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

N782855978

FACILITY: MUSKEGON DEVELOPMENT, Dover Facility		SRN / ID: N7828
LOCATION: NE 1/4 SEC 30 T31N R2W, DOVER TWP		DISTRICT: Gaylord
CITY: DOVER TWP		COUNTY: OTSEGO
CONTACT: Bennett Myler ,		ACTIVITY DATE: 10/07/2020
STAFF: Sharon LeBlanc	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: FY2021 scheduled site inspection and records review. sgl		
RESOLVED COMPLAINTS:		

On October 7, 2020, AQD District Staff mobilized to the Muskegon Development Dover CPF Facility (N7828), located in Section 30, T31N R2W, Dover Township, Otsego County, Michigan to conduct a scheduled compliance inspection of the facility. The referenced facility presently operates under Permit to Install No. 215-07. A records request for the period of August 2019 through September 2020 was made electronically on September 11, 2020. Records were received on October 28, 2020. This document reflects both the site inspection as well as records review.

Previous site inspection activities were conducted on November 3, 2016, and October 15, 2019. No compliance issues were identified with respect to the facility at that time.

FACILITY

The referenced facility is a fenced, gated and unmanned CPF station operated by the Muskegon Development Company and is located in the NE ¼ SW ¼ of Section 30, T31N R2W. The station is reported to service Antrim Formation wells in the area. Activities onsite removal of hydrogen sulfide and water from the incoming Natural Gas (NG) stream and compression of the gas in the lines to aid in transport. Removal of hydrogen sulfide is completed using an iron sponge. Water in the NG is removed during a skid mounted desiccant dryer. There is an onsite well, permit number 42715.

To reach the site, District staff traveled approximately 3.5-plus miles on Wilkinson Road (F-44) from it's intersection with M-32, to the intersection of Wilkinson and Marquardt Roads. Turning left on Marquardt Road, travel north approximately 2 miles to Blahowiak Road. Turn left again, and travel approximately ½ mile to the west, shortly after passing the wooded parcels, the properties will open up for agricultural use, and a trail will be on the south side of the road, with a gate (no sign), turn left and travel south down the trail road to the CPF, just hidden from view in the woods.

A review of aerial photos readily available on the internet indicate that the location was an active oil and gas facility as early as May 1993. Aerials for May 1993 show the Facility as constructed. The permit application for permit 215-07 reports the installation date for the equipment as 1998.

Immediately adjacent properties include wooded parcels, as well as cleared parcels for agricultural use.

Weather conditions at the time of the site inspection included overcast skies, with temps in the low 50's.

REGULATORY

Permitting -The referenced facility operates under Permit to Install (PTI) No. 215-07, which was issued to the Facility on August 21, 2007. The PTI was issued as an opt-out permit based on operation of engine with a 3-way catalyst and the ability to swap out permitted engine(s) onsite. The permit application indicated that the permit was to cover replacement of a non-permitted CAT 3516LE engine with a CAT 398TAHCR onsite. The facility is considered an area source of HAPs.

Emission units associated with the site are limited to the compressor engine (EUENGINE01). Engines of record include the following:

Emission Unit	Description	Control	Install Date	Removal Date
Exempt	CAT 3516 LE Lean Burn	UNK	1998	2007

EUENGINE01	CAT 398TAHCR 4-Stroke Rich Burn 700 HP Sn KI11922	3-way catalyst	2007	NA

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.

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;

- 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);

With regards to the existing engine(s) it appears that based on install dates that EUENGINE01, the Caterpillar 3516 CTA may be subject to NSPS Subparts IIII for Compression Ignition (CI) RICE. District staff requested clarification regarding applicability of RICE NESHAP for EUENGINE1. But the requested information was not provided during report preparation.

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 A.K.A. MACT) the following Subparts may apply:

- Subpart HH (HAPS from Oil and NG Production Facilities)
- Subpart ZZZZ (Reciprocating Internal Combustion Engine aka RICE)

With respect to Subpart HH, the affected unit is believed to be dehy units. However, the Dover Facility operates a dessicant dryer unit, which is not subject to the referenced subpart.

