

Application Type Renewal
 Facility Type Industrial
 Major / Minor Major

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

Application No. PA0253359
 APS ID 929776
 Authorization ID 1360452

Applicant and Facility Information

Applicant Name	<u>Cambria Somerset Authority (Joint Client)</u>	Facility Name	<u>Cambria Somerset Authority</u>
Applicant Address	<u>227 Franklin Street, Suite 306 Johnstown, PA 15901-1916</u>	Facility Address	<u>227 Franklin Street Suite 306 Johnstown, PA 15901-1829</u>
Applicant Contact	<u>Richard S. Ames, Operations Manager</u>	Facility Contact	<u>***same as applicant***</u>
Applicant Phone	<u>(814) 532-8851</u>	Facility Phone	<u>***same as applicant***</u>
Applicant Email	<u>csa@cambriasomersetwater.com</u>	Facility Email	<u>***same as applicant***</u>
Client ID	<u>332350</u>	Site ID	<u>271597</u>
SIC Code	<u>4941</u>	Municipality	<u>City of Johnstown</u>
SIC Description	<u>Trans. & Utilities - Water Supply</u>	County	<u>Cambria</u>
Co-Applicant Name	<u>CPV Fairview, LLC</u>	Facility Name	<u>CPV Fairview Energy Center</u>
Co-Applicant Address	<u>1 North Lexington Avenue, Suite 1400 White Plains, NY 10601-1724</u>	Facility Address	<u>2862 William Penn Avenue Johnstown, PA 15909-3628</u>
Co-Applicant Contact	<u>Shawn Simmers, P.E.</u>	Facility Contact	<u>***same as co-applicant***</u>
Co-Applicant Phone	<u>(814) 924-0338</u>	Facility Phone	<u>***same as co-applicant***</u>
Co-Applicant Email	<u>ssimmers@cpvfairview.com</u>	Facility Email	<u>***same as co-applicant***</u>
Date Application Received	<u>June 29, 2021</u>	EPA Waived?	<u>No</u>
Date Application Accepted	<u>July 12, 2021</u>	If No, Reason	<u>Major Facility</u>
Purpose of Application	<u>NPDES permit renewal for excess raw water withdrawn from reservoirs and industrial waste.</u>		

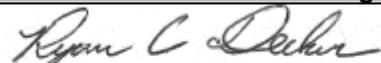
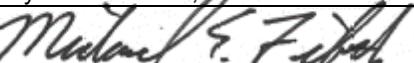
Summary of Review

On June 29, 2021, on behalf of Cambria Somerset Authority (CSA) and CPV Fairview, LLC (CPV), L.R. Kimball submitted an application to renew NPDES Permit PA0253359 for discharges of excess raw water (blow-off) from CSA's raw water distribution system and treated process wastewater ("reclaim water") from the CPV Fairview Energy Center, which receives water from CSA's raw water distribution system and discharges reclaim water back into that system either for reuse by CSA's customers or for discharge through a CSA outfall in combination with CSA's excess raw water.

The previous permit expired on December 31, 2021 with an application due date of July 4, 2021. Since the application was received before July 4, 2021 the application was timely and the terms and conditions of the permit were administratively extended past the expiration date.

Cambria Somerset Authority

CSA is the owner and operator of five dams in Cambria and Somerset Counties and the associated piping and appurtenances necessary to provide raw water from intake structures at those dams to various locations within the region. The original purpose of the dams was to provide raw water to a series of steel mills and associated shops located in Johnstown and the

Approve	Deny	Signatures	Date
✓		 Ryan C. Decker, P.E. / Environmental Engineer	May 7, 2024
X		 Michael E. Fifth, P.E. / Environmental Engineer Manager	May 10, 2024

Summary of Review

surrounding area. To provide maximum flexibility to those industrial facilities, the five dams were connected by an extensive piping network so that water from any of the five dams could be directed to multiple locations in the region with numerous piping interconnections available to assure that the demand of each facility could be maintained under different working scenarios (see p.9 of this Fact Sheet for an overview map of the system). The five dams are the Quemahoning, Hinckston Run, Border, South Fork, and Wilmore. The Quemahoning, Hinckston Run, and Wilmore dams impound water in reservoirs while the Border and South Fork dams are run-of-river dams. Following the closure of the steel mills in the 1990s, CSA was formed to continue to operate the dams and raw water distribution system for industrial, commercial, and potable water users in Cambria and Somerset Counties while also providing recreational opportunities for the region. CSA continues to use multiple crossover connections in the piping network to maintain water supply flexibility including multiple crossover connections between the Quemahoning and Border pipelines, and a complex interconnection with the Hinckston Run pipeline at two locations on the northwest side of Johnstown known as the Minersville and Davis Street Junctions. The dams and intakes are described in more detail later in this Fact Sheet based on summaries provided by L.R. Kimball.

The NPDES permit currently authorizes discharges from three outfalls: 001, 002, and 003. Outfall 001 discharges excess raw water (blow-off) from the Quemahoning Reservoir, the Hinckston Run Reservoir, and/or the Border Dam, and reclaim water received from the CPV Fairview Energy Center. Outfall 001 was modified in 2019 to relocate the discharge pipe from its previous location on Hinckston Run—approximately 170 feet upstream of the mouth of Hinckston Run—to the Conemaugh River. The new discharge pipeline is a 12" diameter pipe secured to the masonry wall of the Hinckston Run stream channel and extending out to the concrete apron at the mouth of Hinckston Run. The discharge point is at the edge of the FEMA floodway boundary and the U.S. Army Corps of Engineers' property.

Outfall 002 is the alternative discharge point for Outfall 001's effluent and discharges to a culverted section of Peggys Run about 800 feet upstream of the mouth of Peggys Run. Peggys Run empties into the Little Conemaugh River.

When Outfall 001 was relocated in 2019, the old Outfall 001 outlet pipe was re-designated as Outfall 003. Outfall 003 is used for conservation releases from the Hinckston Run Reservoir to maintain flow in the Hinckston Run stream channel. Although, the Hinckston Run water supply pipeline bypasses most of Hinckston Run between the dam and Outfall 003. Designated uses of Hinckston Run downstream of the dam are impaired by mine drainage and a ferromanganese slag dump.

CSA was issued an NPDES permit on August 15, 2007 in accordance with DEP's "Policy for Permitting Surface Water Diversions" [Doc. No. 386-2000-019, March 1, 1998], which requires, among other things, water diversions and inter-basin transfers from one water body to another water body to be permitted by an NPDES permit. CSA submitted a renewal application for that permit on February 8, 2012, which was not acted upon by DEP. On April 27, 2016, CSA submitted another application to renew the permit, which replaced the previous application pending from 2012. A permit issued based on the April 27, 2016 application was issued on December 21, 2016 and added CPV as a co-permittee. The permit was amended on September 6, 2019 to allow the relocation of Outfall 001 and the reevaluation of Outfall 002's water quality impacts at the Little Conemaugh River instead of Peggys Run because the lower section of Peggys Run is culverted and unlikely to support designated uses. As stated above, the 2019 permit amendment also added Outfall 003 to the permit.

CPV Fairview Energy Center

The CPV Fairview Energy Center (CPV Fairview) is a 1,050-megawatt 2x1 natural gas combined-cycle electric power-generating facility, located on an 86-acre property in Jackson Township, Cambria County along William Penn Highway (State Route 271) in the unincorporated village of Vinco. CPV Fairview uses two high efficiency natural gas-fired combustion turbine electric generators (GE 7HA.02) coupled with two heat recovery steam generators (HRSGs) with duct firing. The HRSGs produce steam to fuel one steam-driven electric generator. Natural gas is supplied from the Enbridge Texas Eastern Transmission gas lines approximately one mile north of the site through a pipeline owned and maintained by CPV. The facility operates continuously with three shifts and approximately 23 personnel. The facility began commercial operation in December 2019. Before construction of CPV Fairview, the property was used for a salvage operation and a bulk petroleum product storage facility.

CPV Fairview is supplied with potable water from the Jackson Township Water Authority from a water line along SR 271. Sewage from the facility is discharged to the Jackson Township–East Taylor Township Joint Sewage Authority (JETSA) collection system. On September 10, 2015, DEP provided a letter to Jackson Township stating the CPV project is exempt from Act 537 Sewage Planning Approval.

CPV Fairview is supplied with raw water by CSA from either the Quemahoning Reservoir or Hinckston Run Reservoir. Raw water is pumped to a storage tank at CPV Fairview through a dedicated water supply line with two pump stations in series.

Summary of Review

Both pump stations have similar configurations and head requirements. Each pump station has three pumps with a maximum of two pumps operating at once. Each pump has a capacity of about 2,800 gpm, so the maximum pumping capacity is 5,600 gpm (8.064 MGD). The pumps only operate when the level in the storage tank indicates a demand. CPV Fairview's average water supply flow rate from CSA is about 4.0 MGD—about 94% of which is used for cooling. Part of the remaining portion of the raw water supply is pre-treated with greensand filters to supply service water and the rest is pre-treated by reverse osmosis and electro-deionization/ion exchange to produce demineralized water for use in the HRSGs' steam cycle.

Service water media filter backwash, demineralizer pretreatment system backwash, demineralizer reject water, service water from facility drains, and steam cycle sample system drains combine in the low volume waste chamber of the Reclaim Water Treatment Plant Influent Collection Tank and flow over a weir into the main chamber of the tank to combine with cooling tower blowdown for further treatment. Before flowing into the low volume waste chamber, service water from facility drains is pretreated with one of two oil/water separators. Treatment for low volume waste sources and cooling tower blowdown include a 30,000-gallon reaction tank for coagulant and organosulfide additions; a 9,545-gallon Reclaimed Water Flash Mix/Flocculation Tank; a 1,986-gpm Reclaimed Water Lamella Clarifier/Thickener; four 662-gpm Reclaimed Water Greensand Filters; and a Reclaimed Water Clearwell Tank. Sodium hypochlorite is added before the greensand filters to assist with catalytic oxidation and sodium bisulfite is added downstream of the greensand filters to dechlorinate water entering the clearwell. Two 1,650-gpm submersible pumps send treated effluent (reclaim water) back into CSA's distribution system.

Effluent from CPV Fairview is regulated by 40 CFR Part 423 – Steam Electric Power Generating Point Source Category Effluent Limitations Guidelines. The overflow weir in the Reclaim Water Treatment Plant Influent Collection Tank is identified as Internal Monitoring Point (IMP) 201 and is subject to effluent limits for low volume waste sources from 40 CFR Part 423. Cooling tower blowdown is subject to limits from 40 CFR Part 423 at IMP 301 located before the blowdown mixes with low volume waste sources in the main chamber of the Reclaim Water Treatment Plant Influent Collection Tank. The discharge from the Reclaimed Water Clearwell Tank is regulated as IMP 101 and is subject to limits that are not appropriately imposed at the other IMPs.

Discharges of storm water associated with industrial activities from CPV Fairview are regulated by PAG-03 General Permit No. PAG036258, which was issued to CPV on August 2, 2019 (not as a co-permittee with CSA). CPV Fairview's coverage for industrial storm water discharges under PAG036258 was renewed on August 28, 2023.

Cooling Water Intake Structures

This permit renewal imposes requirements pertaining to CSA's cooling water intake structures in accordance with section 316(b) of the Clean Water Act (33 U.S.C. § 1326(b)), which requires that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available (BTA) for minimizing adverse environmental impact.

Based on regulations implementing section 316(b) for existing facilities (40 CFR part 125, Subpart J) and the characteristics of CSA's intakes, CSA is not subject to the specific requirements listed in 40 CFR §§ 125.94 through 125.99. Therefore, pursuant to 40 CFR § 125.90(b), CSA must meet BTA requirements under section 316(b) of the CWA established by the Director on a case-by-case, best professional judgment (BPJ) basis.

In accordance with DEP's "Standard Operating Procedure (SOP) for Clean Water Program, Establishing Best Technology Available (BTA) Using Best Professional Judgement (BPJ) for Cooling Water Intake Structures at Existing NPDES Facilities" [SOP No. BCW-PMT-038, 12/7/2021], the permit identifies the operation of a closed-cycle recirculating system (by Ebensburg Power Company) as BTA for impingement and entrainment control at the Wilmore intake. The permit also requires CSA to make BTA selections for the Quemahoning, Hinckston Run, and Border intakes and to develop the information necessary to justify those selections for impingement and entrainment compliance.

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.	<u>001</u>	Design Flow (MGD)	<u>3.80 (avg.); 10.28 (max)</u>
Latitude	<u>40° 20' 27.0"</u>	Longitude	<u>-78° 55' 50.0"</u>
Quad Name	<u>Hooversville</u>	Quad Code	<u>1714</u>
Wastewater Description:	<u>Excess raw water (blow-off) from Hinckston Run, Quemahoning Reservoir, or Border Dam and reclaim water received from the CPV Fairview Energy Center</u>		
Receiving Waters	<u>Conemaugh River (WWF)</u>	Stream Code	<u>43832</u>
NHD Com ID	<u>123720376</u>	RMI	<u>51.78</u>
Drainage Area	<u>675 sq. mi.</u>	Yield (cfs/mi ²)	<u>0.097</u>
Q ₇₋₁₀ Flow (cfs)	<u>65.3</u>	Q ₇₋₁₀ Basis	<u>USGS StreamStats</u>
Elevation (ft)	<u>1,134</u>	Slope (ft/ft)	<u>0.001</u>
Watershed No.	<u>18-D</u>	Chapter 93 Class.	<u>WWF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Not Assessed</u>		
Cause(s) of Impairment	<u></u>		
Source(s) of Impairment	<u></u>		
TMDL Status	<u>Final</u>	Name	<u>Kiskiminetas-Conemaugh River Watersheds TMDL</u>
Nearest Downstream Public Water Supply Intake	<u>Buffalo Township Municipal Authority – Freeport</u>		
PWS ID	<u>5030019</u>	PWS Withdrawal (MGD)	<u>1.25 (capacity & safe yield)</u>
PWS Waters	<u>Allegheny River</u>	Flow at Intake (cfs)	<u>2,250</u>
PWS RMI	<u>29.6</u>	Distance from Outfall (mi)	<u>80 (approx.)</u>



Image Source and Date: Google Earth Pro; September 2023. Annotations by DEP.

Discharge, Receiving Waters and Water Supply Information

Internal Monitoring Point 101 Design Flow (MGD) 1.19 (avg.); 6.66 (max)
Wastewater Description: Treated effluent from the Reclaim Water Treatment Plant including low volume waste sources monitored at IMP 201 and cooling tower blowdown monitored at IMP 301

Discharge, Receiving Waters and Water Supply Information

Internal Monitoring Point 201 Design Flow (MGD) 0.180 (avg.); 0.355 (max)
Wastewater Description: Low volume waste sources directed to the Reclaim Water Treatment Plant; sources include demineralizer backwash water, reverse osmosis reject water, greensand filter backwash water, water from plant drains pretreated in oil/water separators, and filter press filtrate and flush water

Discharge, Receiving Waters and Water Supply Information

Internal Monitoring Point 301 Design Flow (MGD) 1.03 (avg.); 2.22 (max)
Wastewater Description: Cooling tower blowdown directed to the Reclaim Water Treatment Plant

Discharge, Receiving Waters and Water Supply Information

Outfall No.	<u>002</u>	Design Flow (MGD)	<u>4.24 (avg.); 10.84 (max)</u>
Latitude	<u>40° 20' 29.0"</u>	Longitude	<u>-78° 53' 17.0"</u>
Quad Name	<u>Hooversville</u>	Quad Code	<u>1714</u>
Wastewater Description:	<u>Excess raw water (blow-off) from Quemahoning Reservoir or Border Dam, excess raw water (blow-off) from the Hinckston Run Dam, and reclaim water received from the CPV Fairview Energy Center</u>		
Receiving Waters	<u>Peggys Run (WWF)</u>	Stream Code	<u>45817</u>
NHD Com ID	<u>134395974</u>	RMI	<u>0.15</u>
Drainage Area	<u>1.35 sq. mi.</u>	Yield (cfs/mi ²)	<u>0.07</u>
Q ₇₋₁₀ Flow (cfs)	<u>0.1</u>	Q ₇₋₁₀ Basis	<u>USGS StreamStats</u>
Elevation (ft)	<u>1,210</u>	Slope (ft/ft)	<u>0.074</u>
Watershed No.	<u>18-E</u>	Chapter 93 Class.	<u>WWF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Attaining Use(s)</u>		
Cause(s) of Impairment	<u></u>		
Source(s) of Impairment	<u></u>		
TMDL Status	<u>Final</u>	Name	<u>Kiskiminetas-Conemaugh River Watersheds TMDL</u>
PWS ID	<u>5030019</u>	PWS Withdrawal (MGD)	<u>1.25 (capacity & safe yield)</u>
PWS Waters	<u>Allegheny River</u>	Flow at Intake (cfs)	<u>2,250</u>
PWS RMI	<u>29.6</u>	Distance from Outfall (mi)	<u>83 (6pprox..)</u>

Discharge, Receiving Waters and Water Supply Information

Outfall No.	<u>003</u>	Design Flow (MGD)	<u>7.42 (avg.); 11.96 (max)</u>
Latitude	<u>40° 20' 27.5"</u>	Longitude	<u>-78° 55' 27"</u>
Quad Name	<u>Hooversville</u>	Quad Code	<u>1714</u>
Wastewater Description:	<u>Conservation release from the Hinckston Run Dam and raw water blow-off from the Hinckston Run Reservoir or the Quemahoning Reservoir</u>		
Receiving Waters	<u>Hinckston Run (WWF)</u>	Stream Code	<u>45058</u>
NHD Com ID	<u>123720208</u>	RMI	<u>0.02</u>
Drainage Area	<u>4.27 sq. mi.</u>	Yield (cfs/mi ²)	<u>0.070</u>
Q ₇₋₁₀ Flow (cfs)	<u>0.3</u>	Q ₇₋₁₀ Basis	<u>USGS StreamStats</u>
Elevation (ft)	<u>1,161</u>	Slope (ft/ft)	<u>0.001</u>
Watershed No.	<u>18-D</u>	Chapter 93 Class.	<u>WWF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Impaired (aquatic life)</u>		
Cause(s) of Impairment	<u>Metals, siltation</u>		
Source(s) of Impairment	<u>Acid mine drainage</u>		
TMDL Status	<u>Final</u>	Name	<u>Kiskiminetas-Conemaugh River Watersheds TMDL</u>
PWS ID	<u>5030019</u>	PWS Withdrawal (MGD)	<u>1.25 (capacity & safe yield)</u>
PWS Waters	<u>Allegheny River</u>	Flow at Intake (cfs)	<u>2,250</u>
PWS RMI	<u>29.6</u>	Distance from Outfall (mi)	<u>80 (approx.)</u>

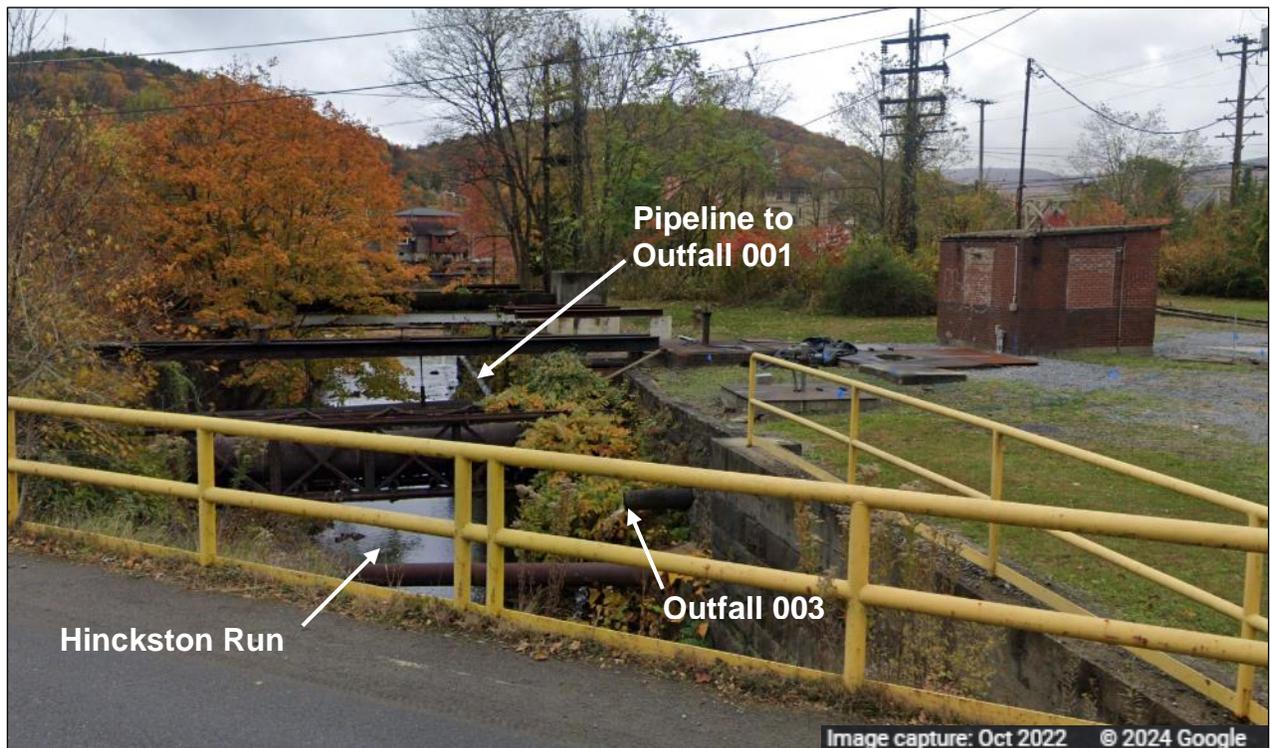


Image Source and Date: Google Maps Street View, October 2022. Annotations by DEP.

Cambria Somerset Authority

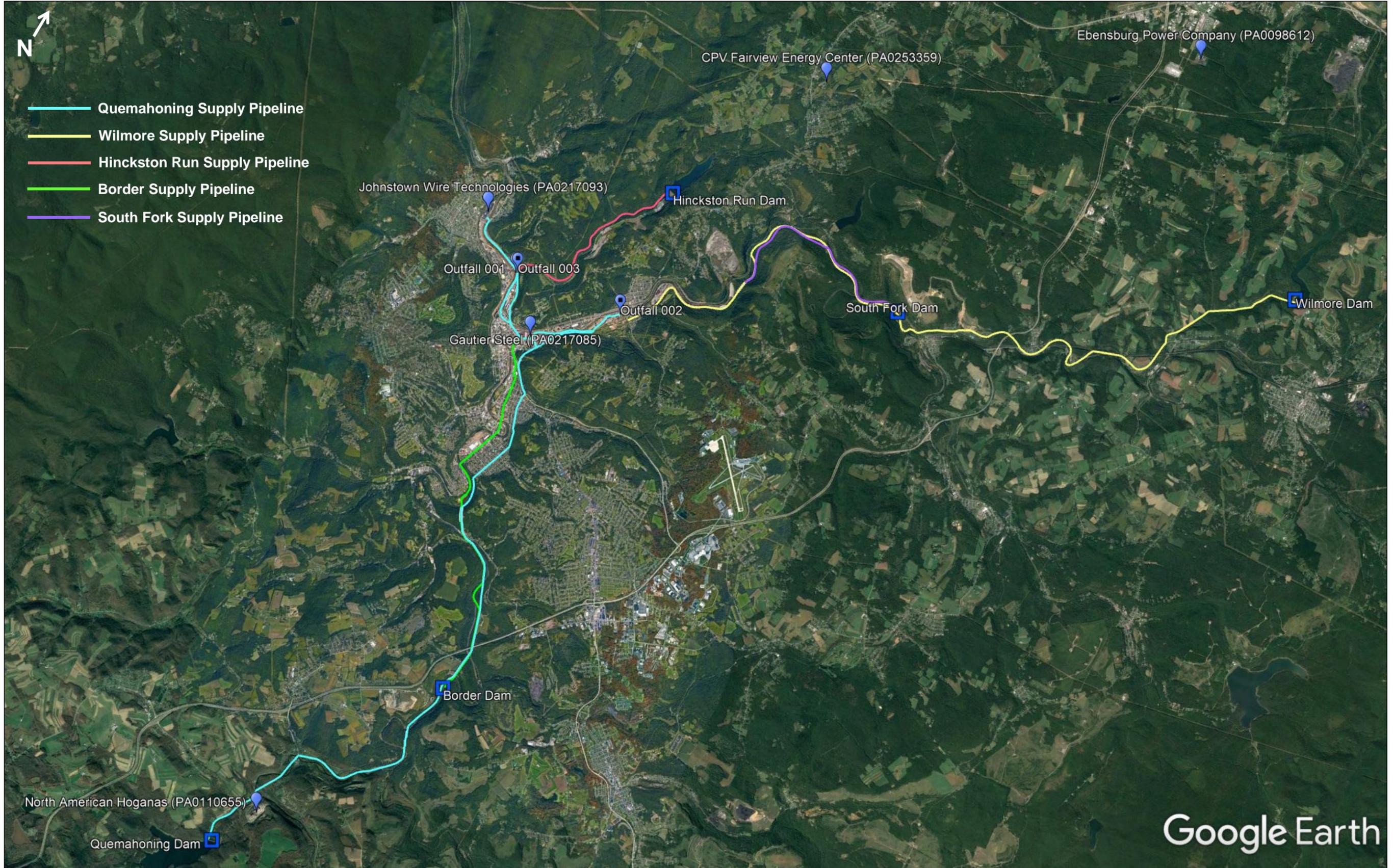
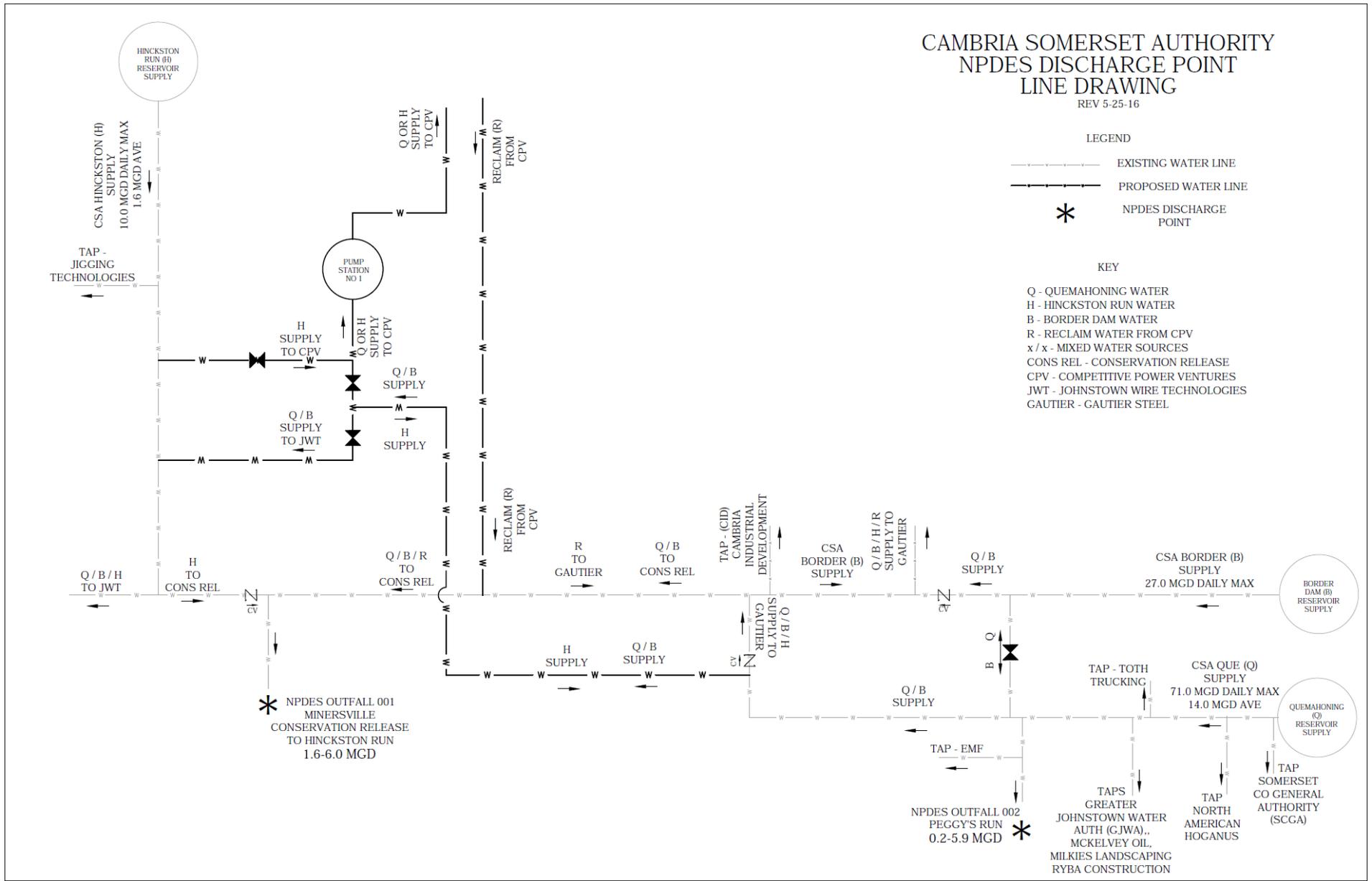


