

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION

**FCE Summary Report**

Facility : MUSKEGON DEVELOPMENT, LITTLE CRAPO LAKE	SRN : N6188
Location : T29 N R1W SEC 18	District : Gaylord
	County : OTSEGO
City : CHARLTON TWP      State: MI      Zip Code : 49751	Compliance Status : Compliance
Source Class : SM OPT OUT	Staff : Sharon LeBlanc
FCE Begin Date : 10/1/2017	FCE Completion Date : 10/1/2018
Comments : FCE for synthetic minor Facility for Fiscal year 2019.	

**List of Partial Compliance Evaluations :**

Activity Date	Activity Type	Compliance Status	Comments
10/01/2018	Scheduled Inspection	Compliance	unannounced, scheduled site inspection for FY2019. sgl
02/13/2018	MAERS	Compliance	2017 MAERS Reports Cat 3516 Engine and one glycol dehydrator. Submittal uses maers EFs for all but Nox and CO emissions for EULOWEMENG. Increase in 106% thruput reported from previous year.

Name: Sharon LeBlanc      Date: 11/21/2018      Supervisor: SN

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

N618846493

FACILITY: MUSKEGON DEVELOPMENT, LITTLE CRAPO LAKE		SRN / ID: N6188
LOCATION: T29 N R1W SEC 18, CHARLTON TWP		DISTRICT: Gaylord
CITY: CHARLTON TWP		COUNTY: OTSEGO
CONTACT: MICHAEL A MESBERGEN, ENGINEER		ACTIVITY DATE: 10/01/2018
STAFF: Sharon LeBlanc	COMPLIANCE STATUS: Compliance	
SUBJECT: unannounced, scheduled site inspection for FY2019. sgl		SOURCE CLASS: SM OPT OUT
RESOLVED COMPLAINTS:		

On Monday, October 1, 2018, AQD District Staff mobilized to the Muskegon Development Little Crapo Lake Facility (AKA State Charlton Facility) (N6188), located in Charlton Township, Otsego County, Michigan to conduct an unscheduled compliance inspection of the facility. The referenced facility presently operates under Permit to Install No. 742-96. A records request was made electronically on October 3, 2018. Records were received on November 1, 2018 and November 19, 2018.

Previous site inspection activities were conducted on October 29, 2014. No compliance issues were identified with respect to the facility at that time.

## FACILITY

The referenced facility is a fenced and unmanned CPF station operated by the Muskegon Development Company and is located in the SE ¼ of Section 18, T29N R1W. The Facility is also referred to as St Charlton. At the time of the site inspection the facility gate was open. Activities onsite include separation of gas and brine from the incoming Natural Gas (NG) stream and compression of the gas in the lines to aid in transport.

To reach the facility Staff traveled south from the intersection of Old State Road (F-38) and Little Crapo Lake Road approximately 0.5-miles, to the intersection of Little Crapo Lake Road and an overhead consumers powerline. At the intersection make a left (east) and travel approximately 1/10-mile. The Facility is located on the left-hand side of the road.

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 1992, with removal of at least one building and associated equipment in the location of what is presently the area of the above ground tank and secondary containment area, and addition of the present compressor building sometime between 1999 and 2005.

Adjacent properties were identified as being property of State of Michigan and appears to be undeveloped, forested lands.

Weather conditions at the time of the inspection included overcast skies and temperatures of approximately 55 degrees Fahrenheit, and spotty showers.

## REGULATORY

Permitting -The referenced facility operates under Permit to Install (PTI) No. 742-96, which was issued to the Facility on December 19, 1996. The PTI was issued as an opt-out permit, but not a Rule 201 permit and was issued around the same time as other Michigan Oil and Gas Association (MOGA) permits that did not undergo 201 reviews. The PTI conditions were generic and refer to the stationary source as a whole rather than conditions that address individual pieces of equipment.

District files contain no records of equipment onsite at the time of permitting. But was believed to have consisted of at least one NG-fired compressor and one glycol

dehydration unit and was reported to have the potential to emit over 100 tons of NOx. The referenced permit limits the emissions to 89 tons per year for NOx, CO and VOCs.

