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

N693929422

FACILITY: CHEVRON MICHIGAN, LLC - OLD VANDY NORTH		**SRN / ID:** N6939
LOCATION: SW SW SW Sec 17 T32N R3W, GAYLORD		**DISTRICT:** Cadillac
CITY: GAYLORD		**COUNTY:** OTSEGO
CONTACT: Natalie Schrader , SR. Production assistant		**ACTIVITY DATE:** 04/22/2015
STAFF: Caryn Owens	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Scheduled Field Inspection and Records Review		
RESOLVED COMPLAINTS:		

On Wednesday, April 22, 2015, Caryn Owens of the DEQ-AQD conducted a scheduled on-site inspection of the Chevron Michigan, LLC (Chevron) – Old Vandy North CPF (also known as the W. Corwith D1-17)(N6939) located in the southwest quarter of the southwest quarter of the southwest quarter of Section 17, Township 32 North, Range 3 West in Corwith Township, Otsego County, Michigan. More specifically, the site is located on the east side of Lewis Road, approximately 1/10 mile north of the Lewis Road and McGregor Road intersection. There is an access gate at the Property which was locked at the time of the inspection. The purpose of this inspection was to determine the facility's compliance with permit to installs (PTIs) 26-01A and 26-01B. Chevron swapped compressors at the facility in 2014. PTI 26-01A covered two Waukesha engines (units #12989 and #13053), which were replaced in September and October 2014 with two Caterpillar lean burn engines. The two new lean burn engines are covered under PTI 26-01B, and PTI 26-01A has been voided. However, records included the former Waukesha engines, as the records requested for the facility were from March 2014 through March 2015. Chevron has opted out of major source applicability by limiting the operational and/or production limits potential to emit (PTE) to be below major source thresholds. 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 MDEQ at this time.

The weather conditions were cloudy, with winds approximately 10 miles per hour from the northwest, approximately 27°F and snowing. There were two buildings on the property and each contained a compressor engine, and two iron sponges east of the buildings. The western building on the property contained a compressor engine. The equipment in the eastern building contained: a compressor engine; vertical separators; and a glycol dehydrator. The glycol dehydrator was used to dry the field gas prior to transporting it to the sales line. The eastern compressor engine was a 1265 horsepower (hp) Caterpillar 3516LE, identified on the on the logs as Unit #: XX20693-018-1224, and identified on the engine block as GCS 1224 and identified in the PTI as EUENGINE2. This engine was operating at 1379 RPM 184°F, and 57psi, and was controlled by a catalyst and Air to fuel ratio controller (AFRC). The inlet temperature to the catalyst was 805°F and the outlet was 790°F. The AFRC read 3.00 volts and 20 percent. The stack on the compressor engine contained a muffler and was approximately 43 feet above ground surface, no visible emissions were observed from the eastern compressor engine stack.

The western engine in the building was a 1265 horsepower (hp) Caterpillar 3516LE, identified on the engine block as GCS 1086, and identified in the PTI as EUENGINE1. This western engine (EUENGINE1) was operating at 1368 RPM, 184°F, and 53 psi, and was equipped with a catalyst and AFRC. DEQ observed the inlet temperature of the catalyst as 805°F and the outlet temperature as 790°F. The AFRC reading was 2.86 volts and 23 percent. The stack on the compressor engine contained a muffler and was approximately 43 feet above ground surface, no visible emissions were observed from the western compressor engine stack.

Records Reviewed

EUDEHY: The glycol dehydration system processes gas from the Antrim zone. The applicable requirements of this emission unit are regulated by the NESHAP 40 CFR Part 63 Subpart HH, and the DEQ does not have delegation for the NESHAP, so these areas were not addressed during this facility inspection and records review. Chevron is claiming the glycol dehydrator at the Old Vandy North facility meets exemption R336.1288(b)(ii).

FGENGINES: Two Caterpillar 3516LE natural gas fired reciprocating internal combustion engines, at 1265 hp. FGENGINES are permitted with a catalyst for control.

