

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

ACTIVITY REPORT: Scheduled Inspection

P027828826

FACILITY: Marathon Oil - Excelsior B1-24.		SRN / ID: P0278
LOCATION: 7999 SUNSET TRAIL NE, KALKASKA		DISTRICT: Cadillac
CITY: KALKASKA		COUNTY: KALKASKA
CONTACT: Luke Franklin , HES - Michigan		ACTIVITY DATE: 02/25/2015
STAFF: Caryn Owens	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Site Inspection & Records Review		
RESOLVED COMPLAINTS:		

On Wednesday, February 25, 2015, Caryn Owens and Shane Nixon of the DEQ-AQD conducted a scheduled on-site inspection of the Marathon Oil – Excelsior B1-24 facility (P0278) located at 7999 Sunset Trail NE Excelsior Township, Kalkaska County, Michigan. More specifically, the site is located on the west side of Sunset Trail NE, approximately 1 mile north of the M-72 and Sunset Trail NE intersection. An access gate was at the entrance to the facility, and was open at the time of the inspection. The purpose of this inspection was to determine the facility's compliance with permit to install (PTI) 138-11A. The site is currently an area source for hazardous air pollutants (HAPs), and is a true minor source for criteria pollutants. DEQ was unaccompanied during the field inspection, an inspection brochure was not given to anyone at this facility, but a brochure will be emailed to the company with this inspection report. The site is an area source for National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR Part 63 Subpart HH, and NESHAP 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 by the DEQ at this time. DEQ requested Marathon to determine if the facility was subject to the New Source Performance Standard (NSPS) 40 CFR Part 60 Subpart OOOO – Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution (NSPS Quad O). Based on Marathon's determination, the facility is not subject to NSPS Quad O. Marathon's determination is attached.

The site was covered in snow, and the weather conditions were partly sunny, with calm winds from the west-northwest, and approximately 10°F. The gas from the Marathon Oil Oliver A3-01 site comes into the Excelsior North site via pipeline on the northern portion of the property, and flows through a 2-phase separator and a 3-phase separator, and then combines with the gas produced from the onsite well in another 3-phase separator. The water, condensate and natural gas are separated, and the condensate and water are collected in the four 400 bbl storage tanks on the northeastern portion of the site. The 400-barrel above ground storage tanks are controlled by the enclosed flare at the site. The natural gas is routed to a reciprocating internal compression engine (RICE) and compressed, then flows through a glycol dehydrator to dry the field gas, and then sent to the sales line. The glycol dehydrator contained a condenser, and the flash tank was controlled by the enclosed flare. The glycol dehydrator contained process heaters that vents to the ambient air. DEQ observed heat shimmers from the glycol dehydrator process heaters and from the enclosed flare.

The compressor engine was operating at 1375 RPM, 60 psi and 200°F, and contained a muffler with no control. The engine block had an ID of 108565, and the compressor engine was a CAT3512 T/A, Ariel JGT-2, Serial# 7NJ00795. The stack was approximately 30 feet above ground surface, and DEQ observed a steam plume from the engine stack. No odors were present outside of the building during the inspection. DEQ observed at least 10 pneumatic controllers during the inspection.

Records Reviewed

EUENGINE1: A 945 horsepower (hp) Caterpillar 3512 T/A, Ariel JGT-2 natural gas fired reciprocating internal combustion engine.

Emission Limits: EUENGINE1 is limited to 14.5 tons per 12-month rolling time period of NOx and 18.4 tons per 12-month rolling time period of CO. Marathon Oil took ownership of the facility November 1, 2014, prior to this date the facility was owned and operated by Encana Oil & Gas. Marathon Oil encountered data gaps that were addressed by averaging data from the records Encana Oil & Gas supplied to Marathon Oil. Based on the records reviewed, the facility highest NOx emissions were between 15.0 and 17.6 tons per 12-month rolling time period from September 2014 through December 2014 which exceeded the NOx emission limit for EUENGINE1. The highest CO emission was reported as 16.0 tons per 12-month rolling time period, which was below the permitted CO emission limit. According to Marathon Oil, EUENGINE1 fuel usage, from December 2013 through October 31, 2014, was calculated based on engine run time, engine specifications and dry gas BTU because there was no metered gas records kept for the engine from the previous owners and operators of the facility. Beginning November 1, 2014, Marathon Oil started to meter the fuel usage, and was able to use actual metered fuel for the calculations. Marathon identified a

discrepancy between the metered fuel use and calculated fuel use, and had a meeting with the DEQ to discuss this discrepancy where the DEQ wanted Marathon Oil to use any information they could to derive the emission calculations. Marathon Oil believes that if metered fuel records were available prior to November 1, 2014, the actual emission would be below the emission limits.

