DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

B429231094

FACILITY: MERIT ENERGY CO. - KALKASKA GAS PLANT		SRN / ID: B4292
LOCATION: 1510 Thomas Road SW, KALKASKA		DISTRICT: Cadillac
CITY: KALKASKA		COUNTY: KALKASKA
CONTACT: Kurt Jagoda , Operatons Manager		ACTIVITY DATE: 09/09/2015
STAFF: Shane Nixon	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: On site inspection and records review		
RESOLVED COMPLAINTS:		

AQD staff traveled to the facility in Kalkaska County to perform an inspection. The purpose of the inspection was to determine the facility's compliance with state and federal air pollution control regulations as well as Renewable Operating Permit (ROP) No. MI-ROP-B4292-2014. Mr. Bruce Vargo, Merit Energy, was present to accompany AQD staff during the inspection.

The Kalkaska Gas Plant, comprised of the North Plant (EUKGPN) and the South Plant (EUKGPS), is an existing natural gas processing and fractionation plant located near the intersection of US-131 and Thomas Road, about four miles southwest of the Village of Kalkaska. The facility extracts propane and heavier hydrocarbons from natural gas using a cryogenic process located at the North Plant. The South Plant, which is currently idle, implements a lean oil absorption process to remove natural gas liquids from the natural gas. The facility is also comprised of several storage tanks, natural gas process heaters, emergency engines, and three natural gas fired turbines with supplemental waste heat recovery units with duct burners. Flares are used at each plant for emissions control and as safety relief devices.

On June 19, 2015, Permit to Install (PTI) No. 1-15 was issued to Merit Energy to allow operation of the idled South Plant. Restarting the plant is considered a physical and operational change which is subject to Prevention of Significant Deterioration (PSD) review and a PTI was a necessity. As a result of PSD applicability, the PTI went through the PTI/ROP public comment process. Merit Energy must notify the AQD within 30 days after completing the physical and operational changes pursuant to PTI No. 1-15 and request the AQD to incorporate the PTI into the ROP as an administrative amendment application no later than 12 months after the date of completion of the changes.

A. SOURCEWIDE – Sourcewide terms and conditions that apply to this stationary source. There are currently no sourcewide terms and conditions contained in the ROP; therefore, this section is not applicable.

B. EUKGPN – Natural gas liquid extraction and fractionation plant subject to the requirements of 40 CFR 60 Subpart KKK and OOOO as they apply to Onshore Natural Gas Processing Plants.

1. Emission Limits – There are no emission limits associated with this emission unit; therefore, this section is not applicable.

2. Material Limits - There are no material limits associated with this emission unit; therefore, this section is not applicable.

3. Process/Operational Restrictions – A continuously burning pilot flame as the flare is monitored used a photoelectric eye. Plant personnel indicated the pilot flame has never been extinguished. No visible emissions were observed by AQD staff at the time of the inspection.

Any leaks detected are required to be repaired as soon as practicable but not later than 15 days after it is detected. In cases where the leak cannot be repaired without shutting down the entire plant, the facility is allowed to place the leaking equipment on the Delay of Repair list and the leak will be repaired at that time. At this time, there are nine components out of 14,309 that are on the Delay of Repair list. The components consist of eight valves and one connector.

Currently, there are no components that are designated for no detectable emissions and the applicable requirements pertaining to those components do not apply.

No compressors are subject to the requirements of 40 CFR 60 Subpart KKK and OOOO. The justification/records for non-applicability are maintained at the facility.

Records maintained at the facility and the semiannual reporting indicate there are no pressure relief devices which had a pressure release and were not returned to a condition of an instrument reading of less than 500 ppm above background.

4. Design/Equipment Parameters – The flare is required to comply with the heat content specifications and maximum tip velocity specifications in accordance with 40 CFR 60.18. Records (attached) indicate the net heating value of the gas is 38.67 MJ/cf and the tip velocity is 0.02m/s.

During the inspection, AQD staff observed open-ended valves and lines equipped with a second valve or cap as required by 40 CFR 60 Subparts KKK and OOOO, and the ROP.

5. Testing/Sampling – Non-certified visible emissions are performed on a quarterly basis for a minimum of two hours. Records maintained at the facility indicate the observations are performed and no visible emissions are present.

