

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Other

N615251648

FACILITY: Riverside Energy Michigan, LLC - Gilchrist CPF		SRN / ID: N6152
LOCATION: NE4 NW4 SW4 SEC 35, T29N-R3E, LOUD TWP		DISTRICT: Gaylord
CITY: LOUD TWP		COUNTY: MONTMORENCY
CONTACT: Natalie Schrader, Compliance Coordinator		ACTIVITY DATE: 11/12/2019
STAFF: Sharon LeBlanc	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Data review for Gilchrist CPF-site visit anticipated for spring.		
RESOLVED COMPLAINTS:		

A records request was made electronically on August 29, 2019 for the Riverside Energy Michigan, LLC (AKA Riverside), Gilchrist CPF (N6152), (AKA Gilchrist Creek 1-35 CPF). The referenced Facility is located in NE ¼, NW ¼, SW ¼, Section 35, T29N – R 3E, Loud Township, Otsego County, Michigan. The referenced facility presently operates under Permit to Install No. 711-96.

The most recent site inspection activities were conducted on October 12, 2015. No compliance issues were noted in association with the visit's compliance evaluation. District Staff anticipate conducting a site visit in spring 2020 to complete a full compliance evaluation for the site.

FACILITY

The referenced facility is operated by Riverside. The referenced facility historically had been operated by Wolverine Environmental Production Inc. The Facility has underwent a number of sales and name changes which are summarized below:

- Wolverine Environmental Production, Inc. (name change 1997)
- Dominion Midwest Energy, Inc. (1997- August 2007)
- HighMount Midwest Energy LLC (AKA HighMount Exploration & Production LLC) (August 2007 – May 2010)
- Linn Energy, LLC (AKA Linn Operating, Inc.) (May 2010 - March 2019)
- Riviera Operating, LLC (March 2019 - August 2019)
- Riverside Energy Michigan, LLC (August 2019 – present)

The station is reported to service Antrim Formation wells in the area. Activities onsite include separation of gas and brine from the incoming gas stream and compression of the gas in the lines.

REGULATORY

Permitting -The referenced facility operates under Permit to Install (PTI) No. 711-96, which was issued in 1996 to the Facility, which was operated by Wolverine Environmental Production, Inc. The PTI was issued as an opt-out permit, but not a Rule 201 permit and was issued around the same time as other Michigan Oil and Gas Association (MOGA) permits that did not undergo 201 reviews. The PTI conditions were generic and refer to the stationary source as a whole rather than conditions that address individual pieces of equipment.

At the time of permitting the facility consisted of one Ajax Natural Gas (NG) fired, 280 HP compressor and one Waukesha 842 HP, NG-fired compressor. In addition, the Facility included one glycol dehydration unit with reboiler and was reported to have the potential to emit over 100 tons of NOx. The referenced permit limits the emissions to 89 tons per year for NOx, CO and VOCs.

Though not identified in the permit, the facility may be subject to Federal Regulation. Subparts frequently associated with oil and gas facilities are identified below. Note however, that compliance with these subparts has not been determined as part of this inspection.

Federal Regulations - The referenced facility does not process or store petroleum liquids, nor store them onsite and is therefore appears to not be subject to 40 CFR Part 60 (New Source Performance Standards AKA NSPS) Subparts;

MACES- Activity Report

- 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);

In addition, the existing engine(s) have install dates (pre 2006) which may exempt them from subject to NSPS Subpart JJJJ for Spark Ignition (SI) RICE.

Subpart OOOO 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 is not applicable at this time but that future changes may be subject to the referenced subpart.

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 ZZZZ (RICE)

With respect to Subpart HH, the affected unit is believed to be the dehy unit. Natural gas flows of less than 3 MMcf/day or benzene emissions of less than 1 ton per year (TPY) and are exempt from emission control requirements under the subpart. MAERS emissions reports for the dehy unit for the past 3 calendar years are summarized below:

CALENDAR YEAR	VOC EMISSIONS REPORTED (lbs VOC/Year)*	DAILY AVERAGE NG FLOWRATE (Mscf/day)**
2016	20.24	NR
2017	9.2	NR
2018	9.2	132.09
2019	NR	444.64

* MAERS emissions

** Reported by Facility. Circulation rates of 0.1005 gpm.

With respect to Subpart ZZZZ, correspondence in District Files dated October 18, 2013, renotifies EPA that the existing engine(s) is/are remote and subject to the subpart.

