Pennsylvania Department of Environmental Protection

NORTHEAST REGIONAL OFFICE
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0008664**
Facility Type	**Industrial**	APS ID	**551679**
Major / Minor	**Minor**	Authorization ID	**1216622**

NPDES PERMIT FACT SHEET ADDENDUM

Applicant and Facility Information

Applicant Name	**Hunlock Creek Generating LLC**	Facility Name	**Hunlock Creek Energy Center**
Applicant Address	390 US Route 11	Facility Address	390 US Route 11
	Hunlock Creek, PA 18621		Hunlock Creek, PA 18621
Applicant Contact	Jeff Steeber	Facility Contact	Jeff Steeber
Applicant Phone	(570) 542-2790	Facility Phone	(570) 542-2790
Client ID	72983	Site ID	264295
SIC Code	4911	Municipality	Hunlock Township
SIC Description	Trans. & Utilities - Electric Services	County	Luzerne
Date Published in PA Bulletin	January 18, 2025	EPA Waived?	Yes
Comment Period End Date	February 17, 2025	If No, Reason	-

Purpose of Application: Renewal and amendment of NPDES permit.

Internal Review and Recommendations

Public notification of draft permit issuance was published in the PA Bulletin on January 18, 2025. Comments were received from the permittee during the 30-day public comment period. The comments and DEP responses are below. Since several changes are made to the permit, another draft permit with a new public comment period is required.

The application and CWIS correspondence were emailed to the U.S. Fish and Wildlife Service and the National Marine Fisheries Service on March 6, 2025. No comments were received during the 60-day review period.

Comment 1 - Part A.I.A, Outfall 001: Duration of Discharge Monitoring and Reporting

"A new requirement to monitor and report the Duration of Discharge in hours for the Outfall 001 flow has been added to the permit. Hunlock respectfully requests that P ADEP provide the background and basis for this new permit requirement. PADEP's Standard Operating Procedure (SOP) for Clean Water Program SOP No. BCW-PMT-032 Establishing Effluent Limitations for Individual Industrial Permits does not include requirements for monitoring and reporting the total duration of discharges, and there are no Technology-Based Effluent Limitation Guidelines established under 40 CFR § 423 for Steam Electric Power Generating Point Sources for monitoring or limiting Non-Contact Cooling Water discharges.

Hunlock is a merchant station that operates when market conditions are favorable. While daily discharge flows through Outfall 001 are monitored and reported in Million Gallons per Day (MGD) during operation in accordance with the existing NPDES permit requirements, monitoring and reporting of daily discharge durations will increase Facility operating requirements. Hunlock respectfully requests that this requirement be removed from the permit."

Response:

The requirement to monitor Duration of Discharge at Outfall 001 was mistakenly added to DEP's WMS during the development of the draft permit documents. This requirement is removed from the permit.

Approve	Return	Deny	Signatures	Date
X			Brian Burden, E.I.T. / Project Manager	May 6, 2025
X			Edward Dudick, P.E. / Environmental Engineer Manager	May 6, 2025

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Comment 2 - Part A.I.A, and A.I.D. Outfall 001: Quarterly (Nutrient) Monitoring Requirements

"The renewed permit appears to include redundant tables and requirements for monitoring and reporting specific parameters (Ammonia-N; Kjeldahl-N; Nitrate-Nitrite as N; Total Nitrogen; and Total Phosphorous) on a quarterly basis in Table A.I.A and A.I.D, respectively. To streamline the permit and avoid confusion, Hunlock recommends either removing these parameters from Table A.I.A or adding additional requirements from Table A.I.D to A.I.A to consolidate Outfall 001 discharge requirements into a single table. Additionally, a footnote (1) under the effluent limitation Table A.I.D indicates "See Part C for Chesapeake Bay Requirements" although there is no mention of Chesapeake Bay requirements in Part C of the draft permit."

Response:

The redundant tables (and corresponding footnotes) are automatically included in the permit during the document generation process since the facility is a Chesapeake Bay discharger. The tables will be combined to help avoid confusion and the footnotes referring to the Chesapeake Bay requirements are deleted.

