

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

N290146104

FACILITY: Consumers Energy - Muskegon River Compressor Stat		SRN / ID: N2901
LOCATION: 8613 Pine Rd., CHURCH BRIDGE		DISTRICT: Saginaw Bay
CITY: CHURCH BRIDGE		COUNTY: CLARE
CONTACT: Parish Geers , Compressor Station Field Leader		ACTIVITY DATE: 08/01/2018
STAFF: Benjamin Witkopp	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Facility Inspection		
RESOLVED COMPLAINTS:		

On August 1 2018, Ben Witkopp of the Michigan Department of Environmental Quality - Air Quality Division (MDEQ-AQD) inspected the Muskegon River Compressor Station owned by Consumers Energy. It is located east of Marion Michigan and north of Temple near the the west bank of the Muskegon River. The facility is covered by Renewable Operating Permit (ROP) MI-ROP-N2901-2014. The facility consists of compressor buildings, a glycol dehydration system, and a maintenance shop. The dehydrator is equipped with a thermal oxidizer.

During the late spring, summer, and early fall months natural gas is taken from a pipeline and routed into underground geological formations. This encompasses three different well fields. During the fall and winter the situation is basically reversed. Gas is withdrawn, water is removed by the glycol dehydrator, and the gas is sent into the pipeline distribution system. Records showed operation typically occurring from October through the following March.

Mr. Parish Geers was the facility contact and a records review was conducted in an available office. Records were requested based on topic and Parish provided them. The dehydration system has a benzene limit of 0.8 tpy. The thermal oxidizer should maintain a daily average minimum temperature of 1,400 +/- 50 degrees F. During operating months, the benzene emissions were very small in terms of tons per month. The 12 month rolling time period values were less than 0.016 tons per 12 month rolling time period. Two years of records were checked. The company tries to maintain a normal operating temperature of about 1,500 degrees F to provide a cushion well above the minimum required. If / when the temperature falls below a set point, or an electric eye senses a flame out, an alarm is triggered and the operator begins checking and fixing the problem. The down time was very small in relation to "up" time. Logs showed only a few instances where the temperatures were out of range, and then only for very short periods. The records had operator documentation for the cause of any incident. Of the few out of range times most were due to unit testing or work on servers being done.

Wet gas stream analysis was being performed and the results used in computing emissions. The gas is tested each month. The sampling is always done on the Kalkaska meter valve 417. The following components are included in the analysis: nitrogen, carbon dioxide, C1 through C6 series, benzene, toluene, xylene, ethylbenzene (BTEX) and hexane. Because the dehydrator has a thermal oxidizer and the benzene emissions are restricted to less than one ton per year, the system is exempt from 40 CFR 63 Subpart HHH.

The site has three emergency generators. Two are located south of Pine Rd and the other is located on the north side. The generators are subject to subpart ZZZZ. A review of the records show the units are started for testing and run for a few minutes each week. The oil is checked for degradation. The total acid number for the engines was typically near 1.9. The viscosity values showed no degradation and the percentage of water was below detection limits. The most usage occurred in mid October 2017 during a power outage. During that period all engines were run. Engine 1 ran for 11.3 hours, engine 2 11.8 hours, and engine 3 30.1 hours. Maintenance is routinely performed and includes changing filters and plugs, checking belts and hoses, etc.

The turbine is not subject to the subpart YYYY of the MACT standards for stationary combustion turbines because it was constructed prior to January 14, 2003. It is also not subject to NSPS subpart GG because it was constructed prior to October 3, 1977. If the unit is reconstructed then it might become subject to the aforementioned standards. There is a requirement to record usage of natural gas and the records are present. It should be noted the unit is typically run from November through February.

The compressors are all natural gas fired units and are required to have records of gas consumption rates which were present. The compressors aren't subject to subpart ZZZZ due to their age. If they are reconstructed then they may become subject.

One cold cleaner is used on site and it is located in the maintenance shop. Records show it was installed in 1994. It was not being used at the time of inspection. Dyna 143 is still used as the solvent and it is essentially hydrotreated light distillates. Operating instructions were posted and it has filters, parts drainer, and lid. The solvents vapor pressure was listed as being 0.0077 psi.

The facility also has two very small process heaters and one very small comfort / process heater. They are subject to Subpart DDDDD, the boiler MACT. Due to the small size, the units are subject to the initial energy assessment, tune-up, and notification requirements. which were all completed.

Only a few compressors were running at the time of inspection and those were in the facility on the south side of the road.

The glycol dehydration system was not in operation.

For potential future reference, Parish previously provided the following information concerning the horsepower and serial numbers of the engines.

#### 2,600 HP

Clark H-9            serial #49009

Clark H-10        serial #49010

Clark H-11        serial #49011

Clark H-12        serial #49012

#### 3,400 HP

Clark T-11        serial #79011

Clark T-12        serial #79012

#### 3,450 HP

Delaval 3-1       serial #72044

Delaval 3-2       serial #72045

Ingersoll Rands – 800 horsepower serial #'s

82FL306

82FL316

82FL319

82FL320

Plant 2 Generators – Waukesha – 325 KW serial #'s

C-93420-901/1

C-93420-904/1

Plant 3 Generator – Caterpillar – 606 horsepower serial #

7NJ00028

Cooper Bessemer Centrifugal compressor            serial #278RC

NAME B. Smith

DATE 9-13-18

SUPERVISOR C. Hall