pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0265951**
Facility Type	**Industrial**	APS ID	**848854**
Major / Minor	**Major**	Authorization ID	**1294755**

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

Applicant and Facility Information

Applicant Name	**Old Dominion Electric Cooperative**	Facility Name	**Wildcat Point Generation Facility**
Applicant Address	4201 Dominion Boulevard	Facility Address	546 S. Railroad Lane
	Glen Allen, VA 23060-6149		Peach Bottom, PA 17563
Applicant Contact	Dale Beam	Facility Contact	Brian Heinbaugh
Applicant Phone	(804) 747-0592	Facility Phone	(410) 658-1229
Client ID	313854	Site ID	785318
SIC Code	4911	Municipality	Fulton Township
SIC Description	Trans. & Utilities - Electric Services	County	Lancaster
Date Application Received	October 31, 2019	EPA Waived?	No
Date Application Accepted	November 6, 2019	If No, Reason	Major Facility

Purpose of Application: NPDES Renewal.

Summary of Review

Old Dominion Electric Cooperative has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit. The existing permit was issued on April 9, 2015 and became effective on May 1, 2015, authorizing discharge of treated industrial wastewater from the new facility. An amendment for the NPDES permit was issued on December 6, 2016. The existing permit expiration date was April 30, 2020, and the permit has been administratively extended since that time.

Per the previous fact sheet, this permit is for ODEC's Wildcat Point Generation Facility (WPGF) industrial wastewater discharge. The facility is a 1,000 megawatt combined-cycle, natural gas-fueled electric generation facility located in Cecil County, Maryland. WPGF is adjacent to the existing Rock Springs Generation Facility as a separate entity, but share an existing water tank and the existing 500-kilovolt switchyard. WPGF consists of two natural gas-fired combustion turbines and a steam turbine in a two-on-one combined cycle configuration. Approximately two-thirds of the 1,000 MW capacity is generated directly by the combustion turbines turning electrical generators. The remaining capacity is generated by the conversion of waste heat in the combustion turbine exhaust into steam that powers a steam-driven electrical generator. The steam is converted to boiler feed water in a condenser. The condenser is cooled by a closed-cycle system that transfers the heat from the condenser to the atmosphere through the evaporation of water in cooling towers. An intake supply pipeline transports cooling and process water for facility operation from the Conowingo Pond portion of the Susquehanna River to the WPGF site in Maryland. At the maximum design intake rate, 93% of the water withdrawn is sent to the cooling towers of WPGF. Approximately 3% of the intake water is used for inlet air conditioning and 3% is used by WPGF for steam-cycle makeup and other service water uses.

Wastewater is discharged to the Conowingo Pond through Outfall 001. The sources of wastewater consist of boiler blowdown, cycle makeup treatment, evaporative coolers, clarified raw water, and services water uses. No stormwater outfalls exist at this site in the Pennsylvania portion. An approval was gained from the Susquehanna River Basin Commission (SRBC) on March

Approve	Deny	Signatures	Date
X		Benjamin R. Lockwood Benjamin R. Lockwood / Environmental Engineering Specialist	January 21, 2022
X		Maria D. Bebenek for Daniel W. Martin, P.E. / Environmental Engineer Manager	February 1, 2022
X		Maria D. Bebenek Maria D. Bebenek, P.E. / Program Manager	February 1, 2022

Summary of Review

5, 2014 which allows WPGF to withdraw and return 8.7 and 0.8 mgd, respectively, for a total maximum consumptive use of 7.9 mgd. The previous NPDES permit application listed a maximum daily discharge rate of 0.857 mgd. About 90% of the water withdrawn is evaporated, and the other 10% is returned to the pond (under the target concentration ratio of 10).

The intake screens are connected to an onshore pump house by two approximately 900 ft. long, 30 in. wide diameter pipes. 800 ft. of the pipes will be under the pond. The pump house is located south of the existing Chester Water Authority pump house. Regulations under Section 316(b) of the Clean Water Act apply to the intake structure. The intake and discharge structures are located a distance of 630 ft. and 940 ft., respectively, from the CWA intake. Conowingo Pond is a 14 mile portion of the Susquehanna River, bounded upstream by the Holtwood Dam and impounded downstream by the Conowingo Dam. The pond is the source and receiver of water for Peach Bottom Atomic Power Station (PBAPS), Muddy Run Pumped Storage Facility (MRPSF), and York Energy Center (YEC). The Conowingo Pond is also the drinking water supply for Chester Water Authority (CWA) and the City of Baltimore. The treatment units that are part of this facility include a raw water clarifier and filter press, two-pass reverse osmosis treatment – cooling tower makeup, a mixed-bed demineralizer system, condensate polisher – HRSG/stream turbine cycle, dichlorination – cooling tower blowdown, and an oil/water separator – water from building floor drains. The water withdrawn is clarified, chlorinated, treated with an anti-scaling agent, and then used in the cooling towers. About 90% of the water is evaporated in this process. The blowdown from the cooling towers will be chemically dechlorinated.

Changes in this renewal: Monitoring for Hexachlorobutadiene and 1,2,4 – Trichlorobenzene was added to the permit. 316(b) monitoring requirement was removed from Part C of the permit. Monitoring for TSS, TDS, Oil and Grease, Total Chromium, Total Zinc at Outfall 001 have been reduced from 1/week to 1/month. For Outfalls 101 and 102, monitoring for TSS and Oil and Grease have been reduced from 1/week to 1/month.

Supplemental information for this facility is provided at the end of this fact sheet.

Public Participation

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

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.857
Latitude	39º 44' 35"	Longitude	76º 13' 41"
Quad Name	Conowingo Dam	Quad Code	2136
Wastewater Description:	Boiler blowdown, Noncontact Cooling Water (NCCW), IMP 101, IMP 102		
Receiving Waters	Susquehanna River (WWF, MF)	Stream Code	6685
NHD Com ID	57473383	RMI	1.7
Drainage Area	27,000 mi^2	Yield (cfs/mi^2)	0.13
Q_{7-10} Flow (cfs)	3,500	Q_{7-10} Basis	Dam Release Rate Data / StreamStats
Elevation (ft)	106.1	Slope (ft/ft)	
Watershed No.	7-K	Chapter 93 Class.	WWF, MF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	Polychlorinated Biphenyls		
Source(s) of Impairment	Source Unknown		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake	Chester Water Authority		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	1.69	Distance from Outfall (ft)	940

Changes Since Last Permit Issuance: None

Other Comments: This facility discharges to the Conowingo Pond portion of the Susquehanna River. As was done during the previous permit review, despite the abnormal flow process of this portion of the Susquehanna, a Q_{7-10} was developed for modeling purposes for this permit. Per StreamStats, a Q_{7-10} value of 3,620 cfs was determined at the point of discharge, with a drainage area of 27,000 mi^2. Additionally, according to SRBC's 2006 Conowingo Pond Management Plan, the release rates from the Conowingo and Holtwood dams reach a minimum of 3,500 cfs during the low flow months of July-November. The stream flow of 3,500 cfs will therefore be used in the modeling, as it is the more conservative of the two values. This is consistent with the past permit evaluation.

Compliance History	
Summary of DMRs:	A summary of the past 12-month DMR effluent data is presented on the next page of this fact sheet.
Summary of Inspections:	8/20/2018: A routine inspection was conducted. Samples collected at the Susquehanna Pump Station were tested and within permit limits. It was recommended to ODEC to gather and record free chlorine results from the cooling tower after blowdown to ensure the blowdown water will have free chlorine results within permit limits before reaching Outfall 001. No other issues were noted. 9/17/2019: A routine inspection was conducted. Samples collected at the Susquehanna Pump Station were tested and within permit limits. No other issues were noted. 7/15/2020: An administrative inspection was conducted. It was noted that the facility was operating normally, and all units were online and operable. There were not any issues noted in the report. 8/3/2021: A routine inspection was conducted. Samples collected at the Susquehanna Pump Station were tested and within permit limits. No other issues were noted.

Other Comments: There are currently no open violations associated with the permittee or the facility.

Compliance History

DMR Data for Outfall 001 (from November 1, 2020 to October 31, 2021)

Parameter	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20
Flow (MGD) Average Monthly	0.287294	0.304096	0.34126	0.365179	0.236599	0.033913	0.183207	0.107165	0.171742	0.045236	0.073797	0.220613
Flow (MGD) Daily Maximum	0.655808	0.770112	0.642496	0.76992	0.733732	0.46224	0.57488	0.348544	0.465664	0.26688	0.562336	0.722752
pH (S.U.) Minimum	7.0	6.9	7.0	7.0	7.0	7.2	7.0	6.8	6.4	7.0	7.1	6.99
pH (S.U.) Instantaneous Maximum	7.6	7.4	7.5	7.7	7.7	7.8	7.8	7.6	7.6	7.3	7.7	7.8
Free Available Chlorine (mg/L) Daily Maximum	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	< 0.02	0.11	0.02	< 0.02	< 0.02	0.02
Free Available Chlorine (mg/L) Instantaneous Maximum	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	< 0.02	0.20	0.02	< 0.02	< 0.02	0.02
Temperature (ºF) Average Monthly	73	78	82	82	76	70	68	64	63	62	64	72
Temperature (ºF) Daily Maximum	80	84	87	87	85	73	73.4	70	70.9	63	67.2	80.8
TSS (mg/L) Average Monthly	16	17	19	10	13	10	< 7	< 6	< 5	11	< 8	< 5
TSS (mg/L) Daily Maximum	35	50	50	13	30	10	11	9	< 5	19	10	5
Total Dissolved Solids (mg/L) Effluent Net Average Monthly	102.51	-758.24	-86.82	-457.48	-292.56	NULL5.06	202.13	NULL66.94	FF	62.5	249.6	-86.17
Total Dissolved Solids (mg/L) Effluent Net Daily Maximum	1127.92	799.06	386.1	1466.69	1249.82	1088.29	1202.53	440.08	FF	62.5	1153.33	664.99
Oil and Grease (mg/L) Average Monthly	< 4	< 4	< 4.0	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 5	< 4
Oil and Grease (mg/L) Daily Maximum	< 4.3	< 4.3	< 4.3	< 4.6	< 4.6	< 4.3	< 4.5	< 4.5	< 4.2	< 4.5	5.8	< 4.5

