pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Amendment, Major**	Application No.	**PA0255092 A-3**
Facility Type	**Industrial**	APS ID	**1005346**
Major / Minor	**Major**	Authorization ID	**1365281**

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

Applicant and Facility Information

Applicant Name	**Hill Top Energy Center LLC**	Facility Name	**Hill Top Energy Center LLC**
Applicant Address	278 Thomas Road	Facility Address	278 Thomas Road
	Carmichaels, PA 15320-1660		Carmichaels, PA 15320-1660
Applicant Contact	James Ryan	Facility Contact	James Ryan
Applicant Phone	(518) 428-5929	Facility Phone	(518) 428-5929
Client ID	323093	Site ID	811291
SIC Code	4911	Municipality	Cumberland Township
SIC Description	Trans. & Utilities - Electric Services	County	Greene
Date Application Received	August 5, 2021	EPA Waived?	No
Date Application Accepted	August 16, 2021	If No, Reason	Major Facility

Purpose of Application: Modifying the pH limits to monitoring requirements at internal monitoring points (IMPs).

Summary of Review

The Department received an application for major amendment from Hill Top Energy Center (HTEC), LLC on August 5, 2021. HTEC requests elimination of the 6.0 to 9.0 pH limits at Internal Monitoring Points (IMPs) 101, 201, and 301, and future IMPs 401, 501, and 601 covered under the NPDES Permit No. PA0255092 A-2. Each of these outfall waste streams is discharged through the final Outfall 001 which is subject to the same numerical pH limit. Table 1 presents the details of the types of discharges that are directed from IMPs to Outfall 001.

Table 1. Types of Discharges through Outfalls and Internal Monitoring Points (IMPs)

Outfall or IMP	Discharge Type
Outfall 001	Process Wastewater
IMP 101	Low Volume Waste (Heat Recovery Steam Generator Sump) Unit 1
IMP 201	Low Volume Waste (Oil/Water separator) Unit 1
IMP 301	Cooling Tower Blowdown Unit 1
IMP 401	Low Volume Waste (Heat Recovery Steam Generator Sump) Unit 2
IMP 501	Low Volume Waste (Oil/Water Separator) Unit 2
IMP 601	Cooling Tower Blowdown Unit 2
Outfall 002	Stormwater (Units 1 & 2)

Approve	Deny	Signatures	Date
X		Mahbuba Iasmin Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineer	10/04/2021
X		Michael E. Fifth Michael E. Fifth, P.E. / Environmental Engineer Manager	10/5/2021

Summary of Review

The pH limits at the Internal Monitoring Points (IMPs) were applied per the requirements set forth in 40 CFR §423.15 which states, "*The pH of all discharges, except once through cooling water, shall be within the range of 6.0-9.0*". According to *Development Document for Stream Electric Power Generating Category – Final – October 1974*, pH was selected as a pollutant of concern due to the potential effects on drinking water sources, aquatic life in rivers/streams, and eye irritation effects on human eyes of a swimmer. The effects are particularly pertinent at, near, and/or after the final discharge point. Any specific mention and/or clarification on mandatory requirement of pH limits prior to commingling of the individual waste streams could not be found in the Federal Register and/or the Development Document. Additionally, it was identified in two 1986 memos (presented in Appendix A) that the pH limitations for the low volume wastes (6.0 – 9.0) can be applied at the point of discharge to waters of the U.S. The memos include clarifications for cases related to once through cooling water only. Limitations for other pollutants are applicable prior to combination. On a case-by-case basis, however, other factors might indicate that limitations be applied prior to combination. Some factors are discussed below:

1. Combination of low volume wastes with cooling water could be anticipated to produce additional total suspended solids (TSS) due to the resulting neutralization, and it could exceed the amount allowed for the low volume wastes. HTEC is operating a closed-cycle recirculating system, not once through cooling system. The IMPs have limits for TSS established prior to commingling (average monthly limit of 30.0 mg/L and daily maximum limit of 100.0 mg/L). Additionally, the final discharge point (Outfall 001) has monitor and report requirement for TSS. The Department intends to evaluate TSS data during the renewal period and apply limits, if necessary.

2. Failure to neutralize and settle the low volume waste prior to combination may result in unacceptable quantities of heavy metals or other toxic metals being released. The applicable technology-based and water quality-based effluent limitations are active at Outfall 001. At HTEC's facility, waste streams are combined at a central wastewater collection sump in which self-neutralization, coprecipitation, and sedimentation may occur as a result of commingling. Therefore, the permittee should be aware of such possible scenarios and take actions, if necessary.

3. Requirements of 316(b) which might limit the amount of cooling water used. Based on the requirements of 316(b), HTEC will be operating a closed-cycle recirculating system. HTEC should be aware that the amount of cooling water would be limited to perform necessary neutralization prior to final discharge.

HTEC plans to maintain chemistry in the cooling tower with the use of chemical additives. HTEC has a Water Quality Management (WQM) permit (3018200) approved for construction of a sodium bisulfite feed tank (to be used to consume free chlorine residual in cooling tower blowdown) and oil/water separator. No additional treatment of the combined stream except commingling of IMPs 101, 201, and 301 is currently proposed.

Additionally, 40 CFR 122.45(h) states,

Internal Waste Streams.

(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…
(2) Limits on internal waste streams will be imposed only when the fact sheet under §124.56 sets forth the exceptional circumstances which makes such limitations necessary, such as when the final discharge point is inaccessible (for example, under 10 meters of water), the wastes at the point of discharge are so diluted as to make monitoring impracticable, or the interferences among pollutants at the point of discharge would make detection or analysis impracticable.

Outfall 001 is accessible, and samples will be taken from Outfall 001 at the point of discharge. Therefore, in the absence of specific clarifications in Federal Regulations that pH limits should be imposed for each type of discharge before and after commingling, pH limits at IMPs would be eliminated. The pH limits imposed at Outfall 001 would satisfy the requirements set forth in 40 CFR §423.15.

Draft issuance is recommended.

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

Treatment Facility Summary				
Treatment Facility Name: Hill Top Energy Center LLC				
WQM Permit No.	**Issuance Date**			
3018200	06/27/2018			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Industrial				0.62
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
1.08				

Changes Since Last Permit Issuance: None.

Other Comments: None.

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP:
☒	Other:

Appendix A

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.
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)

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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. Geoffry 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.

EPA Form 1320-6 (Rev. 3-76)