Review of District Files identified the following requests to void the above referenced permit:

- February 28, 2007, and
- January 8, 2015

The initial request indicated that inherent limits such as a lower than design gas supply resulted in a lower potential to emit for a number of facilities. The later request indicated that equipment presently onsite were exempt under Rule 285(g) (RICE) and Rule 290 (glycol dehydrator). File information indicated that the requests were withdrawn by the company September 21, 2010 and March 24, 2015, respectively.

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 a manufacture date of 1998 and install dates of January 1, 1999 (per MAERS), reported by the company, that EULOWEMENG, the Caterpillar 3516 LCTA would not be subject to NSPS Subparts IIII for Compression Ignition (CI) RICE.

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 the dehy unit. However, the facility reports that it is not subject to the subpart because it's average throughput is less than 3 million cubic feet per day (MMcfd) for the period of January 2015 through September 2018. A compliance determination has not been made with respect to this subpart, and at the time of report preparation AQD does not have authority to enforce the 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, and at the time of report preparation AQD does not have authority to enforce the subpart.

**EQUIPMENT**

At the time of the October 1, 2018, site visit AQD Staff identified one compressor with RICE, one glycol dehydrator and one above ground tank with lined-secondary containment onsite. With the exception of the AST in secondary containment, each of the referenced pieces of equipment are housed separately. A load out exists near the gate, however, it does not appear to be for petroleum products.

At the time of the October 1, 2018, site inspection, heat waves from the engine stack, and intermittent moisture emissions from the glycol dehydrator (fast dissipating and no odor), no other visible emissions were noted.

A review of previous site inspection reports and district files only identified one RICE associated with the site. No records of previous engine replacement activities were found in MAERS or in District Files. Maintenance records provided as part of this compliance evaluation included documentation of an “engine swing” or “like for like” conducted on August 29, 2016. Based on available information the following engine is associated with the site:

INSTALL DATE	MAERS ENGINE ID	TYPE	Dismantle Date	SOURCE
1/1/1999	EULOWEMENG	CAT 3516 LCTA 1150 Hp Lean Burn No Controls	NA	MAERS

Note that documentation in District Files (copies of records) indicates that the following Model 3516 CATs are associated with the site:

MAKE & Model	Serial No.	Time Period of Record	Source
CAT 3516	4EK02238	2003-2005	Previous information Request
CAT 3516 T/A	4EK02781*	6/9/2017 – 6/28/2018	NGCS Field Maintenance Logs
CAT 3516 TA	4EK02781*	8/29/2016 -4/6/2017	ArchRock Field records and Midland Engine Rebuild Invoice.

\* these reflect the same engine, the Facility reports an engine stack height of 14.5 ft and stack diameter of 12-inches.

No Malfunction Abatement Plan (MAP) is of record for the Facility and it’s associated RICE. Maintenance records provided by the Facility appear to indicate that appropriate maintenance activities are being conducted onsite. NGCS records provided identified the site and compressor as St. Charlton and U-1290S. Which the Facility is also referred to.

Engine operational data observed as part of the October 1, 2018, site visit appears to be consistent with operational data documented on daily operational logs and spreadsheets. Operational data was also noted to be consistent between those reported in maintenance records and the company’s operational spreadsheets.

**EULOWEMENG, Cat G3516**

Date	Engine	RPM	Oil Temp	Source
10/1/2018	Unit 395	862	184 degrees	On Site
6/28/2018	U1290-s	894	183 degrees	NGCS
8/18/2017	U1290-s	961	174 degrees	NGCS
6/9/2017	U1290-s	968	171 degrees	NGCS

The glycol dehydrator associated with the site was reported to be installed on October 1, 1989. As previously indicated that facility is reported to process only Antrim gas. Records provided for the period of January 2015 through September 2018 indicated a consistent average circulation rate of 0.670 gpm. The referenced equipment is reported to have had a throughput of less than 3.0 MMcf/d for the entire reporting period.

**COMPLIANCE**

At the time of the October 1, 2018, site visit, no visible emissions were noted to be coming from onsite stacks, nor were there any liquids collected in the secondary containment of the brine tank.

**MAERS-** Reporting of actual emissions for CO, NOx, VOCs and HAPs is required under special condition 18 of the permit. A review of the most recent MAERS submittal for the facility (received on February 8, 2018 for emissions associated with the calendar year 2017) included emissions for one RICE and one glycol dehydrator onsite.

