

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

N818165513

FACILITY: RIVERSIDE - NORTH BAY CPF		SRN / ID: N8181
LOCATION: T28N-R7E, SE SW SW OF SEC 6, CALEDONIA TWP		DISTRICT: Gaylord
CITY: CALEDONIA TWP		COUNTY: ALCONA
CONTACT: Natalie Schrader , Compliance Coordinator		ACTIVITY DATE: 11/14/2022
STAFF: Sharon LeBlanc	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: FY 2023 site inspection and data review- sgl		
RESOLVED COMPLAINTS:		

INTRODUCTION

On November 14, 2022, Gaylord District Staff conducted a self-initiated site inspection of the Riverside Energy Michigan, LLC (Riverside) North Bay Central Processing Facility (CPF) (N8181). The referenced Facility is located in the SE ¼, SW ¼, SW ¼ of Section 6, T28N, R7E, Caledonia Township, Alcona County, Michigan.

The Facility operates under Permit to Install (PTI) 344-08A issued on August 18, 2009. The referenced permit is an opt-out permit and allows for engine replacement and/or swings under FGEngines Special Condition VII.1. The most recent site inspections were self-initiated site inspections conducted September 1, 2016, and June 11, 2020. No violations were noted at those times, and no FCE is of record for the Facility.

At the time of the site inspection, the skies were mostly cloudy, with light winds, and temperatures of approximately 28 degrees Fahrenheit. No visible emissions were noted.

A records request was made for the Facility on September 7, 2022. Records were received electronically on November 7, 2022. The records review has been incorporated into this document.

FACILITY

The North Bay CPF (formerly known as C Caledonia D3-6) is an unmanned Facility located at 2627 West Hubbard Lake Trail, in the SE ¼, SW ¼, SW ¼ of Section 6, T28N, R7E, amongst mixed agricultural and various sized residential properties just NW of Hubbard Lake. Natural Gas (NG) collected from Antrim Formation NG wells in the area is dehydrated and compressed at the Facility prior to flowing to sales points.

Records indicate that the Facility though it reported annual emissions in March 2010 for the 2009 calendar year does not presently report to MAERS. The referenced MAERs reports the equipment being installed in November 2006.

Readily available aerials indicate that the site was constructed between April 1993 and April 1998. At the time of the initial permit issuance, the Facility was owned and operated by Highmount Exploration & Production, LLC. Documentation available indicates that the Facility was operated by Linn Operating LLC (2017), Linn Energy LLC (2018) and in 2019, the Facility was purchased by Riverside.

The Facility is located at the northern end of Hubbard Lake, Alcona County, Michigan. To get to the Facility, District Staff traveled south on M-65 from it's intersection with M-32 to Werth Road. At Werth Road, turn east (to the left) and travel to its intersection with Wolf Creek Road (approximately 4-mile). Turn south (right) and travel approximately 8.5-miles you will just pass the intersection with Hubbard Road, and the road curves to the right and turns into Hubbard Lake Trail. At the curve you will see a residential drive on the left, then the entrance to the North Bay CPF there is a sign.

Draeger tube testing conducted on June 22, 2020, reported H2S as non-detect for incoming gases.

The facility is a gated, unmanned Facility.

EQUIPMENT

At the time of the November 14, 2022, site inspection, the Facility was operating and consisted of two existing NG-fired compressor engines (EUENGINE1 and EUENGINE2), glycol dehydrator (EUDEHY) with process heater, a brine well, one 400-barrel tank for mung oil, and another decommissioned 400-barrel tank (both within a lined- secondary containment berm) onsite and assorted smaller oil/glycol/etal tanks. The site was tidy and well maintained.

Consistent with the previous site inspection reports two engines present onsite consisted of a CAT 3516 lean burn, and a CAT 3306 rich burn.

EU	Equipment Description
EUENGINE1	CAT 3516 TALE
Unit 4228	1085 Hp
	No Catalyst
	DOB: 7/8/1996
EUENGINE2	CAT 3306 NA
Unit 49 Booster	145 Hp
	No Catalyst
	DOB: 1996
EUDEHY	Glycol Dehydrator
	(Tri Ethylene Glycol) (TEG)
	Antrim Formation

The stack for the compressor engines were noted to be over 1.5 times the building height. In conjunction with the November 14, 2022, site inspection District Staff conducted stack height verification activities using a Nikon Range Finder. The results are presented later in this document.

Operational parameters noted for EUENGINE1 (Unit 4228) at the time of the November 14, 2022, site inspection include:

- RPM-1169
- Hours - 13831
- Engine Oil Pressure – 63 PSI
- Engine Oil temperature -185 degrees

Operational parameters for EUENGINE2 (Unit 049) at the time of the November 14, 2022, site inspection included:

- RPM – 1746
- Engine Oil Pressure – 60 PSI
- Engine JW Out Temp – 190 degrees

PERMITTING

As previously indicated, the Facility operates under PTI 344-08A, issued on August 18, 2009, to Highmount Exploration & Production LLC. Included in the permit were conditions for the TEG glycol dehydrator (EUDEHY) and two compressor engines under FGENGINES. The permit was preceded by 344-08, issued on December 8, 2008 and revised on January 14, 2009.