Oil and Grease (mg/L) Instantaneous Maximum	< 4.3	< 4.3	< 4.3	< 4.6	< 4.6	< 4.3	< 4.5	< 4.5	< 4.2	< 4.5	5.8	< 4.5
Total Nitrogen (mg/L) Effluent Net Average Monthly	5.06	-0.09	-3.97	-9.52	3.7	5.48	NULL.89	NULL6.67	FF	-6.64	0.33	-9.23
Total Nitrogen (lbs) Effluent Net Total Monthly	803.22	-9.77	-253.67	-821.05	352.11	84.54	-89.95	-743.67	FF	-92.01	13.72	-290.18
Total Nitrogen (lbs) Other Annual Effluent Net Total Annual											NULL788.39	
Total Phosphorus (mg/L) Effluent Net Average Monthly	-0.58	-0.3	NULL.06	NULL.42	-0.58	-0.28	NULL.25	-0.92	FF	-0.98	-0.51	NULL.44
Total Phosphorus (lbs) Effluent Net Total Monthly	-91.95	-31.21	-68.05	NULL22.32	-54.94	-4.39	-62.71	-41.03	FF	NULL3.63	-21.37	-45.40
Total Phosphorus (lbs) Other Annual Effluent Net Total Annual											-437.32	
Total Aluminum (mg/L) Daily Maximum	1.6	1.9	0.9	0.35	1.1	0.41	0.18	0.16	0.13	0.22	0.63	0.53
Total Aluminum (mg/L) Intake Daily Maximum	0.40	0.33	< 0.05	0.092	0.13	0.26	0.078	0.13	E	0.350	0.099	0.040
Total Chromium (mg/L) Daily Maximum	< 0.0025	0.029	< 0.013	< 0.013	< 0.0025	< 0.0025	0.0011	< 0.001	< 0.001	< 0.001	< 0.001	0.0011
Sulfate (mg/L) Daily Maximum	703	677	759	1020	779	509	613	812	726	729	669	984
Total Zinc (mg/L) Daily Maximum	< 0.01	0.012	0.058	< 0.05	< 0.01	< 0.01	0.0044	0.0054	0.0045	0.0043	0.0082	0.0041
Haloacetic Acids (mg/L) Daily Maximum	< 0.0471	< 0.1753	< 0.0274	< 0.0544	< 0.1753	< 0.0148	< 0.0576	< 0.0798	< 0.2367	< 0.1495	< 0.0607	< 0.0532
Monobromoacetic acid (mg/L) Daily Maximum	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Monochloroacetic acid (mg/L) Daily Maximum	< 0.002	0.0025	0.0022	0.0022	0.0021	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.0023	< 0.002

Dibromoacetic acid (mg/L) Daily Maximum	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Dichloroacetic acid (mg/L) Daily Maximum	0.0112	0.0158	0.0135	0.012	0.0142	0.0047	0.0082	0.008	0.0287	0.0115	0.0131	0.0073
Trichloroacetic acid (mg/L) Daily Maximum	0.0319	0.155	0.0097	0.0382	0.157	0.0061	0.0454	0.0678	0.204	0.134	0.0433	0.0419
Bromoform (mg/L) Daily Maximum	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Chloride (mg/L) Daily Maximum	460	402	440	503	503	319	387	437	363	326.0	269	410
Bromide (mg/L) Daily Maximum	< 0.2	< 0.05	0.0296	0.0381	0.0326	< 0.05	0.0397	0.0759	< 0.05	< 0.05	< 0.05	< 0.05
Dibromochloro-methane (mg/L) Daily Maximum	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Dichlorobromo-methane (mg/L) Daily Maximum	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Chloroform (mg/L) Daily Maximum	0.0085	0.0097	0.0102	0.0045	0.0028	0.00087	0.0016	0.0011	0.0025	0.0016	0.0027	0.0032
Trihalomethanes (mg/L) Daily Maximum	< 0.01	< 0.0112	< 0.0117	< 0.006	< 0.0043	< 0.00237	< 0.0031	< 0.0026	< 0.004	< 0.0031	< 0.0042	< 0.0047

DMR Data for Outfall 102 (from November 1, 2020 to October 31, 2021)

Parameter	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20
Flow (MGD) Average Monthly	0.28666	0.300593	0.36129	0.416658	0.225503	0.126769	0.187436	0.148204	0.173056	0.118221	0.122623	0.168755
Flow (MGD) Daily Maximum	0.461893	0.671833	0.729638	0.72246	0.465554	0.43887	0.538793	0.27955	0.273787	0.227941	0.255094	0.653939
TSS (mg/L) Average Monthly	< 5	< 11	< 6	< 8	< 7	< 7	< 7	< 6	< 5	< 5	< 5	< 5
TSS (mg/L) Daily Maximum	< 5	16	10	15	15	12	12	8	< 5	5	< 5	< 5
Oil and Grease (mg/L) Average Monthly	< 4	< 4	< 4	< 4	< 4	< 5	< 4	< 4	< 4	< 4	< 4	< 4
Oil and Grease (mg/L) Daily Maximum	< 4.4	< 4.4	< 4.2	< 4.2	< 4.5	7.7	< 4.2	< 4.2	< 4.2	< 4.3	5.1	< 4.4

Oil and Grease (mg/L) Instantaneous Maximum	< 4.4	< 4.4	< 4.2	< 4.2	< 4.5	7.7	< 4.2	< 4.2	< 4.2	< 4.3	5.1	< 4.4

Existing Effluent Limitations and Monitoring Requirements

The tables below summarize the effluent limits and monitoring requirements implemented in the existing NPDES permit.

Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Total Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report Avg Mo	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Free Available Chlorine	XXX	XXX	XXX	XXX	0.2	0.5	1/day	Grab
Temperature (ºF)	XXX	XXX	XXX	Report	110	XXX	Continuous	I-S
TSS	XXX	XXX	XXX	30	60	75	1/week	24-Hr Composite
Total Dissolved Solids Effluent Net	XXX	XXX	XXX	Report	Report	XXX	1/week	24-Hr Composite
Oil and Grease	XXX	XXX	XXX	15	20	30	1/week	Grab
Total Chromium	XXX	XXX	XXX	XXX	0.2	XXX	1/week	24-Hr Composite
Total Zinc	XXX	XXX	XXX	XXX	1.0	XXX	1/week	24-Hr Composite
Total Aluminum	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Total Aluminum Intake	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Sulfate	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Chloride	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Bromide	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Trihalomethanes	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite

Outfall 001 , Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Total Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Dibromochloro-methane	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Dichlorobromo-methane	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Chloroform	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Bromoform	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Haloacetic Acids	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Monobromoacetic acid	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Monochloroacetic acid	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Dibromoacetic acid	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Dichloroacetic acid	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Trichloroacetic acid	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Total Nitrogen Effluent Net	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Nitrogen Effluent Net	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus Effluent Net	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Phosphorus Effluent Net	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/month	Calculation

Compliance Sampling Location: At discharge from facility for all parameters except temperature; temperature monitoring shall be performed at Outfall 001

Outfall 101

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
TSS	XXX	XXX	XXX	30	100	XXX	1/week	Grab
Oil and Grease	XXX	XXX	XXX	15	20	30	1/week	Grab

Compliance Sampling Location: Cooling tower discharge line

Outfall 102

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
TSS	XXX	XXX	XXX	30	100	XXX	1/week	Grab
Oil and Grease	XXX	XXX	XXX	15	20	30	1/week	Grab

Compliance Sampling Location: Internal monitoring point located at the point of combined discharge for all building wastewater sumps prior to its internal discharge to the cooling tower basin

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .857
Latitude 39º 44' 35" **Longitude** 76º 13' 4"
Wastewater Description: Boiler blowdown, Noncontact Cooling Water (NCCW), IMP 101, IMP 102

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
pH	6.0 – 9.0 S.U.	Min – Max	423.15(b)(1)	95.2(1)
Total Suspended Solids	30	Average Monthly	423.15(b)(3)	
Total Suspended Solids	100	Daily Maximum	423.15(b)(3)	
Oil and Grease	15	Average Monthly	423.15(b)(3)	95.2(2)(ii)
Oil and Grease	20	Daily Maximum	423.15(b)(3)	
Oil and Grease	30	IMAX		95.2(2)(ii)
Free Available Chlorine	0.2	Average	423.15(b)(10)(i)	
Free Available Chlorine	0.5	Maximum	423.15(b)(10)(i)	
Total Chromium	0.2	Average Monthly	423.15(b)(10)(i)	
Total Chromium	0.2	Daily Maximum	423.15(b)(10)(i)	
Total Zinc	1.0	Average Monthly	423.15(b)(10)(i)	
Total Zinc	1.0	Daily Maximum	423.15(b)(10)(i)	
126 Priority Pollutants	No detectable amount		423.15(b)(10)(i)	

Effluent Limitations Guidelines

This facility is regulated by an Effluent Limitation Guideline (ELG) from the Code of Federal Regulations 40 CFR Part 423 Steam Electric Power Generating Point Source Category. Limits have been applied in the permit based on Part 423.15 – New Source Performance Standards (NSPS).

pH

PA Code Part 95.2(1) and 40 CFR Part 423.15(b) requires effluent pH limits of 6.0 to 9.0 standard units (S.U.) at all times in effluent. The permit will continue to require pH limit of 6.0 to 9.0 S.U.