EQUIPMENT

At the time of the October 12, 2015, site visit AQD Staff identified two compressors, one glycol dehydrator with reboiler, one 400-barrel brine tank and one smaller slop tank with lined-secondary containment were present onsite.

A review of District Files and MAERS records indicates the following equipment having been associated with the facility.

EQUIPMENT	DESCRIPTION	INSTALL DATE	DISMANTLE DATE	OTHER
EU-280AJAX	Ajax Rich Burn 280 HP No control	Jan. 1996	NA	October 12, 2015, inspection report indicates that the EU is in long term storage and is not to be operated.
EU-WAUK7042 or EUENGINE #3006 Sn 166346	Waukesha L7042 GU Rich Burn 802 HP (rated at 1024 HP) with 3-way catalyst & AFRC	9/1/1992	NA	Engine Pedigree dated 4/14/2011. Riverside indicated that this is the date of an engine swing.
EU-	Kimray 40/15 pump	9/1/1992	NA	

DEHYSTILL				
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Preventative Maintenance/Malfunction Abatement Plan (PM/MAP) –

Engines with catalysts are required to have PM/MAPs to insure proper maintenance. District files contained copies of the following PM/MAPs:

PM/MAP DATE	APPROVAL DATE	Comment
June 25, 2007	None located in files	
November 20, 2007 (revision)	None located in files	
May 9, 2018	May 14, 2018	revision of document dated April 23, 2018
October 12, 2018	October 16, 2018	Revision of May 9, 2018 document

The PM/MAP for the Facility indicates that operating reports will be maintained for both the engine and it's associated catalyst. The documents will be used to monitor the units. In addition, the Facility will conduct regularly scheduled maintenance activities in compliance with 40 CFR Part 63, Subpart ZZZZ requirements. Per the referenced subpart, the Facility reports that ≥ 500 HP, 4SLB and 4SRB RICE are required to complete the following every 2,160 hrs of operation or annually, whichever comes first:

- Change oil and filter
- Inspect spark plugs, replacing as necessary
- Inspect all belts and hoses

Copies of maintenance reports provided (SC 19) confirmed that the engine is on a 2160 hours operating schedule. In addition, the following activities will be conducted to ensure proper operation of the engine and catalyst:

- Monitoring of pre and post catalyst temperatures
- Monitoring of differential pressure across the catalyst
- Replacement of air to fuel ratio sensor (AKA O2 sensor) emission checks occur or upon sensor failure.
- Emission checks will be conducted using a portable emissions analyzer when either a monitored parameter is out of range, or when cleaned, typically every 12-18 months.
- Determine/verify destruction efficiency of catalyst using portable analyzer
- Determine differential pressure across the catalyst using calibrated equipment
- Replace catalyst gasket during catalyst cleaning or replacement activities.

Data provided by the Facility indicated that catalyst cleaning activities were conducted on May 6, 2019, with gaskets replacement. Emission testing was conducted on May 25, 2019. Monthly catalyst operating reports dated September 20, 2019, indicated that temperatures and differential pressures were recorded and were within acceptable ranges.

COMPLIANCE

MAERS- Reporting of actual emissions for CO, NOx, VOCs and HAPs is required under special condition 18 of the permit. A review of the most recent MAERS submittal for the facility (received on February 25, 2019 for emissions associated with the calendar year 2018) included emissions for EU-WAUK7042 and EU-DEHYSTILL. EU-280AJAX has been reported to have not operated.

