127									
	Bromide	mg/L	<	25									
	Sulfate (PWS)	mg/L		1050									
	Fluoride (PWS)	mg/L		0.65									
Group 2	Total Aluminum	µg/L		164									
	Total Antimony	µg/L		9.9									
	Total Arsenic	µg/L	<	1									
	Total Barium	µg/L		288									
	Total Beryllium	µg/L	<	0.3									
	Total Boron	µg/L		215									
	Total Cadmium	µg/L	<	1									
	Total Chromium (III)	µg/L	<	7									
	Hexavalent Chromium	µg/L	<	10									
	Total Cobalt	µg/L		1.6									
	Total Copper	µg/L		7									
	Free Cyanide	µg/L		12									
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L		103									
	Total Iron	µg/L		331									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		84.6									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		20.6									
	Total Phenols (Phenolics) (PWS)	µg/L	<	50									
	Total Selenium	µg/L		2.1									
	Total Silver	µg/L	<	1									
	Total Thallium	µg/L		0.3									
	Total Zinc	µg/L		36.7									
	Total Molybdenum	µg/L	<	10									
	Acrolein	µg/L	<	4									
	Acrylamide	µg/L	<	10									
	Acrylonitrile	µg/L	<	4									
	Benzene	µg/L	<	1									
	Bromoform	µg/L	<	1									

Group 3	Carbon Tetrachloride	µg/L	<	1									
	Chlorobenzene	µg/L		1									
	Chlorodibromomethane	µg/L	<	1									
	Chloroethane	µg/L	<	1									
	2-Chloroethyl Vinyl Ether	µg/L	<	2									
	Chloroform	µg/L		4.5									
	Dichlorobromomethane	µg/L	<	1									
	1,1-Dichloroethane	µg/L	<	1									
	1,2-Dichloroethane	µg/L	<	1									
	1,1-Dichloroethylene	µg/L	<	1									
	1,2-Dichloropropane	µg/L	<	1									
	1,3-Dichloropropylene	µg/L	<	1									
	1,4-Dioxane	µg/L	<	1									
	Ethylbenzene	µg/L	<	1									
	Methyl Bromide	µg/L	<	1									
	Methyl Chloride	µg/L	<	1									
	Methylene Chloride	µg/L	<	1									
	1,1,2,2-Tetrachloroethane	µg/L	<	1									
	Tetrachloroethylene	µg/L	<	1									
	Toluene	µg/L	<	1									
	1,2-trans-Dichloroethylene	µg/L	<	1									
	1,1,1-Trichloroethane	µg/L	<	1									
	1,1,2-Trichloroethane	µg/L	<	1									
	Trichloroethylene	µg/L	<	1									
	Vinyl Chloride	µg/L	<	1									
Group 4	2-Chlorophenol	µg/L	<	3									
	2,4-Dichlorophenol	µg/L	<	3									
	2,4-Dimethylphenol	µg/L	<	3									
	4,6-Dinitro-o-Cresol	µg/L	<	6.1									
	2,4-Dinitrophenol	µg/L	<	6.1									
	2-Nitrophenol	µg/L	<	3									
	4-Nitrophenol	µg/L	<	3									
	p-Chloro-m-Cresol	µg/L	<	3									
	Pentachlorophenol	µg/L	<	6.1									
	Phenol	µg/L	<	8.1									
	2,4,6-Trichlorophenol	µg/L	<	3									
Group 5	Acenaphthene	µg/L	<	1.5									
	Acenaphthylene	µg/L	<	1.5									
	Anthracene	µg/L	<	1.5									
	Benzidine	µg/L	<	4.1									
	Benzo(a)Anthracene	µg/L	<	1.5									
	Benzo(a)Pyrene	µg/L	<	1.5									
	3,4-Benzofluoranthene	µg/L	<	1.5									
	Benzo(ghi)Perylene	µg/L	<	1.5									
	Benzo(k)Fluoranthene	µg/L	<	1.5									
	Bis(2-Chloroethoxy)Methane	µg/L	<	3									
	Bis(2-Chloroethyl)Ether	µg/L	<	3									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	3									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	3									
	4-Bromophenyl Phenyl Ether	µg/L	<	3									
	Butyl Benzyl Phthalate	µg/L	<	3									
	2-Chloronaphthalene	µg/L	<	3									
	4-Chlorophenyl Phenyl Ether	µg/L	<	3									
	Chrysene	µg/L	<	1.5									
	Dibenzo(a,h)Anthrancene	µg/L	<	1.5									
	1,2-Dichlorobenzene	µg/L	<	1.5									
	1,3-Dichlorobenzene	µg/L	<	1.5									
	1,4-Dichlorobenzene	µg/L	<	1.5									
	3,3-Dichlorobenzidine	µg/L	<	3									
	Diethyl Phthalate	µg/L	<	3									
	Dimethyl Phthalate	µg/L	<	3									
	Di-n-Butyl Phthalate	µg/L	<	3									
	2,4-Dinitrotoluene	µg/L	<	3									