Comment 3 - Part A.I.B, Outfall 003: Duration of Discharge Monitoring and Reporting

"A new requirement to monitor and report the Duration of Discharge in hours for the Outfall 003 flow has been added to the permit. As per Comment 1 above, Hunlock respectfully requests that P ADEP provide the background and basis for this new permit requirement. PADEP's Standard Operating Procedure (SOP) for Clean Water Program SOP No. BCW-PMT-032 Establishing Effluent Limitations for Individual Industrial Permits does not include requirements for monitoring and reporting the total duration of discharges, and there are no Technology-Based Effluent Limitation Guidelines established under 40 CFR § 423 for Steam Electric Power Generating Point Sources for monitoring or limiting Non-Contact Cooling Water discharges.

Hunlock is a merchant station that operates when market conditions are favorable. While daily discharge flows through Outfall 003 are monitored and reported in MGD during operation in accordance with the existing NPDES permit requirements, monitoring and reporting of daily discharge durations will increase Facility operating requirements. Hunlock respectfully requests that this requirement be removed from the permit."

Response:

The requirement to monitor Duration of Discharge at Outfall 003 was mistakenly added to DEP's WMS during the development of the draft permit documents. This requirement is removed from the permit.

Comment 4 - Part A.I.B, and A.I.E. Outfall 003: Monthly Nutrient Monitoring/ Reporting Requirements

"The renewed permit appears to include redundant tables and requirements for monitoring and reporting specific parameters (Ammonia-N; Kjeldahl-N; Nitrate-Nitrite as N; Total Nitrogen; and Total Phosphorous) on a monthly basis in Table A.LB and A.LE, respectively. To streamline the permit and avoid confusion, Hunlock recommends either removing these parameters from Table A.LB or adding additional requirements from Table A.LE to A.LB to consolidate Outfall 003 discharge requirements into a single table. Additionally, a footnote (1) under the effluent limitation Table A.LE indicates "See Part C for Chesapeake Bay Requirements" although there is no mention of Chesapeake Bay requirements in Part C of the draft permit."

Response:

The redundant tables (and corresponding footnotes) are automatically included in the permit during the document generation process since the facility is a Chesapeake Bay discharger. The tables will be combined to help avoid confusion and the footnotes referring to the Chesapeake Bay requirements are deleted.

Comment 5 - Part A.I.B - Outfall 003: Total Nickel Monitoring and Reporting

"Annual monitoring and reporting requirements for total Nickel in the Outfall 003 discharge are included in

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Table A.I.B of the permit, although the Fact Sheet states on page 4 that " .. Monitoring requirements for Total Nickel were included in the previous renewal due to the stormwater contribution to Outfall 003 and the monitoring requirements from Appendix H of the PAG-03 permit in effect at the time. Appendix H of the latest PAG-03 permit (revised 12/2022) does not include monitoring requirements for Total Nickel. Monitoring requirements for Total Nickel are removed from this permit renewal."

Under normal operations, stormwater runoff is collected via a series of inlets and underground inlets and underground piping that is collected in a 90,000-gallon stormwater cistern. Normal overflow from the cistern is reused as cooling water for Unit 3, while during times of heavy rain events, emergency overflow is discharged to Outfall 003. The discharge of any stormwater through Outfall 003 is very rare. Further, Nickel concentrations at Outfall 003 over the previous five years have been low (average concentrations are <0.012 mg/Land, frequently, is not detected in the discharge).

Hunlock therefore respectfully requests that the annual monitoring and reporting requirements for total Nickel be removed for Outfall 003 in accordance with PADEP's findings summarized in the Fact Sheet.“

Response:

The monitoring requirements for Total Nickel were inadvertently left in the permit at Outfall 003 and are now removed from the permit.

Comment 6 - Part A.LB - Outfall 003: Chlorination Duration and TRC and Free Available Chlorine Sampling Footnote

“Hunlock requests that PADEP clarify that the chlorine duration at Outfall 003 will be monitored and reported only when Hunlock is actively chlorinating the water. Hunlock would like to note that the incoming non-contact cooling water supply is Potable Water supplied from the Pennsylvania American Water Company (PA American), which is chlorinated public water. Hunlock periodically batch chlorinates the public water supplied to the cooling towers for disinfection and safety purposes, i.e., to prevent legionnaire's disease. The 'Chlorine Duration' should only be monitored and reported when Hunlock is actively chlorinating the water.