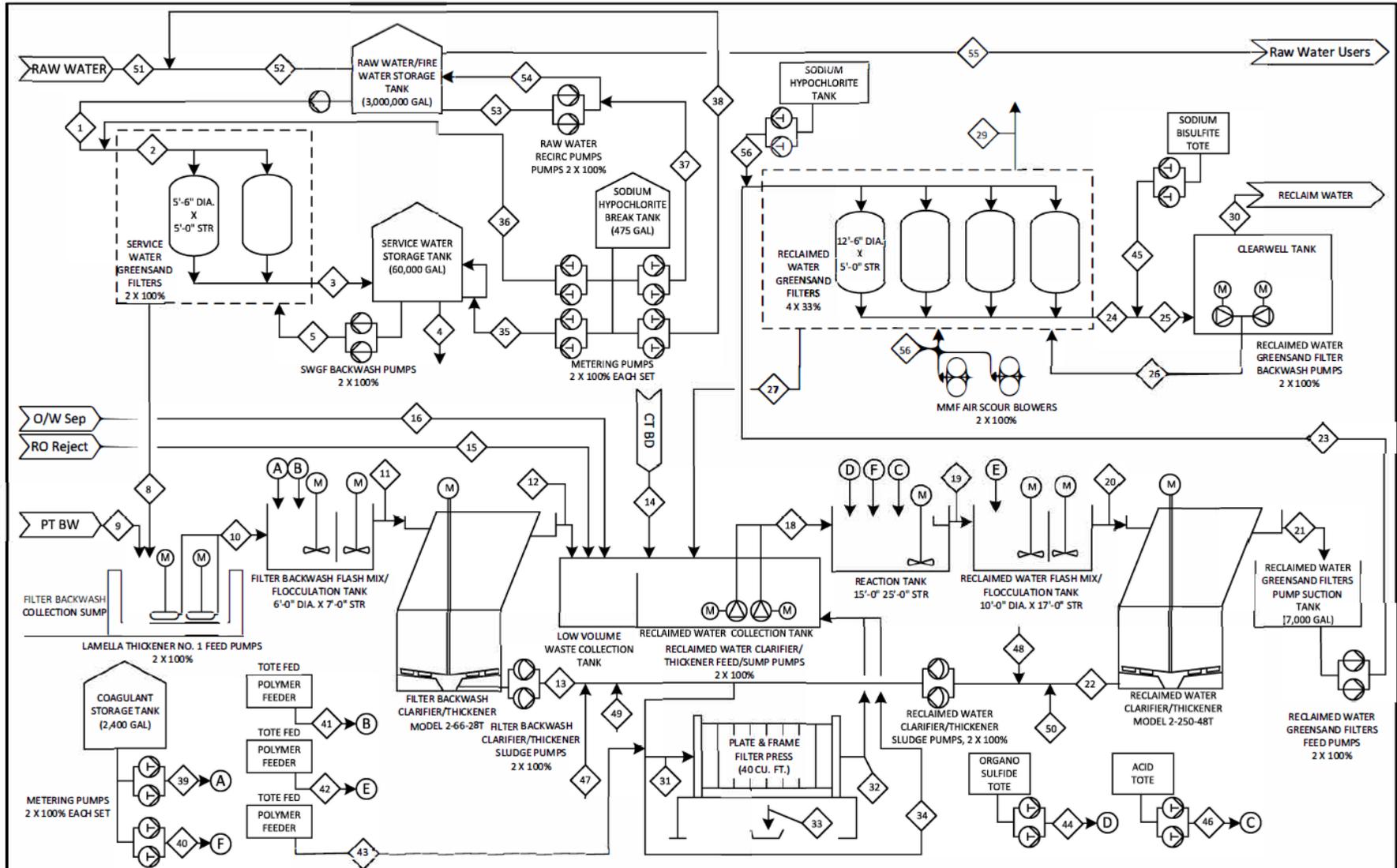
Image Source and Date: Google Earth Pro; September 9, 2022. Annotations by DEP.



CPV Fairview Energy Center



Image Source and Date: Google Earth Pro; March 28, 2024. Annotations by DEP.



LEGEND	
	CENTRIFUGAL PUMP
	METERING PUMP
	AIR DIAPHRAGM PUMP
	PUMP GENERIC
	POSITIVE DISPLACEMENT AIR BLOWER
	MIXER/AGITATOR
	VERTICAL SUMP PUMP

ABBREVIATIONS
RWFWS T – RAW WATER/FIRE WATER STORAGE TANK
SC SAMPLE – STEAM CYCLE SAMPLE
O/W SEP – OIL/WATER SEPARATOR
RO REJECT – REVERSE OSMOSIS SYSTEM REJECT
PT BW – PRE-TREATMENT SYSTEM BACKWASH
CT BD – COOLING TOWER BLOW DOWN

**WATER MASS BALANCE
 PROCESS FLOW DIAGRAM
 CPV FAIRVIEW ENERGY CENTER**

Rev 2.



Treatment Facility Summary				
Treatment Facility: CPV Fairview – Industrial Waste Treatment Facilities				
WQM Permit No.	Issuance Date	Purpose		
1117201	March 2, 2018	Permit issued to CPV Fairview LLC by the Pennsylvania Department of Environmental Protection for portions of a Raw Water Treatment System including one 4,000-gallon filter backwash collection sump, one 1,420-gallon filter backwash flash mix/flocculation tank, and one 225-gpm filter backwash lamella clarifier/thickener; and for a Reclaimed Water Treatment System including one 270-gpm oil/water separator (8,050-gallon separation chamber), one 300 gpm oil/water separator (3,000-gallon separation chamber), one 7,500-gallon low volume waste tank, one 32,000-gallon reclaimed water collection tank, one 30,000-gallon reaction tank, one 9,545-gallon reclaimed water flash mix/flocculation tank, one 1,986-gpm reclaimed water lamella clarifier/thickener, one 7,000-gallon reclaimed water greensand filter pump suction tank, four 662-gpm reclaimed water greensand filters (with option to operate as multimedia pressure filters), one 50,000 clearwell tank, and one plate-and-frame sludge filter press		
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Industrial	Tertiary	Oil/water separation, equalization, flash mixing, flocculation, clarification/thickening, filtration, and settling	N/A	1.034
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
2.86	N/A	N/A	N/A	N/A

CSA does not operate any water or wastewater treatment systems.

Compliance History

DMR Data for Outfall 001 (from February 1, 2023 to January 31, 2024)

Parameter	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23
Flow (MGD) Average Monthly	1.12	0.692	0.348	0.135	0.893	1.670	2.25	1.852	2.22	1.193	1.154	1.147
Flow (MGD) Daily Maximum	1.19	1.142	0.704	1.040	1.686	1.959	4.05	2.130	4.36	1.366	1.287	1.358
pH (S.U.) Instantaneous Minimum	8.04	8.05	8.04	7.47	7.62	7.71	7.39	7.49	7.42	8.02	7.81	8.01
pH (S.U.) Instantaneous Maximum	8.20	8.29	8.19	7.98	8.21	7.92	7.66	7.99	7.91	8.18	7.97	8.17
TSS (mg/L) Average Monthly	1.0	4.7	5.3	3.8	2.8	1.3	5.6	1.3	1.4	4.3	1.3	1.5
TSS (mg/L) Daily Maximum	1.0	12.0	10.0	6.0	6.0	2.0	22.0	2.0	2.0	6.0	2.0	2.0
Total Dissolved Solids (mg/L) Average Monthly	790.0	768.7	694.5	428.8	728	580.5	284.8	453	272.0	552.0	429.0	570.0
Total Dissolved Solids (mg/L) Daily Maximum	842.0	920.0	812.0	770.0	916	668.0	434.0	646	466.0	688.0	578.0	624.0
Total Aluminum (lbs/day) Average Monthly	0.51	0.88	0.10	0.01	0.41	0.52	5.65	0.31	0.70	1.57	1.63	1.99
Total Aluminum (lbs/day) Daily Maximum	0.98	2.44	0.36	0.01	0.76	0.92	24.95	0.54	1.22	2.25	2.90	4.88
Total Aluminum (mg/L) Average Monthly	0.06	0.17	0.23	0.19	0.06	0.05	0.20	0.05	0.05	0.25	0.23	0.23
Total Aluminum (mg/L) Daily Maximum	0.10	0.40	0.50	0.40	0.10	0.05	0.80	0.05	0.05	0.40	0.30	0.30
Total Copper (ug/L) Average Monthly	6.3	6.1	8.2	5.1	6.1	4.9	2.9	3.1	1.8	4.2	2.9	5.0
Total Copper (ug/L) Daily Maximum	8.2	7.3	8.9	7.8	7.5	6.3	4.1	4.6	3.4	5.7	3.3	5.3
Total Iron (lbs/day) Average Monthly	2.72	1.97	0.46	0.02	1.58	1.32	11.81	0.96	2.51	3.92	3.14	4.56
Total Iron (lbs/day) Daily Maximum	3.74	5.11	1.80	0.03	3.42	2.58	49.91	1.93	4.63	5.05	5.95	9.76

Parameter	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23
Total Iron (mg/L) Average Monthly	0.32	0.42	0.49	0.62	0.24	0.12	0.43	0.16	0.17	0.55	0.44	0.56
Total Iron (mg/L) Daily Maximum	0.38	0.84	0.82	1.29	0.45	0.14	1.60	0.22	0.24	0.74	0.50	0.64
Total Manganese (lbs/day) Average Monthly	0.27	0.66	0.16	0.01	0.61	0.31	16.54	0.33	1.21	0.69	0.34	0.54
Total Manganese (lbs/day) Daily Maximum	0.39	1.89	0.65	0.01	1.67	0.55	80.47	0.54	2.92	1.22	0.69	1.14
Total Manganese (mg/L) Average Monthly	0.03	0.12	0.13	0.23	0.09	0.03	0.54	0.05	0.07	0.08	0.05	0.07
Total Manganese (mg/L) Daily Maximum	0.04	0.31	0.26	0.48	0.22	0.03	2.58	0.06	0.12	0.11	0.05	0.07
Sulfate (mg/L) Average Monthly	338.6	320.3	245.8	172.6	289.3	239.8	108.8	174.4	105.2	203.3	158.8	239.0
Sulfate (mg/L) Daily Maximum	372.0	411.0	278.0	322.0	386.0	288.0	173.0	249.0	194.0	247.0	225.0	251.0
Chloride (mg/L) Average Monthly	86.5	79.8	96.1	60.6	86.1	59.4	31.2	56.5	40.0	70.3	59.4	77.8
Chloride (mg/L) Daily Maximum	92.1	88.4	150.0	122.0	108.0	69.8	48.3	83.1	78.8	84.4	82.7	81.4
Bromide (mg/L) Average Monthly	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bromide (mg/L) Daily Maximum	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

DMR Data for Outfall 002 (from February 1, 2023 to January 31, 2024)

Parameter	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23
Flow (MGD) Average Monthly	0.673	0.720		0.605	0.565	0.578	0.12			1.005	2.298	3.204
Flow (MGD) Daily Maximum	0.683	2.979		7.479	2.954	1.522	0.64			1.684	3.196	3.226
pH (S.U.) Instantaneous Minimum	7.57	7.59		7.25	7.17	7.28	7.32			7.56	7.45	7.53
pH (S.U.) Instantaneous Maximum	7.79	7.81		7.25	7.72	7.59	7.60			7.58	7.61	7.66
TSS (mg/L) Average Monthly	2.6	2.0		4.0	1.3	1.0	1.0			2.0	1.3	1.3

Parameter	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23
TSS (mg/L) Daily Maximum	9.0	4.0		4.0	2.0	1.0	1.0			3.0	2.0	2.0
Total Dissolved Solids (mg/L) Average Monthly	137.2	140.5		128.0	130.0	133.0	133.0			110.7	131.3	121.5
Total Dissolved Solids (mg/L) Daily Maximum	156.0	146.0		128.0	134.0	146.0	152.0			124.0	140.0	134.0
Total Aluminum (lbs/day) Average Monthly	0.54	0.71		3.05	1.37	1.05	0.30			1.45	1.33	1.96
Total Aluminum (lbs/day) Daily Maximum	1.28	1.81		3.05	3.22	3.16	0.33			2.35	2.94	2.56
Total Aluminum (mg/L) Average Monthly	0.05	0.05		0.05	0.05	0.05	0.05			0.12	0.08	0.08
Total Aluminum (mg/L) Daily Maximum	0.05	0.05		0.05	0.05	0.05	0.05			0.20	0.10	0.10
Total Copper (ug/L) Average Monthly	0.5	0.5		1.4	0.8	0.9	0.9			0.9	0.5	0.6
Total Copper (ug/L) Daily Maximum	0.5	0.5		1.4	1.2	1.3	1.3			1.1	0.5	1.2
Total Iron (lbs/day) Average Monthly	1.36	2.88		9.16	0.65	0.61	1.01			2.70	5.75	5.38
Total Iron (lbs/day) Daily Maximum	4.37	6.88		9.16	1.33	0.60	1.38			3.17	6.16	6.15
Total Iron (mg/L) Average Monthly	0.10	0.19		0.15	0.05	0.09	0.17			0.22	0.21	0.20
Total Iron (mg/L) Daily Maximum	0.17	0.29		0.15	0.06	0.12	0.21			0.23	0.21	0.22
Total Manganese (lbs/day) Average Monthly	0.27	1.09		14.65	0.47	0.26	0.44			0.88	1.48	1.20
Total Manganese (lbs/day) Daily Maximum	0.77	2.17		14.65	1.06	0.45	0.72			1.15	1.62	1.40
Total Manganese (mg/L) Average Monthly	0.02	0.07		0.24	0.03	0.03	0.07			0.07	0.05	0.05
Total Manganese (mg/L) Daily Maximum	0.03	0.16		0.24	0.04	0.04	0.11			0.08	0.06	0.05

Parameter	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23
Sulfate (mg/L) Average Monthly	47.9	48.3		50.9	45.8	43.6	44.2			38.4	41.4	44.6
Sulfate (mg/L) Daily Maximum	51.1	48.5		50.9	46.9	45.3	47.3			39.7	42.3	45.4
Chloride (mg/L) Average Monthly	15.1	13.8		15.3	14.1	13.5	14.6			15.0	16.1	16.4
Chloride (mg/L) Daily Maximum	16.8	14.2		15.3	14.5	13.9	15.3			15.8	16.4	16.7
Bromide (mg/L) Average Monthly	0.1	0.1		0.1	0.1	0.1	0.1			0.1	0.1	0.1
Bromide (mg/L) Daily Maximum	0.1	0.1		0.1	0.1	0.1	0.1			0.1	0.1	0.1

DMR Data for Outfall 003 (from February 1, 2023 to January 31, 2024)

Parameter	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23
Flow (MGD) Average Monthly	4.89	5.331	6.430	7.140	5.878	6.037	5.32	5.096	5.78	5.330	5.605	5.246
Flow (MGD) Daily Maximum	7.09	8.744	9.041	8.740	8.140	7.968	6.69	6.953	8.19	7.215	6.571	6.113
pH (S.U.) Instantaneous Minimum		7.52			7.68			7.68			8.02	
pH (S.U.) Instantaneous Maximum		7.83			7.46			7.69			8.06	
TSS (mg/L) Average Quarterly		1.0			< 2.0			2.50			4.50	
TSS (mg/L) Daily Maximum		1.0			< 2.0			3.00			6.00	
Total Aluminum (mg/L) Average Quarterly		0.05			< 0.10			0.05			0.45	
Total Aluminum (mg/L) Daily Maximum		0.05			< 0.10			0.05			0.50	
Total Iron (mg/L) Average Quarterly		1.21			0.18			0.34			0.81	
Total Iron (mg/L) Daily Maximum		2.68			3.61			0.36			0.99	
Total Manganese (mg/L) Average Quarterly		0.06			0.02			0.03			0.07	

Parameter	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23
Total Manganese (mg/L) Daily Maximum		0.09			0.02			0.03			0.07	

DMR Data for Internal Monitoring Point 101 (from February 1, 2023 to January 31, 2024)

Parameter	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23
Flow (MGD) Average Monthly	0.711	0.674	0.387	0.152	0.790	0.800	0.883	0.785	0.592	0.676	0.689	0.695
Flow (MGD) Daily Maximum	0.818	1.042	0.678	1.106	1.038	1.09	1.15	0.986	1.05	0.779	0.802	0.904
pH (S.U.) Instantaneous Minimum	7.1	7.15	7.5	7.18	7.7	7.9	7.7	7.8	7.3	7.8	7.8	7.68
pH (S.U.) Instantaneous Maximum	7.9	8.0	8.1	7.9	8.1	8.13	8.3	8.2	8.2	8.2	8.0	8.17
TRC (mg/L) Average Monthly	0.05	0.07	0.09	0.09	0.05	0.04	0.04	0.05	0.06	0.06	0.06	0.06
TRC (mg/L) Instantaneous Maximum	0.22	0.24	0.40	0.44	0.23	0.09	0.11	0.10	0.19	0.16	0.21	0.19
Temperature (°F) Average Monthly	64.2	61.3	65.8	64.2	74.7	73.0	85.1	77.6	73.3	69.4	65.1	64.9
Temperature (°F) Instantaneous Maximum	70.1	68.0	83.1	78.6	80.6	78.0	90.3	84.3	84.1	76.1	71.8	73.8
TSS (mg/L) Average Monthly	4.2	4.3	3.2	6.5	3.5	3.58	4.9	4.6	5.1	10.0	10.0	7.8
TSS (mg/L) Daily Maximum	5.6	6.0	7.6	10.4	4.4	5.5	7.2	6.0	8.0	19.6	12.4	10.80
Total Dissolved Solids (mg/L) Average Monthly	846	825	646	503	877	875	888	932	717	861	870	795
Total Dissolved Solids (mg/L) Daily Maximum	870	934	814	746	1030	948	974	1020	906	908	1220	834
Oil and Grease (mg/L) Average Monthly	< 4.95	< 4.98	< 4.95	< 4.88	< 4.94	< 4.95	< 4.98	< 4.95	< 4.9	< 4.95	< 4.96	< 4.9
Oil and Grease (mg/L) Instantaneous Maximum	< 5.25	< 5.4	< 5.45	< 5.3	< 5.25	< 5.5	< 5.4	< 5.4	< 5.2	< 5.5	< 5.3	< 5.2

Parameter	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23
Total Aluminum (lbs/day) Average Monthly	< 0.63	< 0.61	0.49	0.42	< 0.72	< 0.68	< 0.72	0.67	< 0.6	1.6	1.9	1.5
Total Aluminum (lbs/day) Daily Maximum	0.88	< 0.82	0.57	0.47	0.87	< 0.75	< 0.8	0.82	1.0	2.6	2.2	2.0
Total Aluminum (mg/L) Average Monthly	< 0.1	< 0.1	0.11	0.15	< 0.1	< 0.1	< 0.1	< 0.1	< 0.12	0.29	0.33	0.29
Total Aluminum (mg/L) Daily Maximum	0.14	< 0.1	0.17	0.22	0.12	< 0.1	< 0.1	< 0.1	0.20	0.50	0.41	0.46
Total Copper (ug/L) Average Monthly	10.1	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	10.0	< 10.0	< 10.0	< 10.0	< 10.2	11.0
Total Copper (ug/L) Daily Maximum	10.5	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	10.8	12.2
Total Iron (lbs/year) Average Monthly	2.7	1.86	1.2	1.1	1.7	1.4	1.7	1.8	1.7	4.1	5.1	4.3
Total Iron (lbs/year) Daily Maximum	4.3	3.49	1.4	1.2	2.04	1.6	2.0	1.98	2.8	5.8	6.2	5.3
Total Iron (mg/L) Average Monthly	0.46	0.29	0.29	0.43	0.26	0.21	0.24	0.27	0.34	0.74	0.89	0.8
Total Iron (mg/L) Daily Maximum	0.68	0.43	0.42	0.57	0.34	0.21	0.28	0.31	0.57	1.1	1.22	1.2
Total Manganese (lbs/year) Average Monthly	0.44	0.33	0.27	0.81	0.52	0.22	0.3	0.43	0.41	0.32	0.36	0.44
Total Manganese (lbs/year) Daily Maximum	0.76	0.75	0.35	1.5	1.04	0.42	0.53	0.50	0.75	0.41	0.69	0.78
Total Manganese (mg/L) Average Monthly	0.07	0.05	0.13	0.34	0.08	0.03	0.04	0.06	0.08	0.06	0.06	0.09
Total Manganese (mg/L) Daily Maximum	0.12	0.09	0.39	0.64	0.17	0.06	0.07	0.08	0.15	0.08	1.4	1.8
Sulfate (mg/L) Average Monthly	398	361	258	202	364	391	391	401	345	366	348	319
Sulfate (mg/L) Daily Maximum	416	413	323	286	390	420	413	411	404	392	358	334
Chloride (mg/L) Average Monthly	103	85	96	79	103	93	109	115	108	117	123	104
Chloride (mg/L) Daily Maximum	113	91	123	116	106	100	115	126	137	121	128	107.0

Parameter	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23
Bromide (mg/L) Average Monthly	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Bromide (mg/L) Daily Maximum	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

DMR Data for Internal Monitoring Point 201 (from February 1, 2023 to January 31, 2024)

Parameter	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23
Flow (MGD) Average Monthly	0.036	0.047	0.048	0.019	0.119	0.084	0.104	0.063	0.058	0.049	0.063	0.057
Flow (MGD) Daily Maximum	0.122	0.220	0.1983	0.198	0.218	0.142	0.164	0.122	0.209	0.120	0.130	0.132
pH (S.U.) Instantaneous Minimum	7.5	7.5	7.3	6.5	7.4	7.3	7.3	7.7	7.5	7.5	7.3	7.9
pH (S.U.) Instantaneous Maximum	7.9	7.8	7.9	7.6	7.8	7.8	7.81	7.9	8.8	8.6	8.3	8.68
TSS (mg/L) Average Monthly	2.3	3.4	4.2	4.8	2.7	4.3	3.3	2.5	4.6	5.1	3.8	2.9
TSS (mg/L) Daily Maximum	4.0	7.6	10.0	6.0	4.0	10.0	6.8	4.0	8.0	6.4	7.6	4.8
Oil and Grease (mg/L) Average Monthly	< 4.9	< 4.9	< 4.9	< 4.9	< 4.8	< 4.8	< 4.8	< 4.9	< 4.8	< 4.8	< 4.8	< 4.90
Oil and Grease (mg/L) Daily Maximum	< 5.1	< 5.0	< 5.0	< 5.1	< 5.0	< 4.9	< 4.9	< 5.05	< 4.9	< 4.85	< 4.9	< 5.05

DMR Data for Internal Monitoring Point 301 (from February 1, 2023 to January 31, 2024)

Parameter	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23
Flow (MGD) Average Monthly	0.692	0.628	0.359	0.143	0.682	0.750	0.843	0.788	0.631	0.628	0.626	0.638
Flow (MGD) Daily Maximum	0.835	0.870	0.849	0.921	0.869	0.991	1.07	1.035	0.982	0.718	0.720	0.806
pH (S.U.) Instantaneous Minimum	8.3	8.3	7.9	6.75	8.3	8.26	8.3	8.4	7.9	8.1	8.1	8.4
pH (S.U.) Instantaneous Maximum	8.47	8.5	8.5	8.4	8.4	8.39	8.6	8.5	8.4	8.5	8.4	8.5
Free Available Chlorine (mg/L) Average Monthly	0.12	0.11	0.12	0.12	0.10	0.11	0.12	0.12	0.11	0.13	0.13	0.12

Parameter	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23
Free Available Chlorine (mg/L) Instantaneous Maximum	0.16	0.17	0.16	0.16	0.16	0.16	0.15	0.16	0.17	0.17	0.17	0.17
Total Chromium (mg/L) Average Monthly	< 0.005	0.005	< 0.005	0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Total Chromium (mg/L) Daily Maximum	< 0.005	0.005	< 0.005	0.006	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Total Zinc (mg/L) Average Monthly	< 0.02	0.02	0.05	0.02	0.03	0.02	0.02	0.03	0.02	0.03	0.03	0.028
Total Zinc (mg/L) Daily Maximum	< 0.02	0.03	0.17	0.03	0.04	0.02	0.03	0.06	0.03	0.04	0.04	0.036

Compliance History

Effluent Violations for Outfall 001, from: April 1, 2023 to February 29, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Total Aluminum	07/31/23	Daily Max	0.80	mg/L	0.75	mg/L
Total Aluminum	07/31/23	Daily Max	0.80	mg/L	0.75	mg/L
Total Manganese	07/31/23	Daily Max	2.58	mg/L	2.0	mg/L
Total Manganese	07/31/23	Daily Max	2.58	mg/L	2.0	mg/L

Summary of Inspections:

Other Comments:

Effluent Violations for Outfall 003, from: April 1, 2023 to February 29, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Total Iron	09/30/23	Daily Max	3.61	mg/L	3.0	mg/L
Total Iron	09/30/23	Daily Max	3.61	mg/L	3.0	mg/L
Total Iron	09/30/23	Daily Max	3.61	mg/L	3.0	mg/L
Total Iron	09/30/23	Daily Max	3.61	mg/L	3.0	mg/L
Total Iron	09/30/23	Daily Max	3.61	mg/L	3.0	mg/L

Summary of Inspections:

Other Comments:

Development of Effluent Limitations

IMP Nos.	101, 201, and 301	Design Flow (MGD)	1.19; 0.180; 1.03
Latitude	40° 41' 20"	Longitude	-78° 85' 5"

Treated effluent from the Reclaim Water Treatment Plant including low volume waste sources consisting of demineralizer backwash water, reverse osmosis reject water, greensand filter backwash water, water from plant drains pretreated in oil/water separators, and filter press filtrate and flush water monitored at IMP 201 and cooling tower blowdown monitored at IMP 301

Wastewater Description:

Effluent limits are imposed at IMP 101 rather than another monitoring location because 40 CFR § 125.3(f) prohibits compliance with technology-based treatment requirements using “non-treatment” techniques such as flow augmentation (i.e., dilution). Since the wastewaters monitored at IMP 101 combine with other waters in CSA’s system before the next downstream monitoring location (Outfall 001 or Outfall 002), IMP 101 is the only point at which compliance with applicable effluent limits can be determined without the interference of other wastewaters. That rationale is consistent with 40 CFR § 122.45(h)¹, which allows for the imposition of effluent limitations on internal waste streams in these circumstances. The rationale also applies to IMPs 201 and 301.