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	2,6-Dinitrotoluene	µg/L	<	3									
	Di-n-Octyl Phthalate	µg/L	<	3									
	1,2-Diphenylhydrazine	µg/L	<	3									
	Fluoranthene	µg/L	<	1.5									
	Fluorene	µg/L	<	1.5									
	Hexachlorobenzene	µg/L	<	3									
	Hexachlorobutadiene	µg/L	<	3									
	Hexachlorocyclopentadiene	µg/L	<	3									
	Hexachloroethane	µg/L	<	3									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	1.5									
	Isophorone	µg/L	<	3									
	Naphthalene	µg/L	<	1.5									
	Nitrobenzene	µg/L	<	3									
	n-Nitrosodimethylamine	µg/L	<	3									
	n-Nitrosodi-n-Propylamine	µg/L	<	3									
	n-Nitrosodiphenylamine	µg/L	<	3									
	Phenanthrene	µg/L	<	1.5									
	Pyrene	µg/L	<	1.5									
	1,2,4-Trichlorobenzene	µg/L	<	3									
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 2023

Stream / Surface Water Information

Fayette Energy Facility, NPDES Permit No. PA0218863, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Monongahela River**

No. Reaches to Model: **1**

◉ Statewide Criteria
◯ Great Lakes Criteria
◯ ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	037185	78.6	765	4530			Yes
End of Reach 1	037185	77.6	764	4531			Yes

Q 7-10

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	78.6	0.1	530			500	10					100	7		
End of Reach 1	77.6	0.1													

Q h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	78.6														
End of Reach 1	77.6														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Fayette Energy Facility, NPDES Permit No. PA0218863, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.138 Analysis Hardness (mg/l): 110.39 Analysis pH: 7.01

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	53,786	
Total Antimony	0	0		0	1,100	1,100	78,887	
Total Arsenic	0	0		0	340	340	24,383	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	1,506,019	
Total Boron	0	0		0	8,100	8,100	580,893	
Total Cadmium	0	0		0	2.217	2.36	169	Chem Translator of 0.94 applied
Total Chromium (III)	0	0		0	617.801	1,955	140,208	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	1,168	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	6,813	
Total Copper	0	0		0	14.751	15.4	1,102	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	1,578	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	71.907	92.6	6,640	Chem Translator of 0.777 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	118	Chem Translator of 0.85 applied
Total Nickel	0	0		0	509.070	510	36,581	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	3.813	4.49	322	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	4,661	
Total Zinc	0	0		0	127.416	130	9,343	Chem Translator of 0.978 applied

Acrolein	0	0		0	3	3.0	215	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	650	650	46,615	
Benzene	0	0		0	640	640	45,898	
Bromoform	0	0		0	1,800	1,800	129,087	
Carbon Tetrachloride	0	0		0	2,800	2,800	200,802	
Chlorobenzene	0	0		0	1,200	1,200	86,058	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	1,290,873	
Chloroform	0	0		0	1,900	1,900	136,259	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	1,075,728	
1,1-Dichloroethylene	0	0		0	7,500	7,500	537,864	
1,2-Dichloropropane	0	0		0	11,000	11,000	788,867	
1,3-Dichloropropylene	0	0		0	310	310	22,232	
Ethylbenzene	0	0		0	2,900	2,900	207,974	
Methyl Bromide	0	0		0	550	550	39,443	
Methyl Chloride	0	0		0	28,000	28,000	2,008,025	
Methylene Chloride	0	0		0	12,000	12,000	860,582	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	71,715	
Tetrachloroethylene	0	0		0	700	700	50,201	
Toluene	0	0		0	1,700	1,700	121,916	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	487,663	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	215,146	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	243,832	
Trichloroethylene	0	0		0	2,300	2,300	164,945	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	40,160	
2,4-Dichlorophenol	0	0		0	1,700	1,700	121,916	
2,4-Dimethylphenol	0	0		0	660	660	47,332	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	5,737	
2,4-Dinitrophenol	0	0		0	660	660	47,332	
2-Nitrophenol	0	0		0	8,000	8,000	573,721	
4-Nitrophenol	0	0		0	2,300	2,300	164,945	
p-Chloro-m-Cresol	0	0		0	160	160	11,474	
Pentachlorophenol	0	0		0	8.773	8.77	629	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	32,989	
Acenaphthene	0	0		0	83	83.0	5,952	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	21,515	
Benzo(a)Anthracene	0	0		0	0.5	0.5	35.9	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	2,151,455	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	322,718	

4-Bromophenyl Phenyl Ether	0	0		0	270	270	19,363	
Butyl Benzyl Phthalate	0	0		0	140	140	10,040	
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	58,806	
1,3-Dichlorobenzene	0	0		0	350	350	25,100	
1,4-Dichlorobenzene	0	0		0	730	730	52,352	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	286,861	
Dimethyl Phthalate	0	0		0	2,500	2,500	179,288	
Di-n-Butyl Phthalate	0	0		0	110	110	7,889	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	114,744	
2,6-Dinitrotoluene	0	0		0	990	990	70,998	
1,2-Diphenylhydrazine	0	0		0	15	15.0	1,076	
Fluoranthene	0	0		0	200	200	14,343	
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	717	
Hexachlorocyclopentadiene	0	0		0	5	5.0	359	
Hexachloroethane	0	0		0	60	60.0	4,303	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	717,152	
Naphthalene	0	0		0	140	140	10,040	
Nitrobenzene	0	0		0	4,000	4,000	286,861	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	1,219,158	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	21,515	
Phenanthrene	0	0		0	5	5.0	359	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	9,323	