Polychlorinated Biphenyls (PCBs)

The ELG Part 423.15(b)(2) states “There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.” This statement will be included in the Part C conditions of the NPDES permit, which is consistent with the existing permit.

Total Suspended Solids

The ELG Part 423.15(b)(3) requires limits for TSS in low volume waste sources. The requirement is an average monthly limit of 30 mg/l, and a daily maximum limit of 100 mg/l. Multipliers of 2.0 and 2.5 will be used for the daily maximum and instantaneous maximum (IMAX) in accordance with DEP’s Guidance 362-0400-001. This results in a daily maximum limit of 60 mg/l, and an IMAX limit of 75 mg/l. These limits will be included, which is consistent with the existing permit. ODEC has requested a reduction in monitoring frequency from 1/week to 1/month for this parameter, as they have experienced no reoccurring issues related to compliance with any pollutant limits. Therefore, the frequency has been reduced to 1/month.

Oil and Grease

The ELG Part 423.15(b)(3) requires limits for oil and grease in low volume waste sources. The requirement is an average monthly limit of 15 mg/l, and a daily maximum limit of 20 mg/l. Additionally, 25 Pa Code § 95.2(2)(ii) requires an IMAX limit of 30 mg/l for oil and grease. These limits will be included, which is consistent with the existing permit limits. ODEC has requested a reduction in monitoring frequency from 1/week to 1/month for this parameter, as they have experienced no reoccurring issues related to compliance with any pollutant limits. Therefore, the frequency has been reduced to 1/month.

Free Available Chlorine

The ELG Part 423.15(b)(10)(i) requires limits for free available chlorine in cooling tower blowdown. The requirement is a concentration of 0.2 mg/l as an average concentration, and a concentration of 0.5 mg/l as a maximum concentration. DEP's Guidance Document No.362-2183-004 "Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry" states that the average FAC limit from the ELG should be included in the permit as a maximum daily, and the maximum limit should be included as an IMAX. This is consistent with the existing limits, which will remain in the permit. Additionally, the Guidance 362-2183-004 and ELG Part 423 requires the following language to be included in Part C of the NPDES permit:

> "The term maximum daily concentration as it relates to chlorine discharge means the average analyses made over a single period of chlorine release which does not exceed two hours."
>
> "The term 'free available chlorine' shall mean the value obtained using the amperometric titration method for free available chlorine described in "Standard methods for the Examination of Water and Wastewater," page 112 (13th edition)."
>
> "Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Regional Administrator or state, if the state has NPDES permit issuing authority, that the units in a particular location cannot operate at or below this level of chlorination.

This additional language will be included in Part C of the NPDES permit, which is consistent with the existing permit.

Total Chromium/Total Zinc

The ELG Part 423.15(b)(10)(i) requires limits for Total Chromium and Total Zinc. The requirement for Total Chromium is an average monthly limit of 0.2 mg/l and a maximum daily limit of 0.2 mg/l. The requirement for Total Zinc is an average monthly limit of 1.0 mg/l and a maximum daily limit of 1.0 mg/l. A maximum daily limit of 0.2 mg/l for Total Chromium and 1.0 mg/l for Total Zinc will remain, which is consistent with the existing permit. ODEC has requested a reduction in monitoring frequency from 1/week to 1/month for these parameters, as they have experienced no reoccurring issues related to compliance with any pollutant limits. Therefore, the frequency has been reduced to 1/month.

Priority Pollutants

The ELG Part 423.15(b)(10)(i) requires that any of the 126 Priority Pollutants contained in chemicals added for cooling tower maintenance should not be detectable, except for Total Zinc and total Chromium. In accordance with DEP's Guidance No. 362-2183-004, it is not always necessary to require monitoring for priority pollutants, and can be handled with a narrative condition instead. Since the chemical additives used at the facility do not contain any of the Priority Pollutants, a narrative condition was included in Part C of the permit. This is consistent with the existing permit. The Part C condition states

"Cooling tower blowdown discharges shall contain no detectable amounts of the 126 Priority Pollutants listed in 40 CFR Part 423, Appendix A, with the exception of Total Chromium and Total Zinc."

Total Dissolved Solids (TDS)

Total Dissolved Solids and its major constituents including Bromide, Chloride, and Sulfate have become statewide pollutants of concern and threats to DEP's mission to prevent violations of water quality standards. The requirement to monitor these pollutants must be considered under the criteria specified in 25 Pa. Code § 95.10 and the following January 23, 2014 DEP Central Office Directive:
For point source discharges and upon issuance or reissuance of an individual NPDES permit:

- Where the concentration of TDS in the discharge exceeds 1,000 mg/L, or the net TDS load from a discharge exceeds 20,000 lbs/day, and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for TDS, sulfate, chloride, and bromide. Discharges of 0.1 MGD or less should monitor and report for TDS, sulfate, chloride, and bromide if the concentration of TDS in the discharge exceeds 5,000 mg/L.

- Where the concentration of bromide in a discharge exceeds 1 mg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for bromide. Discharges of 0.1 MGD or less should monitor and report for bromide if the concentration of bromide in the discharge exceeds 10 mg/L.

- Where the concentration of 1,4-dioxane (CAS 123-91-1) in a discharge exceeds 10 µg/l and the discharge flow exceeds 0.1 mgd, Part A of the permit should include monitor and report for 1,4-dioxane. Discharges of 0.1 mgd or less should monitor and report for 1,4-dioxane if the concentration of 1,4-dioxane in the discharge exceeds 100 µg/l.

ODEC reported a maximum effluent concentration of 2,840 mg/l for TDS. Based upon the data provided in the application, monitoring of TDS, Bromide, Chloride, and Sulfate will be required. These monitoring requirements were included in the existing permit, and will remain in the renewal. ODEC has requested a reduction in monitoring frequency from 1/week to 1/month for this parameter, as they have experienced no reoccurring issues related to compliance with any pollutant limits. Therefore, the frequency has been reduced to 1/month.

Toxics

Effluent sample results for toxic pollutants reported on the renewal application were entered into DEP's Toxics Management Spreadsheet Version 1.0 to develop appropriate permit requirements for toxic pollutants of concern. The Toxics Management Spreadsheet combines the functions of PENTOXSD and DEP's Toxics Screening Analysis. Based on effluent sample results reported on the application, the Toxics Management Spreadsheet recommended a limit for Hexachlorobutadiene, and monitoring for 1,2,4-Trichlorobenzene. A discharge hardness of 1080 mg/l and a pH of 8.2 were used in the Spreadsheet, taken from the application.

The TMS output provided specific partial mix factors for each criteria. These partial mix factors were multiplied by 2, to account for the fact that mixing occurs on two sides of the plume. The width and depth of the river at the point of discharge were stated in the previous permit application to be approximately 6,500 ft. and 14 ft., respectively. Additionally, elevations were provided in the previous application for the outfall location and at the PA/MD border. These values were all used in the TMS, and are consistent with how modeling was performed for the existing permit.

Stream pH and hardness inputs for the spreadsheet were based on data acquired from the National Water Quality Monitoring Council website. Data was analyzed from the Water Quality Network (WQN) Station ID 201 on the Susquehanna River from 2010 to 2020. A 90th percentile analysis was performed on the data and resulted in a Stream pH of 8.4 and a Stream Hardness of 270 mg/l.

This data was analyzed based on the guidelines found in DEP's Water Quality Toxics Management Strategy (Document No. 361-0100-003) and DEP's SOP No. BPNPSM-PMT-033. Spreadsheet results are attached to this fact sheet. The Toxics Management Spreadsheet uses the following logic:

a. Establish average monthly and IMAX limits in the draft permit where the maximum reported concentration exceeds 50% of the WQBEL.
b. For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.
c. For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10%-50% of the WQBEL.

Since the reported maximum concentration for Hexachlorobutadiene was greater than 50% of its WQBEL, the TMS produced an effluent limit. However, the maximum concentration reported in the application for Hexachlorobutadiene was based on a non-detect result of <3.1 µg/l. This was also true of 1,2,4-Trichlorobenzene; the maximum reported concentration was based on a non-detect results of <3.1 µg/l. Therefore, these parameters will be included in the permit as monitoring requirements with a sample frequency of 1/6 months. These parameters should be sampled at the Target Quantitation Limit of 0.5 µg/l to determine if they are parameters of concern. These parameters will be re-evaluated again during the next permit cycle to determine if they will remain, or can be removed from the permit. Total Aluminum monitoring was required in the existing permit, and will remain in the renewal. Due to concerns from Chester Water Authority during the previous application review regarding the potential concentrations of pollutants at the facility, monitoring requirements were added to the permit for trihalomethanes and haloacetic acids. These monitoring requirements will remain in the renewal permit.