IMPs 101, 201 and 301 are currently subject to the following effluent limits and monitoring requirements.

Table 1. IMP 101 – Current Effluent Limits and Monitoring Requirements

Parameter	Mass (lbs/day)		Concentration (mg/L)			Measurement Frequency	Sample Type	Limit Basis
	Avg. Mo.	Max Daily	Avg. Mo.	Max Daily	IMAX			
Flow (MGD)	Report	Report	—	—	—	Continuous	Metered	§ 92.61(d)(1)
TRC	—	—	0.5	—	1.6	1/day	Grab	§ 92a.48(b)
Temperature (°F)	—	—	—	—	110	1/day	I-S	Effluent Std.
TSS	—	—	Report	Report	—	1/week	24-Hr Comp.	§ 92.61(b)
TDS	—	—	Report	Report	—	1/week	24-Hr Comp.	§ 92.61(b)
Oil and Grease	—	—	15.0	—	30.0	—	Grab	§ 95.2(2)
Aluminum, Total	Report	Report	Report	Report	—	1/week	24-Hr Comp.	§ 92.61(b)
Copper, Total	—	—	Report	Report	—	1/week	24-Hr Comp.	§ 92.61(b)
Iron, Total	Report	Report	Report	Report	—	1/week	24-Hr Comp.	§ 92.61(b)
Manganese, Total	Report	Report	Report	Report	—	1/week	24-Hr Comp.	§ 92.61(b)
Sulfate, Total	—	—	Report	Report	—	1/week	24-Hr Comp.	§ 92.61(b)
Chloride	—	—	Report	Report	—	1/week	24-Hr Comp.	§ 92.61(b)
Bromide	—	—	Report	Report	—	1/week	24-Hr Comp.	§ 92.61(b)
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	1/day	Grab	§ 95.2(1)

Table 2. IMP 201 – Current Effluent Limits and Monitoring Requirements

Parameter	Mass (lbs/day)		Concentration (mg/L)			Measurement Frequency	Sample Type	Limit Basis
	Avg. Mo.	Max Daily	Avg. Mo.	Max Daily	IMAX			
Flow (MGD)	Report	Report	—	—	—	1/week	Measured	§ 92.61(d)(1)
TSS	—	—	30.0	100.0	—	1/week	Grab-Comp.	40 CFR §
Oil and Grease	—	—	15.0	20.0	—	1/week	Grab-Comp.	423.15(b)(3)
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	1/week	Grab	40 CFR § 423.15(b)(1)

Table 3. IMP 301 – Current Effluent Limits and Monitoring Requirements

Parameter	Mass (lbs/day)		Concentration (mg/L)			Measurement Frequency	Sample Type	Limit Basis
	Avg. Mo.	Max Daily	Avg. Mo.	Max Daily	IMAX			
Flow (MGD)	Report	Report	—	—	—	1/week	Measured	§ 92.61(d)(1)
FAC	—	—	0.5	—	1.6	1/week	Grab	40 CFR § 423.15(b)(10)(i)
Chromium, Total	—	—	0.2	0.2	—	1/week	Grab	
Zinc, Total	—	—	1.0	1.0	—	1/week	Grab	
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	1/week	Grab	40 CFR § 423.15(b)(1)

¹ 40 CFR § 122.45(h)(1): “When permit effluent limitations or standards imposed at the point of discharge are impractical or infeasible, effluent limitations or standards for discharges of pollutants may be imposed on internal waste streams before mixing with other waste streams or cooling water streams.”

The effluent limits in Tables 1, 2 and 3 will remain in effect at IMPs 101, 201, and 301 pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l)—unless the limits are superseded by more stringent limits or are relaxed pursuant to the anti-backsliding exceptions listed in Section 402(o) of the Clean Water Act and/or 40 CFR § 122.44(l).

IMP.A. Technology-Based Effluent Limitations (TBELs)

Federal Effluent Limitations Guidelines (ELGs)

DEP previously determined that CPV Fairview's discharges are subject to the 2015 New Source Performance Standards (2015 NSPS) under 40 CFR § 423.15(b) of the Steam Electric Power Generating Point Source Category ELGs because:

- 1) CPV Fairview is a "new source" pursuant to the definition of that term in 40 CFR §§ 122.2 and the criteria for a new source determination in § 122.29(b)(1);
- 2) There are standards of performance (*i.e.*, 2015 NSPS) that independently apply to CPV Fairview; and
- 3) Construction of CPV Fairview commenced after November 17, 2015, which is the date that splits the applicability of two different sets of NSPS in 40 CFR Part 423.

For reference, 40 CFR § 122.29(b) states the following:

(b) Criteria for new source determination.

- (1) Except as otherwise provided in an applicable new source performance standard, a source is a "new source" if it meets the definition of "new source" in §122.2, and
 - (i) It is constructed at a site at which no other source is located; or
 - (ii) It totally replaces the process or production equipment that causes the discharge of pollutants at an existing source; or
 - (iii) Its processes are substantially independent of an existing source at the same site. In determining whether these processes are substantially independent, the Director shall consider such factors as the extent to which the new facility is integrated with the existing plant; and the extent to which the new facility is engaged in the same general type of activity as the existing source.
- (2) A source meeting the requirements of paragraphs (b)(1) (i), (ii), or (iii) of this section is a new source only if a new source performance standard is independently applicable to it. If there is no such independently applicable standard, the source is a new discharger. See §122.2."

As § 122.29(b)(1) states, a source is a new source if it meets the definition of "new source" in § 122.2 and is described by any of the subsections of § 122.29(b)(1) reproduced above. Section 122.2 defines "new source" as:

New source means any building, structure, facility, or installation from which there is or may be a "discharge of pollutants," the construction of which commenced:

- (a) After promulgation of standards of performance under section 306 of CWA which are applicable to such source, or
- (b) After proposal of standards of performance in accordance with section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with section 306 within 120 days of their proposal.

The CPV Fairview property is 86 acres and was previously used as a salvage yard. Construction of CPV Fairview commenced on October 24, 2017. To the extent that there was an existing source already at the site (a salvage yard), CPV Fairview totally replaced the processes that caused the discharge of pollutants from that salvage yard. The salvage yard was closed, and the site redeveloped to allow CPV Fairview to be constructed.

There are two sets of New Source Performance Standards in Part 423, 1982 NSPS and 2015 NSPS. 2015 NSPS apply to new sources as of November 17, 2015. CPV initiated construction of CPV Fairview on October 24, 2017, which subjects the plant to 2015 NSPS. The 2015 NSPS independently apply to CPV Fairview, so CPV Fairview is a "new source" and not a "new discharger" as defined in 40 CFR § 122.2.

Consolidation of Effluent Limits

In the NPDES permit renewal application, CPV proposed the following changes to the permit:

<u>Current Monitoring</u>	<u>Proposed Change</u>	<u>Justification for Change</u>
IMP 101 Daily Oil and Grease Sample	Weekly sample	Over 500 samples taken – all non-detect
IMP 201 Monitoring Point	Eliminate IMP 201	This is influent to the onsite RWT This influent cannot bypass RWT w/out DEP approval IMP 101 limits are in place
IMP 301 Free Chlorine Limit	Eliminate Limit	This is influent to the onsite RWT This influent cannot bypass RWT w/out DEP approval IMP 101 limits are in place
IMP 301 Monitoring Point	Eliminate IMP 301	This is influent to the onsite RWT This influent cannot bypass RWT w/out DEP approval IMP 101 limits are in place

CPV justified its request to eliminate IMPs 201 and 301 by stating, among other things, that effluent limits are already in place at IMP 101. IMP 101 regulates the combined discharge of IMP 201’s low volume waste sources and IMP 301’s cooling tower blowdown after treatment in the Reclaim Water Treatment Plant.

DEP explained to CPV in a pre-application conference call in March 2021 and in a series of emails in April 2022 that ELGs for the Steam Electric Power Generating Point Source Category under 40 CFR Part 423 require that specific effluent streams comply with specific effluent limits. Regulations in 40 CFR § 125.3(f) further require that “[t]echnology-based treatment requirements cannot be satisfied using “non-treatment” techniques such as flow augmentation and in-stream mechanical aerators.” Those regulations mean that 1) the permit must enable permittees to demonstrate that specific wastewaters comply with specific limits; and 2) dilution cannot be used to comply with those limits. IMPs 201 and 301 were created to ensure compliance with those regulations.

Various low volume waste sources—some of which receive treatment in oil/water separators before flowing to the Reclaim Water Treatment Plant—combine with cooling tower blowdown in the Reclaim Water Treatment Plant Influent Collection Tank. Low volume waste sources are subject to different limits than cooling tower blowdown. IMPs 201 and 301 cannot be eliminated without imposing IMP 201’s ELG limits for low volume waste sources and IMP 301’s ELG limits for cooling tower blowdown at another location. The replacement limits could be flow-weighted concentration limits and/or mass limits calculated using the ELGs’ concentration limits and reasonable measures of the flow rates of the individual low volume waste sources and cooling tower blowdown. Those limits would have to be imposed at IMP 101 to ensure that the co-dilution of dissimilar wastes (e.g., the mixing of oil-bearing low volumes wastes and non-oil-bearing blowdown or the mixing of non-chlorine bearing low volume wastes and chlorine-bearing blowdown) does not result in the waste streams diluting each other into compliance with the ELGs’ limits, which is prohibited by 40 CFR § 125.3(f). DEP does not have the authority to waive ELG requirements for federally regulated wastewaters.

On May 25, 2022, CPV amended its requested permit revisions as follows:

1. Eliminate testing for oil and grease at IMP 101. Oil and Grease (O&G) sampling/testing is required by 40 CFR Part 423, which, in this context, limits the quantity of pollutants discharged from low volume waste sources. The sampling/testing required at IMP 201 addresses this requirement. Since cooling water blowdown is not expected to contain oil and grease, the subsequent addition of flow from cooling water blowdown, downstream of IMP 201, will not add oil and grease. As a result, if the O&G requirements are met at IMP 201, then there should be no need to test at IMP 101. To-date, all O&G tests (850+ tests) at IMP 101 have been non-detect.
2. Eliminate the requirement for pH at IMP 201. IMP 201 represents an internal monitoring location. No effluent is discharged to the environment at that location. Moreover, fluctuating pH levels at that location do not impact the performance of the wastewater treatment system. Additionally, EPA has recognized that the pH limitations for low volume waste sources may be applied after the low volume waste is combined with cooling water. Specifically, as stated in the attached EPA interpretation, dated March 21, 1986, “The pH limitations for the low volume waste...may be applied after combination with once through cooling water, provided that monitoring is prior to discharge to water of the United States.”

3. Eliminate testing for Free Available Chlorine at IMP 301. As noted above, bisulfite is added to cooling tower blowdown between the Cooling Tower Basin and IMP 301 in order to remove residual chlorine due to the permit limitation at IMP 301. Bleach dosing is then required after IMP 301 for the safe and proper operation of the Greensand filters. Bisulfite is then added again prior to IMP 101 to ensure permit compliance. By eliminating IMP 301 chlorine testing, the facility can maintain compliance at IMP 101 with less chlorine and bisulfite, thereby reducing risk to the environment.

With respect to Oil and Grease, the limits will remain in effect at IMP 201 because flow-weighted concentration limits and modified mass limits for Oil and Grease at IMP 101 would not be workable. DEP understands that IMP 201's and IMP 301's wastewaters are treated by the Reclaim Water Treatment Plant, but that plant is not designed to remove Oil and Grease, which is why certain oil-bearing low volume waste sources are pretreated by oil/water separators before combining with other low volume waste sources and cooling tower blowdown for further treatment in the Reclaim Water Treatment Plant. Also, flow-weighted concentration limits for Oil and Grease would be at concentrations that laboratories are unable to quantify due to the amount of dilution from cooling tower blowdown that would have to be considered. Due to that analytical limitation, DEP would not be able to determine whether the effluent complies with flow-weighted concentration limits for Oil and Grease at IMP 101.² Similarly, mass loadings for Oil and Grease calculated using concentrations at a reporting limit of 5 mg/L would be biased high and may not comply with mass limits calculated using a flow-weighted concentration limit at a magnitude less than 5 mg/L.

TSS and Free Available Chlorine do not have the same limit derivation problems as Oil and Grease, so mass limits will be calculated for those pollutants and imposed at IMP 101 rather than IMPs 201 and 301.

The Oil and Grease limits at IMP 101 were not imposed pursuant to 40 CFR Part 423. The limits were imposed pursuant to 25 Pa. Code § 95.2(2), which states:

- (2) Oil-bearing wastewaters, except those subject to paragraph (3), must comply with the following:
 - (i) At no time cause a film or sheen upon or discoloration of the waters of this Commonwealth or adjoining shoreline.
 - (ii) At no time contain more than 15 milligrams of oil per liter as a daily average value nor more than 30 milligrams of oil per liter at any time, or whatever lesser amount the Department may specify for a given discharge or type of discharge as being necessary for the proper protection of the public interest or to meet any requirements based upon the State Act or the Federal Act, as defined in § 92.1 (relating to definitions).

CPV supported its request to eliminate Oil and Grease from IMP 101 by stating that all Oil and Grease test results were non-detect. Results from the eDMR system show that Oil and Grease was detected at IMP 101 after startup in October and November 2019 (5.89 mg/L IMAX and 10.7 mg/L IMAX) and there was a reported Oil and Grease detection in April 2021 (19.2 mg/L IMAX). Apart from those results, DMR data appear to support the premise that discharges at IMP 101 are not characteristically oil-bearing wastewaters. However, since Oil and Grease may be present in the effluent at times, the Oil and Grease limits will remain in effect, but the sampling frequency will be reduced from 1/day to 1/week, which represents an 85% reduction in CPV Fairview's sampling requirements for Oil and Grease at IMP 101.

Other Effluent Limits and Monitoring Requirements at IMP 101

Temperature

An instantaneous maximum temperature limit of 110°F was imposed at IMP 101 in the previous permit and will be maintained at IMP 101 in the renewed permit pursuant to anti-backsliding requirements under 40 CFR § 122.44(I). The rationale for that limit was to protect downstream users as explained in the section of the previous permit's Fact Sheet reproduced below. That rationale has not changed.

The reclaim water will contain cooling tower blowdown, which is warmed within the plant as a reservoir for heat from the combustion of the natural gas fuel. The cooling tower water will be blended with the low volume waste at ambient temperatures and returned to the below grade CSA pipeline. The water will receive significant geothermal cooling along the approximate 8-mile pipeline to the outfalls. The reclaim water agreement between CPV and CSA limits the temperature of the final discharge from the plant to protect the downstream users. In the interest of public safety, DEP's "Implementation Guidance for Temperature Criteria" [Doc. No. 391-2000-017, April 11, 2009]

² Based on average reported flow rates, the flow-weighted average monthly Oil and Grease concentration limit at IMP 101 would be about 2.2 mg/L, which is less than the typical 5.0 mg/L reporting limit of EPA Method 1664 for Oil and Grease.

guidance states that thermal discharges may not exceed 110°F (43.3°C) at any point accessible to the general public. The guidance states the 110°F limit does not apply at internal monitoring points located within a facility, but using Best Professional Judgment, the 110°F (43.3°C) will apply at the final IMP 101 takeover point at the plant. Downstream industrial users will be utilizing the water for their internal operations and may come into contact with the water. IMP 101 is the most downstream accessible location for sampling prior to use by the next industrial user.

Total Residual Chlorine (TRC)

Effluent limits for TRC were imposed at IMP 101 in the previous permit pursuant to DEP's "Standard Operating Procedure for Clean Water Program Establishing Effluent Limitations for Individual Industrial Permits" [SOP No. BCW-PMT-032, October 1, 2020, Version 1.6] and DEP's Best Professional Judgment. Recommendations for TRC in the current version of the SOP (v1.7 from February 5, 2024) have not changed. Even though limits for Free Available Chlorine will be imposed at IMP 101, the TRC limits will remain in effect because those limits are consistent with 25 Pa. Code 92a.48(b)(1) and (b)(2). Section 92a.48(b) states:

- (b) For facilities or activities using chlorination, the following apply:
- (1) If the EPA adopts a National categorical ELG promulgating limits for Total Residual Chlorine (TRC) or free available chlorine for a specific industry or activity under section 301 or 304(b) of the Federal Act (33 U.S.C.A. §§ 1311 and 1314(b)), that ELG constitutes BAT for the industry or activity. If the EPA has not promulgated a National ELG for TRC or free available chlorine for an industry or activity, the Department may develop a facility-specific BAT effluent limitation for TRC. Factors, which will be considered in developing a facility-specific BAT effluent limitation, include the following:
 - (i) The age of equipment and facilities involved.
 - (ii) The engineering aspects of the application of various types of control techniques and alternatives to the use of chlorine or reductions in the volume of chlorine used during the disinfection process.
 - (iii) The cost of achieving the effluent reduction.
 - (iv) Nonwater quality environmental impacts (including energy requirements).
 - (v) Other factors the Department deems appropriate.
 - (2) For facilities where the EPA has not promulgated a National ELG setting forth limits for TRC or free available chlorine for an industry or activity, and the Department has not developed a facility-specific BAT effluent limitation for TRC under the factors in paragraph (1), an effluent limitation for TRC of 0.5 milligrams per liter (30-day average) constitutes BAT.

EPA has promulgated limits for free available chlorine in cooling tower blowdown in 40 CFR Part 423. As explained above, mass limits for free available chlorine will be imposed at IMP 101 based on the flow rate of cooling tower blowdown as necessary to implement Part 423's standards of performance for cooling tower blowdown. However, CPV adds sodium hypochlorite before the greensand filter units in the Reclaim Water Treatment Plant. That chemical addition constitutes chlorination under § 92a.48 and the chlorinated wastewaters include low volume waste sources, which are not subject to national standards of performance for either TRC or free available chlorine. Therefore, pursuant to § 92a.48(b)(2), TRC limits are imposed to regulate TRC levels in the combined effluent. CPV adds sodium bisulfite for dechlorination downstream of the greensand filters, so CPV is expected to comply (and has complied) with the TRC limits at IMP 101.

Aluminum, Iron, Manganese, Copper, TDS, Chloride, Bromide, and Sulfate

In the previous permit, monitoring was required at IMP 101 for any pollutant with either an effluent limit or monitoring requirement at Outfall 001 or Outfall 002. The monitoring was required because CPV is the only industrial wastewater contributor to CSA's discharges. The monitoring requirements included reporting of average monthly and maximum daily concentrations of aluminum, iron, manganese, copper, TDS, chloride, bromide, and sulfate, and average monthly and maximum daily loads of aluminum, iron, and manganese.

The aluminum, iron, manganese, and copper monitoring will be maintained pursuant to 25 Pa. Code § 92a.61(b) (regarding reasonable monitoring requirements) and 40 CFR § 122.44(l) (regarding anti-backsliding) to the extent that limits and/or monitoring for metals are maintained at Outfall 001 or Outfall 002. The reporting requirements for TDS, chloride, bromide, and sulfate will be removed from IMP 101 pursuant to 40 CFR § 122.44(l)(2)(i)(B)(1) (regarding new information that justifies less stringent limits) because DEP's monitoring initiative for those pollutants ended in 2021. Since reporting for those pollutants will not be required at Outfalls 001 and 002 (see Sections 001.B and 002.B of this Fact Sheet), upstream reporting for those pollutants at IMP 101 is not necessary.

Per- and Polyfluoroalkyl Substances (PFAS)

In February 2024, DEP implemented a new monitoring initiative for PFAS. PFAS are a family of thousands of synthetic organic chemicals that contain a chain of strong carbon-fluorine bonds. Many PFAS are highly stable, water- and oil-resistant, and exhibit other properties that make them useful in a variety of consumer products and industrial processes. PFAS are resistant to biodegradation, photooxidation, direct photolysis, and hydrolysis and do not readily degrade naturally; thus, many PFAS accumulate over time. According to the United States Department of Health and Human Services, Agency for Toxic Substances and Disease Registry (ATSDR), the environmental persistence and mobility of some PFAS, combined with decades of widespread use, have resulted in their presence in surface water, groundwater, drinking water, rainwater, soil, sediment, ice caps, outdoor and indoor air, plants, animal tissue, and human blood serum across the globe. ATSDR also reported that exposure to certain PFAS can lead to adverse human health impacts.³ Due to their durability, toxicity, persistence, and pervasiveness, PFAS have emerged as significant pollutants of concern.

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

- a. If sampling that is completed as part of the permit renewal application reveals a detection of PFOA, PFOS, HFPO-DA or PFBS (any of these compounds), the application manager will establish a quarterly monitoring requirement for PFOA, PFOS, HFPO-DA and PFBS (all of these compounds) in the permit.
- b. If sampling that is completed as part of the permit renewal application demonstrates non-detect values at or below the Target QLs for PFOA, PFOS, HFPO-DA and PFBS (all of these compounds in a minimum of 3 samples), the application manager will establish an annual monitoring requirement for PFOA, PFOS, HFPO-DA and PFBS in the permit.
- c. In all cases the application manager will include a condition in the permit that the permittee may cease monitoring for PFOA, PFOS, HFPO-DA and PFBS when the permittee reports non-detect values at or below the Target QL for four consecutive monitoring periods for each PFAS parameter that is analyzed. Use the following language: The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 consecutive monitoring periods indicate non-detects at or below Quantitation Limits of 4.0 ng/L for PFOA, 3.7 ng/L for PFOS, 3.5 ng/L for PFBS and 6.4 ng/L for HFPO-DA. When monitoring is discontinued, permittees should enter a No Discharge Indicator (NODI) Code of "GG" on DMRs.

CPV's application was submitted before the NPDES permit application forms were updated to require sampling for PFOA, PFOS, PFBS, and HFPO-DA. Also, according to EPA's research, CPV does not operate in one of the industries EPA expects to be a source for PFAS.⁴ Therefore, annual reporting of PFOA, PFOS, PFBS, and HFPO-DA will be required consistent with Section II.I.b of SOP BCW-PMT-032.

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

Low Volume Waste Sources from IMP 201

CPV Fairview's low volume waste sources include service water media filter backwash, demineralizer pretreatment system backwash, demineralizer reject, oil/water separator effluent from facility drains, and steam cycle sample system drains. Those sources combine in the low volume waste chamber and flow over a weir into the main chamber of the Reclaim Water Treatment Plant Influent Collection Tank to combine with cooling tower blowdown for further treatment. IMP 201 is sampled at the weir overflow.

Low volume waste sources are subject to pH limits from 423.15(b)(1), TSS and Oil and Grease limits from 423.15(b)(3), and a prohibition on discharges of PCBs from 423.15(b)(2). The limits are summarized in Table 4.

³ ATSDR, "Toxicological Profile for Perfluoroalkyls". Patrick N. Breyse, Ph.D., CIH Director, National Center for Environmental Health and Agency for Toxic Substances and Disease Registry Centers for Disease Control and Prevention, May 2021.

⁴ USEPA, "Multi-Industry Per- and Polyfluoroalkyl Substances (PFAS) Study – 2021 Preliminary Report". Office of Water (4303T). EPA-821-R-21-004. September 2021.

Table 4. 40 CFR Part 423 – Steam Electric 2015 NSPS for Low Volume Waste Sources at IMP 201

Pollutant	Average of daily values for 30 consecutive days (mg/L)	Maximum for any 1 day (mg/L)	Basis
TSS	30.0	100.0	40 CFR § 423.15(b)(3)
Oil and Grease	15.0	20.0	40 CFR § 423.15(b)(3)
pH	within the range of 6.0 to 9.0		40 CFR § 423.15(b)(1)
There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.			40 CFR § 423.15(b)(2)

DEP frequently opts to impose concentration limits rather than mass limits, but mass limits will be imposed for TSS at IMP 101 rather than IMP 201, as discussed previously. TSS concentration reporting will still be required at IMP 201.

Part 423 specifies that the quantity of pollutants discharged from low volume waste sources shall not exceed the quantity determined by multiplying the flow of low volume waste sources by the concentration. CPV has reported flows at IMPs 201 and 301 since discharges commenced in late 2019. Reasonable measures of the flow rates used to calculate mass limits are taken as the long-term average of CPV’s reported maximum daily flows. For IMP 201, the long-term average maximum daily flow is 0.1798 MGD based on flows reported between November 2019 and January 2024. For IMP 301, the long-term average maximum daily flow based that same timeframe is 1.03148 MGD.

Assuming TSS is not present in significant concentrations in cooling tower blowdown, the quantities of TSS allowed at IMP 101 are:

TSS Average Monthly Limit: $(30.0 \text{ mg/L} \times 0.1798 \text{ MGD}) + (0 \text{ mg/L} \times 1.03148 \text{ MGD}) = C_{\text{AML}} (0.1798 \text{ MGD} + 1.03148 \text{ MGD})$

$$C_{\text{AML}} = (5.367 + 0) \div (0.1798 + 1.03148) = 5.367 \div 1.21128 = \mathbf{4.43 \text{ mg/L}}$$

TSS Maximum Daily Limit: $(100.0 \text{ mg/L} \times 0.1798 \text{ MGD}) + (0 \text{ mg/L} \times 1.03148 \text{ MGD}) = C_{\text{MDL}} (0.1798 \text{ MGD} + 1.03148 \text{ MGD})$

$$C_{\text{MDL}} = (17.98 + 0) \div (0.1798 + 1.03148) = 17.98 \div 1.21128 = \mathbf{14.84 \text{ mg/L}}$$

CPV requested pH limits to be removed from IMP 201. Whether the pH limits can be removed from IMP 201 depends on whether cause exists to modify those limits pursuant to anti-backsliding requirements under 40 CFR § 122.44(l)(1), which states:

- (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under § 122.62.)

[Note: the referenced exception in paragraph (l)(2) relates to case-by-case TBELs and does not apply to IMP 201’s pH limits because the pH limits are based on a Federal ELGs.]

There are various causes for modification in § 122.62. Potentially relevant causes include:

§ 122.62(a)(1) **Alterations.** There are material and substantial alterations or additions to the permitted facility or activity (including a change or changes in the permittee’s sludge use or disposal practice) which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit.

§ 122.62(a)(2) **Information.** The Director has received new information. Permits may be modified during their terms for this cause only if the information was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and would have justified the application of different permit conditions at the time of issuance. For NPDES general permits (§ 122.28) this cause includes any information indicating that cumulative effects on the environment are unacceptable. For new source or new discharger NPDES permits §§ 122.21, 122.29), this cause shall include any significant information derived from effluent testing required under § 122.21(k)(5)(vi) or § 122.21(h)(4)(iii) after issuance of the permit.

§ 122.62(a)(15) To correct technical mistakes, such as errors in calculation, or mistaken interpretations of law made in determining permit conditions.

Among other things, CPV cited an internal EPA memo from March 21, 1986 (see **Attachment A**) as the basis for its request to remove pH limits from IMP 201. In the memo, EPA acknowledged that pH limitations for low volume wastes could be applied after combination with once-through cooling water if monitoring for pH is conducted before discharging to waters of the United States. That memo does not apply to CPV because CPV Fairview’s low volume wastes combine with cooling tower blowdown, which has different chemical characteristics than once-through cooling water because blowdown originates from recirculated cooling water. As EPA’s memo states, once-through cooling water is not subject to pH limits under Part 423 because the pH of the intake water remains virtually unchanged by passage through the condensers. However, cooling tower blowdown is not exempt from pH limits under Part 423 because the pH of recirculated cooling water can change from intake values due to the buildup of mineral deposits. Carbonate and bicarbonate compounds are present in surface intake water in dissolved form and can build up as scale in a cooling system. Mineral deposits tend to increase the pH of recirculated cooling water.

EPA’s memo existed when the NPDES permit amendment to incorporate CPV Fairview’s discharges was issued. DEP was not aware of the existence of the memo, but the memo does not apply to CPV’s situation, so it does not constitute new information that justifies the removal of pH limits from IMP 201.