☑ *CFC* CCT (min): 720 PMF: 0.958 Analysis Hardness (mg/l): 101.52 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	108,004	
Total Arsenic	0	0		0	150	150	73,639	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	2,012,809	
Total Boron	0	0		0	1,600	1,600	785,487	
Total Cadmium	0	0		0	0.249	0.27	134	Chem Translator of 0.908 applied
Total Chromium (III)	0	0		0	75.034	87.2	42,833	Chem Translator of 0.86 applied

Hexavalent Chromium	0	0		0	10	10.4	5,103	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	9,328	
Total Copper	0	0		0	9.072	9.45	4,639	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	2,553	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	768,512	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.558	3.24	1,592	Chem Translator of 0.789 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	445	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.673	52.8	25,937	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	2,449	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	6,382	
Total Zinc	0	0		0	119.656	121	59,577	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	1,473	
Acrylamide	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	130	130	63,821	
Benzene	0	0		0	130	130	63,821	
Bromoform	0	0		0	370	370	181,644	
Carbon Tetrachloride	0	0		0	560	560	274,920	
Chlorobenzene	0	0		0	240	240	117,823	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	1,718,252	
Chloroform	0	0		0	390	390	191,462	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	1,521,880	
1,1-Dichloroethylene	0	0		0	1,500	1,500	736,394	
1,2-Dichloropropane	0	0		0	2,200	2,200	1,080,044	
1,3-Dichloropropylene	0	0		0	61	61.0	29,947	
Ethylbenzene	0	0		0	580	580	284,739	
Methyl Bromide	0	0		0	110	110	54,002	
Methyl Chloride	0	0		0	5,500	5,500	2,700,110	
Methylene Chloride	0	0		0	2,400	2,400	1,178,230	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	103,095	
Tetrachloroethylene	0	0		0	140	140	68,730	
Toluene	0	0		0	330	330	162,007	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	687,301	
1,1,1-Trichloroethane	0	0		0	610	610	299,467	
1,1,2-Trichloroethane	0	0		0	680	680	333,832	
Trichloroethylene	0	0		0	450	450	220,918	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	54,002	
2,4-Dichlorophenol	0	0		0	340	340	166,916	
2,4-Dimethylphenol	0	0		0	130	130	63,821	

4,6-Dinitro-o-Cresol	0	0		0	16	16.0	7,855	
2,4-Dinitrophenol	0	0		0	130	130	63,821	
2-Nitrophenol	0	0		0	1,600	1,600	785,487	
4-Nitrophenol	0	0		0	470	470	230,737	
p-Chloro-m-Cresol	0	0		0	500	500	245,465	
Pentachlorophenol	0	0		0	6.731	6.73	3,304	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	44,675	
Acenaphthene	0	0		0	17	17.0	8,346	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	28,965	
Benzo(a)Anthracene	0	0		0	0.1	0.1	49.1	
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	2,945,574	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	446,745	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	26,510	
Butyl Benzyl Phthalate	0	0		0	35	35.0	17,183	
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	78,549	
1,3-Dichlorobenzene	0	0		0	69	69.0	33,874	
1,4-Dichlorobenzene	0	0		0	150	150	73,639	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	392,743	
Dimethyl Phthalate	0	0		0	500	500	245,465	
Di-n-Butyl Phthalate	0	0		0	21	21.0	10,310	
2,4-Dinitrotoluene	0	0		0	320	320	157,097	
2,6-Dinitrotoluene	0	0		0	200	200	98,186	
1,2-Diphenylhydrazine	0	0		0	3	3.0	1,473	
Fluoranthene	0	0		0	40	40.0	19,637	
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	982	
Hexachlorocyclopentadiene	0	0		0	1	1.0	491	
Hexachloroethane	0	0		0	12	12.0	5,891	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	1,030,951	
Naphthalene	0	0		0	43	43.0	21,110	
Nitrobenzene	0	0		0	810	810	397,653	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	1,669,159	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	

n-Nitrosodiphenylamine	0	0		0	59	59.0	28,965	
Phenanthrene	0	0		0	1	1.0	491	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	12,764	

☑ ***THH*** CCT (min): 720 PMF: 0.958 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	2,749	
Total Arsenic	0	0		0	10	10.0	4,909	
Total Barium	0	0		0	2,400	2,400	1,178,230	
Total Boron	0	0		0	3,100	3,100	1,521,880	
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	
Free Cyanide	0	0		0	4	4.0	1,964	
Dissolved Iron	0	0		0	300	300	147,279	
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	490,929	
Total Mercury	0	0		0	0.050	0.05	24.5	
Total Nickel	0	0		0	610	610	299,467	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	118	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	1,473	
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	49,093	
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	2,798	