Additionally, the draft permit includes a footnote that indicates: "All TRC and Free Available Chlorine sampling shall take place during discharge of Units' chlorinated effluent when possible." However, it does not indicate sampling will only to be completed when chlorinating. Hunlock requests the footnote include additional language similar to the footnote for Outfall 001: "No TRC and F AC sampling is required if there is no chlorination of water during that day." As noted above, cooling water is supplied from PA American, which includes influent chlorine concentrations. Hunlock should not be required to monitor for TRC and Free Available Chlorine unless the Facility is chlorinating the water.”

Response:

It’s confirmed that the chlorination duration at Outfall 003 is to be monitored and reported only when the permittee is actively chlorinating the water. The request to update the footnote in Part A.I.B is granted.

Comment 7 - Part A.I.C. Outfall 004: Total Residual Chlorine Limitations

“Hunlock notes that the Average Monthly discharge concentration for Total Residual Chlorine (TRC) has been reduced at Outfall 004 from 1.0 mg/L to 0.5 mg/L and the Instantaneous Maximum discharge concentration for TRC has been reduced from 2.0 to 1.1 mg/L.

The Outfall 004 discharge includes an average flow of 0.00357 MGD of treated sanitary sewage effluent from a small packaged treatment system, which, as PADEP notes in the Fact Sheet on page 5, is a minor discharge when compared to the Q1-101 River flow of 883 cubic feet per second (cfs). The Facility receives Potable Water supplied from PA American that frequently exceeds the draft Instantaneous Maximum discharge TRC concentration. During low-flow periods, dilute water (i.e., from sinks, etc.) would potentially contain 'pass-through' concentrations of TRC that would exceed the draft TRC limitations. Hunlock employs a chlorination system to properly disinfect all sanitary wastewater prior to discharge through Outfall 004.

Of note, the 1.1 mg/L Instantaneous Maximum discharge TRC concentration does not match PADEP's SOP No. BCW-PMT-032 Establishing Effluent Limitations for Individual Industrial Permits, which states an Instantaneous Maximum limit of 1.6

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mg/L is normally considered Best Professional Judgement. Hunlock requests clarification from PADEP on the basis for the more stringent limit of 1.1 mg/L TRC at Outfall 004.

Further, 25 PA Code 92a.48 allows for PADEP to develop facility-specific Best Available Technology (BAT) limits for TRC in cases where the EPA has not promulgated a National ELG, as for the treated effluent at Outfall 004. In consideration of the existing sanitary treatment equipment and facilities, the influent TRC concentrations in the potable water supply system, current and future disinfection requirements, and the substantial difference between the Outfall 004 discharge flow and Susquehanna River flow, Hunlock respectfully requests that the current Average Monthly TRC discharge concentration of 1.0 mg/L and Instantaneous Maximum discharge concentration of 2.0 mg/L be maintained in the renewed NPDES permit."

Response:

The 0.5 mg/L monthly average TRC limitation is considered a BAT limitation for similar package sewage treatment plants. These limitations are included in NPDES permits for other small facilities that discharge to large receiving waters. Across the state, permit application reviewers utilize the TRC calculation spreadsheet to calculate average monthly and IMAX limitations for sewage discharges. The TRC calculation spreadsheet and all other modeling programs used by permit application reviewers are available to the public on DEP's website for download. The 1.6 mg/L IMAX is the technology-based limitation recommended when a facility is required to sample daily. A 1.1 mg/L IMAX is recommended when a facility samples for TRC on a weekly basis. See the images below of the TRC calculation spreadsheet results for both scenarios:

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

878.7	= Q stream (cfs)	0.5	= CV Daily
0.00357	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	0.089	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	0.614	= 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)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 4517.151	1.3.2.iii	WLA cfc = #########
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 1683.198	5.1d	LTA_cfc = #########

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

Figure 1. TRC Calculation Spreadsheet for 1/week Sampling

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TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