Federal Regulations -

The referenced facility does not process or store petroleum liquids and is therefore not be subject to 40 CFR Part 60 (New Source Performance Standards AKA NSPS) Subparts;

- K, Ka or Kb (Storage vessels for Petroleum Liquids);
- KKK (Equipment Leaks of VOC from onshore NG Processing Plants);
- VV (Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry);

With respect to NSPS (40 CFR Part 60) Subpart JJJJ, as applicable Reciprocating Internal Combustion Engines (RICE) were reported to commence construction after June 12, 2006. Recent communications with Riverside staff indicated that both engines have DOB dates of 1996, or that same period, and would not be subject to the NSPS requirements.

40 CFR Part 60 Subpart OOOO - Standards of Performance for Crude Oil and Natural Gas Facilities for which construction, modification, or reconstruction commenced after August 23, 2011, and on or before September 18, 2015. Subpart OOOO as indicated would apply to onshore affected facilities that are constructed, modified or reconstructed after August 23, 2011. Based on available information it appears that the referenced subpart and any subsequent subparts are not applicable at this time but that future changes may be subject.

With respect to 40 CFR Part 63 (Maximum Achievable Control Technology Standards) the following Subparts may apply:

- Subpart HH (HAPS from Oil and NG Production Facilities)
- Subpart JJJJJ (Boiler MACT)
- Subpart ZZZZ (RICE MACT)

With respect to Subpart HH, the affected unit is believed to be dehy units. Riverside staff report that the Facility is not subject to Subpart HH as the flowrate to the dehy is under 85,000MMcf/day and provided data sufficient to verify that status.

NESHAP Subparts JJJJJ pertain to Industrial, Commercial and Institutional Boilers and Process Heaters for Area source of HAPS, respectively. At the time of the site inspection, it appears that the reboiler of the glycol dehydration process would not be subject to the subpart, as a process heater is not subject for area sources. No compliance determination has been made with reference to the subpart.

With respect to Subpart ZZZZ, the Facility RICE are subject to 40 CFR Part 63, Subpart ZZZZ. Riverside Staff updated the previous Site Preventative Maintenance/Malfunction Abatement Plan (PM/MAP) (approved on September 1, 2016) to incorporate the requirements. The revised PM/MAP was received electronically on June 30, 2020, and was approved by District Staff. Though AQD has been delegated to implement and enforce the referenced subpart, a compliance determination has not been made with respect to this subpart.

COMPLIANCE

No complaints, Notices of Violation, or enforcement activities are of record for the North Bay CPF.

MAERS- MACES indicated that annual emissions for 2009 were reported by the Facility in March 2010 through the MAERS program., but no later submittals were documented. Annual reporting of actual emissions for the facility under the MAERs program for the site was added for the 2020 calendar year.

EUDEHY- The referenced EU consists of one glycol dehydrator and associated reboiler. As previously noted, the EU processes Antrim Formation gas.

Permit conditions associated with the EU consist of a high-level citation to 40 CFR Part 63, Subpart HH (S.C. III.1). Determination as to whether EUDEHY meets the exemption criteria in 40 CFR 63.764(e)(1)(i) or (ii) shall be determined based on monitoring and recordkeeping requirements under S.C. VI.1 and VI.2 or VI.3 and reporting requirements under S.C. VII.1.

As previously indicated, the Facility indicates that it's flowrate is below the 85K MMcf/day applicability threshold and is not subject at this time. Records provided for the period of October 1, 2021 to November 6, 2022, indicated a daily average of 1913 MCF/day. Well below the exemption threshold. The Facility has installed a compliant NG gauge, and maintains sufficient documentation/records to show compliance with permit conditions.

In addition, Riverside Staff reported that sampling was conducted by a consultant in 2015 indicated that benzene/HAP concentrations were non-existent.

No Stack height requirements/restrictions for EUDEHY are specified in PTI 344-08A.