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	16,201	
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	33,383	
Methyl Bromide	0	0		0	100	100.0	49,093	
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	27,983	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	49,093	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	4,909,291	
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	14,728	
2,4-Dichlorophenol	0	0		0	10	10.0	4,909	
2,4-Dimethylphenol	0	0		0	100	100.0	49,093	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	982	
2,4-Dinitrophenol	0	0		0	10	10.0	4,909	
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	1,963,716	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	34,365	
Anthracene	0	0		0	300	300	147,279	
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	98,186	
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	49.1	
2-Chloronaphthalene	0	0		0	800	800	392,743	
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	490,929	
1,3-Dichlorobenzene	0	0		0	7	7.0	3,437	

1,4-Dichlorobenzene	0	0		0	300	300	147,279	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	294,557	
Dimethyl Phthalate	0	0		0	2,000	2,000	981,858	
Di-n-Butyl Phthalate	0	0		0	20	20.0	9,819	
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	9,819	
Fluorene	0	0		0	50	50.0	24,546	
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	1,964	
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	16,692	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	4,909	
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	9,819	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	34.4	

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

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	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	121	
Acrylonitrile	0	0		0	0.06	0.06	103	
Benzene	0	0		0	0.58	0.58	1,000	
Bromoform	0	0		0	7	7.0	12,072	
Carbon Tetrachloride	0	0		0	0.4	0.4	690	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	1,380	
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	1,638	
1,2-Dichloroethane	0	0		0	9.9	9.9	17,074	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	1,552	
1,3-Dichloropropylene	0	0		0	0.27	0.27	466	
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	34,492	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	345	
Tetrachloroethylene	0	0		0	10	10.0	17,246	
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	949	
Trichloroethylene	0	0		0	0.6	0.6	1,035	
Vinyl Chloride	0	0		0	0.02	0.02	34.5	
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	51.7	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	2,587	
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	0.17	
Benzo(a)Anthracene	0	0		0	0.001	0.001	1.72	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.17	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	1.72	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	17.2	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	51.7	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	552	
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	207	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.17	
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	86.2	
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	86.2	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	86.2	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	51.7	
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	0.14	
Hexachlorobutadiene	0	0		0	0.01	0.01	17.2	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	172	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	1.72	
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	1.21	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	8.62	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	5,691	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

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

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	34,475	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	2,749	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	965,297	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	372,329	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	108	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	42,833	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	749	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	4,367	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	706	µg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	1,011	µg/L	Discharge Conc ≤ 25% WQBEL
Dissolved Iron	147,279	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	768,512	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	1,592	µg/L	Discharge Conc < TQL
Total Manganese	490,929	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	24.5	µg/L	Discharge Conc < TQL
Total Nickel	23,447	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	2,449	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	206	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	118	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	5,989	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	138	µg/L	Discharge Conc ≤ 25% WQBEL

Acrylamide	121	µg/L	Discharge Conc ≤ 25% WQBEL
Acrylonitrile	103	µg/L	Discharge Conc < TQL
Benzene	1,000	µg/L	Discharge Conc ≤ 25% WQBEL
Bromoform	12,072	µg/L	Discharge Conc ≤ 25% WQBEL
Carbon Tetrachloride	690	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorobenzene	49,093	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorodibromomethane	1,380	µg/L	Discharge Conc ≤ 25% WQBEL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	827,398	µg/L	Discharge Conc < TQL
Chloroform	2,798	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	1,638	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	17,074	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethylene	16,201	µg/L	Discharge Conc ≤ 25% WQBEL
1,2-Dichloropropane	1,552	µg/L	Discharge Conc ≤ 25% WQBEL
1,3-Dichloropropylene	466	µg/L	Discharge Conc ≤ 25% WQBEL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	33,383	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Bromide	25,282	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Chloride	1,287,063	µg/L	Discharge Conc ≤ 25% WQBEL
Methylene Chloride	34,492	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2,2-Tetrachloroethane	345	µg/L	Discharge Conc ≤ 25% WQBEL
Tetrachloroethylene	17,246	µg/L	Discharge Conc ≤ 25% WQBEL
Toluene	27,983	µg/L	Discharge Conc ≤ 25% WQBEL
1,2-trans-Dichloroethylene	49,093	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,1-Trichloroethane	137,900	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2-Trichloroethane	949	µg/L	Discharge Conc ≤ 25% WQBEL
Trichloroethylene	1,035	µg/L	Discharge Conc ≤ 25% WQBEL
Vinyl Chloride	34.5	µg/L	Discharge Conc ≤ 25% WQBEL
2-Chlorophenol	14,728	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	4,909	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	30,338	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	982	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	4,909	µg/L	Discharge Conc < TQL
2-Nitrophenol	367,732	µg/L	Discharge Conc < TQL
4-Nitrophenol	105,723	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	7,355	µg/L	Discharge Conc < TQL
Pentachlorophenol	51.7	µg/L	Discharge Conc < TQL
Phenol	1,963,716	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	2,587	µg/L	Discharge Conc < TQL
Acenaphthene	3,815	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	147,279	µg/L	Discharge Conc < TQL
Benzidine	0.17	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	1.72	µg/L	Discharge Conc < TQL