Chemical Additives

The term chemical additive means a chemical product introduced into a waste stream that is used for cleaning, disinfecting, or maintenance and which may be detected in effluent discharged to waters of the Commonwealth. Generally, the term "chemical additive" excludes chemicals used for neutralization of waste streams, the production of goods, and treatment of wastewater. The following chemical additives will be used at the facility, and will replace the chemical additives currently used. These chemicals were not identified on the previous permit application.

Chemical Additive	Purpose	Maximum Usage (lb/day)	Usage Frequency
4864	Deposit Control Agent	70.8	Daily
6105	Oxygen Scavenger	11371.7	Intermittently
RA9051	Antiscalent	7.266	Daily
FoamBloc 10	Antifoam	77.74	Daily
5015	Neutralizing Amine	5.6	Intermittently
4072	Corrosion Inhibitor	2.8	1/Quarter

These chemicals are included on DEP's Approved List of Chemical Additives. No limits or monitoring requirements will be necessary for these chemicals. The permittee will be required to provide the usage rates of all chemical additives used at the site on a monthly basis, and will report these results on DEP's Chemical Additives Usage Form. The permit will include Part C conditions for chemical additive usage and reporting requirements.

Temperature Limitations

A reasonable potential (RP) analysis was performed for temperature which is the main pollutant of concern for the NCCW. Effluent limitations for temperature were calculated using DEP's Temperature Spreadsheet Model which uses DEP's Guidance No. 391-2000-017 for Temperature Criteria. In the Temperature Spreadsheet, per the previous fact sheet, a Q_{7-10} multiplier of 1.0 was used for each more in the spreadsheet. This was done to be conservative due to the nature of the low flows in the Conowingo Pond. The stream Q_{7-10} of 77 cfs used in the previous fact sheet was used in the Temperature Spreadsheet to account for the partial mixing of the discharge plume. The effluent limitations were analyzed using the Case 2 Thermal Worksheet for WWF streams. The worksheet recommended permit limits of 110°F for all months. The existing permit limit for Temperature of 110°F is consistent with this analysis, and will remain in the permit. A printout of the worksheet is attached.

Chesapeake Bay Total Maximum Daily Load (TMDL)

DEP developed a strategy to comply with the EPA and Chesapeake Bay Foundation requirements by reducing point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP). This strategy can be located in the Pennsylvania Chesapeake Watershed Implementation Plan (WIP), dated January 11, 2011. Subsequently, an update to the WIP was published as the Phase 2 WIP. As part of the Phase 2 WIP, a Phase 2 Watershed Implementation Plan Wastewater Supplement (Phase 2 Supplement) was developed, providing an update on TMDL implementation for point sources and DEP's current implementation strategy for wastewater. The Phase 2 Supplement was most recently revised on September 6, 2017. A new update to the WIP was published as the Phase 3 WIP in August 2019. As part of the Phase 3 WIP, a *Phase 3 Watershed Implementation Plan Wastewater Supplement* (Phase 3 Supplement) was developed, and was most recently revised on December 17, 2019, and is the basis for the development of any Chesapeake Bay related permit parameters. Industrial discharges have been prioritized by Central Office based on their delivered TN and TP loadings to the Bay. Significant industrial wastewater dischargers are facilities that discharge more than 75 lbs/day of TN or 25 lbs/day of TP on an average annual basis and the rest are classified as non-significant dischargers. This facility is classified as a non-significant discharger. From the Phase 3 Supplement, for non-significant IW facilities, "monitoring and reporting of TN and TP will be required throughout the permit term in renewed or amended permits anytime the facility has the potential to introduce a net TN or TP increase to the load contained within the intake water used in processing. In general, facilities that discharge groundwater and cooling water with no addition of chemicals containing N or P do not require monitoring."

As the majority of this facility's discharge is boiler blowdown and NCCW, there should not be any significant net TN or TP contributions to the Susquehanna. Therefore, the permit will not include Cap Loads for TN or TP, which is consistent with the existing permit. The permit will continue to require a 1/month monitoring requirement for TN or TP to monitor the net nutrients being discharged.

316(b) Cooling Water Intake Structures

This facility withdraws 8.7 mgd of intake water from the Susquehanna River. Due to the use of a cooling water intake structure (CWISs), this facility must meet the requirements of Section 316(b) of the Clean Water Act (CWA). Section 316(b) requires that the location, design, construction, and capacity of CWISs reflect the best technology available (BTA) for minimizing adverse environmental impacts. This facility falls under Phase I Section 316(b) for new facilities, under 40 CFR Part 125, Subpart I. In the previous application, a 316(b) demonstration report was submitted to demonstrate compliance with the Track I application requirements in 40 CFR Part 125.86. It was concluded in the report that the impingement mortality rate of the intake is expected to be essentially zero with an overall negligible impact on the fish community.

Per the application, the facility has closed-cycle cooling, and the intake structure consists of six passive, submerged wedge-wire screens with a 2 mm. slot width. The interior of each screen is equipped with a flow modifier to produce an even through-screen velocity across the entire screen surface. The screens are made of a copper-nickel alloy to resist biofouling, particularly colonization of zebra and quagga mussels. Additionally, the actual through-screen velocity is substantially less than 0.5 ft/s. During the previous application review, the DEP permit engineer and biologist determine this facility will meet both impingement mortality and entrainment standards with the proposed design, and is considered to demonstrate BTA. On February 3, 2020, ODEC requested the removal of the monitoring requirement in the renewal permit, as two years of monitoring had been completed. In consultation with DEP's biologist, this monitoring requirement has been removed from Part C of the permit. DEP may request additional sampling in future permits. The remaining Part C language included in the existing permit for CWISs will remain

Additional Considerations

Stormwater

No stormwater outfalls exist for this facility in Pennsylvania; therefore, no additional monitoring or reporting is needed.

Flow Monitoring

Flow monitoring is recommended by DEP's technical guidance and is also required by 25 PA Code §§ 92a.61. It will be included, which is consistent with the existing permit.

Anti-Degradation

The effluent limits for this discharge have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

303(d) Listed Streams

The discharge is located on a stream segment that is designated on the 303(d) list as impaired. There is a fish consumption impairment for polychlorinated biphenyls and pH due to an unknown source. The permit has a condition that states there shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid, and contains a limit for pH.

Class A Wild Trout Fisheries

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

Development of Effluent Limitations

Outfall No.	101, 102	**Design Flow (MGD)**	0.025 (Outfall 101) 0.296 (Outfall 102)
Latitude	39º 43' 16" (Outfall 101) 39º 43' 13" (Outfall 102)	**Longitude**	76º 9' 34" (Outfall 101) 76º 9' 41" (Outfall 102)
Wastewater Description:	Outfall 101: Internal low-volume waste discharge from oil/water separator effluent monitoring sumps, including stormwater from secondary containments for the generator step-up (GSU) units (transformers), auxiliary transformers, emergency diesel generator, and equipment fueling tank. Outfall 102: Internal low-volume discharge from building wastewaters and sumps and non-process wastewater (drum blowdown)		

Limitations

A major permit amendment was issued by DEP on December 6, 2016 to add two internal monitoring points (IMPs) to the permit for Outfall 101 and 102. This was done to account for low volume waste sources required by 40 CFR Part 423. Outfall 101 is located at the point of combined discharge from the oil/water separator effluent monitoring sumps prior to its internal discharge to the cooling tower discharge line. Outfall 102 is located at the point of combined discharge for all building wastewater sumps prior to its internal discharge to the cooling tower basin.

From the permit application regarding Outfall 101, the wastewater sources described above normally passes through an oil/water separator before being pumped to two sumps located within the Raw Water Building. From these sumps, the water is pumped to the Raw Water Building sump and then to the head of the clarifier to be recirculated back into the system. During normal operations there are no discharges through IMP 101; however, during an outage when the clarifier is out of service, wastewater may be discharged through IMP 101 to Outfall 001. These discharges are very small, typically 20,000 gallons over a period of less than one hour, and may occur two time in a 24-hour period.

Regarding Outfall 102, during normal operations effluent from the locations described above is collected in the various building sumps and is pumped to the Cooling Tower basin. As it is pumped to the Cooling Tower basin, it passes through IMP 102.

As described above, the ELG Part 423.15(b)(3) requires limits for TSS and Oil and Grease in low volume waste sources. The requirement for TSS is an average monthly limit of 30 mg/l, and a daily maximum limit of 100 mg/l. The requirement for Oil and Grease is an average monthly limit of 15 mg/l, and a daily maximum limit of 20 mg/l. Additionally, 25 Pa Code Part 95.2(2)(ii) requires an IMAX limit of 30 mg/l for oil and grease. These limits will be included, which is consistent with the existing permit limits. These are the only limits required for these Outfalls, as they only receive the low volume waste sources, and TSS and Oil and Grease are the only relevant parameters for these discharges based on the ELG. ODEC has requested a reduction in monitoring frequency from 1/week to 1/month for these parameters, as they have experienced no reoccurring issues related to compliance with any pollutant limits. Therefore, the frequency has been reduced to 1/month.