878.7	= Q stream (cfs)	0.5	= CV Daily
0.00357	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	0.089	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	0.614	= 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)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 4517.151	1.3.2.iii	WLA cfc = #########
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 1683.198	5.1d	LTA_cfc = #########

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.635	

Figure 2. TRC Calculation Spreadsheet for 1/day Sampling

It's understood that the public water contains residual chlorine, however, other package sewage treatment plants subject to the BAT limitations also treat sewage with a similar water supply. The graph below shows the new monthly average limitation (0.5 mg/L) as it relates to the eDMR reported monthly average TRC concentrations at Outfall 004 since August 2016:

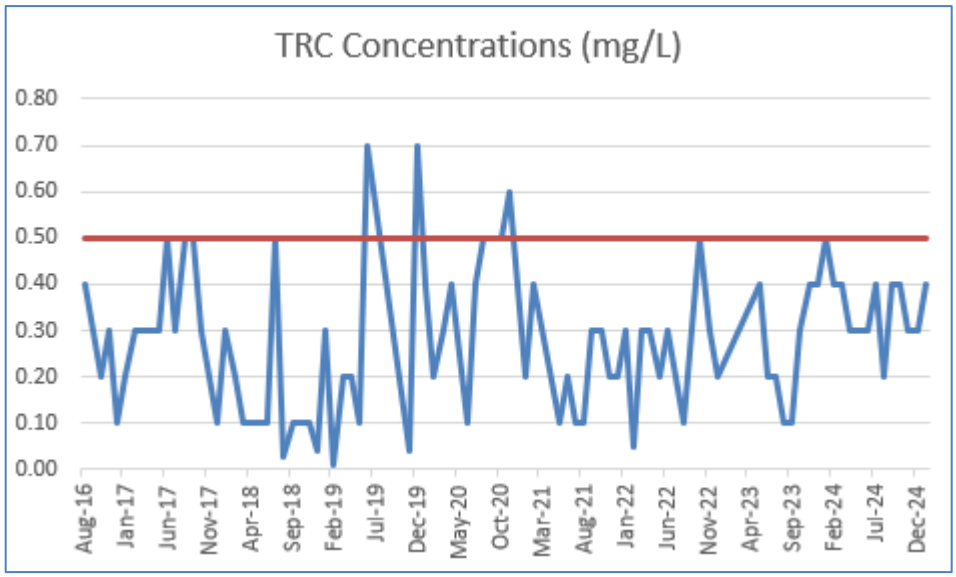

Figure 3. Monthly Average Effluent TRC Concentrations

It appears the permittee can meet the new TRC limitations under current operations and would be able to consistently meet the limitations with only minor process adjustments needed (if any). eDMR data shows the permittee has consistently met their Fecal Coliform limitations over the same timeframe.

The effective date of the new TRC limitations is revised to one year after the permit effective date to allow for time to make any needed process adjustments. The existing limitations will be in effect for the first year of permit coverage.

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Comment 8 - Part A.I.C, Outfall 004: E. Coli Limitations

A new requirement to monitor and report E. Coli concentrations for the Outfall 004 discharge has been added to the permit. Hunlock respectfully requests that P ADEP provide the basis for adding E. Coli monitoring and reporting to Outfall 004, since there are already discharge limits established for Fecal Coliform at Outfall 004. PADEP's SOP No. BCW-PMT-032 Establishing Effluent Limitations for Individual Industrial Permits does not include requirements for E. Coli monitoring and reporting. Additionally, the hold time between sampling and analysis of E. Coli is very short (6 to 8 hours) and it will be difficult to coordinate with a laboratory capable of completing the analysis within the allowable timeframes. Hunlock respectfully requests that the monitoring and reporting requirements for E. Coli be removed from the permit.

Response:

The yearly monitoring/reporting requirement for E. Coli is derived from DEP's *Standard Operating Procedure (SOP) for Clean Water Program Establishing Effluent Limitations for Individual Sewage Permits (SOP No. BCW-PMT-033)*. As stated in the SOP, "sewage discharges will include monitoring, at a minimum, for E. Coli, in new and reissued permits, with a monitoring frequency of 1/month for design flows >= 1 MGD, 1/quarter for design flows >= 0.05 and < 1 MGD, 1/year for design flows of 0.002 – 0.05 MGD." Since the Hunlock Energy Center has a separate discharge for treated sewage at Outfall 004, the recommendations of that SOP apply.