Benzo(a)Pyrene	0.17	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	1.72	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	17.2	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	51.7	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	98,186	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	552	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	12,411	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	49.1	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	392,743	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	207	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.17	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	37,693	µg/L	Discharge Conc ≤ 25% WQBEL
1,3-Dichlorobenzene	3,437	µg/L	Discharge Conc ≤ 25% WQBEL
1,4-Dichlorobenzene	33,556	µg/L	Discharge Conc ≤ 25% WQBEL
3,3-Dichlorobenzidine	86.2	µg/L	Discharge Conc < TQL
Diethyl Phthalate	183,866	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	114,916	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	5,056	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	86.2	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	86.2	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	51.7	µg/L	Discharge Conc < TQL
Fluoranthene	9,193	µg/L	Discharge Conc < TQL
Fluorene	24,546	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.14	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	17.2	µg/L	Discharge Conc ≤ 25% WQBEL
Hexachlorocyclopentadiene	230	µg/L	Discharge Conc < TQL
Hexachloroethane	172	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	1.72	µg/L	Discharge Conc < TQL
Isophorone	16,692	µg/L	Discharge Conc < TQL
Naphthalene	6,435	µg/L	Discharge Conc ≤ 25% WQBEL
Nitrobenzene	4,909	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	1.21	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	8.62	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	5,691	µg/L	Discharge Conc < TQL
Phenanthrene	230	µg/L	Discharge Conc < TQL
Pyrene	9,819	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	34.4	µg/L	Discharge Conc ≤ 25% WQBEL

Attachment D:

Outfall 001 TRC Evaluation

TRC EVALUATION

530	= Q stream (cfs)	0.5	= CV Daily
0.67	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	0.25	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	0.25	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
	= %Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 40.798	1.3.2.iii	WLA cfc = 39.768
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 15.202	5.1d	LTA_cfc = 23.119

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.170	

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

Attachment E:

Outfall 001 Thermal Discharge Evaluation

Facility:	**Fayette Energy Facility**							
Permit Number:	PA0218863							**PMF**
Stream Name:	Monongahela River							1.00
Analyst/Engineer:	Adam Olesnanik							
Stream Q7-10 (cfs):	530							
	Facility Flows					**Stream Flows**		
	Intake (Stream) (MGD)	Intake (External) (MGD)	Consumptive Loss (MGD)	Discharge Flow (MGD)		Upstream Stream Flow (cfs)	Adjusted Stream Flow (cfs)	Downstream Stream Flow (cfs)
Jan 1-31	8.1	0	7.127	0.973		1696.00	1683.47	1684.97
Feb 1-29	8.1	0	7.127	0.973		1855.00	1842.47	1843.97
Mar 1-31	8.1	0	7.127	0.973		3710.00	3697.47	3698.97
Apr 1-15	8.1	0	7.127	0.973		4929.00	4916.47	4917.97
Apr 16-30	8.1	0	7.127	0.973		4929.00	4916.47	4917.97
May 1-15	8.1	0	7.127	0.973		2703.00	2690.47	2691.97
May 16-30	8.1	0	7.127	0.973		2703.00	2690.47	2691.97
Jun 1-15	8.1	0	7.127	0.973		1590.00	1577.47	1578.97
Jun 16-30	8.1	0	7.127	0.973		1590.00	1577.47	1578.97
Jul 1-31	8.1	0	7.127	0.973		901.00	888.47	889.97
Aug 1-15	8.1	0	7.127	0.973		742.00	729.47	730.97
Aug 16-31	8.1	0	7.127	0.973		742.00	729.47	730.97
Sep 1-15	8.1	0	7.127	0.973		583.00	570.47	571.97
Sep 16-30	8.1	0	7.127	0.973		583.00	570.47	571.97
Oct 1-15	8.1	0	7.127	0.973		636.00	623.47	624.97
Oct 16-31	8.1	0	7.127	0.973		636.00	623.47	624.97
Nov 1-15	8.1	0	7.127	0.973		848.00	835.47	836.97
Nov 16-30	8.1	0	7.127	0.973		848.00	835.47	836.97
Dec 1-31	8.1	0	7.127	0.973		1272.00	1259.47	1260.97

Please forward all comments to Tom Starosta at 717-787-4317, tstarosta@state.pa.us.

Version 2.0 -- 07/01/2005 Reference: Implementation Guidance for Temperature Criteria, DEP-ID: 391-2000-017

NOTE: The user can only edit fields that are blue.

NOTE: MGD x 1.547 = cfs.