With respect to Subpart ZZZZ, the company at the time of report preparation has provided no information indicating that the existing RICE would not be subject to the referenced subpart. A compliance determination has not been made with respect to this subpart, as at the time of report preparation AQD does not have authority to enforce the subpart.

EQUIPMENT

At the time of the October 7, 2020, site visit AQD Staff identified one compressor with RICE (EUENGINE01), one dessicant dryer, one iron sponge and one above ground tank (80 barrel mung oil tank) with lined-secondary containment were present onsite. The RICE is housed in a building, and no emissions or heat waves were noted from the stacks. EUENGINE1 reported to be a CAT 398TAHCR with a catalyst on a skid labeled "GCS912". The engine type and skid ID number is consistent with the unit reported present during the November 3, 2016 site inspection. The Facility reports no engine replacements or engine swings during the August 2019 through September 2020 period. EUENGINE01 was equipped with an AFR meter.

MAERs submittals for the Facility reported only emissions for the CAT 398 TAHCR compressor engine.

At the time of the site visit, operational parameters for EUENGINE1 include: 1018 RPM, engine oil temperature of 200 degrees. No daily operational log sheets, or engine maintenance log sheets were found onsite at the time of the site visit.

COMPLIANCE

MAERS- The Facility reports annual emissions as part of the Michigan Air Emission Reporting System (MAERS). A review of records indicate that annual emissions reported included emissions for one RICE (EUENGINE01). Reporting was initiated with the 2012 calendar year. Submittals appear to be complete and submitted in a timely manner. The most recent reporting for calendar year 2019 was submitted on February 13, 2020. Reported emissions are summarized later in the report.

Malfunction Abatement Plan

A Malfunction Abatement Plan (MAP) was received on October 24, 2007 for the Facility. No other MAP is of record for the Facility and its associated RICE. The referenced document was submitted to meet special condition 1.3 (SC 1.3) of permit 215-07. No MAP approval letter was found in District files.

Per the Facility MAP, a daily pumper log is completed documenting operational data for the compressors and their associated RICE. Supplemental data is recorded every 6 weeks by the engine/compressor service company. In order to address engine maintenance and service, every 6 weeks or 1000 hours the Facility reports their engine/compressor service contractor will conduct specific maintenance activities including:

- Oil and filter change
- Oil sample collection for analysis
- Check air filter
- Check fuel pressure
- Check ignition timing
- Check, clean and change (if appropriate) spark plugs
- Test shut down system.

In addition to the above activities, the engine/compressor service contractor is reported to conduct every 12 weeks or 2000 hours a valve adjustment and compression check. 3-Way catalyst activities in the MAP identify cleaning or replacement of catalyst when the differential pressure or is "high" or the differential temperature is "low".

A review of the maintenance records provided for EUENGINE1 (Cat 398) indicated that with respect to the referenced activities, that NGCS had been contracted to conduct maintenance activities. The field maintenance reports clearly identified the engine model and serial number, as well as the date and location of the work and appropriate operating data for the unit. A note by Facility staff indicated that an incorrect Sn was used on some of the maintenance records.

Information provided by the Facility indicates that the CPF was shut-in (not operating) for the period of January through August 2020. Engine services are being conducted in general compliance with the PM/MAP. In addition, National Gas Compression Systems (NGCS) also conducted monthly recordkeeping of catalyst temperature and differential pressures. Based on increased temperature across the catalyst, and presence of a consistent differential pressure it would appear that the catalyst is functioning appropriately.

Engine operational data observed as part of the October 7, 2020, site visit was consistent with operational data documented on NGCS Maintenance logs available during operations.

Permit Conditions -Special conditions associated with Permit No. 215-07 are limited to conditions for the compressor engine EUENGINE01.

EUENGINE01 -Conditions include testing, design/equipment parameters, operational restrictions, record keeping, reporting and emission/material limits.

Material limits associated with EUENGINE01 include SC 1.2 which does not allow the use of sour NG as fuel for EUENGINE01. Sour Gas is defined as any gas containing more than 1 grain of hydrogen sulfide (16.5 ppm) or more than 10 grains of total sulfur per 100 standard cubic feet. The Facility reported H2S concentrations of 0 ppm for incoming gas stream. H2S concentrations are obtained by Facility operators using drager tubes. Testing was conducted on October 16, 2020.