However, other information supports the removal of pH limits from IMP 201 and IMP 301, provided pH limits remain at IMP 101. When the NPDES permit to authorize CPV Fairview’s discharges was issued on December 21, 2016, CPV had a general plan for wastewater treatment. The detailed design of the Reclaim Water Treatment Plant was permitted by Water Quality Management (WQM) Permit 1117201 issued on March 2, 2018. The supporting documentation for the WQM permit identified pH adjustment as a treatment step for the combined wastewaters from IMP 201 and IMP 301. As explained previously, the co-dilution of dissimilar wastes is not considered treatment, but the design of the Reclaim Water Treatment Plant includes pH adjustment for the combination of both low volume waste sources and cooling tower blowdown. Both wastewater types are independently subject to part 423’s pH effluent standards, but since CPV provides pH treatment for the combination of both sources, DEP considers it appropriate for pH limits to be applied only at IMP 101—notwithstanding any co-dilution/pH neutralization that occurs circumstantially from the mixing of those wastewaters before treatment.

The information about the Reclaim Water Treatment Plant’s pH adjustment component was made available to DEP with the WQM permit application after the NPDES permit for CPV Fairview’s discharges was issued. Therefore, that information is “new information” that was not available at the time of permit issuance. Pursuant to 40 CFR § 122.44(l)(1) and the cause for modification in 122.62(a)(2), the pH limits will be removed from IMPs 201 and 301, but weekly reporting of pH will be required at those locations. The existing pH limits at IMP 101 will remain in effect but the bases for the limits will include both 40 CFR § 423.15(b)(1) and 25 Pa. Code § 95.2(1).

Cooling Tower Blowdown from IMP 301

Cooling tower blowdown is subject to pH limits from 423.15(b)(1), TSS and Oil and Grease limits from 423.15(b)(3), and a prohibition on discharges of PCBs from 423.15(b)(2). The limits are summarized in Table 5.

Table 5. 40 CFR Part 423 – Steam Electric 2015 NSPS for Cooling Tower Blowdown at IMP 301

Pollutant	Average Concentration (mg/L)	Maximum Concentration (mg/L)	Basis
Free Available Chlorine	0.2	0.5	40 CFR § 423.15(b)(10)(i)
Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Regional Administrator or State, if the State has NPDES permit issuing authority, that the units in a particular location cannot operate at or below this level of chlorination.			40 CFR § 423.15(b)(10)(ii)
Pollutant	Average of daily values for 30 consecutive days (mg/L)	Maximum for any 1 day (mg/L)	Basis
Chromium, Total	0.2	0.2	40 CFR § 423.15(b)(10)(i)
Zinc, Total	1.0	1.0	40 CFR § 423.15(b)(10)(i)
The 126 priority pollutants contained in chemicals added for cooling tower maintenance	No detectable amount	No detectable amount	40 CFR § 423.15(b)(10)(i)
pH	within the range of 6.0 to 9.0		40 CFR § 423.15(b)(1)

As explained previously, the pH limits for cooling tower blowdown will be imposed at IMP 101 and the Free Available Chlorine limits will be imposed as mass limits at IMP 101 based on the concentrations in Table 5 and the flows reported at

IMP 301. Assuming that Free Available Chlorine is not present in significant concentrations in low volume waste sources, the quantities of Free Available Chlorine allowed at IMP 101 are:

$$\text{FAC Average Monthly Limit: } (0 \text{ mg/L} \times 0.1798 \text{ MGD}) + (0.2 \text{ mg/L} \times 1.03148 \text{ MGD}) = C_{\text{AML}} (0.1798 \text{ MGD} + 1.03148 \text{ MGD})$$

$$C_{\text{AML}} = (0 + 0.206296) \div (0.1798 + 1.03148) = 0.206296 \div 1.21128 = \mathbf{0.170 \text{ mg/L}}$$

$$\text{FAC Maximum Daily Limit: } (0 \text{ mg/L} \times 0.1798 \text{ MGD}) + (0.5 \text{ mg/L} \times 1.03148 \text{ MGD}) = C_{\text{MDL}} (0.1798 \text{ MGD} + 1.03148 \text{ MGD})$$

$$C_{\text{MDL}} = (0 + 0.51574) \div (0.1798 + 1.03148) = 0.51574 \div 1.21128 = \mathbf{0.426 \text{ mg/L}}$$

CPV did not request any changes to the chromium and zinc limits at IMP 301, so those limits will remain in effect. However, pursuant to CPV's request in comments on the previous permit, DEP will consider sampling frequency reductions for Total Chromium and Total Zinc at IMP 301. Based on Maximum Daily effluent results reported by CPV between October 2019 and January 2024, the long-term average Total Chromium concentration at IMP 301 is 0.0058 mg/L and long-term average Total Zinc concentration at IMP 301 is 0.0637 mg/L using delta-lognormal distributions because the data include detected results and non-detect results. The ratios of the Long-Term Average Concentrations to the Monthly Average Limits (expressed as a percentage) are summarized in the table below.

Table 6. Long-Term Average to Monthly Average Limit Ratios for Chromium and Zinc at IMP 301

Parameter	Long-Term Average Concentration	Monthly Average Limit	Ratio of Long-Term Average to Monthly Average Limit
Chromium, Total	0.0058	0.2	2.9%
Zinc, Total	0.0637	1.0	6.37%

Pursuant to Table 1 in EPA's "Interim Guidance For Performance-Based Reduction Of NPDES Permit Monitoring Frequencies" [EPA 833-B-96-001, April 1996], when baseline monitoring is 1/week (as it is for both Total Chromium and Total Zinc at IMP 301) and the ratio of the long-term average concentration to the monthly average limit is <25%, monitoring can be reduced to once every two months. To align with eDMR reporting periods, the sampling frequencies for those parameters will be reduced to 2/quarter.

IMP.B. Water Quality-Based Effluent Limitations (WQBELs)

WQBELs are not evaluated at CPV's internal monitoring points. WQBELs are designed to protect water quality by ensuring that water quality standards are met in the receiving water and the IMPs are not final stream discharge locations. Therefore, water quality limits will be evaluated at Outfall 001 where CPV's wastewaters discharge to waters of the Commonwealth.

Total Maximum Daily Load for the Kiskiminetas-Conemaugh River Watershed

Even though no WQBELs are imposed at IMPs 101, 201, or 301, concentration and load reporting will be required for aluminum, iron, and manganese at IMP 101. Discharges of aluminum, iron, and manganese are subject to a Total Maximum Daily Load (TMDL) for the Kiskiminetas-Conemaugh River Watershed. Reporting for those metals was required at IMP 101 in the previous permit to document CPV's contribution of TMDL metals to waters of the Commonwealth. The reporting requirements will be maintained at IMP 101 pursuant to 25 Pa. Code §§ 92a.61(b) and 96.4(i) and Section 402(o) of the Clean Water Act (regarding anti-backsliding). See Section 001.B of this Fact Sheet for further discussion of the TMDL.

IMP.C. Effluent Limitations and Monitoring Requirements for IMPs 101, 201, and 301

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l) ⁵ (incorporated in Pennsylvania's regulations at 25 Pa. Code § 92a.44), effluent limits at IMPs 101, 201, and 301 are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable effluent limits and monitoring requirements are summarized in the tables below.

⁵ *Reissued permits.* (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under § 122.62.)

Table 7. Effluent Limits and Monitoring Requirements for IMP 101

Parameter	Mass (pounds/day)		Concentration (mg/L)			Basis
	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(d)(1)
pH (standard units)	—	—	6.0 (IMIN)	—	9.0	25 Pa. Code § 95.2(1)
Total Residual Chlorine	—	—	0.5	—	1.6	40 CFR § 122.44(l)
Free Available Chlorine	0.170	0.426	Report	Report	—	40 CFR § 423.15(b)(10)(i)
Temperature (°F)	—	—	—	—	110.0	40 CFR § 122.44(l)
Total Suspended Solids	4.43	14.84	Report	Report	—	40 CFR § 423.15(b)(3)
Oil and Grease	—	—	15.0	—	30.0	25 Pa. Code § 95.2(2)(ii)
Aluminum, Total	Report	Report	Report	Report	—	25 Pa. Code §§ 92a.61(b) & 96.4(i)
Copper, Total	—	—	Report	Report	—	25 Pa. Code § 92a.61(b)
Iron, Total	Report	Report	Report	Report	—	25 Pa. Code §§ 92a.61(b) & 96.4(i)
Manganese, Total	Report	Report	Report	Report	—	25 Pa. Code §§ 92a.61(b) & 96.4(i)

Monitoring frequencies and sample types are imposed in accordance with Chapter 6, Table 6-4 of DEP's "Technical Guidance for the Development and Specification of Effluent Limitations" ("Permit Writer's Manual"), DEP's "Standard Operating Procedure for Clean Water Program New and Reissuance Industrial Waste and Industrial Stormwater Individual NPDES Permit Applications" ("IW NPDES SOP"), and the previous permit.

Flow must be measured continuously with a flow meter. TRC and pH must be sampled 1/day using grab samples. Temperature must be measured 1/day using immersion stabilization sampling. Oil and Grease must be sampled 1/week using grab samples. TSS, free available chlorine, aluminum, copper, iron, and manganese must be sampled 1/week using 24-hour composite samples.

Table 8. Effluent Limits and Monitoring Requirements for IMP 201

Parameter	Mass (pounds/day)		Concentration (mg/L)			Basis
	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(d)(1)
pH (standard units)	—	—	Report	—	Report	25 Pa. Code § 95.2(1)
Total Suspended Solids	—	—	Report	Report	—	25 Pa. Code § 92a.61(b)
Oil and Grease	—	—	15.0	20.0	—	40 CFR § 423.15(b)(3)

Flow must be measured 1/week. TSS and Oil and Grease must be sampled 1/week using grab-composite samples and pH must be sampled 1/week using grab samples.

Table 9. Effluent Limits and Monitoring Requirements for IMP 301

Parameter	Mass (pounds/day)		Concentration (mg/L)			Basis
	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(d)(1)
pH (standard units)	—	—	Report	—	Report	25 Pa. Code § 95.2(1)
Chromium, Total	—	—	0.2	0.2	—	40 CFR § 423.15(b)(10)(i)
Zinc, Total	—	—	1.0	1.0	—	40 CFR § 423.15(b)(10)(i)

Flow must be measured 1/week. Oil and grease and pH must be sampled 1/week using grab sampling. Chromium and zinc must be sampled 2/quarter using grab samples.

Development of Effluent Limitations

Outfall No.	001	Design Flow (MGD)	3.80 (avg.); 10.28 (max)
Latitude	40° 20' 27.0"	Longitude	-78° 55' 50.0"
Wastewater Description:	Excess supply water (blow-off) from Hinckston Run, Quemahoning Reservoir, or Border Dam and reclaim water received from the CPV Fairview Energy Center		

Outfall 001 is currently subject to the following effluent limits and monitoring requirements.

Table 10. Outfall 001 – Current Effluent Limits and Monitoring Requirements

Parameter	Mass (lbs/day)		Concentration (mg/L)			Measurement Frequency	Sample Type	Limit Basis
	Avg. Mo.	Max Daily	Avg. Mo.	Max Daily	IMAX			
Flow (MGD)	Report	Report	—	—	—	1/day	Measured	§ 92.61(d)(1)
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	1/week	Grab	§ 95.2(1)
TSS	—	—	30.0	60.0	—	1/week	Grab	§ 92a.48(a)(3)
TDS	—	—	Report	Report	—	1/week	Grab	§ 92.61(b)
Aluminum, Total	Report	Report	0.75	0.75	0.75	1/week	Grab	§ 92.61(b)
Copper, Total	—	—	33.6	52.3	84.0	1/week	Grab	TMDL
Iron, Total	Report	Report	1.5	3.0	3.8	1/week	Grab	TMDL
Manganese, Total	Report	Report	1.0	2.0	2.5	1/week	Grab	TMDL
Sulfate, Total	—	—	Report	Report	—	1/week	Grab	§ 92.61(b)
Chloride	—	—	Report	Report	—	1/week	Grab	§ 92.61(b)
Bromide	—	—	Report	Report	—	1/week	Grab	§ 92.61(b)

The effluent limits in Table 10 will remain in effect at Outfall 001 pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l)—unless the limits are superseded by more stringent limits or are relaxed pursuant to the anti-backsliding exceptions listed in Section 402(o) of the Clean Water Act and/or 40 CFR § 122.44(l).

001.A. Technology-Based Effluent Limitations (TBELs)

TBELs for Total Suspended Solids were imposed at Outfall 001 in the previous permit based on DEP’s Best Professional Judgement under the authority of 25 Pa. Code § 92a.48(a)(3) and 40 CFR § 125.3. The information upon which the previous permit’s limits for Outfall 001 was based has not materially or substantially changed since the permit was last modified, so the TBELs for TSS will remain in effect. CPV Fairview did start up and begin discharging since the permit was last modified, but the TBELs for TSS imposed previously in the permit accounted for CPV Fairview’s discharges.

Regulatory effluent standards for pH (25 Pa. Code § 95.2(1)) and a reporting requirement for flow (25 Pa. Code § 92a.61(d)(1)) will be maintained at Outfall 001.

001.B. Water Quality-Based Effluent Limitations (WQBELs)

Total Maximum Daily Load for the Kiskiminetas-Conemaugh River Watershed

A Total Maximum Daily Load (TMDL) was finalized for the Kiskiminetas-Conemaugh River Watershed (Kiski-Conemaugh TMDL) on January 29, 2010 to control acid mine drainage pollutants including aluminum, iron, manganese, sediment, and pH. Receiving waters for CSA’s and CPV Fairview’s wastewaters (the Conemaugh River, the Little Conemaugh River, Peggys Run, and Hinckston Run) are in the Kiskiminetas-Conemaugh River Watershed.

In accordance with 40 CFR § 122.44(d)(1)(vii)(B), when developing WQBELs, the permitting authority shall ensure that effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation (WLA) for the discharge prepared by the State and approved by EPA pursuant to 40 CFR § 130.7. 40 CFR § 130.7 pertains to TMDLs and individual water quality-based effluent limitations.

The Kiski-Conemaugh TMDL assigned WLAs for iron, aluminum, and manganese to one of CSA’s outfalls: 001. No WLAs were developed for sediment and pH in the TMDL because a surrogate approach was used for both of those constituents whereby reductions of in-stream concentrations of aluminum, iron, and manganese would result in acceptable reductions of sediment and mitigation of acidic pH. The allocated loads and concentrations are summarized in Table 11, below.

Table 11. Outfall 001 TMDL Allocations

Parameter	Allocated Load (lbs/yr)	Allocated Concentration (mg/L)
Aluminum (mg/L)	228	0.75
Iron (mg/L)	457	1.50
Manganese (mg/L)	305	1.00

The methods used to implement water quality criteria are described in 25 Pa. Code §§ 96.3 and 96.4. Also, DEP’s “Water Quality Toxics Management Strategy” [Doc. No. 361-2000-003] addresses design conditions in detail (Table 1 in that document), including the appropriate durations to assign to water quality criteria. The design duration for Criteria Maximum Concentration (CMC) criteria is 1 hour (acute). The design duration for Criteria Continuous Concentration (CCC) criteria is 4 days (chronic). The design duration for Threshold Human Health (THH) criteria is 30 days (chronic). The design duration for Cancer Risk Level (CRL) criteria is 70 years (chronic).

The 750 µg/L aluminum criterion in 25 Pa. Code § 93.8c is a CMC (acute) criterion. Therefore, 750 µg/L is imposed as a maximum daily limit. There is no CCC criterion for aluminum necessitating the imposition of a more stringent average monthly limit. Imposing 750 µg/L as both a maximum daily and average monthly limit protects water quality uses.

The 1.5 mg/L iron criterion is given as a 30-day average in 25 Pa. Code § 93.7(a). Therefore, 1.5 mg/L is imposed as an average monthly limit and the maximum daily effluent limit is calculated using a multiplier of two times the average monthly limit based on DEP’s “Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits” [Doc. No. 362-0400-001, Chapter 3, pp. 15, 16].

The 1 mg/L potable water supply criterion for manganese in 25 Pa. Code § 93.7(a) is a human health criterion (chronic). Per Table 1 of DEP’s “Water Quality Toxics Management Strategy”, the duration for a THH criterion is 30 days. Therefore, an average monthly effluent limit of 1 mg/L is imposed, and the maximum daily effluent limit is calculated using a multiplier of two times the average monthly limit consistent with the technical guidance cited above for iron.

The TMDL concentration limits are as follows:

Table 12. TMDL Effluent Limits for Outfall 001

Pollutant	Concentration (mg/L)		
	Average Monthly	Daily Maximum	Instant Maximum
Aluminum, Total	0.75	0.75	0.75
Iron, Total	1.5	3.0	3.75
Manganese, Total	1.0	2.0	2.5

Imposing only concentration limits for the TMDL’s pollutants of concern is consistent with the assumptions and requirements of the Kiski-Conemaugh TMDL’s available WLAs (pursuant to 40 CFR § 122.44(d)(1)(vii)(B)) because the TMDL’s annual mass WLAs were developed based on the achievement of end-of-pipe concentration limits at criteria levels. Since the TMDL’s allocated concentrations are equivalent to water quality criteria, CSA’s compliance with concentration limits for aluminum, iron, and manganese will not result in excursions above water quality criteria in the Conemaugh River. Therefore, the TMDL’s annual load limits do not need to be imposed. Nevertheless, load reporting will be required for aluminum, iron, and manganese.

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

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

The TMS is a single discharge, mass-balance water quality modeling program for Microsoft Excel® that considers mixing, first-order decay, and other factors to determine WQBELs for toxic and nonconventional pollutants. Required input data including stream code, river mile index, elevation, drainage area, discharge flow rate, low-flow yield, and the hardness and pH of both the discharge and the receiving stream are entered into the TMS to establish site-specific discharge conditions. Other data such as reach dimensions, partial mix factors, and the background concentrations of pollutants in the stream also may be entered to further characterize the discharge and receiving stream. The pollutants to be analyzed by the model

are identified by inputting the maximum concentration reported in the permit application or Discharge Monitoring Reports, or by inputting an Average Monthly Effluent Concentration (AMEC) calculated using DEP’s TOXCONC spreadsheet for datasets of 10 or more effluent samples. Pollutants with no entered concentration data and pollutants for which numeric water quality criteria in 25 Pa. Code Chapter 93 have not been promulgated are excluded from the modeling. Ammonia-nitrogen, CBOD-5, and dissolved oxygen are analyzed separately using DEP’s WQM 7.0 model.

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

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

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

Reasonable Potential Analysis and WQBEL Development for Outfall 001

Table 13. TMS Inputs for 001

Parameter	Value
River Mile Index	51.78
Discharge Flow (MGD)	3.80
Discharge Hardness (mg/L)	150.6
Discharge pH (s.u.)	7.4
Basin/Stream Characteristics	
Parameter	Value
Drainage Area (sq. mi.)	675
Q ₇₋₁₀ (cfs)	65.3
Low-flow yield (cfs/mi ²)	0.097
Elevation (ft)	1,134
Slope	0.001

Discharges from Outfall 001 are evaluated based on the maximum concentrations reported in the permit application except for TDS, chloride, bromide, sulfate, aluminum, copper, iron, and manganese, which are evaluated based on the AMECs calculated using DEP’s TONCONC spreadsheet because there are more than 10 effluent samples available for those parameters from CSA’s reporting through eDMR.

The TMS model is run for Outfall 001 with the modeled discharge and receiving stream characteristics shown in Table 13. Pollutants for which specific water quality criteria have not been promulgated (e.g., TSS, oil and grease, etc.) are excluded from the modeling.

The modeled discharge flow is the average of the maximum daily flows reported on DMRs for Outfall 001 between November 2019 (soon after CPV Fairview’s startup) and January 2024. DEP previously modeled three different flow scenarios: 1) a discharge composed of 100% excess supply water (raw water blow-off) from the reservoirs; 2) a discharge of 100% reclaimed water from CPV; and 3) a blend of excess supply water and reclaimed water from CPV. Flow rates reported in eDMR indicate that the prevailing discharge scenario among the three previously considered is a blend of excess supply water and reclaim water from CPV (see Graph 1), so only the blend scenario is modeled using actual flow data.

The Q₇₋₁₀ flow of the Conemaugh River is estimated using USGS’s StreamStats web application. StreamStats estimates flow statistics for ungaged sites using streamflow data from gaged sites and regression equations that account for the characteristics of the delineated drainage basin at the ungaged site. The slope of the river is estimated using a topographic map. Discharge hardness is the long-term average hardness reported on the permit application and pH is the minimum long-term average pH reported on the permit application.

Output from the TMS model run is included in **Attachment B**. As explained previously, the TMS compares the input discharge concentrations to the calculated WQBELs using DEP’s RP thresholds to evaluate the need to impose WQBELs or monitoring requirements in the permit. Based on the results of the TMS modeling, the permit requirements listed in Table 14 apply at Outfall 001.

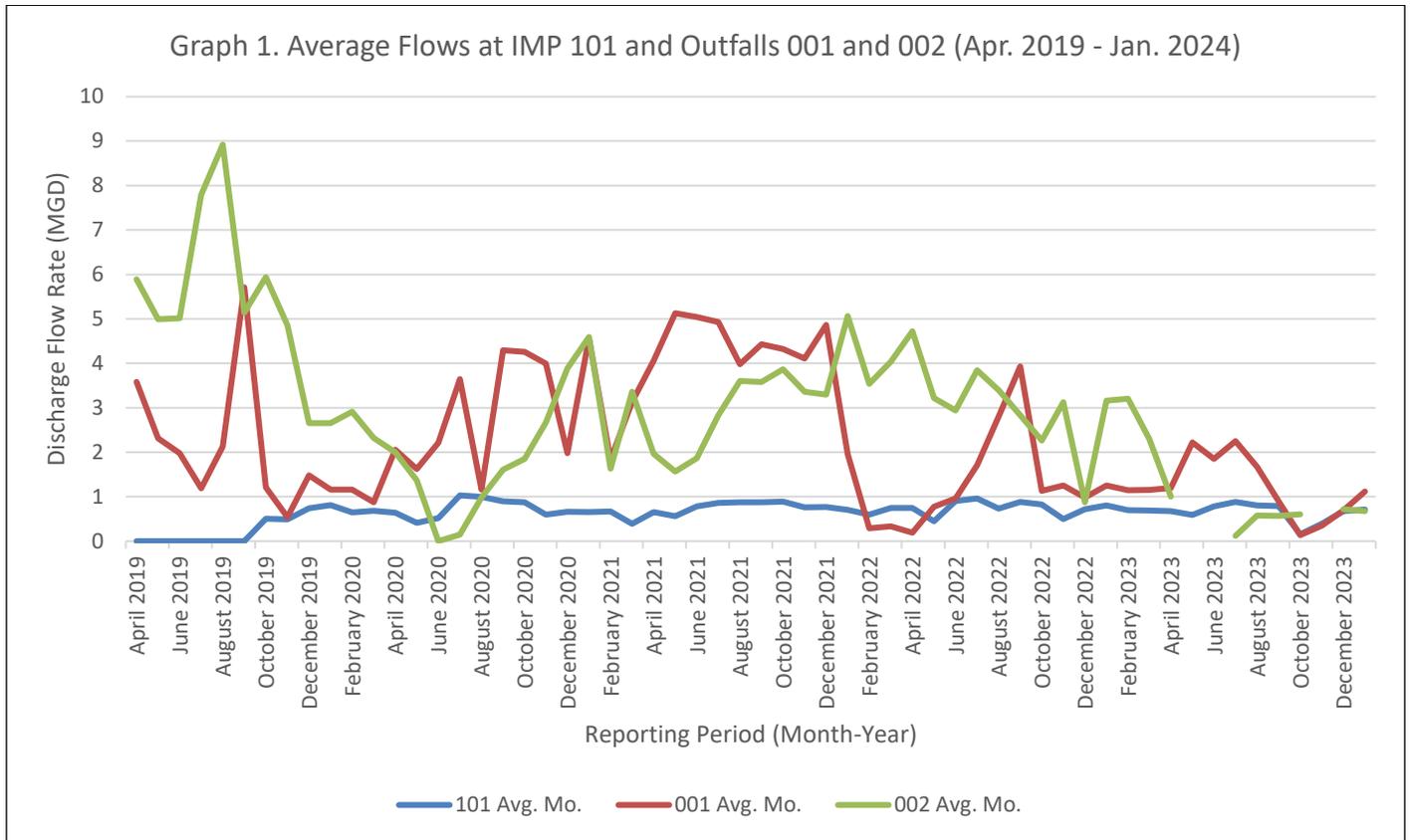


Table 14. Water Quality-Based Requirements for Outfall 001

Parameter	Permit Limits			Discharge Conc. (µg/L)	Governing WQBEL (µg/L)	Governing WQBEL Basis [†]	Reasonable Potential?
	Avg Mo. (µg/L)	Max Daily (µg/L)	IMAX (µg/L)				
Copper, Total	Report	Report	—	18.38	127	AFC	Discharge Conc. > 10% WQBEL (No RP)
Zinc, Total	Report	Report	—	37.4	290	AFC	Discharge Conc. > 10% WQBEL (No RP)

[†] CFC = Chronic Fish Criterion; AFC = Acute Fish Criterion

The copper WQBELs at Outfall 001 will be changed to copper reporting pursuant to the exceptions to anti-backsliding given in sections 402(o) and 303(d)(4)(b) of the Clean Water Act. Outfall 001’s existing copper WQBELs (33.6 µg/L average monthly and 52.3 µg/L maximum daily) were established pursuant to section 301(b)(1)(C) of the Clean Water Act because the WQBELs were based on state water quality standards. Chapter 7 of the NPDES Permit Writers’ Manual provides a detailed discussion of how the anti-backsliding provisions are to be applied. The Permit Writers’ Manual explains that, for state WQBELs, relaxation of limits is allowed in either case of a section 402(o)(2) exception being satisfied or if water quality provisions of section 303(d)(4) are satisfied. Satisfying either provision allows for backsliding.

Section 303(d)(4) is divided between: (A) waters where the applicable water quality standard has not been attained, and (B) waters where the “quality of such waters equals or exceeds levels necessary to protect the designated use for such waters or otherwise required by applicable water quality standards.” Section 303(d)(4)(A) is the relevant requirement because the receiving water—the Conemaugh River—is not attaining its designated uses. Section 303(d)(4)(B) states:

For waters identified under paragraph (1)(A) where the applicable water quality standard has not yet been attained, any effluent limitation based on a total maximum daily load or other waste load allocation established under this section may be revised only if (i) the cumulative effect of all such revised effluent limitations based on such total maximum daily load or waste load allocation will assure the attainment of such water quality standard, or (ii) the designated use which is not being attained is removed in accordance with regulations established under this section.”

Backsliding to copper reporting will not contribute to the Conemaugh River’s non-attainment status because copper is not the cause of the river’s impairment.

Total Residual Chlorine

To determine if WQBELs are required for discharges containing total residual chlorine (TRC), a discharge evaluation is performed using a DEP program called TRC_CALC created with Microsoft Excel for Windows. TRC_CALC calculates TRC Waste Load Allocations (WLAs) through the application of a mass balance model which considers TRC losses due to stream and discharge chlorine demands and first-order chlorine decay. Input values for the program include flow rates and chlorine demands for the receiving stream and the discharge, the number of samples taken per month, coefficients of TRC variability, partial mix factors, and an optional factor of safety. The mass balance model calculates WLAs for acute and chronic criteria that are then converted to long term averages using calculated multipliers. The multipliers are functions of the number of samples taken per month and the TRC variability coefficients (normally kept at default values unless site specific information is available). The most stringent limitation between the acute and chronic long-term averages is converted to an average monthly limit for comparison to the BAT average monthly limit of 0.5 mg/l from 25 Pa. Code § 92a.48(b)(2). The more stringent of these average monthly TRC limitations is imposed in the permit.