Facility:	**Fayette Energy Facility**						
Permit Number:	PA0218863						
Stream:	Monongahela River						
	WWF Criteria	**CWF Criteria**	**TSF Criteria**	**316 Criteria**		**Q7-10 Multipliers**	**Q7-10 Multipliers**
	(ºF)	(ºF)	(ºF)	(ºF)		(Used in Analysis)	(Default - Info Only)
Jan 1-31	40	38	40	0		3.2	3.2
Feb 1-29	40	38	40	0		3.5	3.5
Mar 1-31	46	42	46	0		7	7
Apr 1-15	52	48	52	0		9.3	9.3
Apr 16-30	58	52	58	0		9.3	9.3
May 1-15	64	54	64	0		5.1	5.1
May 16-30	72	58	68	0		5.1	5.1
Jun 1-15	80	60	70	0		3	3
Jun 16-30	84	64	72	0		3	3
Jul 1-31	87	66	74	0		1.7	1.7
Aug 1-15	87	66	80	0		1.4	1.4
Aug 16-31	87	66	87	0		1.4	1.4
Sep 1-15	84	64	84	0		1.1	1.1
Sep 16-30	78	60	78	0		1.1	1.1
Oct 1-15	72	54	72	0		1.2	1.2
Oct 16-31	66	50	66	0		1.2	1.2
Nov 1-15	58	46	58	0		1.6	1.6
Nov 16-30	50	42	50	0		1.6	1.6
Dec 1-31	42	40	42	0		2.4	2.4

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

Facility:	**Fayette Energy Facility**						
Permit Number:	PA0218863						**PMF**
Stream:	Monongahela River						1.00
	WWF Ambient Stream Temperature (ºF) (Default)	Ambient Stream Temperature (ºF) (Site-specific data)	Target Maximum Stream Temp.[1] (ºF)	**WWF** Daily WLA[2] (Million BTUs/day)		**WWF** Daily WLA[3] (ºF)	at Discharge Flow (MGD)
Jan 1-31	35	0	40	45,410		110.0	0.973
Feb 1-29	35	0	40	49,695		110.0	0.973
Mar 1-31	40	0	46	119,625		110.0	0.973
Apr 1-15	47	0	52	132,539		110.0	0.973
Apr 16-30	53	0	58	132,539		110.0	0.973
May 1-15	58	0	64	87,058		110.0	0.973
May 16-30	62	0	72	145,097		110.0	0.973
Jun 1-15	67	0	80	110,639		110.0	0.973
Jun 16-30	71	0	84	110,639		110.0	0.973
Jul 1-31	75	0	87	57,564		110.0	0.973
Aug 1-15	74	0	87	51,219		110.0	0.973
Aug 16-31	74	0	87	51,219		110.0	0.973
Sep 1-15	71	0	84	40,078		110.0	0.973
Sep 16-30	65	0	78	40,078		110.0	0.973
Oct 1-15	60	0	72	40,423		110.0	0.973
Oct 16-31	54	0	66	40,423		110.0	0.973
Nov 1-15	48	0	58	45,113		110.0	0.973
Nov 16-30	42	0	50	36,090		110.0	0.973
Dec 1-31	37	0	42	33,983		110.0	0.973

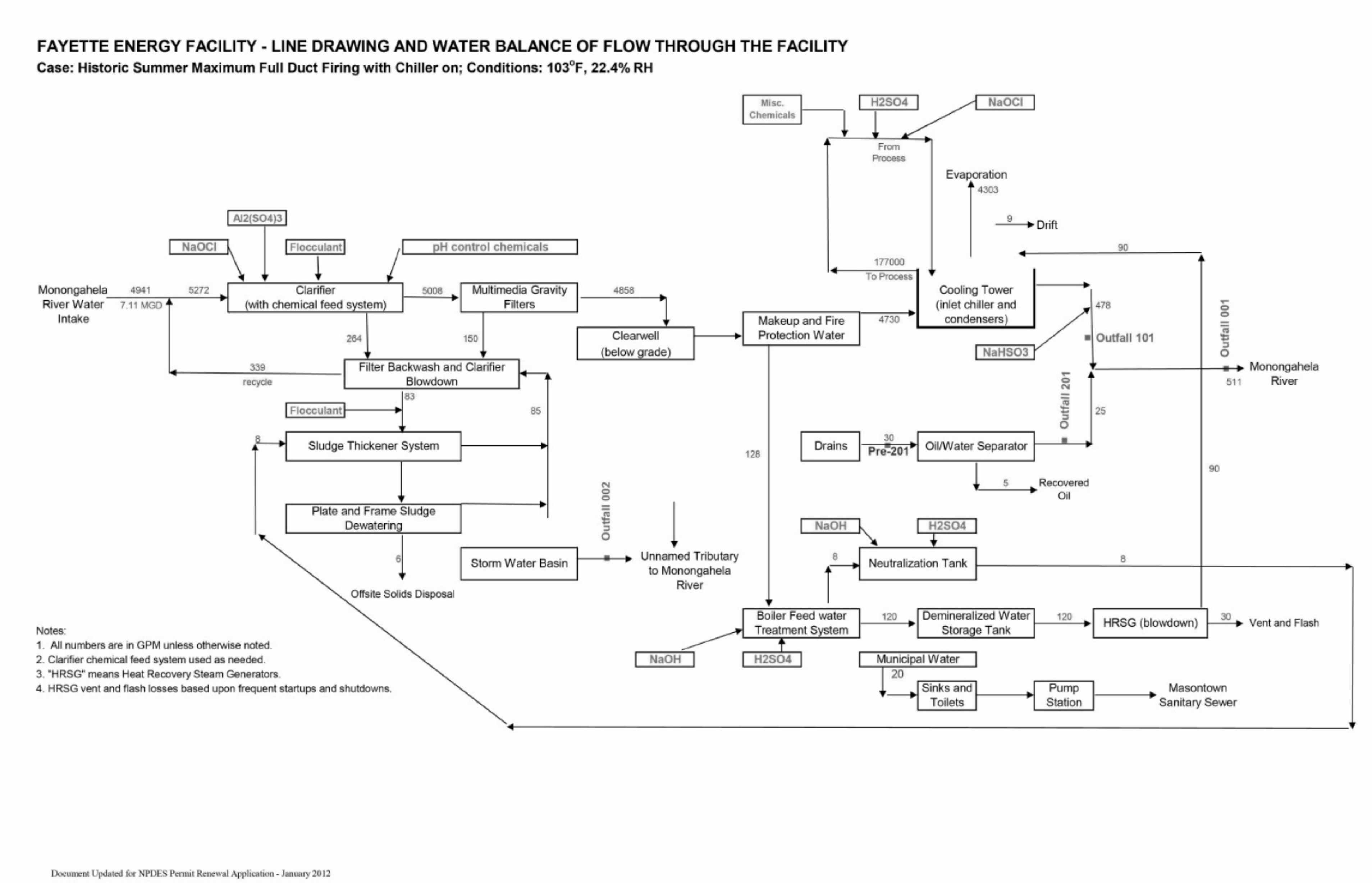
[1] This is the maximum of the WWF WQ criterion or the ambient temperature. The ambient temperature may be either the design (median) temperature for WWF, or the ambient stream temperature based on site-specific data entered by the user. A minimum of 1ºF above ambient stream temperature is allocated.