Permit 215-07, EUENGINE01 includes a number of conditions that are specific to emission units with add on control devices. EUENGINE01 has a 3-way catalyst for control of NOx and CO. These permit

conditions include:

- Installation, maintenance and operation of the control device in a satisfactory manner (SC 1.5).
- Limited operation of the emission unit to 200 hours or less without the control device within a 12-month rolling time period (SC 1.4).
- Monthly records of total monthly and 12-month rolling total hours in which the emission unit operated without the control device. (SC 1.10)

Records provided by the Facility indicate that EUENGINE01 did not operate without it's control device for the period of August 2019 through September 2020. Noting that the engine did not operate for the period of January through August 2020.

Under Permit 215-07, EUENGINE01 has both NOx and CO 12-month rolling total limits (SC 1.1a and 1.1b). The following table summarizes both the MAERS for the calendar years of 2017, 2018, as well as the highest 12-month rolling time total from reported to date for 2019. All reported emissions were below permit limits.

EUENGINE01, CAT 3406 TAHCR with 3-way catalyst

CALENDAR YEAR	NOx (tons/year)	CO (tons/year)
Year to Date*	1.31	0.76
2019	2.1	4.4**
LIMIT	10.3 (SC 1.1a)	13.4 (SC 1.1b)

* reflects the 12-month rolling period ending September 2020.

** CO concentrations reported for MAERS 2019 appear to be approximately 1 ton higher than the December 2019 monthly spreadsheet documenting monthly and 12-month rolling. Suspect that a typo may have occurred during MAERS submittal.

Calculation of actual emissions on a monthly and 12-month rolling total for CO and NOx are based on engine manufacturer specs for each engine in compliance with conditions SC 1.12 & 1.13 and Appendix A of the permit. Records provided indicated compliance with permit conditions.

District files contain no copies of requests by District Staff for formal verification of NOx and CO emission factors by testing be conducted for FGENGINES. Therefore, condition SC 1.6 is not applicable at this time.

Monitoring and recordkeeping conditions for EUENGINE01 include:

- Fuel usage for each engine monitored on a continuous basis, and recorded monthly, (SC 1.7 and 1.11)
- Maintain a log of all maintenance activities conducted according to the PM/MAP (SC 1.9)
- Monthly and 12-month rolling total NOx emission calculations (SC 1.12)
- Monthly and 12-month rolling total CO emissions (SC 1.13)

Upon request the facility provided copies of the above required records in a timely manner and in compliance with permit conditions.

With reference to continuous monitoring and recordkeeping of fuel usage for EUENGINE01, the Facility has provided appropriate monthly records for the engine and the data is used to determine total emissions for the Facility on a monthly and 12-month rolling average. 12-month rolling totals are reported annually as part of the MAERS reporting process and are summarized earlier in this report. Data reported appears consistent with emission records provided.

Reporting requirements under Permit 215-07 (SC 1.9) include notification (except as provided in Rule 285) of replacement of any engine with an equivalent or lower emitting engine. The notification is required to include acceptable emissions data to show that the alternate engine meets the equivalent or lower emissions. Records provided indicate that no engine swap has been made of EUENGINE01.

Stack requirements for FGENGINES include the following:

ENGINE	EUENGINE1 (CAT 3516)
Reported Exhaust Diameter (inches)	6
Maximum Exhaust Diameter (inches)	12 (SC VIII.1)
Reported Height (ft above land surface)	30
Minimum Height (ft above land surface)	30 (SC VIII.1)

SC 1.14 requires the stack height for EUENGINE01 meets requirements within 60 days of the permit issuance. As indicated in the above table, stack dimensions were in compliance with permit conditions at the time of the site inspection.

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No compliance issues were identified with respect to the facility at that time. No compliance issues were identified as a result of the October 7, 2020, site visit, or review of data provided by the Facility. Based on information provided, the Facility appears to be operating in compliance with PTI 215-07.

NAME _____ DATE _____ SUPERVISOR _____

Sharon LeBlanc

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