

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

B916557806

| | | |
|---|--------------------------------------|----------------------------------|
| FACILITY: Lambda Energy Resources LLC - Rapid River 24 | | SRN / ID: B9165 |
| LOCATION: 3301 WOOD RD, KALKASKA | | DISTRICT: Cadillac |
| CITY: KALKASKA | | COUNTY: KALKASKA |
| CONTACT: | | ACTIVITY DATE: 04/22/2021 |
| STAFF: Kurt Childs | COMPLIANCE STATUS: Compliance | SOURCE CLASS: SM OPT OUT |
| SUBJECT: 2021 FCE Inspection. | | |
| RESOLVED COMPLAINTS: | | |

On April 22, 2021, I conducted an on-site inspection and records review of the Lambda Energy Resources, LLC Rapid River 24 facility (B9165) located on Wood Road NE in Rapid River Township, Kalkaska County, Michigan. The site is located on the north side of Wood Road NE, approximately 0.4 miles west of Priest Road NE and Wood Road NE intersection. The site access is approximately 0.2 miles north on a gravel drive. The site entrance was gated and locked. I parked outside the facility and inspected each area of the plant on foot.

The purpose of this inspection was to determine the facility's compliance with permit to install (PTI) 629-96 and the Air Pollution Control Rules. The PTI has opted this source out of major source applicability by limiting operational and/or production limits potential to emit (PTE) to be below major source thresholds. The site is an area source for National Emission Standards for Hazardous Air Pollutants (NESHAP) for Oil and Natural Gas Production facilities (40 CFR, Part 63, Subpart HH), and NESHAP for Stationary Reciprocating Internal Combustion Engines (40 CFR, Part 63, Subpart ZZZZ). The State of Michigan does not have delegated authority of the area source NESHAPs, and thus these areas were not reviewed at this time.

On-site Inspection:

During the field inspection, the weather conditions were mostly sunny with light winds from the west-northwest, approximately 5-10 miles per hour, and 45 degrees Fahrenheit. Fuel enters the facility via pipeline on the northeastern portion of the site. The facility consisted of: three process heaters (one disconnected, one not operating) to keep the fuel and fuel lines heated throughout the processing activities; a separator building on the northwestern portion of the site; a heater treater and glycol dehydrator system along the western portion of the site, a tank battery with eight approximate 400 barrel above ground storage tanks controlled by a vapor recovery unit on the eastern portion of the site; and a compressor building with one engine on the southern portion of the site.

The fuel flows via pipeline through the process heaters, then to the separator building on the northwestern portion of the site, which separates the crude oil, natural gas, and condensate. The separators direct the fuel to specific areas of the site. The Crude oil and condensate are routed to the tank battery area. Water is removed from the natural gas using the glycol dehydrator system and the gas is compressed for transport by the compressor engine located in the southern building. The compressor engine is a 500 horsepower Caterpillar G398NA natural gas-fired reciprocating internal combustion engine, listed as Unit #618 on the log sheet at the facility. The engine was operating at 647 revolutions per minute (RPM) and 75 pounds per square inch (psi) of pressure during the inspection. The stack on the compressor engine was approximately 16 feet above ground surface, and contained a muffler. There were no visible emissions from any of the stacks at the source and only mild odors.

PTI Compliance Evaluation:

Emission Limits: Individual Carbon monoxide (CO), volatile organic compounds (VOCs) and nitrogen oxides (NOx) emissions shall not exceed 99 tons per year based on a 12-month rolling time period. Based on the records reviewed (and attached to this report), the highest CO emissions from November 2019 through October 2020 were 50.31 tons per 12-month rolling time period, the highest NOx emissions were 46.64 tons per 12-month rolling time period, and the highest VOC emissions were 7.34 tons per 12-month rolling time period.

The individual hazardous air pollutant (HAP) emissions shall be below 10 tons per year and total HAPs shall be below 25 tons per year based on a 12-month rolling time period. Based on the records reviewed, the individual and total HAPs are 3.5 tpy which is below the emission limits.

PTI 629-96 requires that emissions be calculated using the specific emission factors in Appendix A of the permit. Records provided by Lambda Energy Resources, LLC indicate that manufacturer engine specific emission factors have been used to calculate emissions in the records that are maintained and provided. This is a standard industry method and is generally accepted by the Air Quality Division (AQD) at most other oil and gas facilities including most of the Lambda Energy Resources, sources. Therefore, the AQD finds it appropriate to use enforcement discretion with regard to the method of emissions calculation and has determined the current emission calculation method is acceptable.

Lambda Energy Resources, LLC records monthly and 12-month rolling time period calculations for NOx, CO, VOCs, and HAPs.

Materials/Fuels: The source shall only process sweet natural gas, which is defined as any gas that is not sour. Sour natural gas is defined as "any gas containing more than 1 grain of hydrogen sulfide or more than 10 grains of total sulfur per 100 standard cubic feet. The most recent analytical data (attached) indicated hydrogen sulfide levels in the gas stream were non-detectable.

Process/Operational Parameters: Lambda Energy Resources, LLC provided maintenance records for the facility. The records did not show maintenance concerns with the engine, the compressor was serviced and had a leak repaired. This engine does not have a control device so there were no periods of operation without control to record. The crude oil and condensate storage tank battery area are connected to a vapor recovery system for control which was operating at the time of the inspection.

Emissions Testing: As previously indicated Lambda Energy Resources, LLC used engine specific emission factors to calculate the emissions for NOx, CO, VOCs, and HAPs. Performance testing has not been requested by the AQD for this source.

Monitoring/Recordkeeping: Lambda Energy Resources, LLC monitors and records monthly fuel consumption, monthly crude/condensate throughput to the ASTs, the amount of hydrocarbons trucked, and the glycol circulated through the dehydrator. Additionally, the facility keeps monthly records of the amount of oil and gas processed at the source.

Reporting: Lambda Energy Resources, LLC completes all calculations in formats acceptable by the AQD, and the records are properly maintained. Additionally, the facility reports to the Michigan Air Emissions Reporting System (MAERS) on an annual basis, and the facility is in compliance with their MAERS reporting.

Stack/Vent Restrictions: There are no stack/vent restrictions applicable for the engine at the facility.

Other Requirements: The facility is not subject to 40 CFR Part 60, Subpart KKK since the gas is not fractionated at the facility.

Evaluation Summary

Based on the activities covered during this field inspection, the source appears to be in compliance with PTI 629-96 and the air pollution control rules. Review of the records for the source indicates it was in compliance with emission and material use limits in accordance with the PTI. No additional actions are necessary at this time.

NAME 

DATE _____

SUPERVISOR _____