Method 21 testing as required by the ROP and 40 CFR 60 Subparts KKK and OOOO are performed by a contractor hired by Merit Energy. The testing dates are scheduled in accordance with the federal regulations and the results appear to be accurate.

6. Reporting – All reports submitted pursuant to the ROP were previously reviewed and documented.

7. Monitoring/Recordkeeping – Records required by the ROP and federal regulation are maintained at the facility via a detailed electronic format. A log of all equipment subject to the standards in 40 CFR 60 Subpart KKK and OOOO was available for AQD staff to review. The log included, but was not limited to, a list of all components subject to the federal regulations, leaking equipment, and Method 21 test dates.

8. Stack/Vent Restrictions – There are no stack or vent restrictions associated with this emission unit; therefore, this section is not applicable.

9. Other Requirements – Staff observed during the inspection that a tag was attached to any leaking equipment pursuant to 40 CFR 60 Subpart KKK and OOOO as well as the ROP.

The facility is required to comply with the applicable requirements of 40 CFR 60 Subparts KKK and OOOO. Based upon the onsite inspection and review of records, AQD staff determined, to the best of their knowledge, the facility to be in compliance with 40 CFR 60 Subparts KKK and OOOO.

C. EUKGPN-TURB-C – 60.2 MMBtu/hr natural gas fired Taurus 60 turbine and 28.0 MMBtu/hr natural gas fired duct burner in the waste heat recovery unit. The turbine is used for plant electrical production and the WHRU is used to heat thermal oil for other processes. The turbine and the WHRU were operating at the time of the inspection with 0% opacity. The turbine was producing 41.87 kilowatts at the time of the inspection and fuel consumption was 1,292 MCF/day. Based upon the construction date, the turbine is currently subject to 40 CFR 60 Subpart KKKK (Standards of Performance for Stationary Combustion Turbines). The serial number of the turbine installed and operating at the time of the inspection is OHD14-T2577

1. Emission Limits – NOx emissions are limited to 1.2 lb/MW-hr pursuant to conditions of the ROP. Testing performed on May 12, 2015 determined NOx emissions were 0.45 lb/MW-hr; which is in compliance with the emission limit.

2. Material Limits – Total potential sulfur emissions are limited to less than or equal to 0.06 pounds SO2 per MMBtu heat input. Fuel quality characteristics in a transportation contract with Michcon indicates and based upon calculations performed by AQD staff, the total potential sulfur emissions are 0.01 pounds SO2 per MMBtu heat input.

3. Process/Operational Restrictions – The ROP only allows natural gas to be fired in the emission unit. At this time, the equipment is capable of only firing natural gas.

4. Design/Equipment Parameters – The turbine was equipped with low NOx burners pursuant to the ROP and a device to monitor and record the natural gas usage on a continuous basis. AQD staff confirmed that the natural gas consumption rate was recorded in the control room.

5. Testing/Sampling – NOx testing is required every year unless emissions, based on stack testing, are less than 0.9 lb/MW-hr. Stack testing results in 2015 were less than 0.9 lb/MW-hr and allows the stationary source to reduce the frequency of testing every two years subsequent to 40 CFR 60 Subpart KKKK.

6. Monitoring/Recordkeeping – Records of fuel combusted in the duct burner were available for AQD review. The monthly fuel combusted in April 2014 was 14,443,000 cubic feet and was 11,048,000 in August 2015.

A valid transportation contract was available for AQD staff to review to demonstrate that the potential sulfur emissions did not exceed the emission limit contained in the ROP.

7. Reporting – All reports submitted pursuant to the ROP were previously reviewed and documented.

8. Stack/Vent Restrictions – The stacks associated with this emission unit appeared to be installed in accordance with the specifications contained in the ROP.

9. Other Requirements – The permittee is required to comply with all applicable requirements of 40 CFR 60 Subpart KKKK. Based upon the onsite inspection and review of records, AQD staff considers the facility to be in compliance with the federal regulation.

D. EUKGPS – An idled lean oil absorption natural gas liquid recovery process consisting of a lean oil absorber, a rich oil demethanizer, and rich oil still to separate the natural gas liquids from the lean oil and is a closed system. Additional components include the pressurized natural gas storage tanks, heat medium heater, fuel gas system, and flare system.