Proposed Effluent Limitations and Monitoring Requirements

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

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Total Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report Avg Mo	Report	XXX	XXX	XXX	XXX	Continuous	Measured
Temperature (ºF)	XXX	XXX	XXX	Report	110	XXX	Continuous	I-S
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Free Available Chlorine	XXX	XXX	XXX	XXX	0.2	0.5	1/day	Grab
TSS	XXX	XXX	XXX	30	60	75	1/month	24-Hr Composite
Total Dissolved Solids Effluent Net	XXX	XXX	XXX	Report	Report	XXX	1/month	24-Hr Composite
Oil and Grease	XXX	XXX	XXX	15	20	30	1/month	Grab
Total Chromium	XXX	XXX	XXX	XXX	0.2	XXX	1/month	24-Hr Composite
Total Zinc	XXX	XXX	XXX	XXX	1.0	XXX	1/month	24-Hr Composite
Total Aluminum	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Sulfate	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Chloride	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Bromide	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Trihalomethanes	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Dibromochloro-methane	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite

Outfall 001 , Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Total Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Dichlorobromo-methane	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Chloroform	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Bromoform	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Haloacetic Acids	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Monobromoacetic acid	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Monochloroacetic acid	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Dibromoacetic acid	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Dichloroacetic acid	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Trichloroacetic acid	XXX	XXX	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Hexachlorobutadiene	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	24-Hr Composite
1,2,4-Trichlorobenzene	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	24-Hr Composite
Total Nitrogen Effluent Net	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Nitrogen Effluent Net	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus Effluent Net	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Phosphorus Effluent Net	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/month	Calculation

Compliance Sampling Location: At discharge from facility for all parameters except temperature; temperature monitoring shall be performed at Outfall 001

Other Comments: None

Proposed Effluent Limitations and Monitoring Requirements

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

Outfall 101, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
TSS	XXX	XXX	XXX	30	100	XXX	1/month	Grab
Oil and Grease	XXX	XXX	XXX	15	20	30	1/month	Grab

Compliance Sampling Location: Cooling tower discharge line

Other Comments: None

Proposed Effluent Limitations and Monitoring Requirements

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

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

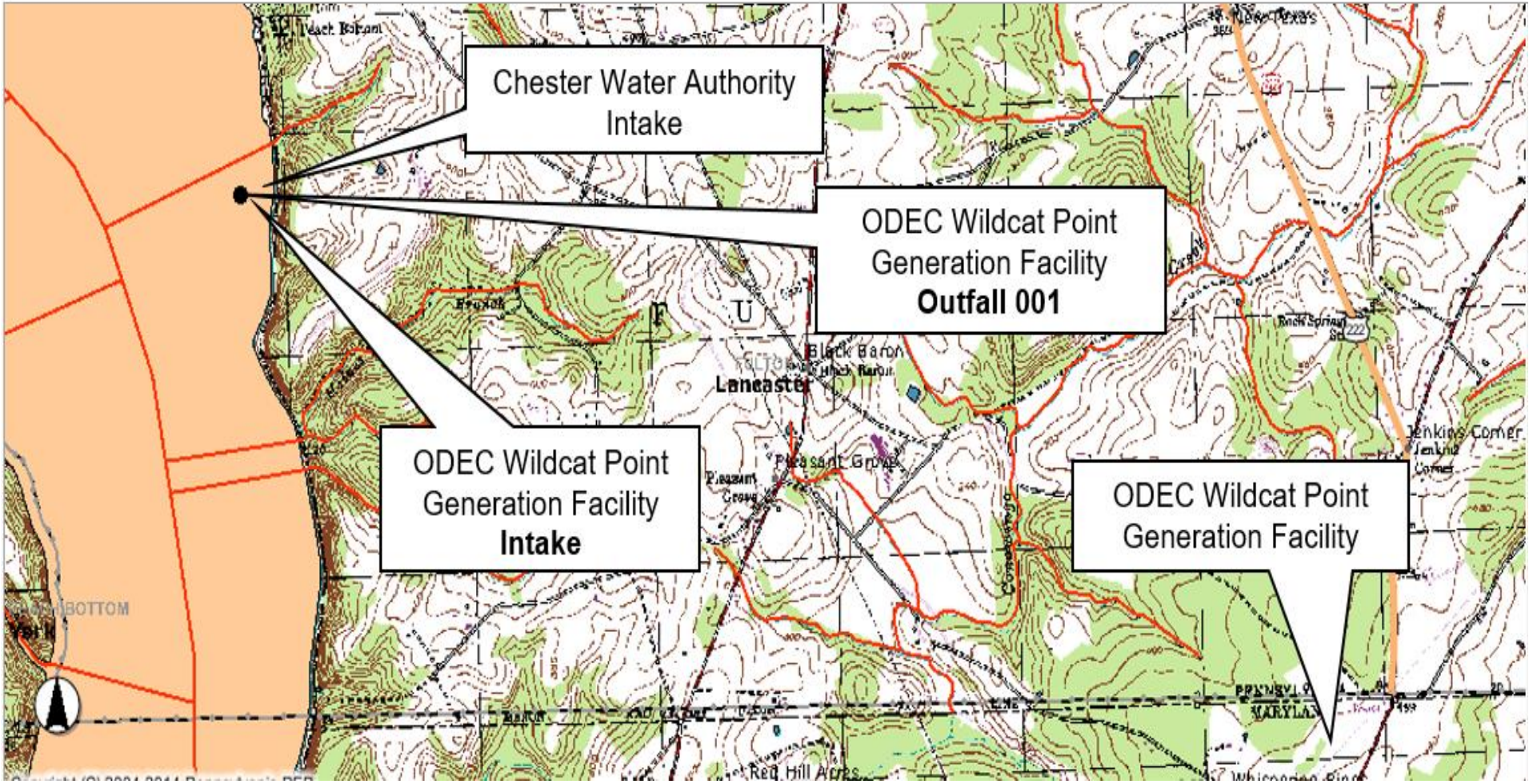
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
TSS	XXX	XXX	XXX	30	100	XXX	1/month	Grab
Oil and Grease	XXX	XXX	XXX	15	20	30	1/month	Grab

Compliance Sampling Location: Internal monitoring point located at the point of combined discharge for all building wastewater sumps prior to its internal discharge to the cooling tower basin

Other Comments: None

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☒	Temperature Model Spreadsheet (see Attachment)
☒	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☒	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☒	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☒	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☒	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☒	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☒	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP: No. BPNPSM-PMT-001, No. BCW-PMT-032
☐	Other:

DEP Map


Chester Water Authority
Intake
ODEC Wildcat Point
Generation Facility
Outfall 001
ODEC Wildcat Point
Generation Facility
Intake
ODEC Wildcat Point
Generation Facility
Lancaster
Black Baron
Pleasant Grove
Jenkins Corner
Red Hill Acres

Facility: Wildcat Point Generation Facility
Permit Number: PA0265951
Stream Name: Susquehanna River
Analyst/Engineer: Benjamin Lockwood
Stream Q7-10 (cfs): 77

	Facility Flows				Stream Flows			
	Intake (Stream) (MGD)	Intake (External) (MGD)	Consumptive Loss (MGD)	Discharge Flow (MGD)	PMF	Upstream Stream Flow (cfs)	Adjusted Stream Flow (cfs)	Downstream Stream Flow (cfs)
Jan 1-31	8.7	0	7.843	0.857	1.00	77.00	63.54	64.87
Feb 1-29	8.7	0	7.843	0.857	1.00	77.00	63.54	64.87
Mar 1-31	8.7	0	7.843	0.857	1.00	77.00	63.54	64.87
Apr 1-15	8.7	0	7.843	0.857	1.00	77.00	63.54	64.87
Apr 16-30	8.7	0	7.843	0.857	1.00	77.00	63.54	64.87
May 1-15	8.7	0	7.843	0.857	1.00	77.00	63.54	64.87
May 16-31	8.7	0	7.843	0.857	1.00	77.00	63.54	64.87
Jun 1-15	8.7	0	7.843	0.857	1.00	77.00	63.54	64.87
Jun 16-30	8.7	0	7.843	0.857	1.00	77.00	63.54	64.87
Jul 1-31	8.7	0	7.843	0.857	1.00	77.00	63.54	64.87
Aug 1-15	8.7	0	7.843	0.857	1.00	77.00	63.54	64.87
Aug 16-31	8.7	0	7.843	0.857	1.00	77.00	63.54	64.87
Sep 1-15	8.7	0	7.843	0.857	1.00	77.00	63.54	64.87
Sep 16-30	8.7	0	7.843	0.857	1.00	77.00	63.54	64.87
Oct 1-15	8.7	0	7.843	0.857	1.00	77.00	63.54	64.87
Oct 16-31	8.7	0	7.843	0.857	1.00	77.00	63.54	64.87
Nov 1-15	8.7	0	7.843	0.857	1.00	77.00	63.54	64.87
Nov 16-30	8.7	0	7.843	0.857	1.00	77.00	63.54	64.87
Dec 1-31	8.7	0	7.843	0.857	1.00	77.00	63.54	64.87

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: **Wildcat Point Generation Facility**
Permit Number: PA0265951
Stream: Susquehanna River

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

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

Facility: **Wildcat Point Generation Facility**
Permit Number: PA0265951
Stream: Susquehanna River

	WWF Ambient Stream Temperature (°F) (Default)	Ambient Stream Temperature (°F) (Site-specific data)	Target Maximum Stream Temp.[1] (°F)	WWF Daily WLA[2] (Million BTUs/day)	WWF Daily WLA[3] (°F)	at Discharge Flow (MGD)	PMF
Jan 1-31	35	0	40	1,748	110.0	0.857	1.00
Feb 1-29	35	0	40	1,748	110.0	0.857	1.00
Mar 1-31	40	0	46	2,098	110.0	0.857	1.00
Apr 1-15	47	0	52	1,748	110.0	0.857	1.00
Apr 16-30	53	0	58	1,748	110.0	0.857	1.00
May 1-15	58	0	64	2,098	110.0	0.857	1.00
May 16-31	62	0	72	3,496	110.0	0.857	1.00
Jun 1-15	67	0	80	4,545	110.0	0.857	1.00
Jun 16-30	71	0	84	4,545	110.0	0.857	1.00
Jul 1-31	75	0	87	4,196	110.0	0.857	1.00
Aug 1-15	74	0	87	4,545	110.0	0.857	1.00
Aug 16-31	74	0	87	4,545	110.0	0.857	1.00
Sep 1-15	71	0	84	4,545	110.0	0.857	1.00
Sep 16-30	65	0	78	4,545	110.0	0.857	1.00
Oct 1-15	60	0	72	4,196	110.0	0.857	1.00
Oct 16-31	54	0	66	4,196	110.0	0.857	1.00
Nov 1-15	48	0	58	3,496	110.0	0.857	1.00
Nov 16-30	42	0	50	2,797	110.0	0.857	1.00
Dec 1-31	37	0	42	1,748	110.0	0.857	1.00

[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 1°F 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 °F 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 110°F are displayed as 110°F.