- **Materials/Fuels:** No material limits were applicable for EUENGINE1.
- **Process/Operational Parameters:** The facility submitted a Malfunction Abatement Plan (MAP) on January 11, 2013, and was approved by the DEQ on March 19, 2013. Based on the maintenance records, the engine was inspected at least 1 to 3 times a month. General maintenance such as, but no limited to: replacing filters; valves; spark plugs; seals; belts; and/or repair leaks was performed on the engine from November 2013 through December 2014.
- **Testing Sampling Equipment:** The facility used engine specific emission factors to calculate the emissions for NOx and CO. Performance testing has not been completed at this facility.
- **Monitoring/Recordkeeping:** The facility monitors the natural gas usage for EUENGINE1, as previously stated, Marathon Oil did not receive actual natural gas usage from the previous owners. Therefore, Marathon Oil calculated fuel usage based on engine run time, engine specifications and dry gas BTU. The facility records monthly and 12-month rolling time period records for NOx and CO. The 12-month rolling time period emissions are discussed above under emission limits.
- **Reporting:** The facility has not swapped out an engine at the facility since the PTI was issued.
- **Stack/Vent Restrictions:** Based on visible observations during the field inspections, the stacks of the engines appeared at least 30 feet above ground surface.

EUCONDANKS: Two of the Four 400 bbl condensate tanks at the facility contain condensate and the remaining two 400 bbl tanks contain water. The 400 bbl above ground storage tanks are connected to a vapor recovery system that vents to the onsite enclosed flare. DEQ requested breathing, working and flash emissions from the storage tanks. Based on the records, the flash loss from the oil separator to tank pressure is 0.36 tons per year, however; with the control of the onsite flare, the VOCs from the tanks are 0.01 tons per year from the flashing loss of the tanks. The controlled breathing loss emissions were 12.1 lbs per year from the tanks, and the controlled working loss emissions were 0.11 lbs per year from the tanks.

FGDEHY: Two glycol dehydration systems processing gas from the Collingwood – Utica formation, and removes the water from the natural gas stream.

- **Emission Limits:** EUDEHY1 is limited to 2.2 tons per 12-month rolling time period of VOC and EUDEHY2 is limited to 0.4 tons per 12-month rolling time period of VOC. Based on the records reviewed, EUDEHY1 was taken out of service when EUDEHY2 was placed onsite in January 2013. The facility highest VOC emissions were 0.05 tons per 12-month rolling time period from December 2013 through November 2014 which was within the permitted limits. **Materials/Fuels:** No material limits were applicable for FGDEHY.
- **Process/Operational Parameters:** The glycol recirculation rate for FGDEHY shall not exceed 3.0 gallons per minute. Based on the records reviewed, the highest glycol recirculation rate reported was 0.52 gallon per minute, which was within the permitted limits. DEQ observed the glycol dehydrator at the facility equipped with a condenser, and the flash tank was connected to vapor recovery that vented either to the fuel gas system or the onsite enclosed flare. A flame detector was installed on the enclosed flare system, and contained a continuously burning pilot flame.
- **Testing Sampling Equipment:** The facility sampled the wet gas stream on February 20, 2014 for the permitted required constituents. DEQ observed no concerns with the wet gas analysis.
- **Monitoring/Recordkeeping:** The facility calculated monthly and 12-month rolling time period VOC emissions from EUDEHY2 and recorded monthly glycol recirculation rates using acceptable methods. EUDEHY1 was taken out of service when EUDEHY2 was installed in January 2013, so no emissions were reported for EUDEHY1. The enclosed flare was not extinguished from November 2013 through December 2014.
- **Reporting:** DEQ does not have delegation for area source NESHAPs 40 CFR Part 63 Subpart HH, so these areas were not addressed during the field inspection and records review.
- **Stack/Vent Restrictions:** Based on visible observations during the field inspections, the stacks of the FGDEHY appeared in compliance with the permitted limits.

FGFACILITY: Conditions that include all source-wide activities at the facility.

- **Emission Limits:** There are no applicable emission limits for FGFACILITY.
- **Materials/Fuels:** According to Marathon, no sour gas is burned at the facility.
- **Process/Operational Parameters:** No process/operational parameters were applicable for FGFACILITY.
- **Testing Sampling Equipment:** Based on the wet gas analysis sampled February 20, 2014, no sour gas was detected in the gas stream sampled.
- **Monitoring/Recordkeeping, Reporting, Stack/Vent Restrictions, Other Requirements:** No Monitor/Recordkeeping, Reporting, Stack/Vent Restrictions, Other Requirements were applicable for

FGFACILITY.

Evaluation Summary: Based on the field inspection and records review, the facility is in compliance with PTI 138-11A. Even though Marathon reported NOx emissions greater than the permitted limits, Marathon met with DEQ staff to discuss the lack of records they received from the previous owners of the facility. DEQ accepted that Marathon report the emissions as best they could, even though they did not have sufficient records from the previous owners of the facility. Therefore, a violation is not warranted at this time.

NAME *Campy Chens*

DATE *2/25/15*

SUPERVISOR *[Signature]*