Comment 9 - Part A.I.C, and A.I.F. Outfall 004: Monthly (Nutrient) Monitoring Requirements

The renewed permit appears to include redundant tables and requirements for monitoring and reporting specific parameters (Kjeldahl-N; Nitrate-Nitrite as N; Total Nitrogen; and Total Phosphorous) on a monthly basis in Table A.I.C and A.I.F, respectively. Table A.I.C also includes discharge limits in addition to monthly monitoring requirements for Ammonia-N, whereas Table A.I.F includes monthly monitoring and reporting requirements only. To streamline the permit and avoid confusion, Hunlock recommends either removing the redundant parameters from Table A.LC or adding additional requirements from Table ALF to A.LC to consolidate Outfall 004 discharge requirements into a single table. Additionally, a footnote (1) under the effluent limitation Table ALF indicates "See Part C for Chesapeake Bay Requirements" although there is no mention of Chesapeake Bay requirements in Part C of the draft permit.

Response:

The redundant tables (and corresponding footnotes) are automatically included in the permit during the document generation process since the facility is a Chesapeake Bay discharger. The tables will be combined to help avoid confusion and the footnotes referring to the Chesapeake Bay requirements are deleted.

Comment 10 - Part C.I.H: Additional TRC and FAC Requirements for Outfalls 001 and 003

Hunlock requests written approval from the Department to continue use of the Spectrophotometric DPD Analytical Method at the Hunlock Creek Energy Center for TRC and FAC parameters in accordance with Part C.111.H. The Spectrophotometric DPD Analytical Method is an approved method listed in Table lB of 40 CFR 136.3(a) for both TRC and FAC.

Response:

Since the analytical method appears on Table IB (List of Approved Inorganic Test Procedures) of 40 CFR 136.3, written approval is not necessary. The permittee may utilize that specific analytical method for TRC and FAC analyses, or any method listed on Table IB for analyzing TRC and FAC.

The requirements referenced in Part C.I.H.3 and C.I.H.4 were carried over from the previous renewal and reflect standard requirements cited in other areas of the permit.

Part A.III.A.4.b of the permit states: *Test procedures (methods) for the analysis of pollutants or pollutant parameters shall be those approved under 40 CFR Part 136 or required under 40 CFR Chapter I, Subchapters N or O, unless the method is specified in this permit or has been otherwise approved in writing by DEP.*

To avoid any confusion on when to report the use of analytical methods, the Part C.I.H.3 and C.I.H.4 conditions are removed from the permit. The permittee shall follow the requirements in Part A.III.A.4.b when analyzing pollutants in the discharge.

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Comment 11 - Part C.LIV: Cooling Water Intake Structures

The draft permit includes a requirement in Part C.I.IV.D for Best Technology Available (BTA) Requirements: the permittee shall meet the BTA requirements to minimize adverse impacts from entrainment as directed by DEP. Within one year of the permit effective date, the permittee shall submit to DEP the site-specific entrainment performance studies required by 40 CFR 122.2J(r)(7). After the entrainment BTA is established, an amended NPDES permit will be issued requiring the permittee to select a compliance alternative for meeting impingement mortality standards for the operation of the cooling water intake structure (CWIS).

Pursuant to 40 CFR 122.21(r)(7), Hunlock was required to submit "any previously conducted studies or studies obtained from other facilities":

(7) Entrainment Performance Studies. The owner or operator of an existing facility must submit any previously conducted studies or studies obtained from other facilities addressing technology efficacy, through-facility entrainment survival, and other entrainment studies. Any such submittals must include a description of each study, together with underlying data, and a summary of any conclusions or results. Any studies conducted at other locations must include an explanation as to why the data from other locations are relevant and representative of conditions at your facility. In the case of studies more than 10 years old, the applicant must explain why the data are still relevant and representative of conditions at the facility and explain how the data should be interpreted using the definition of entrainment at 40 CFR l 25.92(h).