Report

Enter a report title and/or comments here that will display on the printed report. Use the print button below.

Enter report title:

Old Dominion Electric Cooperative PA0265951 Outfall 001

Enter comments:

Some comments here

Old Dominion Electric Cooperative PA0265951 Outfall 001

Region ID:	PA
Workspace ID:	PA20220118163849566000
Clicked Point (Latitude, Longitude):	39.73815, -76.23765
Time:	2022-01-18 11:39:21 -0500

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	27000	square miles
BSLOPD	Mean basin slope measured in degrees	8.0219	degrees
ROCKDEP	Depth to rock	4.5	feet
URBAN	Percentage of basin with urban development	3.0283	percent
PRECIP	Mean Annual Precipitation	40	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	1.75	miles per square mile
CARBON	Percentage of area of carbonate rock	7.91	percent
ELEV	Mean Basin Elevation	1300	feet
GLACIATED	Percentage of basin area that was historically covered by glaciers	43.768	percent
FOREST	Percentage of area covered by forest	66.3501	percent

Low-Flow Statistics Parameters [7.3 Percent (1970 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	27000	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	8.0219	degrees	1.7	6.4
ROCKDEP	Depth to Rock	4.5	feet	4.13	5.21
URBAN	Percent Urban	3.0283	percent	0	89

Low-Flow Statistics Parameters [41.0 Percent (11100 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	27000	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	40	inches	35	50.4
STRDEN	Stream Density	1.75	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	4.5	feet	3.32	5.65
CARBON	Percent Carbonate	7.91	percent	0	99

Low-Flow Statistics Parameters [6.0 Percent (1610 square miles) Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	27000	square miles	2.33	1720
ELEV	Mean Basin Elevation	1300	feet	898	2700
PRECIP	Mean Annual Precipitation	40	inches	38.7	47.9

Low-Flow Statistics Parameters [45.5 Percent (12300 square miles) Low Flow Region 5]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	27000	square miles	4.84	982
PRECIP	Mean Annual Precipitation	40	inches	33.1	47.1

GLACIATED	Percent of Glaciation	43.768	percent	0	100
FOREST	Percent Forest	66.3501	percent	41	100

Low-Flow Statistics Disclaimers [7.3 Percent (1970 square miles) Low Flow Region 1]

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

Low-Flow Statistics Flow Report [7.3 Percent (1970 square miles) Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	9510	ft^3/s
30 Day 2 Year Low Flow	10600	ft^3/s
7 Day 10 Year Low Flow	7410	ft^3/s
30 Day 10 Year Low Flow	7820	ft^3/s
90 Day 10 Year Low Flow	8400	ft^3/s

Low-Flow Statistics Disclaimers [41.0 Percent (11100 square miles) Low Flow Region 2]

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

Low-Flow Statistics Flow Report [41.0 Percent (11100 square miles) Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	6360	ft^3/s
30 Day 2 Year Low Flow	7480	ft^3/s
7 Day 10 Year Low Flow	4780	ft^3/s
30 Day 10 Year Low Flow	5620	ft^3/s
90 Day 10 Year Low Flow	6930	ft^3/s

Low-Flow Statistics Disclaimers [6.0 Percent (1610 square miles) Low Flow Region 3]

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

Low-Flow Statistics Flow Report [6.0 Percent (1610 square miles) Low Flow Region 3]

Statistic	Value	Unit
7 Day 2 Year Low Flow	2460	ft^3/s
30 Day 2 Year Low Flow	3050	ft^3/s
7 Day 10 Year Low Flow	1490	ft^3/s
30 Day 10 Year Low Flow	1850	ft^3/s
90 Day 10 Year Low Flow	2540	ft^3/s

Low-Flow Statistics Disclaimers [45.5 Percent (12300 square miles) Low Flow Region 5]

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

Low-Flow Statistics Flow Report [45.5 Percent (12300 square miles) Low Flow Region 5]

30 Day 10 Year Low Flow	1850	ft^3/s
90 Day 10 Year Low Flow	2540	ft^3/s

Low-Flow Statistics Disclaimers [45.5 Percent (12300 square miles) Low Flow Region 5]

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

Low-Flow Statistics Flow Report [45.5 Percent (12300 square miles) Low Flow Region 5]

Statistic	Value	Unit
7 Day 2 Year Low Flow	3540	ft^3/s
30 Day 2 Year Low Flow	4480	ft^3/s
7 Day 10 Year Low Flow	2250	ft^3/s
30 Day 10 Year Low Flow	2980	ft^3/s
90 Day 10 Year Low Flow	3850	ft^3/s

Low-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	5060	ft^3/s
30 Day 2 Year Low Flow	6060	ft^3/s
7 Day 10 Year Low Flow	3620	ft^3/s
30 Day 10 Year Low Flow	4340	ft^3/s
90 Day 10 Year Low Flow	5360	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p.

Application Version: 4.6.2
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Wildcat Point Generation Facility** NPDES Permit No.: **PA0265951** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Boiler blowdown, NCCW, IMP 101, IMP 102**

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
0.857	1080	8.2	0.006	0.038	0.038	0.052		

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		2840									
	Chloride (PWS)	mg/L		458									
	Bromide	mg/L		10.9									
	Sulfate (PWS)	mg/L		949									
	Fluoride (PWS)	mg/L		0.36									
Group 2	Total Aluminum	µg/L		740									
	Total Antimony	µg/L		1.7									
	Total Arsenic	µg/L		4.3									
	Total Barium	µg/L		250									
	Total Beryllium	µg/L	<	0.5									
	Total Boron	µg/L		230									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L		3									
	Hexavalent Chromium	µg/L		0.59									
	Total Cobalt	µg/L	<	2.5									
	Total Copper	µg/L		12									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L		6.8									
	Dissolved Iron	µg/L	<	60									
	Total Iron	µg/L		130									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		83									
	Total Mercury	µg/L		0.0018									
	Total Nickel	µg/L		7.5									
	Total Phenols (Phenolics) (PWS)	µg/L	<	5									
	Total Selenium	µg/L		2.7									
	Total Silver	µg/L	<	0.5									
	Total Thallium	µg/L	<	0.5									
	Total Zinc	µg/L		12									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<	2.5									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	5									
	Benzene	µg/L	<	0.5									
	Bromoform	µg/L	<	1									

Group 3	Carbon Tetrachloride	µg/L	<	1									
	Chlorobenzene	µg/L	<	0.5									
	Chlorodibromomethane	µg/L	<	0.5									
	Chloroethane	µg/L	<	1									
	2-Chloroethyl Vinyl Ether	µg/L	<	5									
	Chloroform	µg/L		3									
	Dichlorobromomethane	µg/L	<	1									
	1,1-Dichloroethane	µg/L	<	0.5									
	1,2-Dichloroethane	µg/L	<	0.5									
	1,1-Dichloroethylene	µg/L	<	0.5									
	1,2-Dichloropropane	µg/L	<	0.5									
	1,3-Dichloropropylene	µg/L	<	1									
	1,4-Dioxane	µg/L	<	3.1									
	Ethylbenzene	µg/L	<	0.5									
	Methyl Bromide	µg/L	<	1									
	Methyl Chloride	µg/L	<	1									
	Methylene Chloride	µg/L	<	1									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.5									
	Tetrachloroethylene	µg/L	<	0.5									
	Toluene	µg/L	<	0.5									
	1,2-trans-Dichloroethylene	µg/L	<	0.5									
	1,1,1-Trichloroethane	µg/L	<	0.5									
	1,1,2-Trichloroethane	µg/L	<	0.5									
	Trichloroethylene	µg/L	<	0.5									
	Vinyl Chloride	µg/L	<	0.5									
Group 4	2-Chlorophenol	µg/L	<	3.1									
	2,4-Dichlorophenol	µg/L	<	3.1									
	2,4-Dimethylphenol	µg/L	<	3.1									
	4,6-Dinitro-o-Cresol	µg/L	<	6.3									
	2,4-Dinitrophenol	µg/L	<	6.3									
	2-Nitrophenol	µg/L	<	3.1									
	4-Nitrophenol	µg/L	<	3.1									
	p-Chloro-m-Cresol	µg/L	<	3.1									
	Pentachlorophenol	µg/L	<	6.3									
	Phenol	µg/L	<	8.3									
	2,4,6-Trichlorophenol	µg/L	<	3.1									
Group 5	Acenaphthene	µg/L	<	1.6									
	Acenaphthylene	µg/L	<	1.6									
	Anthracene	µg/L	<	1.6									
	Benzidine	µg/L	<	4.2									
	Benzo(a)Anthracene	µg/L	<	1.6									
	Benzo(a)Pyrene	µg/L	<	1.6									
	3,4-Benzofluoranthene	µg/L	<	1.6									
	Benzo(ghi)Perylene	µg/L	<	1.6									
	Benzo(k)Fluoranthene	µg/L	<	1.6									
	Bis(2-Chloroethoxy)Methane	µg/L	<	3.1									
	Bis(2-Chloroethyl)Ether	µg/L	<	3.1									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	3.1									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	3.1									
	4-Bromophenyl Phenyl Ether	µg/L	<	3.1									
	Butyl Benzyl Phthalate	µg/L	<	3.1									
	2-Chloronaphthalene	µg/L	<	3.1									
	4-Chlorophenyl Phenyl Ether	µg/L	<	3.1									
	Chrysene	µg/L	<	1.6									
	Dibenzo(a,h)Anthrancene	µg/L	<	1.6									
	1,2-Dichlorobenzene	µg/L	<	1									
	1,3-Dichlorobenzene	µg/L	<	1									
	1,4-Dichlorobenzene	µg/L	<	1									
	3,3-Dichlorobenzidine	µg/L	<	3.1									
	Diethyl Phthalate	µg/L	<	3.1									
	Dimethyl Phthalate	µg/L	<	3.1									
	Di-n-Butyl Phthalate	µg/L	<	3.1									
	2,4-Dinitrotoluene	µg/L	<	3.1									