FGENGINES - The referenced FG consists of two NG-fired, RICE (EUENGINE1 and EUENGINE2) without catalysts. No material limits are associated with FGENGINES, however S.C. IV.2, VI.2, VI.3 and VI.6 requires that the permittee installs, calibrates, maintains and operates in a satisfactory manner a device to continuously record the NG usage for each engine. Records provided were sufficient to confirm compliance with permit conditions. NG usage for FGENGINES is summarized below:

Period	EUENGINE1 (Unit 4228)	EUENGINE2 (Unit 49)
January 1, 2022 to September 1, 2022	50277 MCF	6895 MCF
Limit	NA	NA

FGENGINES at the time of permitting no pollution control devices/catalysts were reported to be associated with the engines. The **November 14, 2022**, site inspection verified that no catalysts were associated with FGENGINES. Based on the lack of a control device the following special conditions are not applicable:

- Operational limit of 200 hours per year for engine without it's control device. (SC III.2)
- Proper installation, operation and maintenance of the add-on control device (SC IV.1 and VI.3)
- Documentation of the hours of engine operation without it's control device (SC VI.5)

OPERATION LIMITS – No later than 60 days after the issuance of Permit 344-08A the permittee is required to submit for review and approval a Preventative Maintenance/Malfunction Abatement Plan (PM/MAP). Records indicate that the required document was submitted by the permittee in a timely manner and approved on 10/26/2009 in compliance with the permit condition. (SC III.1) As previously indicated the required document has been submitted and is considered to have met the permit condition. The present operator has revised the referenced PM/MAP to reflect the requirements of the RICE MACT. The revised document was submitted on and approved on June 30, 2020.

A review of maintenance records provided by Riverside for 2022 to date appears to indicate that in addition to activities such as “pigging” and required as needed maintenance, that the Engines are on a regular service schedule and in general compliance with the PM/MAP. The most recent maintenance activities been November 4, 2022, for EUENGINE2 (#49 booster) and October 30, 2022, for EUENGINE1.

EMISSION LIMITS

Emissions for RICE associated with the Facility are calculated using emission factors from Manufacturer Spec sheets (SC VI.7, VI.8 and Appendix A) when available and are based on NG

usage documented (SC IV.2, SC VI.2 and SC VI.3). The 12-month rolling total emissions for the period ending September 2022 and their respective limits are summarized below:

Emission Unit	NOx Emissions (TPY)	NOx 12-month Rolling Limit (TPY)	CO Emissions (TPY)	CO 12-month Rolling Limit (TPY)	<u>TESTING ACTIVITIES</u> – Under the present permit verification of NOx and CO emissions may be required at owners expense. (SC V.1) No request for testing is of record for the Facility, thereby the condition is not applicable at
EUENGINE1 (Unit 4228)	20.17	23.11 (S.C. I.1)	18.15	20.8 (S.C. I.2)	
EUENGINE2 (Unit 49)	28.26	35 (S.C. I.3)	2.09	3.0 (S.C. I.4)	

this time.

MONITORING/RECORDKEEPING –Permit requirements for monitoring and recordkeeping include the following:

- Completion of all required calculations by the last day of the calendar month for the month prior and made available to AQD staff upon request, (SC VI.1)
- Monitor and record NG usage for EUENGINE1 on a continuous basis (SC IV.2, VI.2 and VI.6)
- Maintain a log of all maintenance activities conducted according to the PM/MAP (SC VI.4) and
- Monthly and 12-month rolling time period NOx and CO emission calculation records for EUENGINE1 and EUENGINE2 as required by SC I.1 through SC I.4 and Appendix A. (SC VI.7 and SC VI.8)

Records provided by the Facility were sufficient to indicate compliance with the above referenced permit conditions. These records with respect to emission calculations and NG usage are summarized on spreadsheets generated monthly, which summarizes all the required information, as well as equipment descriptions and emission factor sources.

STACK/VENT - Communications with Riverside Staff, indicate that the existing stacks meet SC VIII.1, which limits the exhaust dimensions for the stack associated with FGENGINES to:

Emission Unit	Exhaust Diameter (inches)	Diameter Limit (inches)	Minimum Height Above Land Surface (feet)	Height Limit (ft above land surface)
EUENGINE1	12-inch		31 feet	30-foot Minimum

		12-inch Maximum (SC VIII.1)		(SC VIII.1)
EUENGINE2	4-inch	4-inch Maximum (SC VIII.2)	45 feet	45-feet Minimum (SC VIII.2)

As previously indicated at the time of the November 14, 2022, site inspection AQD District Staff conducted stack verification activities using a Nikon Range Finder to determine approximate stack heights. The Following stack heights were reported during the reference activities:

Unit	Approximate Height (ft above land surface)
EUENGINE1	29.3 -30.2
EUENGINE2	36.8-plus
Building Height (crown)	21.8

OTHER- S.C. VII.1 allows for the swap out or exchange of an engine included in FGEngines with an engine of equivalent or lower emissions. Documentation of the activity and emissions for the engine to be provided within 30-days of the change. The Facility reports that no change out or engine swings have occurred since ownership/operation of the Facility by Riverside in August 2019.

SUMMARY

On November 14, 2022, Gaylord District Staff conducted a self-initiated site inspection of the Riverside Energy Michigan, LLC (Riverside) North Bay Central Processing Facility (CPF) (N8181). The referenced Facility is located in the SE ¼, SW ¼, SW ¼ of Section 6, T28N, R7E, Caledonia Township, Alcona County, Michigan.

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NAME Sharon L. LeBlanc

DATE 2-8-23

SUPERVISOR Shane Nixon