The stream flow and discharge flow entered in the TRC_CALC spreadsheet are 65.3 cfs and 3.8 MGD, respectively, and the acute and chronic partial mix factors are 0.148 acute and 1.0 chronic as calculated by the TMS (see **Attachment B**). The results of the TRC_CALC analysis included in **Attachment E** indicate that the following TRC WQBELs apply at Outfall 001: 0.348 mg/L average monthly and 0.815 mg/L instantaneous maximum.

CSA reported that TRC concentrations were not detectable at a reporting limit of 0.1 mg/L in any of the three Outfall 001 effluent samples collected for the application. Even though TRC was not detected in the effluent, CSA did not achieve DEP’s Target QL of 0.02 mg/L when reporting those results, which would have been sufficiently sensitive to rule out the need for TRC WQBELs or TRC reporting according to the RP thresholds described previously in this section. A discharge concentration of <0.1 mg/L means that TRC concentrations are less than 50% of the average monthly TRC WQBEL. Therefore, reasonable potential is not demonstrated. However, a discharge concentration of <0.1 may mean that TRC is present within 25-50% of the average monthly TRC WQBEL (TRC is a non-conservative pollutant). Therefore, reporting will be required for TRC.

TDS, Chloride, Bromide, and Sulfate

DEP ended its monitoring initiative for TDS, chloride, bromide, and sulfate in early 2021 after approximately seven years. DEP determined that enough data were collected to evaluate the effects of point source discharges of those pollutants on waters of the Commonwealth.

Pursuant to DEP’s ceased monitoring initiative, the TMS no longer recommends reporting for TDS, chloride, bromide, and sulfate unless reasonable potential exists. As the modeling results in **Attachment B** show, there is no reasonable potential for discharges of TDS, chloride, bromide, and sulfate from Outfall 001 to cause or contribute to an in-stream excursion above water quality criteria, and the discharge concentrations do not rise to the thresholds at which reporting is necessary. Therefore, reporting requirements for TDS, chloride, bromide, and sulfate will be removed from Outfall 001. The removal of those reporting requirements is consistent with 40 CFR §§ 122.44(l)(1) and 122.62(a)(2) regarding the allowance for backsliding from final standards and conditions based on new information.

001.C. Effluent Limitations and Monitoring Requirements for Outfall 001

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l), effluent limits at Outfall 001 are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable effluent limits and monitoring requirements are summarized in the table below.

Table 15. Effluent Limits and Monitoring Requirements for Outfall 001

Parameter	Mass (pounds/day)		Concentration (mg/L)			Basis
	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(d)(1)
pH (standard units)	—	—	6.0 (IMIN)	—	9.0	25 Pa. Code § 95.2(1)

Table 15 (continued). Effluent Limits and Monitoring Requirements for Outfall 001

Parameter	Mass (pounds/day)		Concentration (mg/L)			Basis
	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Instant Maximum	
Total Residual Chlorine	—	—	Report	Report	—	25 Pa. Code § 92a.61(b)
Total Suspended Solids	—	—	30.0	60.0	—	25 Pa. Code § 92a.48(a)(3)
Aluminum, Total	Report	Report	0.75	0.75	0.75	40 CFR § 122.44(d)(1)(vii)(B); TMDL WQBELs
Copper, Total	—	—	Report	Report	—	25 Pa. Code § 92a.12 & 96.4
Iron, Total	Report	Report	1.5	3.0	3.8	40 CFR § 122.44(d)(1)(vii)(B); TMDL WQBELs
Manganese, Total	Report	Report	1.0	2.0	2.5	40 CFR § 122.44(d)(1)(vii)(B); TMDL WQBELs
Zinc, Total	—	—	Report	Report	—	25 Pa. Code § 92a.12 & 96.4

Monitoring frequencies and sample types are imposed in accordance with Chapter 6, Table 6-4 of DEP's Permit Writer's Manual, DEP's IW NPDES SOP, and the previous permit. Flow must be measured 1/day, and pH, TRC, TSS, aluminum, copper, iron, manganese, and zinc must be sampled 1/week using grab samples.

Development of Effluent Limitations

Outfall No. 002 **Design Flow (MGD)** 4.24 (avg.); 10.84 (max)
Latitude 40° 20' 29.0" **Longitude** -78° 53' 17.0"
Wastewater Description: Excess supply water (blow-off) from Hinckston Run, Quemahoning Reservoir, or Border Dam and reclaim water received from the CPV Fairview Energy Center

Outfall 002 is currently subject to the following effluent limits and monitoring requirements.

Table 16. Outfall 002 – Current Effluent Limits and Monitoring Requirements

Parameter	Mass (lbs/day)		Concentration (mg/L)			Measurement Frequency	Sample Type	Limit Basis
	Avg. Mo.	Max Daily	Avg. Mo.	Max Daily	IMAX			
Flow (MGD)	Report	Report	—	—	—	1/day	Measured	§ 92.61(d)(1)
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	1/week	Grab	§ 95.2(1)
TSS	—	—	30.0	60.0	—	1/week	Grab	§ 92a.48(a)(3)
TDS	—	—	Report	Report	—	1/week	Grab	§ 92.61(b)
Aluminum, Total	Report	Report	0.75	0.75	0.75	1/week	Grab	§ 92.61(b)
Copper, Total	—	—	32.8	51.1	82	1/week	Grab	TMDL
Iron, Total	Report	Report	1.5	3.0	3.8	1/week	Grab	TMDL
Manganese, Total	Report	Report	1.0	2.0	2.5	1/week	Grab	TMDL
Sulfate, Total	—	—	Report	Report	—	1/week	Grab	§ 92.61(b)
Chloride	—	—	Report	Report	—	1/week	Grab	§ 92.61(b)
Bromide	—	—	Report	Report	—	1/week	Grab	§ 92.61(b)

The effluent limits in Table 16 will remain in effect at Outfall 002 pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l)—unless the limits are superseded by more stringent limits or are relaxed pursuant to the anti-backsliding exceptions listed in Section 402(o) of the Clean Water Act and/or 40 CFR § 122.44(l).

002.A. Technology-Based Effluent Limitations (TBELs)

Generally, Outfall 002 is an alternative discharge location for the blowoff and reclaim water sources that discharge through Outfall 001. However, the application clarifies that Hinckston Run blowoff and CPV reclaim water cannot flow to Outfall 002 based on the current pipe configuration.

TBELs for Total Suspended Solids previously were imposed based on DEP’s Best Professional Judgement under the authority of 25 Pa. Code § 92a.48(a)(3) and 40 CFR § 125.3. The TBELs for TSS were in effect before CPV began discharging reclaim water to CSA’s system, so the fact that the existing pipe configuration precludes reclaim water from discharging to Outfall 002 does not justify any changes to the TSS limits. Similarly, the TSS limits do not change regardless of whether blow-off from Hinckston Run is included since there is comparable blowoff from the Quemahoning Reservoir and Border Dam that continue to discharge through Outfall 002.

Regulatory effluent standards for pH (25 Pa. Code § 95.2(1)) and monitoring of flow (25 Pa. Code § 92a.61(d)(1)) will be maintained at Outfall 002.

002.B. Water Quality-Based Effluent Limitations (WQBELs)

As established for the 2019 permit amendment, the Little Conemaugh River is identified as the point of first use instead of Peggys Run. The receiving water listed on the permit will remain as Peggys Run because that is the actual location where Outfall 002 discharges, but WQBELs are based on mixing and dilution with the Q₇₋₁₀ flow of the Little Conemaugh River. About 0.45 miles of the farthest downstream section of Peggys Run in the vicinity of Outfall 002 is culverted and is not expected to support aquatic life.

Reasonable Potential Analysis and WQBEL Development for Outfall 002

Discharges from Outfall 002 are evaluated based on the maximum concentrations reported in the permit application except for TDS, chloride, bromide, sulfate, aluminum, copper, iron, and manganese, which are evaluated based on the long-term average concentrations and coefficients of variation calculated using DEP’s TONCONC spreadsheet because there are more than ten effluent samples available for those parameters from CSA’s reporting through eDMR.

The TMS model is run for Outfall 002 with the modeled discharge and receiving stream characteristics shown in Table 17. Pollutants for which specific water quality criteria have not been promulgated (e.g., TSS, oil and grease, etc.) are excluded from the modeling.

Table 17. TMS Inputs for 002

Parameter	Value
River Mile Index	2.30
Discharge Flow (MGD)	4.24
Discharge Hardness (mg/L)	745
Discharge pH (s.u.)	7.5
Basin/Stream Characteristics	
Parameter	Value
Drainage Area (sq. mi.)	186
Q ₇₋₁₀ (cfs)	18.9
Low-flow yield (cfs/mi ²)	0.101
Elevation (ft)	1,197
Slope	0.001

The modeled discharge flow is the average of the maximum daily flows reported on DMRs for Outfall 002 between November 2019 (soon after CPV Fairview's startup) and January 2024. DEP previously modeled three different flow scenarios: 1) a discharge composed of 100% excess supply water (raw water blow-off) from the reservoirs; 2) a discharge of 100% reclaimed water from CPV; and 3) a blend of excess supply water and reclaimed water from CPV. Flow rates reported in eDMR indicate that the prevailing discharge scenario among the three previously considered is a blend of excess supply water and reclaim water from CPV (see Graph 1 above), so only the blend scenario is modeled using actual flow data.

The Q₇₋₁₀ flow of the Little Conemaugh River is estimated using USGS's StreamStats web application. StreamStats estimates flow statistics for ungaged sites using streamflow data from gaged sites and regression equations that account for the characteristics of the delineated drainage basin at the ungaged site. The slope of the river is estimated using a topographic map. Discharge hardness is the long-term average hardness reported on the permit application

and pH is the minimum long-term average pH reported on the permit application.

Output from the TMS model run is included in **Attachment C**. As explained previously, the TMS compares the input discharge concentrations to the calculated WQBELs using DEP's Reasonable Potential thresholds to evaluate the need to impose WQBELs or monitoring requirements in the permit. Based on the results of the TMS modeling, no WQBELs apply at Outfall 002. The existing WQBELs for copper will be removed from Outfall 002 pursuant to Section 303(d)(4)(B) of the Clean Water Act and the monitoring requirements for TDS, chloride, bromide, and sulfate will be removed pursuant to 40 CFR §§ 122.44(l)(1) and 122.62(a)(2) (see Section 001.B of this Fact Sheet for explanation).

Total Maximum Daily Load for the Kiskiminetas-Conemaugh River Watershed

A Total Maximum Daily Load (TMDL) was finalized for the Kiskiminetas-Conemaugh River Watershed (Kiski-Conemaugh TMDL) on January 29, 2010 to control acid mine drainage pollutants including aluminum, iron, manganese, sediment, and pH. Receiving waters for CSA's and CPV's wastewaters—the Conemaugh River, Peggys Run (Little Conemaugh River), and Hinckston Run—are in the Kiskiminetas-Conemaugh River Watershed.

In accordance with 40 CFR § 122.44(d)(1)(vii)(B), when developing WQBELs, the permitting authority shall ensure that effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation (WLA) for the discharge prepared by the State and approved by EPA pursuant to 40 CFR § 130.7. 40 CFR § 130.7 pertains to TMDLs and individual water quality-based effluent limitations.

The Kiski-Conemaugh TMDL did not assign WLAs for discharges from Outfall 002. In the absence of WLAs, DEP previously imposed concentration WQBELs at criteria levels. Imposing WQBELs at levels equivalent to water quality criteria was determined to be consistent with the TMDL per 40 CFR § 122.44(d)(1)(vii)(B) because effluent concentrations at or below water quality criteria will not contribute to the impairment of the receiving water. The previously imposed WQBELs will be maintained at Outfall 002 pursuant to Section 402(o)(1) of the Clean Water Act regarding anti-backsliding.

Table 18. TMDL Effluent Limits for Outfall 002

Pollutant	Concentration (mg/L)		
	Average Monthly	Daily Maximum	Instant Maximum
Aluminum, Total	0.75	0.75	0.75
Iron, Total	1.5	3.0	3.75
Manganese, Total	1.0	2.0	2.5

The calculations used to derive the limits in Table 18 are the same as those used to calculate the concentration limits for Outfall 001 (see Section 001.B of this Fact Sheet). Imposing only concentration limits for the TMDL's pollutants of concern is consistent with the assumptions and requirements of the TMDL's available WLAs (pursuant to 40 CFR §

122.44(d)(1)(vii)(B)) because the TMDL's annual mass WLAs were developed based on the achievement of end-of-pipe concentration limits at criteria levels. Since the TMDL's allocated concentrations are equivalent to water quality criteria, CSA's compliance with concentration limits for aluminum, iron, and manganese will not result in excursions above water quality criteria in the Conemaugh River. Therefore, annual load limits do not need to be imposed. Nevertheless, load reporting will be required for aluminum, iron, and manganese.

Total Residual Chlorine

To determine if WQBELs are required for discharges containing total residual chlorine (TRC), a discharge evaluation is performed using a DEP program called TRC_CALC created with Microsoft Excel for Windows. The stream flow and discharge flow entered in the TRC_CALC spreadsheet are 65.3 cfs and 3.8 MGD, respectively, and the acute and chronic partial mix factors are 0.148 acute and 1.0 chronic as calculated by the TMS (see **Attachment C**). The results of the TRC_CALC analysis included in **Attachment E** indicate that the following TRC WQBELs apply at Outfall 002: 0.184 mg/L average monthly and 0.430 mg/L instantaneous maximum.

CSA reported that TRC concentrations were not detectable at a reporting limit of 0.1 mg/L in any of the three Outfall 002 effluent samples collected for the application. Even though TRC was not detected in the effluent, CSA did not achieve DEP's Target QL of 0.02 mg/L when reporting those results, which would have been sufficiently sensitive to rule out the need for TRC WQBELs or TRC reporting according to the reasonable potential thresholds described in Section 001.B of this Fact Sheet. A discharge concentration of <0.1 mg/L may mean that TRC is present at a concentration within 50% of the average monthly TRC WQBEL. Therefore, the TRC WQBELs will be imposed at Outfall 002. Since CSA's TRC concentrations are less than the TRC WQBELs, CSA is expected to comply with the TRC WQBELs, so no schedule of compliance is included for those limits in the permit.

002.C. Effluent Limitations and Monitoring Requirements for Outfall 002

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l), effluent limits at Outfall 002 are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable effluent limits and monitoring requirements are summarized in the table below.

Table 19. Effluent Limits and Monitoring Requirements for Outfall 002

Parameter	Mass (pounds/day)		Concentration (mg/L)			Basis
	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(d)(1)
pH (standard units)	—	—	6.0 (IMIN)	—	9.0	25 Pa. Code § 95.2(1)
Total Residual Chlorine	—	—	0.184	—	0.430	WQBELs; 25 Pa. Code §§ 92a.12(a)(1) & 96.4(b)
Total Suspended Solids	—	—	30.0	60.0	—	25 Pa. Code § 92a.48(a)(3)
Aluminum, Total	Report	Report	0.75	0.75	0.75	40 CFR § 122.44(d)(1)(vii)(B); TMDL WQBELs
Iron, Total	Report	Report	1.5	3.0	3.8	40 CFR § 122.44(d)(1)(vii)(B); TMDL WQBELs
Manganese, Total	Report	Report	1.0	2.0	2.5	40 CFR § 122.44(d)(1)(vii)(B); TMDL WQBELs

Monitoring frequencies and sample types are imposed in accordance with Chapter 6, Table 6-4 of DEP's Permit Writer's Manual, DEP's IW NPDES SOP, and the previous permit. Flow must be measured 1/day, and pH, TRC, TSS, aluminum, iron, and manganese must be sampled 1/week using grab samples.

Development of Effluent Limitations

Outfall No. 003 **Design Flow (MGD)** 7.42 (avg.); 11.96 (max)
Latitude 40° 20' 27.50" **Longitude** -78° 55' 27.00"

Wastewater Description: Conservation release from the Hinckston Run Dam and raw water blow-off from the Hinckston Run Reservoir, Quemahoning Reservoir, or Border Dam

Outfall 003 is used for conservation releases from the Hinckston Run Reservoir. The conservation releases maintain flow in Hinckston Run (the stream below the dam) as required by CSA's Water Allocation Permit. The outfall is at the same location as the previous conservation release outfall (former Outfall 001). Outfall 003 does not discharge treated effluent from CPV Fairview.

Outfall 003 is currently subject to the following effluent limits and monitoring requirements.

Table 20. Outfall 003 – Current Effluent Limits and Monitoring Requirements

Parameter	Mass (lbs/day)		Concentration (mg/L)			Measurement Frequency	Sample Type	Limit Basis
	Avg. Mo.	Max Daily	Avg. Mo.	Max Daily	IMAX			
Flow (MGD)	Report	Report	—	—	—	1/day	Measured	§ 92.61(d)(1)
pH (S.U.)	—	—	6.0 (IMIN)	—	9.0	2/quarter	Grab	§ 95.2(1)
TSS	—	—	30.0	60.0	—	2/quarter	Grab	§ 92a.48(a)(3)
Aluminum, Total	Report	Report	0.75	0.75	0.75	2/quarter	Grab	TMDL
Iron, Total	Report	Report	1.5	3.0	3.8	2/quarter	Grab	TMDL
Manganese, Total	Report	Report	1.0	2.0	2.5	2/quarter	Grab	TMDL

The effluent limits in Table 20 will remain in effect at Outfall 003 pursuant to anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l)—unless the limits are superseded by more stringent limits or are relaxed pursuant to the anti-backsliding exceptions listed in Section 402(o) of the Clean Water Act and/or 40 CFR § 122.44(l).

003.A. Technology-Based Effluent Limitations (TBELs)

There have been no material or substantial alterations to Outfall 003's discharges since the permit was last modified. Therefore, the TBELs and regulatory effluent standards and monitoring requirements previously imposed on conservation releases and raw water blow-off discharges from Outfall 003 will be maintained unless superseded by more stringent requirements.

003.B. Water Quality-Based Effluent Limitations (WQBELs)

The TMS model is run for Outfall 003 with the modeled discharge and receiving stream characteristics shown in Table 21. Pollutants for which specific water quality criteria have not been promulgated (e.g., TSS, oil and grease, etc.) are excluded from the modeling.

Table 21. TMS Inputs for 003

Parameter	Value
River Mile Index	0.04
Discharge Flow (MGD)	7.42
Discharge Hardness (mg/L)	77.47
Discharge pH (s.u.)	7.4
Basin/Stream Characteristics	
Parameter	Value
Drainage Area (sq. mi.)	4.27
Q ₇₋₁₀ (cfs)	0.3
Low-flow yield (cfs/mi ²)	0.070
Elevation (ft)	1,161
Slope	0.001

The modeled discharge flow is the average of the maximum daily flows reported on DMRs for Outfall 003 between November 2019 (soon after CPV Fairview's startup) and January 2024.

The Q₇₋₁₀ flow of Hinckston Run is estimated using USGS's StreamStats web application. StreamStats estimates flow statistics for ungaged sites using streamflow data from gaged sites and regression equations that account for the characteristics of the delineated drainage basin at the ungaged site. In the case of Outfall 003, the delineated drainage area from StreamStats is modified to exclude the area above the Hinckston Run dam because stream flow from above the dam is not part of the background flow in Hinckston Run at Outfall 003. That is, base flow and runoff from areas above the dam are either impounded by the dam or withdrawn by the intake structure and consequently are not available to dilute Outfall 003's effluent at the point of discharge.

The slope is estimated using a topographic map. Discharge hardness is the long-term average hardness reported on the permit application and pH is the long-term average pH reported on the permit application.

Output from the TMS model run is included in **Attachment D**. As explained previously, the TMS compares the input discharge concentrations to the calculated WQBELs using DEP's Reasonable Potential thresholds to evaluate the need to impose WQBELs or monitoring requirements in the permit. Based on the results of the TMS modeling, WQBELs are required for copper.

Table 22. WQBELs for Outfall 003

Parameter	Permit Limits			Discharge Conc. (µg/L)	Governing WQBEL (µg/L)	Governing WQBEL Basis†	Reasonable Potential?
	Avg Mo. (µg/L)	Max Daily (µg/L)	IMAX (µg/L)				
Copper, Total	7.74	11.4	11.4	6.9	7.74	CFC	Discharge Conc. ≥ 50% WQBEL (No RP)

† CFC = Chronic Fish Criterion

The maximum reported concentration of Total Copper is less than the average monthly WQBEL, so CSA is expected to comply with the new WQBELs for Total Copper. There will be no schedule of compliance for the new WQBELs.

TMDL WQBELs previously imposed based on the allocated concentrations from the Kiskiminetas-Conemaugh River Watershed TMDL will be maintained at Outfall 003.

Total Residual Chlorine

To determine if WQBELs are required for discharges containing total residual chlorine (TRC), a discharge evaluation is performed using a DEP program called TRC_CALC created with Microsoft Excel for Windows. The stream flow and discharge flow entered in the TRC_CALC spreadsheet are 0.3 cfs and 7.42 MGD, respectively, and the acute and chronic partial mix factors are 1.0 acute and 1.0 chronic as calculated by the TMS (see **Attachment D**). The results of the TRC_CALC analysis included in **Attachment E** indicate that the following TRC WQBELs apply at Outfall 003: 0.018 mg/L average monthly and 0.041 mg/L instantaneous maximum.

CSA reported that TRC concentrations were not detectable at a reporting limit of 0.1 mg/L in any of the three Outfall 003 effluent samples collected for the application. Even though TRC was not detected in the effluent, CSA did not achieve DEP's Target QL of 0.02 mg/L when reporting those results, which would have been sufficiently sensitive to rule out the need for TRC WQBELs or TRC reporting according to the reasonable potential thresholds described previously in this section. A discharge concentration of <0.1 mg/L would mean that TRC is present at a concentration greater than the average monthly TRC WQBEL. Therefore, the TRC WQBELs will be imposed at Outfall 003. The average monthly WQBEL for TRC is less than DEP's Target QL of 0.02 mg/L, so the Target QL must be used to demonstrate compliance. A condition will be included in Part C of the permit in that regard. Also, the average monthly TRC WQBEL will be imposed as a quarterly average because conservation releases from Outfall 003 generally are not expected to contain chlorinated waters from facilities like CPV Fairview.

003.C. Effluent Limitations and Monitoring Requirements for Outfall 003

In accordance with 25 Pa. Code §§ 92a.12 and 92a.61 and anti-backsliding requirements under Section 402(o) of the Clean Water Act and 40 CFR § 122.44(l), effluent limits at Outfall 003 are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements developed for this permit renewal; and effluent limits and monitoring requirements from the previous permit, subject to any exceptions to anti-backsliding discussed previously in this Fact Sheet. Applicable effluent limits and monitoring requirements are summarized in the tables below.

Table 23. Effluent Limits and Monitoring Requirements for Outfall 003

Parameter	Mass (pounds/day)		Concentration (mg/L)			Basis
	Average Monthly	Maximum Daily	Average Quarterly	Maximum Daily	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(b)
Total Residual Chlorine	—	—	0.018	—	0.041	WQBELs; 25 Pa. Code §§ 92a.12(a)(1) & 96.4(b)
Total Suspended Solids	—	—	30.0	60.0	—	TBELs; 40 CFR § 122.44(l)
Aluminum, Total	—	—	0.75	0.75	0.75	TMDL WQBELs
Copper, Total (µg/L)	—	—	7.74	11.4	11.4	WQBELs
Iron, Total	—	—	1.5	3.0	3.8	TMDL WQBELs

Table 23. Effluent Limits and Monitoring Requirements for Outfall 003

Parameter	Mass (pounds/day)		Concentration (mg/L)			Basis
	Average Monthly	Maximum Daily	Average Quarterly	Maximum Daily	Instant Maximum	
Manganese, Total	—	—	1.0	2.0	2.5	TMDL WQBELs
pH (standard units)	—	—	6.0 (IMIN)	—	9.0 (IMAX)	25 Pa. Code § 95.2(1)

Monitoring frequencies and sample types will be the same as those in the current permit at Outfall 003 including daily measurement of flow; 2/month grab sampling for copper; and 2/quarter grab sampling for the remaining parameters.

Clean Water Act Section 316(b) – Best Technology Available for Cooling Water Intake Structures

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

CSA owns and operates intakes at the Quemahoning Reservoir, the Hinckston Run Reservoir, and the Wilmore Reservoir, and on the Stonycreek River at the Border Dam, and on the Little Conemaugh River at the South Fork Dam. Presently, the South Fork and Wilmore intakes are not tied into the main CSA system. The South Fork intake is used occasionally to supply water to one non-cooling water customer. The Wilmore intake supplies raw water that is used for cooling by the Ebensburg Power Company (NPDES PA0098612). CPV's Fairview Energy Center is connected into the main CSA system and is supplied with water for cooling from the Quemahoning Reservoir as the primary source or from Hinckston Run Reservoir as a secondary, backup source. Johnstown Wire Technologies (aka Liberty Wire Johnstown) (NPDES PA0217093) receives raw water from the Quemahoning Reservoir, Hinckston Run Reservoir, and/or Border Dam that is used for cooling. Gautier Steel (NPDES PA0217085) receives raw water from the Quemahoning Reservoir, Hinckston Run Reservoir, and/or Border Dam, and reclaim water from CPV Fairview that is used for cooling. North American Höganäs (NPDES PA0110655) receives raw water from the Quemahoning Reservoir that is used for cooling. Cambria CoGen Company (NPDES PA0204153) did receive water from the Wilmore intake that was used for cooling, but Cambria CoGen shut down in 2019 and was subsequently demolished and the property sold to Pro Disposal, Inc. (PAG036564), a facility that does not use cooling water.

As part of the NPDES permit renewal for CSA issued on December 21, 2016, DEP determined that CSA is not subject to Section 316(b) of the Clean Water Act. At that time DEP concluded that: 1) Ebensburg Power Company and Cambria CoGen Company each withdrew less than 2 MGD, which is the flow threshold above which facilities are subject to the Existing Facilities Rule; and 2) CSA is a public water system and public water systems that supply cooling water are exempt from 316(b) requirements. CPV Fairview was not constructed when the 2016 permit was issued. In 2018, upon revisiting those conclusions when drafting NPDES permit renewals for Ebensburg Power and Cambria CoGen, DEP determined that CSA is subject to requirements under Section 316(b) of the Clean Water Act.

CSA applied for an amendment to PA0253359 on March 27, 2018 to relocate Outfall 001; request the re-evaluation of Outfall 002 at a larger downstream receiving water; and to add a new outfall, Outfall 003. Since the permit was being amended, DEP decided to incorporate cooling water intake structure requirements into the draft permit amendment. DEP received comments on that draft permit amendment from CSA, CPV, North American Höganäs, Cambria CoGen Company, Somerset County General Authority, Johnstown Area Regional Industries (JARI), and Cambria and Somerset County Commissioners. Commenters generally disputed the applicability of Section 316(b) to CSA and its customers on various grounds. The permit amendment was issued on September 6, 2019 and was silent on 316(b) applicability but did require the collection of flow data to facilitate an evaluation of 316(b) requirements for this NPDES permit renewal.

CSA maintains that it is not subject to requirements under Section 316(b) of the Clean Water Act. A footnote in the pending renewal application states:

CSA is providing information in this application regarding its intake of cooling water (including Module 5) at the request of the Department. However, obtaining cooling water from a public water system does not constitute use of a cooling water intake structure for purposes of 40 CFR Part 125, Subpart J. See 40 CFR 125.91(c). CSA is a public water system and exempt from the requirements of Clean Water Act 316(b), as the Department previously has determined. Moreover, as the flow data show, less than 25 percent of CSA's system withdrawal is used for cooling water purposes, and, accordingly, the requirements of 40 CFR 125.94- 125.99 do not apply in any event. See 40 CFR 125.91(a)(3). By supplying information regarding intake and use of cooling water, CSA in no way concedes that the requirements of Clean Water Act 316(b) apply.

Based on DEP's evaluation of the applicability of 316(b) requirements for this NPDES permit renewal, DEP has determined that CSA's cooling water intake structures are subject to 316(b) requirements. DEP's applicability evaluation and CSA's exemption claims are discussed below.