E. FG-KGPS-TURB – Two 19,750 hp natural gas fired GE Frame 5 turbines, each equipped with a 7.5 MW electrical generator and a 55 MMBtu per hour natural gas fired duct burner in the waste heat recovery units (WHRU). The turbines are used for plant electrical production and the WHRUs are used to heat thermal oil for other processes. Currently, the turbines are used as backup power generators in the event that EU-TURB-C is inoperable.

1. Emission Limits – There are no emission limits associated with this flexible group; therefore, this section is not applicable. The turbines are subject to 40 CFR 60 Subpart GG but are not subject to an emission limit. The turbines were installed prior 1982 and exempts them from the emission limits contained in 40 CFR 60.332(a).

2. Material Limits – The total sulfur contained in the natural gas is limited to 0.8% by weight total as a requirement of the ROP and 40 CFR 60 Subpart GG. A transportation contract supplied by Merit Energy indicates the total sulfur content is 0.2%, by weight.

3. Process/Operational Restrictions – There are no process or operational restrictions associated with this flexible group; therefore, this section is not applicable.

4. Design/Equipment Parameters – There are no design or equipment parameters associated with this flexible group; therefore, this section is not applicable.

5. Testing/Sampling – There are no testing or sampling requirements associated with this flexible group; therefore, this section is not applicable.

6. Monitoring/Recordkeeping – The gas quality characteristics in the transportation contract with Michcon was available for AQD staff to review. The natural gas usage of each turbine is to be monitored and recorded. Records maintained at the facility indicate the turbines have not been operated in the past year.

7. Reporting – All reporting submitted pursuant to conditions of the ROP were previously reviewed and documented by AQD staff.

8. Stack/Vent Restrictions – There are no stack or vent restrictions associated with this flexible group; therefore, this section is not applicable.

9. Other Requirements – Based upon the records review and onsite inspection, AQD staff determined the facility to be in compliance with the applicable requirements of 40 CFR 60 Subpart GG.

F. FG-EMERGENS – 275 horsepower International Harvester gas- fired emergency generator, 1,090 horsepower Waukesha gas-fired emergency generator, 125 horsepower Cummins gas-fired emergency fire water engine, 145 horsepower Minneapolis Moline gas-fired emergency fire water engine. The Kalkaska Gas Plant is considered an area source for Hazardous Air Pollutants (HAPs). The applicable requirements contained in the flexible group were established pursuant to the regulations found in 40 CFR 63 Subpart ZZZZ. AQD does not have delegation to enforce the regulation as it pertains to area sources for HAPs and a determination of compliance with the regulation was not performed.

G. FGRULE290 – Any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rule 278 and Rule 290. The ROP must contain all applicable requirements and three remediation basins for groundwater contamination are covered under this flexible group.

1. Emission Limits – Noncarcinogenic volatile organic compounds (VOC) and benzene emissions are limited to 1,000 pounds per month and 20 pounds per month, respectively. Records provided by Merit Energy (attached) demonstrates that the emissions from the basins are well below the monthly emission limits in the ROP.

2. Material Limits – There are no material limits associated with this flexible group; therefore, this section is not applicable.

3. Process/Operational Restrictions – General language in the condition states Rule 290 applies to each emission unit that is operating pursuant to Rule 290.

4. Design/Equipment Parameters – There are no design or equipment parameters associated with this flexible group; therefore, this section is not applicable.

5. Testing/Sampling – There are no testing or sampling requirements associated with this flexible group; therefore this section is not applicable.

6. Monitoring/Recordkeeping – Records provided to AQD staff were identifying the air contaminant,

quality, nature and quantity were in sufficient detail to demonstrate compliance with the monitoring and recordkeeping requirements associated with the applicable requirements.

7. Reporting – All reporting submitted pursuant to the ROP was previously reviewed and documented by AQD staff.

8. Stack/Vent Restrictions – There are no stack or vent restrictions associated with this flexible group; therefore, this section is not applicable.

9. Other Requirements – There are no other requirements associated with this flexible group; therefore this section is not applicable.

Conclusion – Based upon the records review and on-site inspection, AQD staff have determined the facility to be in compliance with ROP No. MI-ROP-B4292-2014.

NAME Shane D Wixom DATE 9/29/15 SUPERVISOR