Permit Conditions -Special conditions associated with Permit No. 711-96 are limited to record keeping, reporting and emission limits. Emission limits for the facility are defined in special conditions 13 and 14. These two conditions limit CO, VOC and NOx emissions to 89 tons/year for each referenced parameter as well as individual HAPs to below 9 tons/year and total HAPs to below 22.5 tons/year.

Calculation of actual emissions on a monthly and 12-month rolling total for CO, NOx, VOC and HAPS are required under special condition 15. The PTI specifies that emissions will be determined using emission factors from Appendix A. It should be noted that with the exception of HAPS, which Appendix A does not list HAPS for Antrim units.

NOx and CO annual emissions are determined using manufacturer data. Except for NOx, CO and VOC engine emissions were calculated using EPA emission factors. Total emissions in tons per year (tpy) reported for the calendar years since the last site inspection were:

CALENDAR YEAR	NOX (tpy)	CO (tpy)	VOC (tpy)	HAPs (tpy)*
2016	9.28	12.85	1.08	0.602
2017	9.25	12.8	1.07	0.60
2018	8.48	11.73	0.98	0.58
12-month rolling as of Sept 2019	5.8	8.0	0.67	NR
LIMIT (SC 13)	89 (SC 13)	89 (SC 13)	89 (SC 13)	9 (SC 14)

*Reflects AQD calculated formaldehyde emissions

Data from “Engine Specification Calculation spreadsheets” provided by Riverside reported the following emissions for EUENGINE, the principal emission source:

Special condition No. 16 and/or 17 require monthly records of:

- Fuel consumption, in million cubic feet (MMcf)
- Crude/condensate throughput to the tank in barrels (bbis)
- Hydrocarbon liquid trucked offsite (bbis), and
- Oil and gas processed onsite

Upon district request and in compliance with permit requirements Riverside provided the applicable requested records. As previously noted the facility does not produce or process liquid hydrocarbons onsite. Fuel consumption and other equipment operational data provided in response to the request indicated consistent operation of the equipment overtime.

Special condition 19 requires the owner or operator of the source to conduct all necessary maintenance and make all necessary attempt to keep all components of the process equipment in proper working order and maintain a log of significant maintenance activities and all repairs made to the equipment. Per request, the Riverside provided copies of maintenance reports for the NG compressors and associated engines conducted by Natural Gas Compression Systems. The company provided contracted engine maintenance service logs, as well as a “Quad Z Engine Summary” for activities conducted for 2019.

Special condition 20 applies to crude oil or condensate storage tanks greater than or equal to 952 barrels, and the liquid having a true vapor pressure of greater than 1.5 psia. This condition is not applicable as the facility does not store crude or condensate onsite.

Special condition 21 applies to malfunction of a pollution control device and limits bypass of the control device for a period not to exceed 48 hours per event nor a total of 144 hours per calendar year. The facility reports that no operation under bypass occurred.

Special condition 22 requires the owner or operator of an oil-gas facility constructed on or after January 20, 1984 to determine if they are subject to Federal standards in 40 CFR, Part 60, Subpart KKK. No hydrocarbon liquids are reported to be produced at the facility, so the facility is reported not to be subject to the referenced Subpart.

Special condition 23 refers to requirements associated with verification stack testing for CO, VOC, NOx or HAP. No request for verification testing was found in District Files, so the condition in not applicable at the time of the report preparation.

Special condition 24 requires the facility to only process sweet gas as defined in Rule 119. Riverside provided copies of lab analysis dated September 26, 2019. The data reported that the contents of the sample consisted of sulfides below detection limits, and that the remaining parameters totaled 100% molecular and by weight.

SUMMARY

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At the time of permitting the facility consisted of one non-operating Ajax NG-fired, 280 HP compressor and one Waukesha 842 HP, NG-fired compressor. The referenced permit limits the emissions to 89 tons per year for NOx, CO and VOCs.

Review of data provided by Riverside indicated that no compliance issues were of note. District Staff anticipate conducting a site visit in spring 2020 to complete a full compliance evaluation for the site.

NAME Sharon L. Stone

DATE 12/10/2019 SUPERVISOR 