Design Intake Flow

According to 40 CFR 125.92(g), *Design Intake Flow* (DIF) means the value assigned during the cooling water intake structure design to the maximum instantaneous rate of flow of water the cooling water intake system is capable of withdrawing from a source waterbody. The facility's DIF may be adjusted to reflect permanent changes to the maximum capabilities of the cooling water intake system to withdraw cooling water, including pumps permanently removed from service, flow limit devices, and physical limitations of the piping. DIF does not include values associated with emergency and fire suppression capacity or redundant pumps (*i.e.*, back-up pumps).

CSA did not report DIFs for its intakes on its NPDES permit renewal application, and the DIFs cannot be determined based on pumping capacity because there are no pumps at CSA's intakes. However, CSA requested and was granted approval by Water Allocation Permit No. WA56-1003 to withdraw the following as peak, maximum daily withdrawals:

- Quemahoning: 71.0 MGD
- Hinckston Run: 10.0 MGD
- Border Dam: 27.0 MGD
- Wilmore: 6.3 MGD

It is unknown whether CSA's requested/approved maximum daily withdrawal rates equate to the maximum instantaneous rates of flow CSA is capable of withdrawing at each intake, but it is reasonable to assume that CSA would not request approval to withdraw water at rates it is not capable of achieving. CSA also reported the following maximum average daily withdrawals for the period of record from December 2019 through April 2023:

- Quemahoning: 33.61 MGD (Metered volume in pipelines + conservation release + whitewater release)
- Hinckston Run: 6.54 MGD (Metered volume in pipelines + conservation release)
- Border Dam: 22.81 MGD (Metered volume in pipelines + conservation release)
- Wilmore: 2.45 MGD (Metered volume in pipelines + conservation release)

While the DIFs of CSA's intakes are unclear, CSA's reported flows indicate that the individual and cumulative DIFs of CSA's intakes necessarily exceed 2.0 MGD because actual withdrawal rates at all intakes are greater than 2.0 MGD.

General Applicability Criteria Evaluation

Section 316(b) of the Clean Water Act (33 U.S.C. § 1326(b)) states:

- (b) Any standard established pursuant to section 301 or section 306 of this Act and applicable to a point source shall require that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact.

EPA's "Technical Development Document for the Final Section 316(b) Existing Facilities Rule" [EPA-821-R-14-002] dated May 2014 explains Section 316(b) as follows:

Section 316(b) addresses the adverse environmental impact caused specifically by the intake of cooling water, rather than discharges into water. Despite this special focus, the requirements of section 316(b) remain closely linked to several of the core elements of the NPDES permit program established under section 402 of the CWA to control discharges of pollutants into navigable waters. Thus, while effluent limitations apply to the discharge of pollutants by NPDES-permitted point sources to waters of the United States, section 316(b) applies to facilities subject to NPDES requirements that also withdraw water from a water of the United States for cooling and that use a cooling water intake structure to do so.

Existing facilities are subject to 40 CFR part 125, Subpart J – Requirements Applicable to Cooling Water Intake Structures for Existing Facilities Under Section 316(b) of the Clean Water Act (§§ 125.90 – 125.99) pursuant, in part, to the applicability criteria given by § 125.91(a) as follows:

1. The owner or operator of an existing facility, as defined in § 125.92(k), is subject to the requirements at §§ 125.94 through 125.99 if:
 - (1) The facility is a point source;

- (2) The facility uses or proposes to use one or more cooling water intake structures with a cumulative design intake flow (DIF) of greater than 2 million gallons per day (mgd) to withdraw water from waters of the United States; and
- (3) Twenty-five percent or more of the water the facility withdraws on an actual intake flow basis is used exclusively for cooling purposes.

Section 125.91(b) further states:

- (b) Use of a cooling water intake structure includes obtaining cooling water by any sort of contract or arrangement with one or more independent suppliers of cooling water if the independent supplier withdraws water from waters of the United States but is not itself a new or existing facility as defined in subparts I or J of this part, except as provided in paragraphs (c) and (d) of this section. An owner or operator of an existing facility may not circumvent these requirements by creating arrangements to receive cooling water from an entity that is not itself a facility subject to subparts I or J of this part.

“Cooling water intake structure” is defined in § 125.92(f) as follows:

- (f) *Cooling water intake structure* means the total physical structure and any associated constructed waterways used to withdraw cooling water from waters of the United States. The cooling water intake structure extends from the point at which water is first withdrawn from waters of the United States up to, and including the intake pumps.

“Existing facility” is defined in § 125.92(k) as follows:

- (k) *Existing facility* means any facility that commenced construction as described in 40 CFR 122.29(b)(4) on or before January 17, 2002 (or July 17, 2006 for an offshore oil and gas extraction facility) and any modification of, or any addition of a unit at such a facility. A facility built adjacent to another facility would be a new facility while the original facility would remain as an existing facility for purposes of this subpart. A facility cannot both be an existing facility and a new facility as defined at § 125.83.

“Independent supplier” is defined in § 125.92(p) as follows:

- (p) *Independent supplier* means an entity, other than the regulated facility, that owns and operates its own cooling water intake structure and directly withdraws water from waters of the United States. The supplier provides the cooling water to other facilities for their use, but may itself also use a portion of the water. An entity that provides potable water to residential populations (e.g., public water system) is not a supplier for purposes of this subpart.

CSA meets the *existing facility* definition in § 125.92(k) and is described superficially by the *independent supplier* definition in § 125.92(p) to the extent that CSA withdraws and supplies cooling water to other facilities for their use. Section 125.91(b) explains that use of a cooling water intake structure includes obtaining cooling water by any sort of contract or arrangement with one or more independent suppliers of cooling water if the independent supplier withdraws water from waters of the United States but is not itself a new or existing facility. That section was intended to prevent circumvention of the rule and indicates that a supplier’s status as an *existing facility* supersedes its status as an *independent supplier* or otherwise removes the supplier from classification as an *independent supplier* because an *existing facility* is “the regulated facility” referenced in the *independent supplier* definition. Therefore, CSA is an existing (regulated) facility and the applicability requirements of § 125.91(a) are evaluated for CSA.

CSA is a point source and CSA uses one or more cooling water intake structures with a cumulative DIF of greater than 2 million gallons per day (mgd) to withdraw water from waters of the United States. As discussed above, maximum average daily flows for each of CSA’s intakes are greater than 2.0 MGD, so the DIF of each intake and the cumulative DIF of all intakes are necessarily greater than 2.0 MGD. However, twenty-five percent or more of the water CSA withdraws on an actual intake flow basis is not used exclusively for cooling purposes. The total withdrawal from all intakes for the period from December 2019 through April 2023 was 65.42 MGD. The total cooling water use by CSA’s customers during that time was about 9.12 MGD. By total withdrawal across all intakes, only about 14% of the water CSA withdraws is used for cooling.

Since the Quemahoning, Hinckston Run, and Border Dam intakes are part of the same interconnected system that supplies cooling water to CPV, Johnstown Wire Technologies, Gautier Steel, and North American Höganäs (separate from the Wilmore intake), it is prudent to examine the percent-cooling usage for that intake grouping. The percent-cooling usage for

the Wilmore intake is examined separately because the Wilmore intake solely supplies cooling water to Ebensburg Power Company.

The total actual intake flow rates from the Quemahoning, Hinckston Run, and Border intakes for the period lasting from December 2019 through April 2023 was 33.61 MGD, 6.54 MGD, and 22.81 MGD, respectively, including raw water supply, conservation releases, and whitewater releases. The total actual intake flow from the Wilmore intake was 2.46 MGD, including conservation releases. The average flow of water purchased by CPV, Johnstown Wire Technologies, Gautier Steel, and North American Höganäs and the average flow of water purchased that was used for cooling at each of those facilities during that same period are summarized in Table 24.

Table 24. Cooling Water Usage Data by Intake Group/Facility (December 2019 – February 2024)

Parameter	Quemahoning, Hinckston Run, and Border Dam				Wilmore
	North American Höganäs	Johnstown Wire Technologies	Gautier Steel	CPV Fairview	Ebensburg Power Company
Facility Name					
Avg. Purchased Water (MGD)	1.45	2.54	1.73	4.28	0.71
% of Purchased Water Used for Cooling	78%	90%	70%	94%	80%
Avg. Purchased Water Used for Cooling (MGD)	1.13	2.29	1.21	4.02	0.57
Total Cooling Water Used (MGD)	8.65 (1.13 + 2.29 + 1.21 + 4.02)				0.57

Table 25 summarizes the percent-cooling usage for various water withdrawal scenarios. The table does not list percent-cooling usage for Quemahoning alone or Hinckston Run alone because both of those intakes are normally operating for raw water supply and conservation release purposes.

Table 25. Cooling Water Usage Data by Intake Group/Scenario (December 2019 – February 2024)

Parameter	Water Supply Scenarios		
	Quemahoning + Hinckston Run + Border	Quemahoning + Hinckston Run	Wilmore
Total Actual Withdrawal (MGD)	63.41	40.45	2.46
Total Used for Cooling (MGD)	8.65	8.65	0.57
% Used for Cooling	13.6%	21.4%	23.2%

Section 125.90(b) states: “Cooling water intake structures not subject to requirements under §§ 125.94 through 125.99 or subparts I or N of this part must meet requirements under section 316(b) of the CWA established by the Director on a case-by-case, best professional judgment (BPJ) basis.”

CSA does not meet the applicability requirements under § 125.91 to be subject to the requirements of §§ 125.94 through 125.99. Therefore, CSA is subject to requirements under section 316(b) of the CWA established by the Director (DEP according to its delegated authority) on a case-by-case, BPJ basis.

Public Water System Exemption

In claiming that it is not subject to 316(b) requirements, CSA primarily relied on the applicability criterion given by § 125.91(c), which states:

- (c) Obtaining cooling water from a public water system, using reclaimed water from wastewater treatment facilities or desalination plants, or recycling treated process wastewater effluent as cooling water does not constitute use of a cooling water intake structure for purposes of this subpart.

EPA explained consideration for public water systems in the 316(b) regulations in Essay 14 of EPA’s “Response to Public Comment: National Pollutant Discharge Elimination System Final Regulations to Establish Requirements for Cooling Water Intake Structures at Existing Facilities and Amend Requirements at Phase I Facilities (40 CFR Parts 122 and 125) Docket # EPA-HQ-OW-2008-0667” as follows:

Under § 125.91(c) and § 125.92 (definition of cooling water) the rule refers to PWSs. The term PWS is defined under the SDWA [Safe Drinking Water Act] regulations and generally refers to drinking water systems of a certain

size (see 40 CFR 142.2). EPA references PWSs in the above-referenced provisions because these are established terms and reflect potential reuse of PWS-derived water for cooling. [...]

With regard to PWSs, EPA has concluded that it is not necessary to regulate PWSs or exclude independent suppliers under the rule. Although EPA recognizes the PWS intakes can cause adverse impacts, PWSs are not regulated under this rule because they do not withdraw water for cooling. Section 316(b) requires EPA only to establish standards to address the intake of cooling water under 316(b). See previous discussion regarding language of section 316(b). EPA allows the reuse of water from a PWS because such reuse reduces the overall need for additional water withdrawals that may be associated with adverse environmental impacts.

Contrary to CSA's claim in the NPDES permit renewal application footnote reproduced above and in comments/correspondence associated with the 2019 NPDES permit amendment, CSA is not a public water system. The definition of "public water system" in 40 CFR § 142.2 states:

Public water system or PWS means a system for the provision to the public of water for human consumption through pipes or, after August 5, 1998, other constructed conveyances, if such system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year. Such term includes:

Any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system; and any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. Such term does not include any "special irrigation district." A public water system is either a "community water system" or a "noncommunity water system" as defined in § 141.2.

CSA does not provide water to the public for human consumption, so there is no reuse of PWS-derived water for cooling by CSA's customers (*i.e.*, no reuse of water treated for potable use). CSA supplies raw, unfinished, non-potable water to its customers, some of which is withdrawn solely for use as cooling water. The fact that CSA's customers include the Greater Johnstown Water Authority ("GJWA") and the Somerset County General Authority ("SCGA"), which treat raw water from CSA for human consumption does not make CSA a public water system.

Pursuant to the definition in 40 CFR § 142.2, a public water system encompasses collection facilities not under the control of the operator of a system that provides piped water for human consumption if the facilities are used primarily in connection with that system. GJWA and SCGA do not control the source water collection facilities that are used in connection with their public water systems. CSA owns and operates the source water collection facilities for GJWA and SCGA. However, CSA's collection facilities (e.g., intakes and distribution pipelines) are not used primarily in connection with GJWA or SCGA.

Since December 2019, the average flow of water CSA supplied to GJWA was 0.691 MGD and the average flow of water CSA supplied to SCGA was 1.6 MGD. The average flow of water supplied to all of CSA's customers was about 13.0 MGD. Based on those flows, the percentage of water CSA supplies that is ultimately used for public water supply is about 17.6%, which means that 82.4% of the water CSA supplies to its customers is used by industry for process and cooling water use. The percentage of water CSA provides to other facilities that is eventually used for human consumption decreases even more if all water withdrawals are included (e.g., flows necessary to maintain self-scour velocities in the distribution system that pass through that system unused including conservation and whitewater releases). Narrowing the scope to just the Quemahoning intake that is the only intake used to supply GJWA and SCGA, CSA's collection facilities still are not primarily used in connection with public water systems. Therefore, CSA's collection facilities are not used primarily in connection with the provision of water for human consumption and CSA is not a public water system with respect to CSA's operation of collection facilities used in connection with GJWA and SCGA.⁶

Moreover, DEP does not regulate CSA as a public water system. CSA cannot claim to be a public water system to benefit from the § 316(b) exemption and simultaneously not be regulated as a public water system by DEP under the state and federal Safe Drinking Water Acts. For the preceding reasons, CSA is not eligible for the public water system exemption.

⁶ Even if CSA was classified as a PWS based on its control of collection facilities used in connection with GJWA and SCGA, § 125.91(c) would not exempt CSA from 316(b) requirements in that circumstance. The PWS exemption applies to the reuse of water treated for human consumption and not the use of raw water supplied by a PWS. That is why the Cooling Water Intake Structures section of the NPDES permit application has separate checkboxes for "Public water system (Potable)" and "Public water system (Raw)".

BTA Standards for Impingement Mortality and Entrainment

DEP's "Standard Operating Procedure (SOP) for Clean Water Program, Establishing Best Technology Available (BTA) Using Best Professional Judgement (BPJ) for Cooling Water Intake Structures at Existing NPDES Facilities" [SOP No. BCW-PMT-038, 12/7/2021] describes the procedures DEP uses to make BTA determinations for existing cooling water intake structures based on BPJ.

Pursuant to Section II.A of the SOP, facilities that have one or more of the following technologies or best management practices has BTA for impingement mortality:

1. Closed-cycle recirculating system.
2. 0.5 foot per second (fps) through-screen design velocity.
3. 0.5 fps through-screen actual velocity.
4. Modified Traveling Screens with a fish handling and return system with sufficient water flow to return the fish directly to the source water in a manner that does not promote reimpingement of the fish or require a large vertical drop.

In addition, pursuant to Section II.B of the SOP, facilities that have one or more of the following technologies or best management practices has BTA for entrainment:

1. Closed-cycle recirculating system.
2. The actual intake flow (AIF) is minimal compared to the mean annual flow of the river. For cases where this option is being used, cumulative withdrawals from nearby facilities should be considered. The application manager may contact the Bureau of Clean Water to determine if this option is applicable.
3. Seasonal flow reductions - If a facility can reduce flows to mimic closed cycle cooling during spawning and biologically important time periods.

Pursuant to Section II.E of the SOP, if a permittee's facility does not employ any of the technologies or processes listed in Sections II.A and II.B of the SOP, and no impingement or entrainment studies have been completed within the last 10 years, then the permit must incorporate conditions necessary to determine the appropriate BTA for the facility. Recommended conditions are included in Attachment A of the SOP. Permit conditions may require the completion of biological studies and the collection of other cooling water intake structure data.

Wilmore Intake

The Wilmore intake supplies cooling water only to Ebensburg Power Company (NPDES PA0098612). There is piping infrastructure leading from the Wilmore intake to the Johnstown area where other CSA customers are located, but an interconnection between the Wilmore pipeline and the rest of CSA's system currently does not exist.

Ebensburg Power Company operates a closed-cycle recirculating system. Therefore, pursuant to Sections II.A.1 and II.B.1 of the SOP, the Wilmore intake satisfies one of the compliance options for both impingement BTA and entrainment BTA.

Attachment A to the SOP includes permit conditions for facilities subject to BTA determinations based on BPJ under 40 CFR § 125.90(b). The 316(b) conditions for the Wilmore intake will be as follows:

WILMORE COOLING WATER INTAKE STRUCTURE

- A. Nothing in this permit authorizes a take of endangered or threatened species under the Endangered Species Act.
- B. Technology and operational measures employed at the cooling water intake structures must be operated in a way that minimizes impingement mortality and entrainment to the smallest amount, extent, or degree reasonably possible.
- C. The location, design, construction or capacity of the intake structure(s) may not be altered without prior approval of DEP.

- D. The permittee must notify DEP before changing its source of cooling water.
- E. The permittee shall retain data and other records for any information developed pursuant to Section 316(b) of the Clean Water Act for a minimum of ten (10) years.
- F. The following technology constitutes Best Technology Available (BTA) for reducing impingement:
 - Ebensburg Power Company's operation of a closed-cycle recirculating cooling system.
- G. The following technology constitutes Best Technology Available (BTA) for reducing entrainment:
 - Ebensburg Power Company's operation of a closed-cycle recirculating cooling system.

Quemahoning Intake

The Quemahoning intake is CSA's primary water supply intake and is used to supply the following facilities with cooling water: CPV Fairview, Johnstown Wire Technologies—aka Liberty Wire Johnstown (NPDES PA0217093), Gautier Steel (NPDES PA0217085), and North American Höganäs (NPDES PA0110655). CPV Fairview operates a closed-cycle recirculating system, but the other facilities do not. CPV Fairview's operation of a closed-cycle recirculating system does not satisfy that impingement BTA or entrainment BTA compliance option for the Quemahoning intake because CPV is not the only facility receiving cooling water from the Quemahoning intake.

As a passive intake without any pumps, it is possible that the Quemahoning intake satisfies one of the through-screen velocity compliance options for impingement BTA. In EPA's July 6, 2022 *Revised Framework for Considering Existing Hydroelectric Facility Technologies in Establishing Case-by-Case, Best Professional Judgment Clean Water Act § 316(b) NPDES Permit Conditions*, EPA states:

Most hydroelectric facility cooling water intakes rely upon a passive gravity feed that in some cases might result in a lower initial intake velocity than a pumped system. In such a case, organisms may have enough motility that when they sense the opening of the intake, they have an avoidance response that allows them to swim away and avoid being drawn into the intake.

EPA's framework for hydroelectric facilities suggests that the intake velocity of a passive intake may be low enough (generally less than 0.5 feet per second) to justify compliance with impingement BTA. EPA's framework also supports the conclusion that cooling water intake structures without pumps are subject to 316(b) requirements.

CSA did not report through-screen velocities on its application, but CSA did report an "average through-screen velocity" of 0.28 fps in correspondence dating to 2018. Even though that reported velocity is low, the maximum velocity must be less than 0.5 fps, not the average, and CSA's calculation did not exclude the portion of the screened cross-sectional area taken up by the screens themselves.

The Quemahoning intake does not meet any of the SOP's options for entrainment BTA. As stated previously, CPV Fairview's operation of a closed-cycle recirculating system among the facilities supplied with cooling water by CSA's Quemahoning intake does not satisfy that impingement BTA or entrainment BTA compliance option for that intake. In addition, the AIF is not minimal compared to the mean annual flow of the river. The Quemahoning Dam impounds Quemahoning Creek and all water passing through the dam including water used to maintain flow in Quemahoning Creek downstream of the dam flows through the intake structure. Since the AIF of the Quemahoning intake consists of the entire flow of Quemahoning Creek, the AIF is not minimal compared to the mean annual flow of Quemahoning Creek. Also, CSA does not practice seasonal flow reductions. Biologically important time periods generally run from April/May through August, which also coincides with recreation season when CSA releases excess water to create "whitewater" conditions for boating and kayaking on Quemahoning Creek and the Stonycreek River.

Based on Section II.E and Attachment A of the SOP, the following conditions apply to the Quemahoning intake.

The permittee shall submit the following information:

- A. Within 18 months of the permit effective date, the permittee shall submit a source water baseline biological characterization in support of developing the permittee's selection and justification for impingement and entrainment compliance. The permittee may use surrogate data where appropriate data exists or collect sampling data to support the report. The permittee must submit a study plan for DEP approval prior to collecting data.

- B. Within 24 months of DEP's approval of the source water baseline biological characterization, the permittee will submit a facility and cooling water intake structure report in support of the permittee's selection and justification for impingement and entrainment compliance. This report should include an analysis of a minimum of three options to meet Best Technology Available (BTA) for both impingement and entrainment. The report should also include details of the source water physical data, cooling water intake structure data, cooling water system data, and operational status. The permittee may optionally conduct impingement and entrainment sampling to determine if current operations meet BTA.

If the permittee's selection for impingement and entrainment compliance is not one of the following, then impingement and entrainment sampling must be conducted to justify the permittee's alternative selection:

Impingement Mortality

1. Closed-cycle recirculating system
2. 0.5 foot per second (fps) through-screen design velocity
3. 0.5 fps through-screen actual velocity
4. Modified Traveling Screens with a fish handling and return system with sufficient water flow to return the fish directly to the source water in a manner that does not promote reimpingement of the fish or require a large vertical drop.

Entrainment

1. Closed-cycle recirculating system.
 2. The actual intake flow (AIF) is minimal compared to the mean annual flow of the river. For cases where this option is being used, cumulative withdrawals from nearby facilities should be considered. The application manager may contact the Bureau of Clean Water to determine if this option is applicable.
 3. Seasonal flow reductions - If a facility can reduce flows to mimic closed cycle cooling during spawning and biologically important time periods.
- C. Upon written approval from DEP, the permittee will implement technologies or BMPs that constitute BTA for impingement and entrainment within the shortest, reasonable period of time.
- D. The permittee shall submit a progress report by the anniversary of the effective date of the permit each year detailing the status of activities being conducted until BTA for impingement and entrainment is implemented.

Hinckston Run, Border Dam, and South Fork Intakes

While CSA characterizes the Hinckston Run and Border Dam intakes as backup water supplies for the Quemahoning Reservoir when the Quemahoning intake, dam, and/or pipelines are undergoing maintenance, the regulatory record does not indicate that secondary, backup intakes are excluded from the need to implement BTA where impingement and entrainment are possible. However, short term withdrawals and intermittent withdrawals may be used to demonstrate credit for flow reductions as part of BTA.

The South Fork intake is not used to supply cooling water, so it is not subject to any 316(b) requirements.

Flow Monitoring and Reporting

In addition to the 316(b) requirements imposed on CSA, the flow monitoring and reporting condition previously imposed on CSA will be maintained as follows:

FLOW MONITORING AND REPORTING

The permittee shall use its best efforts to provide a full and accurate accounting of the origin and fate of all water entering its system by monitoring water flow rates or volumes in accordance with the following schedule:

Reservoir water withdrawal volumes shall be recorded daily at the following locations:

- Quemahoning Dam
- Hinckston Run Dam
- Wilmore Dam
- Border Dam

Conservation release volumes shall be recorded daily at the following locations:

- Quemahoning Dam
- Hinckston Run Dam
- Wilmore Dam
- Border Dam

Water supply volumes shall be recorded daily for the following users:

- CPV Fairview Energy Center
- Ebensburg Power Company
- Greater Johnstown Water Authority

Water supply volumes shall be recorded monthly for all other users of the permittee's raw water supply system, including, but not limited to the following:

- Somerset County General Authority
- North American Höganäs
- Gautier Steel
- Johnstown Wire Technologies

Flow data collected in accordance with the preceding schedule and flow data collected at Outfalls 001, 002, and 003 pursuant to Part A of this permit shall be summarized and submitted to DEP in a monthly report attached to the permittee's monthly Discharge Monitoring Report submissions. The flow monitoring and reporting required by this condition is supplementary to (does not replace) the flow reporting required by Part A of this permit.

Quemahoning Dam and Intake

The Quemahoning Dam is located on Quemahoning Creek in Quemahoning and Conemaugh Townships in Somerset County. The dam was constructed in 1913 by the Manufacturers Water Company, a subsidiary of the Cambria Steel Company, to create the Quemahoning Reservoir to supply water to the steel mills in Johnstown. The dam was later purchased by Bethlehem Steel and then by CSA in 1999. The dam embankment is approximately 100 feet high with a normal pool elevation of 1627 feet and a top-of-dam elevation of 1644 feet. The reservoir has a drainage area of nearly 94.5 square miles and a normal pool storage capacity of 12.370 billion gallons.

Raw water supply is through a pipeline of varying diameter, beginning with a 48" HDPE pipeline through the dam embankment, then a 66" riveted steel pipeline to Johnstown where the pipe divides into several smaller pipelines. The total length of pipe associated with the Quemahoning Dam is nearly 75,600 feet, with the northern portion branching in several directions. The smallest diameter pipeline associated with the Quemahoning Dam system is 36".

The water supply pipeline begins at the base of the intake tower in the reservoir at an approximate elevation of 1540 feet. The lowest end (at the Valve House in Minersville) is at an approximate elevation of 1155 feet—an elevation drop of 385 feet.

CSA uses the Quemahoning Reservoir as the primary supply of raw water to customers. The reservoir also is used for recreational purposes.

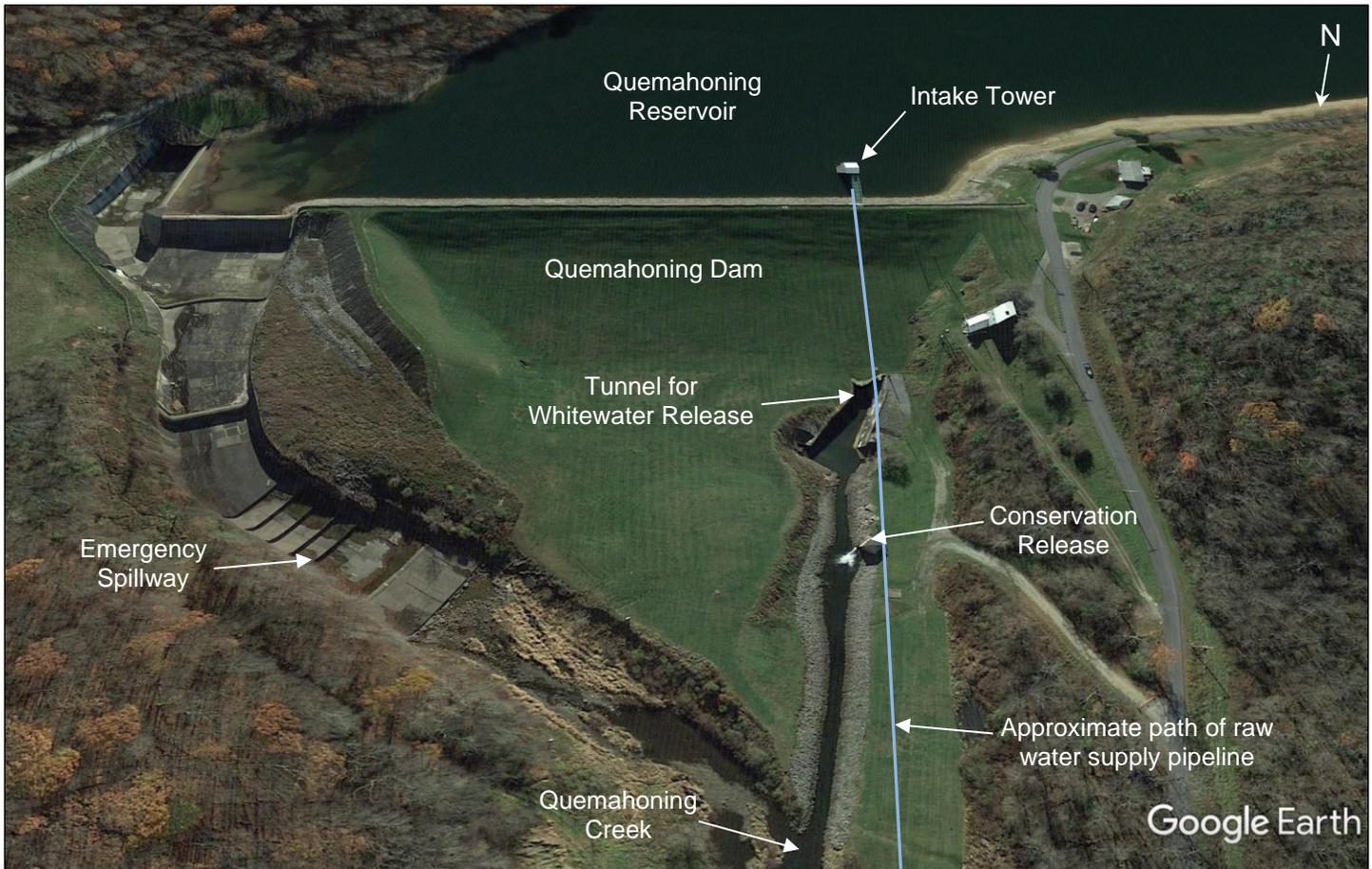


Image Source and Date: Google Earth Pro, November 12, 2016. Annotations by DEP.