**Permit Conditions -**Special conditions associated with Permit No. 742-96 are limited to record keeping, reporting and emission limits. Emission limits for the facility are defined in special conditions 13 and 14. These two conditions limit CO, VOC and NOx emissions to 89 tons/year for each referenced parameter as well as individual HAPs to below 9 tons/year and total HAPs to below 22.5 tons/year.

The following table summarizes both the MAERS for the calendar years of 2014 through 2017, as well as the 12-month rolling time total as of September 2018. All reported emissions were below permit limits.

Reporting Period	NOX (12-Month Rolling)	CO (12-Month Rolling)	VOC (12-Month Rolling)
August 2017 – September 2018	6.46	7.75	0.86
2017	7.45	8.94	1.97
2016	3.61	4.34	0.96
2015	7.84	9.40	2.08
2014	7.96	9.55	2.11
Limit	89 tpy	89 tpy	89 tpy

\*Note that Appendix A HAP emission factors indicate “nil” for Antrim wells.

Calculation of actual emissions on a monthly and 12-month rolling total for CO, NO<sub>x</sub>, VOC and HAPS are required under special condition 15. The PTI specifies that emissions will be determined using emission factors from Appendix A. In correspondence dated May 25, 2007, Muskegon Development requested permission to use manufacturer's engine specific emission factors. It should also be noted that the company reported using MAERS EFs for calculation of emission totals for the glycol dehydrator. A review of the EF indicated that the EF is in fact from Appendix A of the permit and is in compliance with the permit conditions.

Special condition No. 16, 17 require Monthly records of:

- Fuel consumption, in million cubic feet (MMcf)
- Crude/condensate throughput to the tank in barrels (bbls)
- Hydrocarbon liquid trucked offsite (bbls), and
- Oil and gas processed onsite

It should be noted as no oil is processed onsite, neither monthly oil processing or hydrocarbon liquid totals are associated with the facility. The other requested monthly records were submitted as requested. Monthly gas production records provided were consistent with those that would verify the less than 3.0 MMcfd for the glycol dehydrator.

Special condition 19 requires the owner or operator of the source to conduct all necessary maintenance and make all necessary attempts to keep all components of the process equipment in proper working order and maintain a log of significant maintenance activities and all repairs made to the equipment. Muskegon Development provided upon request field maintenance reports completed by their subcontractor for both compressors/engines onsite in compliance with permit requirements.

Special condition 20 applies to crude oil or condensate storage tanks greater than or equal to 952 barrels, and the liquid having a true vapor pressure of greater than 1.5 psia. This condition is not applicable as the facility does not store crude or condensate onsite.

Special condition 21 applies to malfunction of a pollution control device and limits bypass of the control device for a period not to exceed 48 hours per event nor a total of 144 hours per calendar year. No control device is associated with the facility.

Special condition 22 requires the owner or operator of an oil-gas facility constructed on or after January 20, 1984 to determine if they are subject to Federal standards in 40 CFR, Part 60, Subpart KKK. No hydrocarbon liquids are reported to be produced at the facility, so the facility is reported not to be subject to the referenced Subpart.

Special condition 23 refers to requirements associated with verification stack testing for CO, VOC, NO<sub>x</sub> or HAP. No request for verification testing was found in District Files, so the condition is not applicable at the time of the report preparation.

Special condition 24 requires the facility to only process sweet gas as defined in Rule 119. The Facility was sampled using stain tubes. Information provided that the wet gas contained 0 ppm hydrogen sulfide, which would confirm that the gas stream is in compliance with the referenced special condition.

## SUMMARY

MACES- Activity Report

On Monday, October 1, 2018, AQD District Staff mobilized to the Muskegon Development Little Crago Lake Facility (AKA State Charlton Facility) (N6188), located in Charlton Township, Otsego County, Michigan to conduct an unscheduled compliance inspection of the facility. The referenced facility presently operates under Permit to Install No. 742-96.

A records request was made electronically on October 3, 2018. Records were received on November 1, 2018 and November 19, 2018.

Previous site inspection activities were conducted on October 29, 2014. No compliance issues were identified with respect to the facility at that time.

Based on observations made, and information provided and reviewed, it appears the facility is operating in general compliance with their permit.

NAME Shaunette Stone

DATE 11/21/2018

SUPERVISOR NS