- **Emission Limits:** The former permit (PTI 26-01A) had emission limits of 25 tons of NOx per year based on a 12-month rolling time period and 43 tons of CO per year based on a 12-month rolling time period for EUENGINE1. EUENGINE2 had emission limits of 25 tons of NOx per 12-month rolling time period and 43

tons of CO per 12-month rolling time period. Based on the records reviewed for the former Waukesha engines at the facility from March 2014 through September 2014, EUENGINE1 highest emission reported was 7.56 tons of NOx per 12-month rolling time period and 25.44 tons of CO per 12-month rolling period, which were below permitted emission limits. EUENGINE2 highest emission reported was 8.11 tons of NOx per 12-month rolling time period and 27.31 tons of CO per 12-month rolling period, which were below permitted emission limits.

PTI 26-01B emission limits for the Caterpillar 3516 lean burn engines were 44.5 tons of NOX per year based on a 12-month rolling time period, and 30 tons of CO per 12-month rolling time period for both EUENGINE1 and EUENGINE2. Based on the records reviewed from October 2014 through March 2015, the highest emissions reported were 12.17 tons of NOx per 12-month rolling time period, and 23.82 tons of CO per 12-month rolling time period for EUENGINE1 and 14.65 tons of NOx per 12-month rolling time period, and 25.73 tons of CO per 12-month rolling time period for EUENGINE2. During the requested time period between March 2014 and March 2015, the emission limits were not exceeded for NOx and CO.

- **Materials/Fuels:** No material limits were applicable for FGENGINES.
- **Process/Operational Parameters:** The facility submitted a Malfunction Abatement Plan (MAP) on January 26, 2015, and was approved by the DEQ on April 1, 2015 to address the new Caterpillar lean burn engines at the facility. Based on the maintenance records, the engines were generally inspected on a daily basis. EUENGINE1 was shut down for a total of 47.4 hours from April 1, 2014 through October 4, 2014 before the engine was swapped out. The new EUENGINE1 was shut down for 173.5 hours from October 10, 2014 through March 30, 2015 for replacing filters, valves, spark plugs, and/or repair leaks. EUENGINE2 was shut down for a total of 43.55 hours from April 1, 2014 through September 25, 2014 before the engine was swapped out. The new EUENGINE1 was shut down for 121.05 hours from September 30, 2014 through March 30, 2015 for replacing filters, valves, spark plugs, and/or repair leaks. The records did not show maintenance concerns with the engines or catalysts.
- **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 FGENGINES on a continuous basis and records the monthly fuel use for each engine at the facility. 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 26-01B was issued.
- **Stack/Vent Restrictions:** Based on visible observations during the field inspections, the stacks of the engines appeared to be at least 43 feet above ground surface.

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

- **Emission Limits:** FGFACILITY is limited 89 tons per 12-month rolling time period of NOx and CO. Based on the records reviewed, the highest emissions were reported as 36.08 tons of NOx per 12-month rolling time period, and 55.17 tons of CO per 12-month rolling time period. The emissions reported for FGFACILITY were in compliance with the permit emission limits.
- **Materials/Fuels:** According to Chevron, no sour gas is burned at the facility.
- **Process/Operational Parameters:** No process/operational parameters were applicable for FGFACILITY.
- **Testing Sampling Equipment:** DEQ did not require the facility to verify the H2S or sulfur content of the natural gas at this time.
- **Monitoring/Recordkeeping:** The facility records monthly and 12-month rolling time period records for NOx, and were supplied to the DEQ for review. The 12-month rolling time period emissions are discussed above under emission limits. The recordkeeping was acceptable to the DEQ.
- **Reporting, Stack/Vent Restrictions, Other Requirements:** No 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 PTIs 26-01A and 26-01B. No further action is necessary at this time.

NAME Carrie Owens DATE 4/22/15 SUPERVISOR