The intake riser for the Quemahoning Dam has a series of screens that slide into slots that were cast into the concrete riser. There are two sets of screens (18 screens on each side), in parallel slots, and each screen is 3 feet wide x 5 feet long and uses a mesh with 1/2-inch openings. The screens were historically made of copper wire, but the copper wire screens were phased out and replaced with stainless steel wire.

The screens extend all the way from the normal pool level (elevation 1627) to the bottom of the riser (approx. elevation 1540). However, there is a zone below elevation 1580 that is sealed off. The screens are open from roughly elevation

1620 to 1580. There is another opening at the bottom where water can pass into the chambers near Gates D and F, which is roughly the size of one additional screen (3 feet x 5 feet).

As such, when the reservoir is at normal pool elevation 1627, water passing into the tower goes thru a screened zone that is roughly 40+5 feet high and 3 feet wide = 135 square feet. Since there are two of those sets of screens, the total screened area is 270 square feet.

Once the water passes thru the screens, it enters two chambers (labeled 1 and 2 in Figure 1) from which the water can pass through any combination of valves A, C, D, and F into the next set of chambers (labeled 3 and 4 in Figure 1). From there, water is directed toward the water supply pipeline (from Chamber 3) or from Chamber 4 thru Gate B into the whitewater release valve, for direct discharge into the stream. Water in Chambers 3 and 4 can also pass back and forth thru Gate E if desired.

When Gate E is closed, water entering either the water supply pipeline or the whitewater release pipeline would pass through a screened area of 135 square feet.

As noted below, CSA's current average daily withdrawal from the Que is about 18.41 MGD (December 2019 through February 2022). However, that only accounts for the flow into the pipeline for use by downstream customers. The flow meter does not account for the water which is discharged from the pipeline as a conservation release, which is about 12.29 MGD. In addition, CSA provides periodic "whitewater releases" for downstream recreation. There are typically 13 such releases annually, and each release accounts for roughly 57 million gallons, so an annual total of roughly 871 million gallons. If the intermittent whitewater releases are averaged over a year, then the average daily withdrawal attributable to whitewater releases is about 2.43 MGD. As such, the average daily withdrawal from the Quemahoning Reservoir is roughly 33.13 MGD (withdrawal for use by customers plus the required conservation releases plus whitewater releases). This does not account for the additional flow that passes over the emergency spillway and enters the stream directly, which is water that does not pass through the intake structure.

Assuming the entire average daily flow passing through the intake—33.13 MGD—passes thru Chambers 1 and 3 (with Gate E closed) then it would have a screened area of 135 SF. That results in an average velocity thru the screens of roughly 0.28 feet per second. If Gate E was open, the velocity thru the screens would be much lower since both sets of screens would be in use.



Image from CSA's Quemahoning Family Recreation Area Brochure

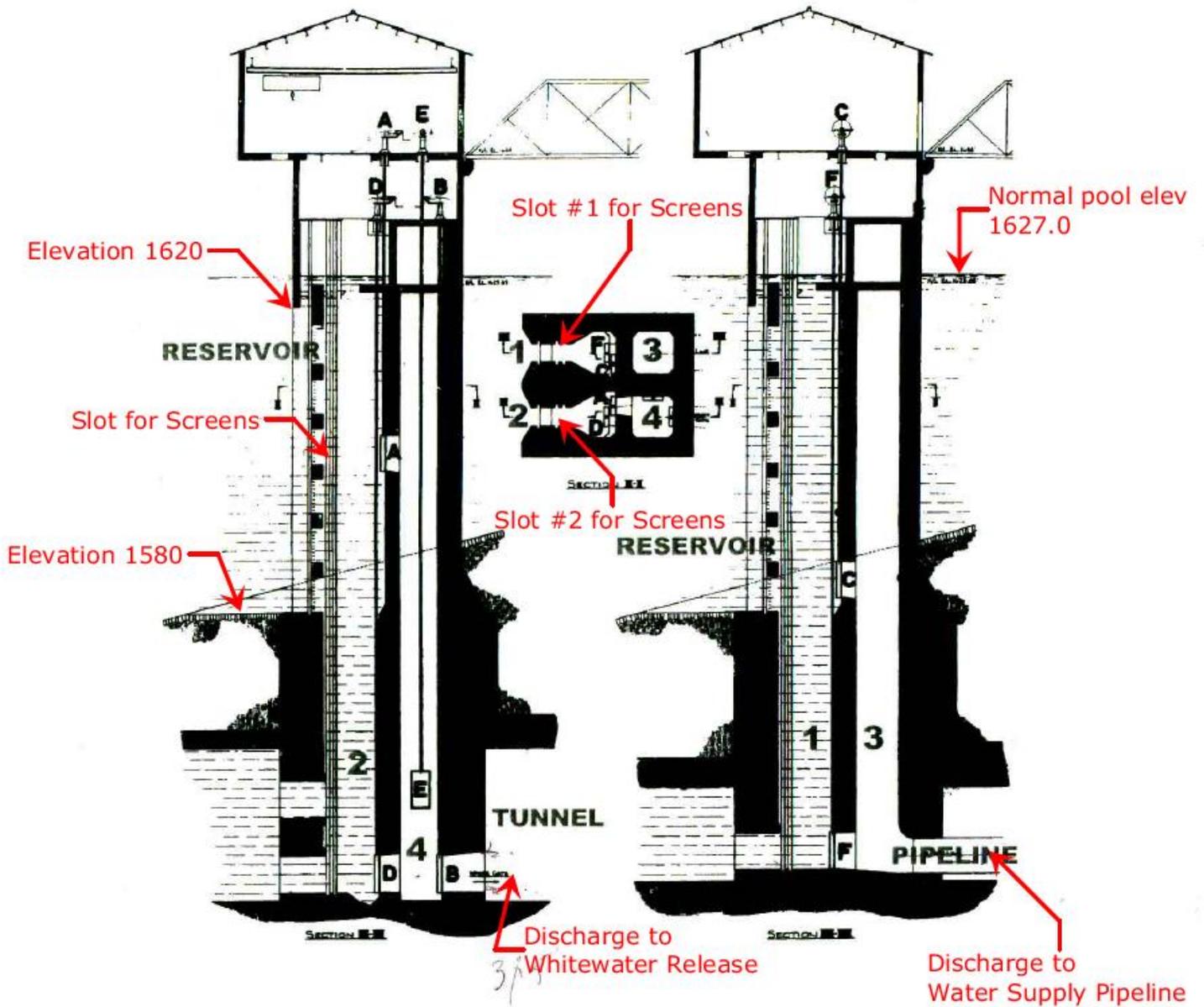


Figure 1: Schematic of Intake Tower at Quemahoning Dam (not to scale).

Hinckston Run Dam and Intake

The dam is located on Hinckston Run in East Taylor and Middle Taylor Townships in Cambria County and was originally constructed by Manufacturers Water Company in 1905 to create the Hinckston Run Reservoir to supply water to the steel mills in Johnstown until the dam was purchased by CSA in 1999. The initial dam structure was an earthen embankment, which was expanded by placement of slag dumped on the downstream side to form the current shape. The dam is 84 feet high with a normal pool elevation of 1395 feet and a top-of-dam elevation of 1402 feet.

The reservoir has a drainage area of approximately 10.75 square miles and a normal pool storage capacity of about 1.160 billion gallons. CSA uses the Hinckston Run Reservoir as a backup water supply for the Quemahoning Reservoir when the Quemahoning dam/pipelines are undergoing maintenance. The reservoir also is used for recreational purposes.

The water supply pipeline from the Hinckston Run Reservoir begins as a 24" cast iron pipe leading from the intake tower in the reservoir to a meter house located in the Minersville section of Johnstown. The pipeline is approximately 18,300 feet long with an elevation drop of about 180 feet (elevation 1335 feet at the base of the intake tower to elevation 1155 feet at the Minersville Valve House).

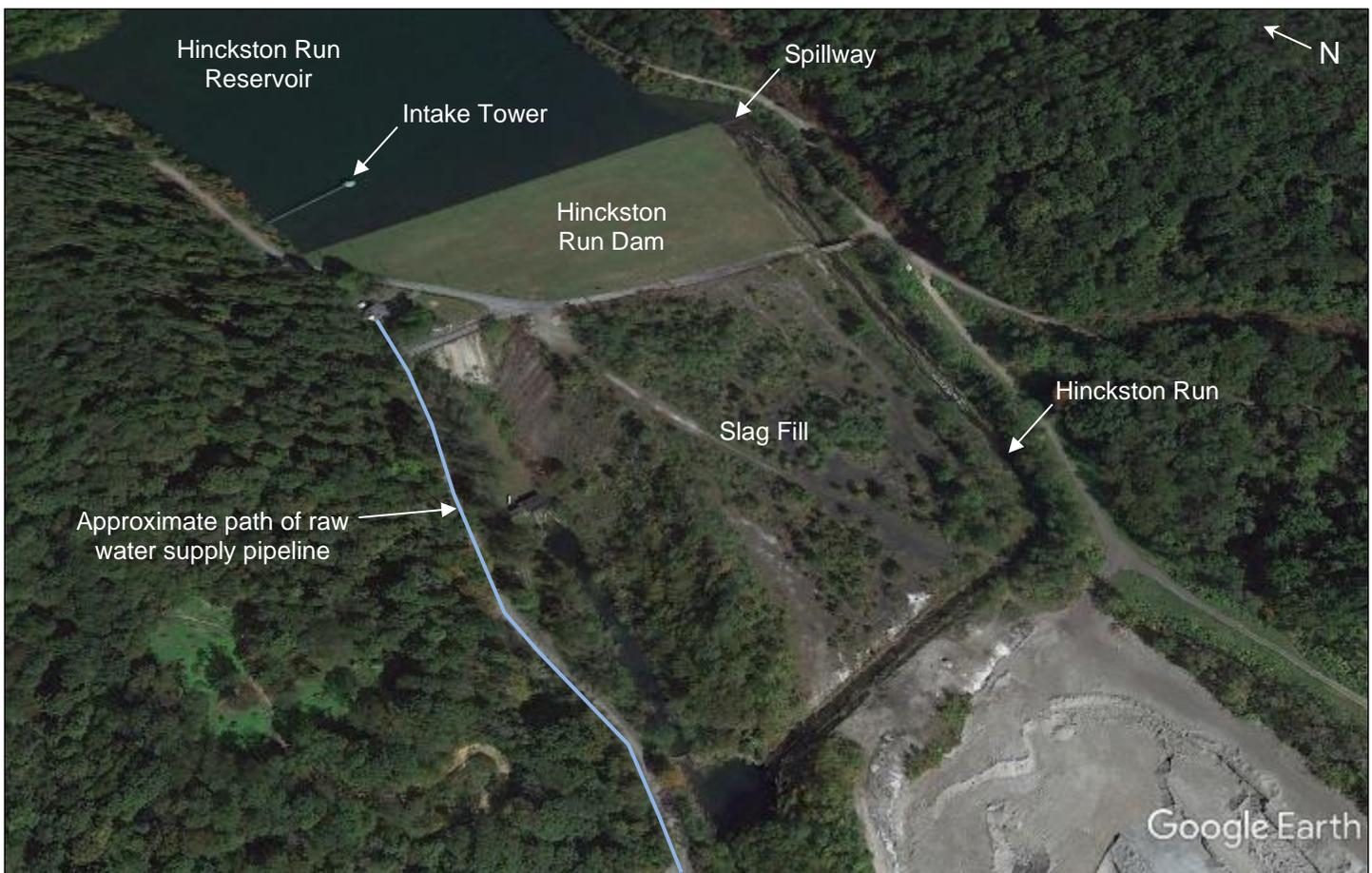


Image Source and Date: Google Earth Pro, September 26, 2019. Annotations by DEP.

Wilmore Dam and Intake

The Wilmore Dam is located on the North Branch Little Conemaugh River in Summerhill and Portage Townships in Cambria County. The reservoir was previously interconnected with the rest of the water supply system via a 24" diameter cast iron pipe leading to Johnstown, but this connection currently does not exist. The dam is about 38 feet high at its highest point with a normal pool elevation of 1619.9 feet and a top-of-dam elevation of 1623 feet. The reservoir holds about 1.03 billion gallons. Currently, the Wilmore Reservoir is used solely to supply water to Ebensburg Power Company, which operates a pump station on the supply line leading from the intake structure.

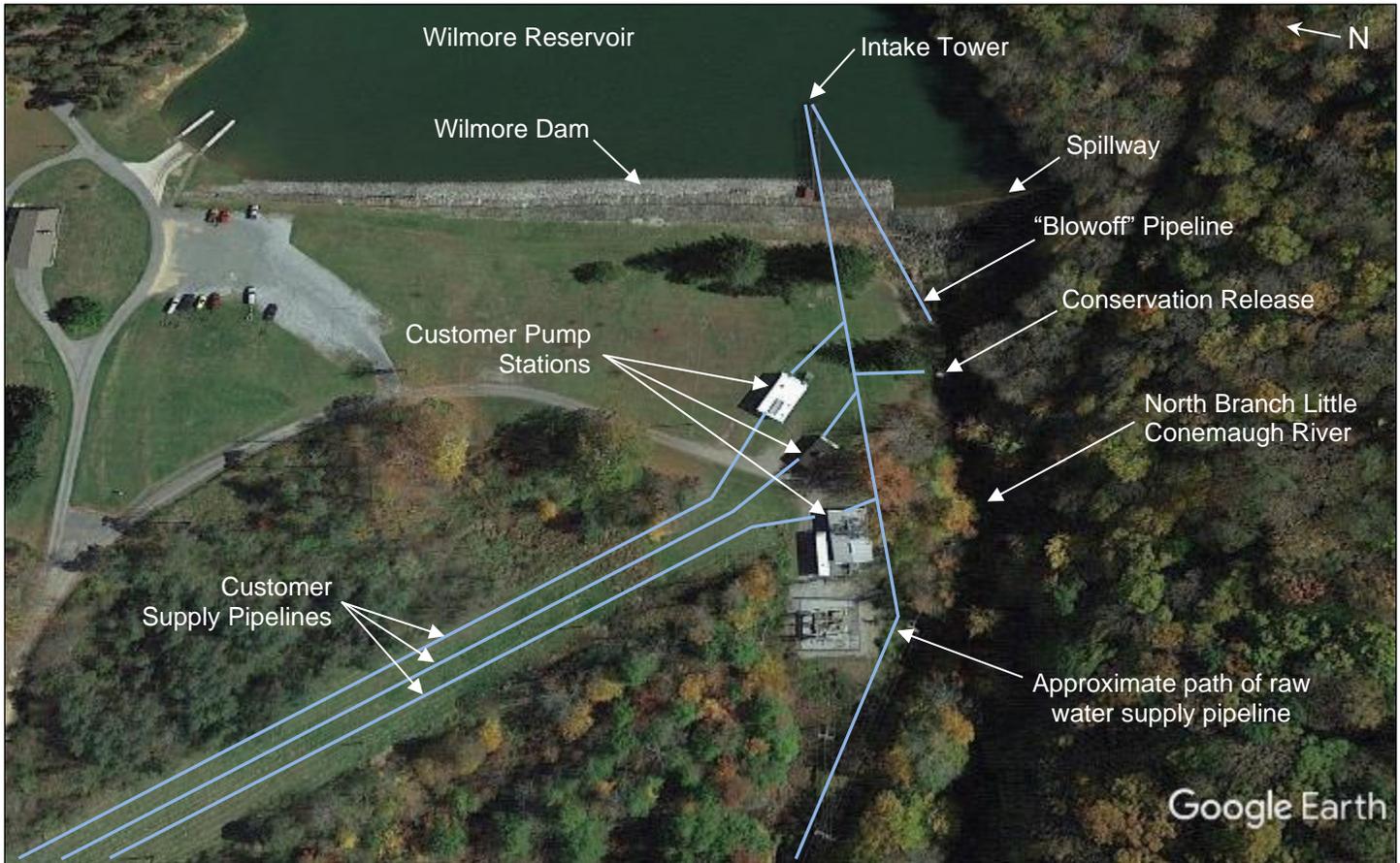


Image Source and Date: Google Earth Pro, October 11, 2015. Annotations by DEP.

Border Dam and Reservoir

The dam is a run-of-river structure located on the Stony Creek River in Conemaugh and Paint Townships in Somerset County. The dam was originally constructed by Cambria Iron in 1898 as a water supply facility for steel mills in Johnstown. The dam is a timber crib dam, which permits continuous overflow of river water. The dam is about eight feet high with a normal pool elevation of about 1363 feet.

The reservoir is used as a backup water supply for the Quemahoning Reservoir. The water supply pipeline begins as a 36" cast iron pipe leading from the reservoir to a meter house located in the Minersville section of Johnstown. The pipeline is approximately 38,700 feet long with an elevation drop of about 208 feet (elevation 1363 feet at the reservoir to elevation 1155 feet at the Minersville Valve House).



Image Source and Date: Google Earth Pro, September 26, 2016. Annotations by DEP.

South Fork Dam

The dam is a run-of-river structure located in East Taylor and Conemaugh Townships in Cambria County. Water withdrawn at the South Fork Dam is only used periodically for special customers located west of the Dam.



Image Source and Date: Google Earth Pro, September 26, 2019. Annotations by DEP.

Tools and References Used to Develop Permit	
<input type="checkbox"/>	WQM for Windows Model (see Attachment)
<input checked="" type="checkbox"/>	Toxics Management Spreadsheet (see Attachment B, C, and D)
<input checked="" type="checkbox"/>	TRC Model Spreadsheet (see Attachment)
<input checked="" type="checkbox"/>	Temperature Model Spreadsheet (see Attachment)
<input type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input checked="" type="checkbox"/>	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
<input checked="" type="checkbox"/>	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
<input type="checkbox"/>	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
<input type="checkbox"/>	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
<input type="checkbox"/>	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
<input type="checkbox"/>	Pennsylvania CSO Policy, 386-2000-002, 9/08.
<input type="checkbox"/>	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
<input type="checkbox"/>	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
<input type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
<input type="checkbox"/>	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
<input type="checkbox"/>	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
<input type="checkbox"/>	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
<input type="checkbox"/>	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
<input type="checkbox"/>	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
<input type="checkbox"/>	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
<input type="checkbox"/>	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
<input checked="" type="checkbox"/>	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
<input checked="" type="checkbox"/>	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
<input type="checkbox"/>	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
<input type="checkbox"/>	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
<input type="checkbox"/>	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
<input type="checkbox"/>	Design Stream Flows, 386-2000-003, 9/98.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
<input type="checkbox"/>	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
<input type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input checked="" type="checkbox"/>	SOP: Standard Operating Procedure for Clean Water Program New and Reissuance Industrial Waste and Industrial Stormwater Individual NPDES Permit Applications, SOP No. BCW-PMT-001, February 5, 2024, Version 1.7.
<input checked="" type="checkbox"/>	SOP: Standard Operating Procedure for Clean Water Program Establishing Effluent Limitations for Individual Industrial Permits, SOP No. BCW-PMT-032, February 5, 2024, Version 1.7.
<input checked="" type="checkbox"/>	SOP: Standard Operating Procedure for Clean Water Program Establishing Best Technology Available (BTA) Using Best Professional Judgement (BPJ) for Cooling Water Intake Structures at Existing NPDES Facilities, SOP No. BCW-PMT-038, December 7, 2021, Version 1.0.
<input type="checkbox"/>	Other:

ATTACHMENT A

U.S. EPA Memo – pH Limitations for Low Volume Wastes Commingled with Once Through Cooling Water

*Test
THANKS
TO
Steve*



Feb: 86

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30365

March 21, 1986

4WM-PF

Subject: Steam Electric Generating Point Source Guidelines (40 CFR Part 423)
pH Limitations for Low Volume Wastes Commingled with Once Through
Cooling Water

From: Charles H. Kaplan, P.E. *Charles H. Kaplan*
National Expert Steam Electric/Water

To: Regional Permit Branch Chiefs
State Directors

Attached is a February 24, 1986 interpretation of 40 CFR 423.12(b)(1) as it relates to pH limitations for low volume wastes which are commingled with once through cooling water. The pH limitations for the low volume waste (6.0 to 9.0 range) may be applied after combination with once through cooling water, provided that monitoring is prior to discharge to waters of the United States. This interpretation is subject to consideration of various factors, some of which are detailed in the memorandum, which might allow/require that pH limitations be applied prior to combination.

cc: Mr. Geoffry Grubbs (EN-336)
Mr. Dennis Ruddy (WH-552)

RECEIVED
MAR 26 1986
COMPLIANCE BR...

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: February 24, 1986

SUBJECT: Steam Electric Generating Point Source Guidelines (40 CFR Part 423)
pH Limitations For Low Volume Wastes Commingled with Once Through Cooling Water

FROM: National Expert, Steam Electric/Water
Region IV (4WM-FP)

TO: Dit Fai Chung, Environmental Engineer
Region II

Through: Mr. Geoffrey Grubbs (EN-336)
Chief, Technical Support Branch

Through: Mr. Dennis Ruddy (WH-552A)
Project Manager, Steam Electric



Reference is made to the December 18, 1985, letter from New York State requesting further clarification of the subject guidelines beyond that provided by the October 18, 1985, letter from Mr. Dennis Ruddy. At issue is whether 40 CFR Part 423 requires pH limitations to be applied for a low volume waste stream prior to combination with once through cooling water.

It has always been my understanding that where low volume wastes from a steam electric power plant are commingled with once through cooling water prior to discharge to waters of the U.S., pH limitations for the commingled stream are applicable at the combined discharge point to waters of the U.S. Limitations for other pollutants, however, are applicable prior to combination.

Provisions of 40 CFR §423.12(b)(1) require "The pH of all discharges, except for once through cooling water, shall be in the range of 6.0 to 9.0." This guideline is to be applied at the point of discharge to waters of the U.S. In developing the Regulation, once through cooling water was not subject to a pH limitation since the pH of intake water is virtually unchanged by passage through the condensers, even during chlorination.

The Agency has always opposed the use of dilution as a substitute for treatment. In the case of pH, however, combination of low volume wastes with once through cooling water (another plant waste) produces chemical neutralization, utilizing ambient intake water chemicals instead of added chemicals. However, we will not condone situations where ambient water is pumped expressly for the purpose of neutralization.

On a case-by-case basis, other factors might allow/require that limitations be applied at a point prior to combination. Some of these include:

1. Combination of specific low volume wastes with once through cooling water which could be anticipated to produce additional total suspended solids, due to the resulting neutralization, and which would exceed the amount allowed for the low volume wastes.
2. Failure to neutralize and settle the low volume waste prior to combination would result in unacceptable quantities of heavy metals or other toxic pollutants being released.
3. Requirements of 316(b) which might limit the amount of cooling water used.