As such, the Hunlock CW A § 122.21 (r)(4) report presented entrainment data from the Susquehanna Steam Electric Station (SSES) which is located approximately ten miles downstream of Hunlock. The SSES Entrainment Study is expected to be representative for Hunlock due to the proximity of the two Stations. The aquatic habitat and fish species composition would be expected to be similar within this reach of the Susquehanna River and the two Facilities share some similarities in CWIS operation (e.g., both Facilities have a shoreline CWIS with trash racks followed by traveling screens) and intake flows during the time of the SSES study were similar to Hunlock's intake flow. The Hunlock Facility should not be required to collect one-year of site-specific entrainment data because the Facility withdraws less than 125 MGD of cooling water from the Susquehanna River and is not subject to the entrainment characterization study requirements of 40 CFR 122.21(r)(9). However, while Hunlock recognizes that the Susquehanna River is a well-studied and documented waterbody with no known changes to the River since the 2008 SSES Entrainment Study was completed that would be expected to change the overall aquatic habitat and fish species composition, Hunlock acknowledges that site-specific entrainment data has not been previously collected at the Hunlock intake.

The Fact Sheet (page 2) includes a statement " ... DEP requires all facilities under the regulation to collect one year of peak season entrainment data at the facility to make a BTA determination" and, as noted above, the draft permit includes a requirement to provide the site-specific entrainment performance (sic) studies within one year of the effective date of the permit. If PADEP is requesting that Hunlock conduct a site-specific year-long entrainment study, additional time is required to develop a Field Sampling and Analysis Plan for review and approval by PADEP; Health and Safety procedures for completion of the Study; procurement and setup of sampling equipment; completion of the Field Study itself (presumably an entire year of Field Work); analysis of organisms collected from the Study; and preparation of a summary report with findings.

Hunlock therefore respectfully requests that PADEP consider removing the requirement to submit additional entrainment data or, at a minimum, clarify whether their expectation is that a year-long entrainment study to be completed for Hunlock. If so, Hunlock requests that a minimum of eight months be provided to develop a Sampling and Analysis Plan for review and approval by PADEP, along with an additional 24 months to complete the Study and prepare a summary report after the Sampling and Analysis Plan is approved by PADEP.

Response:

Entrainment data taken at the facility's cooling water intake structures is required to make a BTA determination. The data submitted with the permit renewal application was determined to not be representative of the conditions at the Hunlock Creek Energy Center. This permit requires one year of peak season entrainment data collection. The peak season is defined as the summer months (May – October).

The Part C.IV.D. condition is adjusted to require submittal of a Sampling and Analysis Plan within 6 months of the permit effective date for DEP review (which is estimated to be approximately 8 months from issuance of this 2nd draft permit).

Internal Review and Recommendations

Entrainment data collection shall be conducted during the 2026 peak season (May 1 – October 31). The final study/report shall be submitted to PA DEP by April 30, 2027.

Comment 12 - 'Other Part C Conditions'

PADEP states on page 6 of the Fact Sheet that " ... The condition from the previous permit requiring intake monitoring of TN and TP is removed from this permit .. ". However, Hunlock notes that Part A.I.D, A.LE, and ALF tables in the NPDES Permit include Net Nitrogen and Net Phosphorus limits for Outfalls 001, 003, and 004. While there are no further instructions in Part C for Chesapeake Bay Requirements, it is unclear how net mass calculations could be provided without Intake monitoring. Hunlock therefore respectfully requests that the tables included in Part A.I.D, A.I.E, and A.I.F. be removed from the permit. Please see additional Comments 2, 4, and 9 above.

Response:

The net TN and TP reporting requirements, which were included in the previous renewal, are standard template requirements for dischargers to the Chesapeake Bay. The “net” amount is determined by taking the actual amount and applying any applicable nutrient credits and/or offsets. This calculation is different than the net Oil & Grease calculation where the difference between the intake and effluent concentrations are used.

Since this facility doesn’t have any cap loads for TN or TP, they are not required to purchase credits to meet nutrient goals and the net reporting requirements are removed from the Part A tables and eDMR.