	2,6-Dinitrotoluene	µg/L	<	3.1									
	Di-n-Octyl Phthalate	µg/L	<	3.1									
	1,2-Diphenylhydrazine	µg/L	<	3.1									
	Fluoranthene	µg/L	<	1.6									
	Fluorene	µg/L	<	1.6									
	Hexachlorobenzene	µg/L	<	3.1									
	Hexachlorobutadiene	µg/L	<	3.1									
	Hexachlorocyclopentadiene	µg/L	<	3.1									
	Hexachloroethane	µg/L	<	3.1									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	1.6									
	Isophorone	µg/L	<	3.1									
	Naphthalene	µg/L	<	1.6									
	Nitrobenzene	µg/L	<	3.1									
	n-Nitrosodimethylamine	µg/L	<	3.1									
	n-Nitrosodi-n-Propylamine	µg/L	<	3.1									
	n-Nitrosodiphenylamine	µg/L	<	3.1									
	Phenanthrene	µg/L	<	1.6									
	Pyrene	µg/L	<	1.6									
	1,2,4-Trichlorobenzene	µg/L	<	3.1									
Group 6	Aldrin	µg/L	<										
	alpha-BHC	µg/L	<										
	beta-BHC	µg/L	<										
	gamma-BHC	µg/L	<										
	delta BHC	µg/L	<										
	Chlordane	µg/L	<										
	4,4-DDT	µg/L	<										
	4,4-DDE	µg/L	<										
	4,4-DDD	µg/L	<										
	Dieldrin	µg/L	<										
	alpha-Endosulfan	µg/L	<										
	beta-Endosulfan	µg/L	<										
	Endosulfan Sulfate	µg/L	<										
	Endrin	µg/L	<										
	Endrin Aldehyde	µg/L	<										
	Heptachlor	µg/L	<										
	Heptachlor Epoxide	µg/L	<										
	PCB-1016	µg/L	<										
	PCB-1221	µg/L	<										
	PCB-1232	µg/L	<										
	PCB-1242	µg/L	<										
	PCB-1248	µg/L	<										
	PCB-1254	µg/L	<										
	PCB-1260	µg/L	<										
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<										
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

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Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Wildcat Point Generation Facility, NPDES Permit No. PA0265951, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Susquehanna River**

No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	006685	1.7	109.2	27000			Yes
End of Reach 1	006685	0.0001	108.3	27001			Yes

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

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	1.7	0.13				6500	14					128	8.376		
End of Reach 1	0.0001	0.13				6500	14					128	8.376		

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	1.7														
End of Reach 1	0.0001														

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Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Wildcat Point Generation Facility, NPDES Permit No. PA0265951, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.006 Analysis Hardness (mg/l): 184.38 Analysis pH: 8.36

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	12,664	
Total Antimony	0	0		0	1,100	1,100	18,574	
Total Arsenic	0	0		0	340	340	5,741	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	354,585	
Total Boron	0	0		0	8,100	8,100	136,769	
Total Cadmium	0	0		0	3.649	3.97	67.1	Chem Translator of 0.918 applied
Total Chromium (III)	0	0		0	940.409	2,976	50,249	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	275	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	1,604	
Total Copper	0	0		0	23.918	24.9	421	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	124.862	178	3,004	Chem Translator of 0.702 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	27.8	Chem Translator of 0.85 applied
Total Nickel	0	0		0	785.708	787	13,293	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	9.214	10.8	183	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	1,098	
Total Zinc	0	0		0	196.787	201	3,398	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	50.7	

Acrylonitrile	0	0		0	650	650	10,975	
Benzene	0	0		0	640	640	10,806	
Bromoform	0	0		0	1,800	1,800	30,393	
Carbon Tetrachloride	0	0		0	2,800	2,800	47,278	
Chlorobenzene	0	0		0	1,200	1,200	20,262	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	303,930	
Chloroform	0	0		0	1,900	1,900	32,082	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	253,275	
1,1-Dichloroethylene	0	0		0	7,500	7,500	126,638	
1,2-Dichloropropane	0	0		0	11,000	11,000	185,735	
1,3-Dichloropropylene	0	0		0	310	310	5,234	
Ethylbenzene	0	0		0	2,900	2,900	48,967	
Methyl Bromide	0	0		0	550	550	9,287	
Methyl Chloride	0	0		0	28,000	28,000	472,780	
Methylene Chloride	0	0		0	12,000	12,000	202,620	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	16,885	
Tetrachloroethylene	0	0		0	700	700	11,820	
Toluene	0	0		0	1,700	1,700	28,705	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	114,818	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	50,655	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	57,409	
Trichloroethylene	0	0		0	2,300	2,300	38,836	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	9,456	
2,4-Dichlorophenol	0	0		0	1,700	1,700	28,705	
2,4-Dimethylphenol	0	0		0	660	660	11,144	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	1,351	
2,4-Dinitrophenol	0	0		0	660	660	11,144	
2-Nitrophenol	0	0		0	8,000	8,000	135,080	
4-Nitrophenol	0	0		0	2,300	2,300	38,836	
p-Chloro-m-Cresol	0	0		0	160	160	2,702	
Pentachlorophenol	0	0		0	34.335	34.3	580	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	7,767	
Acenaphthene	0	0		0	83	83.0	1,401	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	5,066	
Benzo(a)Anthracene	0	0		0	0.5	0.5	8.44	
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	506,550	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	75,983	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	4,559	
Butyl Benzyl Phthalate	0	0		0	140	140	2,364	

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	13,846	
1,3-Dichlorobenzene	0	0		0	350	350	5,910	
1,4-Dichlorobenzene	0	0		0	730	730	12,326	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	67,540	
Dimethyl Phthalate	0	0		0	2,500	2,500	42,213	
Di-n-Butyl Phthalate	0	0		0	110	110	1,857	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	27,016	
2,6-Dinitrotoluene	0	0		0	990	990	16,716	
1,2-Diphenylhydrazine	0	0		0	15	15.0	253	
Fluoranthene	0	0		0	200	200	3,377	
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	169	
Hexachlorocyclopentadiene	0	0		0	5	5.0	84.4	
Hexachloroethane	0	0		0	60	60.0	1,013	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	168,850	
Naphthalene	0	0		0	140	140	2,364	
Nitrobenzene	0	0		0	4,000	4,000	67,540	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	287,045	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	5,066	
Phenanthrene	0	0		0	5	5.0	84.4	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	2,195	

☑ ***CFC*** CCT (min): 720 PMF: 0.038 Analysis Hardness (mg/l): 137.37 Analysis pH: 8.37

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	22,353	
Total Arsenic	0	0		0	150	150	15,241	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	416,581	
Total Boron	0	0		0	1,600	1,600	162,568	
Total Cadmium	0	0		0	0.307	0.34	34.8	Chem Translator of 0.896 applied
Total Chromium (III)	0	0		0	96.125	112	11,357	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	1,056	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	1,930	