ATTACHMENT B

Toxics Management Spreadsheet Results for Outfall 001



Discharge Information

Instructions **Discharge** Stream

Facility: Cambria Somerset Authority NPDES Permit No.: PA0253359 Outfall No.: 001

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: Excess raw water and CPV reclaim water

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q ₇₋₁₀	Q _b
3.8	206	7.4						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
			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	538.238077			0.5984					
	Chloride (PWS)	mg/L	70.9585958			0.6421					
	Bromide	mg/L	0.1087189			0.2158					
	Sulfate (PWS)	mg/L	231.973408			0.6344					
	Fluoride (PWS)	mg/L									
Group 2	Total Aluminum	µg/L	0.2035999			1.1229					
	Total Antimony	µg/L	< 0.5								
	Total Arsenic	µg/L	1.7								
	Total Barium	µg/L	68.2								
	Total Beryllium	µg/L	< 0.5								
	Total Boron	µg/L	32								
	Total Cadmium	µg/L	< 0.1								
	Total Chromium (III)	µg/L	1.1								
	Hexavalent Chromium	µg/L	0.9								
	Total Cobalt	µg/L	0.8								
	Total Copper	µg/L	18.3791561			2.6177					
	Free Cyanide	µg/L									
	Total Cyanide	µg/L	< 0.01								
	Dissolved Iron	µg/L	42								
	Total Iron	µg/L	0.5478288			0.8127					
	Total Lead	µg/L	1.4								
	Total Manganese	µg/L	0.2417321			1.0422					
	Total Mercury	µg/L	< 0.1								
	Total Nickel	µg/L	4.1								
	Total Phenols (Phenolics) (PWS)	µg/L	< 5								
	Total Selenium	µg/L	1								
	Total Silver	µg/L	< 0.1								
	Total Thallium	µg/L	< 0.1								
Total Zinc	µg/L	37.4									
Total Molybdenum	µg/L	1.4									
Acrolein	µg/L	< 2									
Acrylamide	µg/L	<									
Acrylonitrile	µg/L	< 0.5									
Benzene	µg/L	< 0.2									
Bromoform	µg/L	1.1									



Stream / Surface Water Information

Cambria Somerset Authority, NPDES Permit No. PA0253359, Outfall 001

Instructions Discharge **Stream**

Receiving Surface Water Name: Conemaugh 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	043832	51.78	1134	675	0.001		Yes
End of Reach 1	043832	51	1130	676	0.001		Yes

Q₇₋₁₀

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	51.78	0.097										119	7		
End of Reach 1	51	0.097													

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	51.78														
End of Reach 1	51														



Model Results

Cambria Somerset Authority, NPDES Permit No. PA0253359, Outfall 001

Instructions

Results

RETURN TO INPUTS

SAVE AS PDF

PRINT

All

Inputs

Results

Limits

Hydrodynamics

Q₇₋₁₀

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
51.78	65.48		65.48	5.879	0.001	1.085	145.779	134.338	0.451	0.106	686.11
51	65.57		65.572								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
51.78	287.24		287.24	5.879	0.001	2.021	145.779	72.145	0.995	0.048	307.955
51	287.608		287.61								

Wasteload Allocations

AFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	
Total Aluminum	0	0		0	750	750	1,985	
Total Antimony	0	0		0	1,100	1,100	2,912	
Total Arsenic	0	0		0	340	340	900	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	55,584	
Total Boron	0	0		0	8,100	8,100	21,439	
Total Cadmium	0	0		0	3.022	3.26	8.63	Chem Translator of 0.927 applied
Total Chromium (III)	0	0		0	802.267	2,539	6,720	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	43.1	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	251	
Total Copper	0	0		0	19.923	20.8	54.9	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	101.469	139	368	Chem Translator of 0.73 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1,400	1.65	4.36	Chem Translator of 0.85 applied
Total Nickel	0	0		0	666.789	668	1,768	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	6.600	7.76	20.6	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	172	
Total Zinc	0	0		0	166.961	171	452	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	7.94	
Acrylonitrile	0	0		0	650	650	1,720	
Benzene	0	0		0	640	640	1,694	
Bromoform	0	0		0	1,800	1,800	4,764	
Carbon Tetrachloride	0	0		0	2,800	2,800	7,411	
Chlorobenzene	0	0		0	1,200	1,200	3,176	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	47,643	
Chloroform	0	0		0	1,900	1,900	5,029	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	39,703	
1,1-Dichloroethylene	0	0		0	7,500	7,500	19,851	
1,2-Dichloropropane	0	0		0	11,000	11,000	29,115	
1,3-Dichloropropylene	0	0		0	310	310	821	
Ethylbenzene	0	0		0	2,900	2,900	7,676	
Methyl Bromide	0	0		0	550	550	1,456	
Methyl Chloride	0	0		0	28,000	28,000	74,111	
Methylene Chloride	0	0		0	12,000	12,000	31,762	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	2,647	
Tetrachloroethylene	0	0		0	700	700	1,853	
Toluene	0	0		0	1,700	1,700	4,500	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	17,998	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	7,941	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	8,999	
Trichloroethylene	0	0		0	2,300	2,300	6,088	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	1,482	
2,4-Dichlorophenol	0	0		0	1,700	1,700	4,500	
2,4-Dimethylphenol	0	0		0	660	660	1,747	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	212	
2,4-Dinitrophenol	0	0		0	660	660	1,747	
2-Nitrophenol	0	0		0	8,000	8,000	21,175	
4-Nitrophenol	0	0		0	2,300	2,300	6,088	
p-Chloro-m-Cresol	0	0		0	160	160	423	
Pentachlorophenol	0	0		0	9.763	9.76	25.8	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	1,218	
Acenaphthene	0	0		0	83	83.0	220	

Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	794	
Benzo(a)Anthracene	0	0		0	0.5	0.5	1.32	
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	79,405	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	11,911	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	715	
Butyl Benzyl Phthalate	0	0		0	140	140	371	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthracene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	2,170	
1,3-Dichlorobenzene	0	0		0	350	350	926	
1,4-Dichlorobenzene	0	0		0	730	730	1,932	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	10,587	
Dimethyl Phthalate	0	0		0	2,500	2,500	6,617	
Di-n-Butyl Phthalate	0	0		0	110	110	291	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	4,235	
2,6-Dinitrotoluene	0	0		0	990	990	2,620	
1,2-Diphenylhydrazine	0	0		0	15	15.0	39.7	
Fluoranthene	0	0		0	200	200	529	
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	26.5	
Hexachlorocyclopentadiene	0	0		0	5	5.0	13.2	
Hexachloroethane	0	0		0	60	60.0	159	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	26,468	
Naphthalene	0	0		0	140	140	371	
Nitrobenzene	0	0		0	4,000	4,000	10,587	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	44,996	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	794	
Phenanthrene	0	0		0	5	5.0	13.2	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	344	

CFC CCT (min): ##### PMF: 1 Analysis Hardness (mg/l): 126.17 Analysis pH: 7.02

Pollutants	Stream Conc (ug/L)	Stream CV	Trib Conc (ug/L)	Fate Coef	WQC (ug/L)	WQ Obj (ug/L)	WLA (ug/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	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	2,670	
Total Arsenic	0	0		0	150	150	1,821	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	49,765	
Total Boron	0	0		0	1,600	1,600	19,421	
Total Cadmium	0	0		0	0.289	0.32	3.9	Chem Translator of 0.899 applied
Total Chromium (III)	0	0		0	89.656	104	1,265	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	126	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	231	
Total Copper	0	0		0	10.924	11.4	138	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	18,207	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	3.238	4.28	51.9	Chem Translator of 0.757 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	11.0	Chem Translator of 0.85 applied
Total Nickel	0	0		0	63.308	63.5	771	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	60.6	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	158	
Total Zinc	0	0		0	143.856	146	1,771	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	36.4	
Acrylonitrile	0	0		0	130	130	1,578	
Benzene	0	0		0	130	130	1,578	
Bromoform	0	0		0	370	370	4,491	
Carbon Tetrachloride	0	0		0	560	560	6,797	
Chlorobenzene	0	0		0	240	240	2,913	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	42,482	
Chloroform	0	0		0	390	390	4,734	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	37,627	
1,1-Dichloroethylene	0	0		0	1,500	1,500	18,207	
1,2-Dichloropropane	0	0		0	2,200	2,200	26,703	
1,3-Dichloropropylene	0	0		0	61	61.0	740	
Ethylbenzene	0	0		0	580	580	7,040	
Methyl Bromide	0	0		0	110	110	1,335	
Methyl Chloride	0	0		0	5,500	5,500	66,758	
Methylene Chloride	0	0		0	2,400	2,400	29,131	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	2,549	
Tetrachloroethylene	0	0		0	140	140	1,699	
Toluene	0	0		0	330	330	4,005	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	16,993	
1,1,1-Trichloroethane	0	0		0	610	610	7,404	

1,1,2-Trichloroethane	0	0		0	680	680	8,254
Trichloroethylene	0	0		0	450	450	5,462
Vinyl Chloride	0	0		0	N/A	N/A	N/A
2-Chlorophenol	0	0		0	110	110	1,335
2,4-Dichlorophenol	0	0		0	340	340	4,127
2,4-Dimethylphenol	0	0		0	130	130	1,578
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	194
2,4-Dinitrophenol	0	0		0	130	130	1,578
2-Nitrophenol	0	0		0	1,600	1,600	19,421
4-Nitrophenol	0	0		0	470	470	5,705
p-Chloro-m-Cresol	0	0		0	500	500	6,069
Pentachlorophenol	0	0		0	7.490	7.49	90.9
Phenol	0	0		0	N/A	N/A	N/A
2,4,6-Trichlorophenol	0	0		0	91	91.0	1,105
Acenaphthene	0	0		0	17	17.0	206
Anthracene	0	0		0	N/A	N/A	N/A
Benzidine	0	0		0	59	59.0	716
Benzo(a)Anthracene	0	0		0	0.1	0.1	1.21
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	72,827
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	11,045
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	655
Butyl Benzyl Phthalate	0	0		0	35	35.0	425
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A
Chrysene	0	0		0	N/A	N/A	N/A
Dibenzo(a,h)Anthracene	0	0		0	N/A	N/A	N/A
1,2-Dichlorobenzene	0	0		0	160	160	1,942
1,3-Dichlorobenzene	0	0		0	69	69.0	838
1,4-Dichlorobenzene	0	0		0	150	150	1,821
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A
Diethyl Phthalate	0	0		0	800	800	9,710
Dimethyl Phthalate	0	0		0	500	500	6,069
Di-n-Butyl Phthalate	0	0		0	21	21.0	255
2,4-Dinitrotoluene	0	0		0	320	320	3,884
2,6-Dinitrotoluene	0	0		0	200	200	2,428
1,2-Diphenylhydrazine	0	0		0	3	3.0	36.4
Fluoranthene	0	0		0	40	40.0	486
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	24.3
Hexachlorocyclopentadiene	0	0		0	1	1.0	12.1
Hexachloroethane	0	0		0	12	12.0	146

Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A
Isophorone	0	0		0	2,100	2,100	25,489
Naphthalene	0	0		0	43	43.0	522
Nitrobenzene	0	0		0	810	810	9,832
n-Nitrosodimethylamine	0	0		0	3,400	3,400	41,269
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A
n-Nitrosodiphenylamine	0	0		0	59	59.0	716
Phenanthrene	0	0		0	1	1.0	12.1
Pyrene	0	0		0	N/A	N/A	N/A
1,2,4-Trichlorobenzene	0	0		0	26	26.0	316

THH

CCT (min): #####

PMF: 1

Analysis Hardness (mg/l): N/A

Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	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	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	68.0	
Total Arsenic	0	0		0	10	10.0	121	
Total Barium	0	0		0	2,400	2,400	29,131	
Total Boron	0	0		0	3,100	3,100	37,627	
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	3,641	
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	12,138	
Total Mercury	0	0		0	0.050	0.05	0.61	
Total Nickel	0	0		0	610	610	7,404	
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	2.91	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	36.4	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	1,214	

Chlorodibromomethane	0	0		0	N/A	N/A	N/A
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A
Chloroform	0	0		0	5.7	5.7	69.2
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	401
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	825
Methyl Bromide	0	0		0	100	100.0	1,214
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	692
1,2-trans-Dichloroethylene	0	0		0	100	100.0	1,214
1,1,1-Trichloroethane	0	0		0	10,000	10,000	121,379
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	364
2,4-Dichlorophenol	0	0		0	10	10.0	121
2,4-Dimethylphenol	0	0		0	100	100.0	1,214
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	24.3
2,4-Dinitrophenol	0	0		0	10	10.0	121
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	48,551
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A
Acenaphthene	0	0		0	70	70.0	850
Anthracene	0	0		0	300	300	3,641
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	2,428
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	1.21
2-Chloronaphthalene	0	0		0	800	800	9,710
Chrysene	0	0		0	N/A	N/A	N/A

Dibenzo(a,h)Anthracene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	12,138	
1,3-Dichlorobenzene	0	0		0	7	7.0	85.0	
1,4-Dichlorobenzene	0	0		0	300	300	3,641	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	7,283	
Dimethyl Phthalate	0	0		0	2,000	2,000	24,276	
Di-n-Butyl Phthalate	0	0		0	20	20.0	243	
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	243	
Fluorene	0	0		0	50	50.0	607	
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	48.6	
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	413	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	121	
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	243	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.85	

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

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
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	2.99
Benzene	0	0		0	0.58	0.58	28.9
Bromoform	0	0		0	7	7.0	349
Carbon Tetrachloride	0	0		0	0.4	0.4	19.9
Chlorobenzene	0	0		0	N/A	N/A	N/A
Chlorodibromomethane	0	0		0	0.8	0.8	39.9
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A
Chloroform	0	0		0	N/A	N/A	N/A
Dichlorobromomethane	0	0		0	0.95	0.95	47.4
1,2-Dichloroethane	0	0		0	9.9	9.9	494
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A
1,2-Dichloropropane	0	0		0	0.9	0.9	44.9
1,3-Dichloropropylene	0	0		0	0.27	0.27	13.5
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	997
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	9.97
Tetrachloroethylene	0	0		0	10	10.0	499
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	27.4
Trichloroethylene	0	0		0	0.6	0.6	29.9
Vinyl Chloride	0	0		0	0.02	0.02	1.
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	1.5
Phenol	0	0		0	N/A	N/A	N/A
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	74.8
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	0.005
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.05
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.005
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.05
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.5
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	1.5
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	16.0
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	5.98
Dibenzo(a,h)Anthracene	0	0		0	0.0001	0.0001	0.005
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	2.49
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	2.49
2,6-Dinitrotoluene	0	0		0	0.05	0.05	2.49
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	1.5
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	0.004
Hexachlorobutadiene	0	0		0	0.01	0.01	0.5
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A
Hexachloroethane	0	0		0	0.1	0.1	4.99
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.05
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	0.035
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.25
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	165
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

Pollutants	Mass Limits		Concentration Limits				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			
Total Copper	Report	Report	Report	Report	Report	µg/L	127	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	290	AFC	Discharge Conc > 10% 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
Total Aluminum	2,179	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	121	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	29,131	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	13,742	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	3.9	µg/L	Discharge Conc < TQL
Total Chromium (III)	1,265	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	27.6	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	161	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	3,641	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	18,207	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	51.9	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	12,138	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.61	µg/L	Discharge Conc < TQL
Total Nickel	771	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	60.6	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	13.2	µg/L	Discharge Conc < TQL
Total Thallium	2.91	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	5.09	µg/L	Discharge Conc < TQL
Acrylonitrile	2.99	µg/L	Discharge Conc < TQL
Benzene	28.9	µg/L	Discharge Conc < TQL

Bromoform	349	µg/L	Discharge Conc ≤ 25% WQBEL
Carbon Tetrachloride	19.9	µg/L	Discharge Conc < TQL
Chlorobenzene	1,214	µg/L	Discharge Conc < TQL
Chlorodibromomethane	39.9	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	30,537	µg/L	Discharge Conc < TQL
Chloroform	69.2	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	47.4	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	494	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	401	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	44.9	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	13.5	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	825	µg/L	Discharge Conc < TQL
Methyl Bromide	933	µg/L	Discharge Conc < TQL
Methyl Chloride	47,502	µg/L	Discharge Conc < TQL
Methylene Chloride	997	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	9.97	µg/L	Discharge Conc < TQL
Tetrachloroethylene	499	µg/L	Discharge Conc < TQL
Toluene	692	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	1,214	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	5,090	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	27.4	µg/L	Discharge Conc < TQL
Trichloroethylene	29.9	µg/L	Discharge Conc < TQL
Vinyl Chloride	1.	µg/L	Discharge Conc < TQL
2-Chlorophenol	364	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	121	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	1,120	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	24.3	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	121	µg/L	Discharge Conc < TQL
2-Nitrophenol	13,572	µg/L	Discharge Conc < TQL
4-Nitrophenol	3,902	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	271	µg/L	Discharge Conc < TQL
Pentachlorophenol	1.5	µg/L	Discharge Conc < TQL
Phenol	48,551	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	74.8	µg/L	Discharge Conc < TQL
Acenaphthene	141	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	3,641	µg/L	Discharge Conc < TQL
Benzidine	0.005	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.05	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.005	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.05	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS

Benzo(k)Fluoranthene	0.5	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	1.5	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	2,428	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	16.0	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	458	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	1.21	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	9,710	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	5.98	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthracene	0.005	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	1,391	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	85.0	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	1,238	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	2.49	µg/L	Discharge Conc < TQL
Diethyl Phthalate	6,786	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	4,241	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	187	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	2.49	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	2.49	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	1.5	µg/L	Discharge Conc < TQL
Fluoranthene	243	µg/L	Discharge Conc < TQL
Fluorene	607	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.004	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.5	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	8.48	µg/L	Discharge Conc < TQL
Hexachloroethane	4.99	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.05	µg/L	Discharge Conc < TQL
Isophorone	413	µg/L	Discharge Conc < TQL
Naphthalene	238	µg/L	Discharge Conc < TQL
Nitrobenzene	121	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.035	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.25	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	165	µg/L	Discharge Conc < TQL
Phenanthrene	8.48	µg/L	Discharge Conc < TQL
Pyrene	243	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.85	µg/L	Discharge Conc < TQL

ATTACHMENT C

Toxics Management Spreadsheet Results for Outfall 002



Discharge Information

Instructions Discharge Stream

Facility: **Cambria Somerset Authority** NPDES Permit No.: **PA0253359** Outfall No.: **002**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Excess raw water and CPV reclaim water**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q ₇₋₁₀	Q _h
4.24	745	7.5						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank			1 if left blank		
			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	148.403434			0.2237						
	Chloride (PWS)	mg/L	17.4005231			0.2398						
	Bromide	mg/L	0.1									
	Sulfate (PWS)	mg/L	55.1171576			0.2393						
	Fluoride (PWS)	mg/L										
Group 2	Total Aluminum	µg/L	0.1014602			0.7447						
	Total Antimony	µg/L										
	Total Arsenic	µg/L										
	Total Barium	µg/L										
	Total Beryllium	µg/L										
	Total Boron	µg/L										
	Total Cadmium	µg/L										
	Total Chromium (III)	µg/L										
	Hexavalent Chromium	µg/L										
	Total Cobalt	µg/L										
	Total Copper	µg/L	2.5134274			1.7306						
	Free Cyanide	µg/L										
	Total Cyanide	µg/L										
	Dissolved Iron	µg/L										
	Total Iron	µg/L	0.2116461			0.7088						
	Total Lead	µg/L										
	Total Manganese	µg/L	0.1307931			0.7931						
	Total Mercury	µg/L										
	Total Nickel	µg/L										
	Total Phenols (Phenolics) (PWS)	µg/L										
	Total Selenium	µg/L										
	Total Silver	µg/L										
	Total Thallium	µg/L										
Total Zinc	µg/L											
Total Molybdenum	µg/L											
Acrolein	µg/L	<										
Acrylamide	µg/L	<										
Acrylonitrile	µg/L	<										
Benzene	µg/L	<										
Bromoform	µg/L	<										

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



Stream / Surface Water Information

Cambria Somerset Authority, NPDES Permit No. PA0253359, Outfall 002

Instructions
Discharge
Stream

Receiving Surface Water Name: Little Conemaugh 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	045815	2.3	1197	186	0.001		Yes
End of Reach 1	045815	2	1190	187	0.001		Yes

Q₇₋₁₀

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	2.3	0.101										100	7		
End of Reach 1	2	0.101													

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	2.3														
End of Reach 1	2														



Model Results

Cambria Somerset Authority, NPDES Permit No. PA0253359, Outfall 002

Instructions

Results

RETURN TO INPUTS

SAVE AS PDF

PRINT

All

Inputs

Results

Limits

Hydrodynamics

Wasteload Allocations

AFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	
Total Aluminum	0	0		0	750	750	1,376	
Total Copper	0	0		0	55,630	57.9	106	Chem Translator of 0.96 applied
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	

CFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	20,723	21.6	83.4	Chem Translator of 0.96 applied
Total Iron	0	0		0	1,500	1,500	5,796	WQC = 30 day average; PMF = 1
Total Manganese	0	0		0	N/A	N/A	N/A	

THH

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	3,864	

CRL CCT (min): PMF: Analysis Hardness (mg/l): Analysis pH:

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	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	

Recommended WQBELs & Monitoring Requirements

No. Samples/Month:

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

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
Total Aluminum	1,111	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	83.4	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	5,796	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	3,864	µg/L	Discharge Conc ≤ 10% WQBEL

ATTACHMENT D

Toxics Management Spreadsheet Results for Outfall 003



Discharge Information

Instructions Discharge Stream

Facility: Cambria Somerset Authority NPDES Permit No.: PA0253359 Outfall No.: 003

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: Conservation release & excess raw water

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q ₇₋₁₀	Q _h
7.42	77.47	7.4						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
			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	149								
	Chloride (PWS)	mg/L	21.1								
	Bromide	mg/L	0.1								
	Sulfate (PWS)	mg/L	65.9								
	Fluoride (PWS)	mg/L									
Group 2	Total Aluminum	µg/L	0.5								
	Total Antimony	µg/L									
	Total Arsenic	µg/L									
	Total Barium	µg/L									
	Total Beryllium	µg/L									
	Total Boron	µg/L									
	Total Cadmium	µg/L									
	Total Chromium (III)	µg/L									
	Hexavalent Chromium	µg/L									
	Total Cobalt	µg/L									
	Total Copper	µg/L	6.9								
	Free Cyanide	µg/L									
	Total Cyanide	µg/L									
	Dissolved Iron	µg/L									
	Total Iron	µg/L	0.49								
	Total Lead	µg/L									
	Total Manganese	µg/L	0.56								
	Total Mercury	µg/L									
	Total Nickel	µg/L									
	Total Phenols (Phenolics) (PWS)	µg/L									
	Total Selenium	µg/L									
	Total Silver	µg/L									
	Total Thallium	µg/L									
Total Zinc	µg/L										
Total Molybdenum	µg/L										
Acrolein	µg/L	<									
Acrylamide	µg/L	<									
Acrylonitrile	µg/L	<									
Benzene	µg/L	<									
Bromoform	µg/L	<									

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



Stream / Surface Water Information

Cambria Somerset Authority, NPDES Permit No. PA0253359, Outfall 003

- Instructions
- Discharge
- Stream

Receiving Surface Water Name: Hinckston Run

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	045058	0.04	1161	4.27	0.001		Yes
End of Reach 1	045058	0	1160	4.28	0.001		Yes

Q₇₋₁₀

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	0.04	0.07										100	7		
End of Reach 1	0	0.07													

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	0.04														
End of Reach 1	0														



Model Results

Cambria Somerset Authority, NPDES Permit No. PA0253359, Outfall 003

Instructions

Results

RETURN TO INPUTS

SAVE AS PDF

PRINT

All

Inputs

Results

Limits

Hydrodynamics

Wasteload Allocations

AFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	
Total Aluminum	0	0		0	750	750	770	
Total Copper	0	0		0	10.640	11.1	11.4	Chem Translator of 0.96 applied
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	

CFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	7.246	7.55	7.74	Chem Translator of 0.96 applied
Total Iron	0	0		0	1,500	1,500	1,539	WQC = 30 day average; PMF = 1
Total Manganese	0	0		0	N/A	N/A	N/A	

THH

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	1,026	

CRL CCT (min): PMF: Analysis Hardness (mg/l): Analysis pH:

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	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	

Recommended WQBELs & Monitoring Requirements

No. Samples/Month:

Pollutants	Mass Limits		Concentration Limits				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			
Total Copper	0.48	0.7	7.74	11.4	11.4	µg/L	7.74	CFC	Discharge Conc ≥ 50% WQBEL (RP)

Other Pollutants without Limits or Monitoring

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

Pollutants	Governing WQBEL	Units	Comments
Total 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
Total Aluminum	750	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	1,539	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	1,026	µg/L	Discharge Conc ≤ 10% WQBEL

ATTACHMENT E

TRC Modeling Results

TRC EVALUATION – Outfall 001

65.3	= Q stream (cfs)	0.5	= CV Daily
3.8	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	0.148	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA_afc = 0.543	1.3.2.iii	WLA_cfc = 3.466
PENTOXSD TRG	5.1a	LTAMULT_afc = 0.373	5.1c	LTAMULT_cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.202	5.1d	LTA_cfc = 2.015

Source	Reference	Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML_MULT = 1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.348	AFC
		INST MAX LIMIT (mg/l) = 0.815	

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

TRC EVALUATION – Outfall 002

18.9	= Q stream (cfs)	0.5	= CV Daily
4.24	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	0.291	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA_afc = 0.286	1.3.2.iii	WLA_cfc = 0.907
PENTOXSD TRG	5.1a	LTAMULT_afc = 0.373	5.1c	LTAMULT_cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.107	5.1d	LTA_cfc = 0.527

Source	Reference	Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML_MULT = 1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.184	AFC
		INST MAX LIMIT (mg/l) = 0.430	

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

TRC EVALUATION – Outfall 003

0.3	= Q stream (cfs)	0.5	= CV Daily
7.42	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA_afc = 0.027	1.3.2.iii	WLA_cfc = 0.019
PENTOXSD TRG	5.1a	LTAMULT_afc = 0.373	5.1c	LTAMULT_cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.010	5.1d	LTA_cfc = 0.011

Source	Reference	Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML_MULT = 1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.018	AFC
		INST MAX LIMIT (mg/l) = 0.041	

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

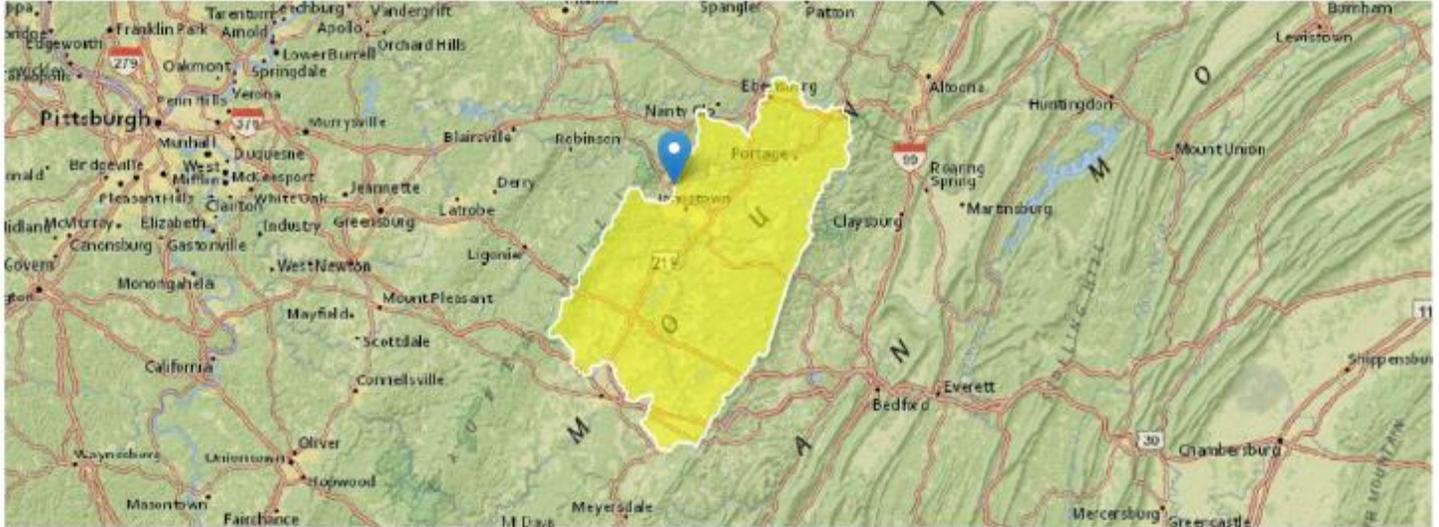
ATTACHMENT F

USGS StreamStats Basin Delineations and Low-Flow Statistics for Outfalls 001, 002, and 003

OUTFALL 001

StreamStats Report

Region ID: PA
 Workspace ID: PA20240418173316098000
 Clicked Point (Latitude, Longitude): 40.34146, -78.92658
 Time: 2024-04-18 13:33:37 -0400



➤ Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	675	square miles	2.33	1720
ELEV	Mean Basin Elevation	2113	feet	898	2700
PRECIP	Mean Annual Precipitation	45	inches	38.7	47.9

Low-Flow Statistics Flow Report [Low Flow Region 3]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	109	ft ³ /s	43	43
30 Day 2 Year Low Flow	143	ft ³ /s	38	38
7 Day 10 Year Low Flow	65.3	ft ³ /s	54	54
30 Day 10 Year Low Flow	78.2	ft ³ /s	49	49
90 Day 10 Year Low Flow	108	ft ³ /s	41	41

Low-Flow Statistics Citations

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

OUTFALL 002

StreamStats Report

Region ID: PA
 Workspace ID: PA20240418174512015000
 Clicked Point (Latitude, Longitude): 40.33655, -78.89540
 Time: 2024-04-18 13:45:38 -0400



➤ Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	186	square miles	2.33	1720
ELEV	Mean Basin Elevation	2070	feet	898	2700
PRECIP	Mean Annual Precipitation	47	inches	38.7	47.9

Low-Flow Statistics Flow Report [Low Flow Region 3]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	31.8	ft ³ /s	43	43
30 Day 2 Year Low Flow	43.2	ft ³ /s	38	38
7 Day 10 Year Low Flow	18.9	ft ³ /s	54	54
30 Day 10 Year Low Flow	23	ft ³ /s	49	49
90 Day 10 Year Low Flow	31.9	ft ³ /s	41	41

Low-Flow Statistics Citations

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

OUTFALL 003

StreamStats Report

Region ID: PA
 Workspace ID: PA20240327133209933000
 Clicked Point (Latitude, Longitude): 40.34105, -78.92415
 Time: 2024-03-27 09:32:30 -0400



➤ Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	4.27	square miles	2.33	1720
ELEV	Mean Basin Elevation	1540	feet	898	2700
PRECIP	Mean Annual Precipitation	49	inches	38.7	47.9

Low-Flow Statistics Disclaimers [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 [Low Flow Region 3]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.595	ft ³ /s
30 Day 2 Year Low Flow	0.894	ft ³ /s
7 Day 10 Year Low Flow	0.3	ft ³ /s
30 Day 10 Year Low Flow	0.41	ft ³ /s
90 Day 10 Year Low Flow	0.59	ft ³ /s

Low-Flow Statistics Citations

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