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

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

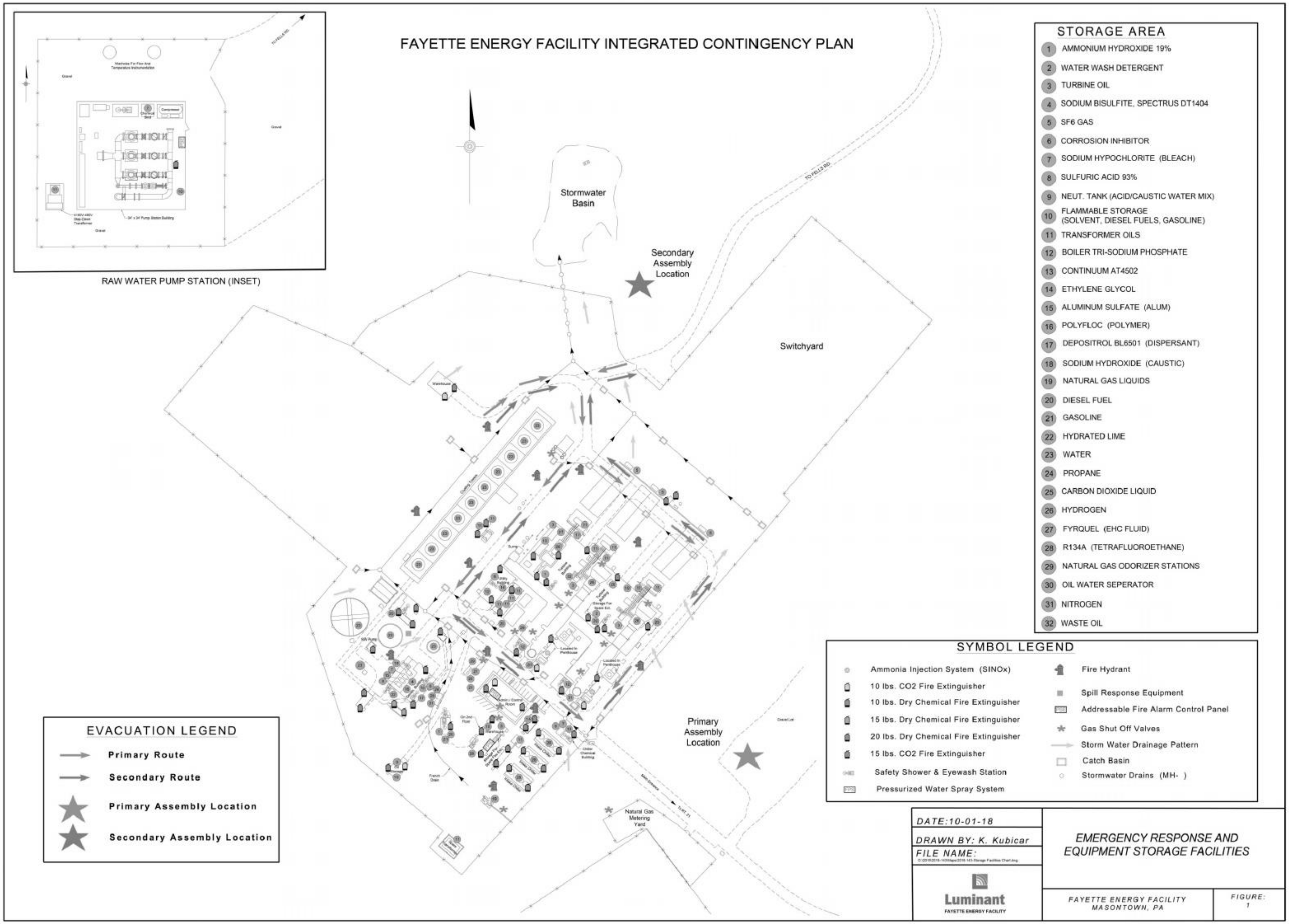
Attachment F:

Site Flow Diagram


FAYETTE ENERGY FACILITY - LINE DRAWING AND WATER BALANCE OF FLOW THROUGH THE FACILITY
Case: Historic Summer Maximum Full Duct Firing with Chiller on; Conditions: 103°F, 22.4% RH
Monongahela River Water Intake
4941
7.11 MGD
5272
Al2(SO4)3
NaOCl
Flocculant
pH control chemicals
Clarifier (with chemical feed system)
5008
Multimedia Gravity Filters
4858
Clearwell (below grade)
264
150
Filter Backwash and Clarifier Blowdown
339
recycle
83
Flocculant
85
8
Sludge Thickener System
Plate and Frame Sludge Dewatering
6
Offsite Solids Disposal
Storm Water Basin
Outfall 002
Unnamed Tributary to Monongahela River
Misc. Chemicals
H2SO4
NaOCl
From Process
177000
To Process
Evaporation
4303
9
Drift
Cooling Tower (inlet chiller and condensers)
4730
Makeup and Fire Protection Water
90
478
Outfall 101
NaHSO3
Outfall 001
Monongahela River
511
Outfall 201
25
128
Drains
30
Pre-201
Oil/Water Separator
5
Recovered Oil
90
NaOH
H2SO4
8
Neutralization Tank
8
Boiler Feed water Treatment System
120
Demineralized Water Storage Tank
120
HRSG (blowdown)
30
Vent and Flash
NaOH
H2SO4
Municipal Water
20
Sinks and Toilets
Pump Station
Masontown Sanitary Sewer
Notes:
1. All numbers are in GPM unless otherwise noted.
2. Clarifier chemical feed system used as needed.
3. "HRSG" means Heat Recovery Steam Generators.
4. HRSG vent and flash losses based upon frequent startups and shutdowns.
Document Updated for NPDES Permit Renewal Application - January 2012

Attachment G:

Site Plan


FAYETTE ENERGY FACILITY INTEGRATED CONTINGENCY PLAN
RAW WATER PUMP STATION (INSET)
Stormwater Basin
Secondary Assembly Location
Switchyard
Primary Assembly Location
STORAGE AREA
1 AMMONIUM HYDROXIDE 19%
2 WATER WASH DETERGENT
3 TURBINE OIL
4 SODIUM BISULFITE, SPECTRUS DT1404
5 SF6 GAS
6 CORROSION INHIBITOR
7 SODIUM HYPOCHLORITE (BLEACH)
8 SULFURIC ACID 93%
9 NEUT. TANK (ACID/CAUSTIC WATER MIX)
10 FLAMMABLE STORAGE (SOLVENT, DIESEL FUELS, GASOLINE)
11 TRANSFORMER OILS
12 BOILER TRI-SODIUM PHOSPHATE
13 CONTINUUM AT4502
14 ETHYLENE GLYCOL
15 ALUMINUM SULFATE (ALUM)
16 POLYFLOC (POLYMER)
17 DEPOSITROL BL6501 (DISPERSANT)
18 SODIUM HYDROXIDE (CAUSTIC)
19 NATURAL GAS LIQUIDS
20 DIESEL FUEL
21 GASOLINE
22 HYDRATED LIME
23 WATER
24 PROPANE
25 CARBON DIOXIDE LIQUID
26 HYDROGEN
27 FYRQUEL (EHC FLUID)
28 R134A (TETRAFLUOROETHANE)
29 NATURAL GAS ODORIZER STATIONS
30 OIL WATER SEPERATOR
31 NITROGEN
32 WASTE OIL
SYMBOL LEGEND
Ammonia Injection System (SINOx)
10 lbs. CO2 Fire Extinguisher
10 lbs. Dry Chemical Fire Extinguisher
15 lbs. Dry Chemical Fire Extinguisher
20 lbs. Dry Chemical Fire Extinguisher
15 lbs. CO2 Fire Extinguisher
Safety Shower & Eyewash Station
Pressurized Water Spray System
Fire Hydrant
Spill Response Equipment
Addressable Fire Alarm Control Panel
Gas Shut Off Valves
Storm Water Drainage Pattern
Catch Basin
Stormwater Drains (MH-)
EVACUATION LEGEND
Primary Route
Secondary Route
Primary Assembly Location
Secondary Assembly Location
Natural Gas Metering Yard
DATE:10-01-18
DRAWN BY: K. Kubicar
FILE NAME:
Luminant
FAYETTE ENERGY FACILITY
EMERGENCY RESPONSE AND EQUIPMENT STORAGE FACILITIES
FAYETTE ENERGY FACILITY MASONTOWN, PA
FIGURE: 1