Total Copper	0	0		0	11.747	12.2	1,243	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	3,972,750	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	3.550	4.77	484	Chem Translator of 0.745 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	92.0	Chem Translator of 0.85 applied
Total Nickel	0	0		0	68.032	68.2	6,933	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	507	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	1,321	
Total Zinc	0	0		0	154.607	157	15,932	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	305	
Acrylonitrile	0	0		0	130	130	13,209	
Benzene	0	0		0	130	130	13,209	
Bromoform	0	0		0	370	370	37,594	
Carbon Tetrachloride	0	0		0	560	560	56,899	
Chlorobenzene	0	0		0	240	240	24,385	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	355,618	
Chloroform	0	0		0	390	390	39,626	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	314,976	
1,1-Dichloroethylene	0	0		0	1,500	1,500	152,408	
1,2-Dichloropropane	0	0		0	2,200	2,200	223,531	
1,3-Dichloropropylene	0	0		0	61	61.0	6,198	
Ethylbenzene	0	0		0	580	580	58,931	
Methyl Bromide	0	0		0	110	110	11,177	
Methyl Chloride	0	0		0	5,500	5,500	558,828	
Methylene Chloride	0	0		0	2,400	2,400	243,852	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	21,337	
Tetrachloroethylene	0	0		0	140	140	14,225	
Toluene	0	0		0	330	330	33,530	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	142,247	
1,1,1-Trichloroethane	0	0		0	610	610	61,979	
1,1,2-Trichloroethane	0	0		0	680	680	69,091	
Trichloroethylene	0	0		0	450	450	45,722	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	11,177	
2,4-Dichlorophenol	0	0		0	340	340	34,546	
2,4-Dimethylphenol	0	0		0	130	130	13,209	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	1,626	
2,4-Dinitrophenol	0	0		0	130	130	13,209	
2-Nitrophenol	0	0		0	1,600	1,600	162,568	
4-Nitrophenol	0	0		0	470	470	47,754	

p-Chloro-m-Cresol	0	0		0	500	500	50,803	
Pentachlorophenol	0	0		0	26.342	26.3	2,676	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	9,246	
Acenaphthene	0	0		0	17	17.0	1,727	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	5,995	
Benzo(a)Anthracene	0	0		0	0.1	0.1	10.2	
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	609,630	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	92,461	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	5,487	
Butyl Benzyl Phthalate	0	0		0	35	35.0	3,556	
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	16,257	
1,3-Dichlorobenzene	0	0		0	69	69.0	7,011	
1,4-Dichlorobenzene	0	0		0	150	150	15,241	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	81,284	
Dimethyl Phthalate	0	0		0	500	500	50,803	
Di-n-Butyl Phthalate	0	0		0	21	21.0	2,134	
2,4-Dinitrotoluene	0	0		0	320	320	32,514	
2,6-Dinitrotoluene	0	0		0	200	200	20,321	
1,2-Diphenylhydrazine	0	0		0	3	3.0	305	
Fluoranthene	0	0		0	40	40.0	4,064	
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	203	
Hexachlorocyclopentadiene	0	0		0	1	1.0	102	
Hexachloroethane	0	0		0	12	12.0	1,219	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	213,371	
Naphthalene	0	0		0	43	43.0	4,369	
Nitrobenzene	0	0		0	810	810	82,300	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	345,457	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	5,995	
Phenanthrene	0	0		0	1	1.0	102	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	2,642	

☑ ***THH*** CCT (min): 720 PMF: 0.038 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	569	
Total Arsenic	0	0		0	10	10.0	1,016	
Total Barium	0	0		0	2,400	2,400	243,852	
Total Boron	0	0		0	3,100	3,100	314,976	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	30,482	
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	101,605	
Total Mercury	0	0		0	0.050	0.05	5.08	
Total Nickel	0	0		0	610	610	61,979	
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	24.4	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	305	
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	10,161	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	3,353	
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	6,909	

Methyl Bromide	0	0		0	100	100.0	10,161	
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	5,791	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	10,161	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	1,016,050	
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	3,048	
2,4-Dichlorophenol	0	0		0	10	10.0	1,016	
2,4-Dimethylphenol	0	0		0	100	100.0	10,161	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	203	
2,4-Dinitrophenol	0	0		0	10	10.0	1,016	
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	406,420	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	7,112	
Anthracene	0	0		0	300	300	30,482	
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	20,321	
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	10.2	
2-Chloronaphthalene	0	0		0	800	800	81,284	
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	101,605	
1,3-Dichlorobenzene	0	0		0	7	7.0	711	
1,4-Dichlorobenzene	0	0		0	300	300	30,482	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	60,963	
Dimethyl Phthalate	0	0		0	2,000	2,000	203,210	
Di-n-Butyl Phthalate	0	0		0	20	20.0	2,032	
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	2,032	
Fluorene	0	0		0	50	50.0	5,080	
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	406	
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	3,455	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	1,016	
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	2,032	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	7.11	

☑ ***CRL*** CCT (min): 720 PMF: 0.052 Analysis Hardness (mg/l): N/A Analysis pH: N/A

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

Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	22.0	
Benzene	0	0		0	0.58	0.58	213	
Bromoform	0	0		0	7	7.0	2,567	
Carbon Tetrachloride	0	0		0	0.4	0.4	147	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	293	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	2,090	
Dichlorobromomethane	0	0		0	0.95	0.95	348	
1,2-Dichloroethane	0	0		0	9.9	9.9	3,630	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	330	
1,3-Dichloropropylene	0	0		0	0.27	0.27	99.0	
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	7,334	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	73.3	
Tetrachloroethylene	0	0		0	10	10.0	3,667	
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	202	
Trichloroethylene	0	0		0	0.6	0.6	220	
Vinyl Chloride	0	0		0	0.02	0.02	7.33	
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	11.0	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	550	
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	0.037	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.37	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.037	

3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.37	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	3.67	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	11.0	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	117	
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	44.0	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.037	
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	18.3	
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	18.3	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	18.3	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	11.0	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.029	
Hexachlorobutadiene	0	0		0	0.01	0.01	3.67	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	36.7	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.37	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.26	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	1.83	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	1,210	
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
Hexachlorobutadiene	0.026	0.041	3.67	5.72	9.17	µg/L	3.67	CRL	Discharge Conc ≥ 50% WQBEL (RP)

1,2,4-Trichlorobenzene	Report	Report	Report	Report	Report	µg/L	7.11	THH	Discharge Conc > 25% WQBEL (no RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Total 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	8,117	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	569	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	1,016	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	227,275	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	87,663	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	34.8	µg/L	Discharge Conc < TQL
Total Chromium (III)	11,357	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	176	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	1,028	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	270	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	30,482	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	3,972,750	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	484	µg/L	Discharge Conc < TQL
Total Manganese	101,605	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	5.08	µg/L	Discharge Conc ≤ 10% WQBEL
Total Nickel	6,933	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	507	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	117	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	24.4	µg/L	Discharge Conc < TQL
Total Zinc	2,178	µg/L	Discharge Conc ≤ 10% WQBEL
Acrolein	32.5	µg/L	Discharge Conc ≤ 25% WQBEL
Acrylonitrile	22.0	µg/L	Discharge Conc < TQL
Benzene	213	µg/L	Discharge Conc < TQL
Bromoform	2,567	µg/L	Discharge Conc ≤ 25% WQBEL
Carbon Tetrachloride	147	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorobenzene	10,161	µg/L	Discharge Conc < TQL
Chlorodibromomethane	293	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS

2-Chloroethyl Vinyl Ether	194,807	µg/L	Discharge Conc < TQL
Chloroform	2,090	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	348	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	3,630	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	3,353	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	330	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	99.0	µg/L	Discharge Conc ≤ 25% WQBEL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	6,909	µg/L	Discharge Conc < TQL
Methyl Bromide	5,952	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Chloride	303,033	µg/L	Discharge Conc ≤ 25% WQBEL
Methylene Chloride	7,334	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2,2-Tetrachloroethane	73.3	µg/L	Discharge Conc < TQL
Tetrachloroethylene	3,667	µg/L	Discharge Conc < TQL
Toluene	5,791	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	10,161	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	32,468	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	202	µg/L	Discharge Conc < TQL
Trichloroethylene	220	µg/L	Discharge Conc < TQL
Vinyl Chloride	7.33	µg/L	Discharge Conc < TQL
2-Chlorophenol	3,048	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	1,016	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	7,143	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	203	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	1,016	µg/L	Discharge Conc < TQL
2-Nitrophenol	86,581	µg/L	Discharge Conc < TQL
4-Nitrophenol	24,892	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	1,732	µg/L	Discharge Conc < TQL
Pentachlorophenol	11.0	µg/L	Discharge Conc < TQL
Phenol	406,420	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	550	µg/L	Discharge Conc < TQL
Acenaphthene	898	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	30,482	µg/L	Discharge Conc < TQL
Benzidine	0.037	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.37	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.037	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.37	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	3.67	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	11.0	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	20,321	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	117	µg/L	Discharge Conc < TQL

4-Bromophenyl Phenyl Ether	2,922	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	10.2	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	81,284	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	44.0	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.037	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	8,875	µg/L	Discharge Conc ≤ 25% WQBEL
1,3-Dichlorobenzene	711	µg/L	Discharge Conc ≤ 25% WQBEL
1,4-Dichlorobenzene	7,901	µg/L	Discharge Conc ≤ 25% WQBEL
3,3-Dichlorobenzidine	18.3	µg/L	Discharge Conc < TQL
Diethyl Phthalate	43,290	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	27,057	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	1,190	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	18.3	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	18.3	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	11.0	µg/L	Discharge Conc < TQL
Fluoranthene	2,032	µg/L	Discharge Conc < TQL
Fluorene	5,080	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.029	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	54.1	µg/L	Discharge Conc < TQL
Hexachloroethane	36.7	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.37	µg/L	Discharge Conc < TQL
Isophorone	3,455	µg/L	Discharge Conc < TQL
Naphthalene	1,515	µg/L	Discharge Conc ≤ 25% WQBEL
Nitrobenzene	1,016	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.26	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	1.83	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	1,210	µg/L	Discharge Conc < TQL
Phenanthrene	54.1	µg/L	Discharge Conc < TQL
Pyrene	2,032	µg/L	Discharge Conc < TQL