

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

B709358672

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| FACILITY: Jaguar Energy | | SRN / ID: B7093 |
| LOCATION: 335 Washington St., MANISTEE | | DISTRICT: Cadillac |
| CITY: MANISTEE | | COUNTY: MANISTEE |
| CONTACT: John Ward , Plant Superintendent | | ACTIVITY DATE: 06/23/2021 |
| STAFF: Kurt Childs | COMPLIANCE STATUS: Compliance | SOURCE CLASS: MAJOR |
| SUBJECT: 2021 FCE site inspection and records review. | | |
| RESOLVED COMPLAINTS: | | |

Introduction

I conducted a scheduled FCE onsite inspection of Aztec Producing Company (Aztec) located at 335 North Washington Street in Manistee, Michigan (SRN No. B7093). The purpose of the inspection was to determine the source's compliance with Renewable Operating Permit (ROP) MI-ROP-B7093-2014 and the Air Pollution Control Rules. I met with Mr. John Ward, the plant Superintendent. Mr. Ward accompanied me on a tour of the plant and described the process and identified each piece of process equipment. We discussed plant operations and reviewed records.

Off-Site Observations

At the time of the inspection the weather was overcast, temperature 70 degrees F, and 10 mph winds from the southwest. The plant is entirely enclosed by fencing that is marked at regular intervals with plant identification and warning signs. There are two entrances. There are two larger buildings and several outbuildings as well as a tank battery.

Aztec is an area source pursuant to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (40 CFR, Part 63, Subpart ZZZZ (RICE MACT)) (FGRICEMACTZZZZ) and the NESHAP from Oil and Natural Gas Production facilities (40 CFR Part 63, Subpart HH) (EUDEHY). Additionally, Aztec would be subject to 40 CFR, Part 60, Subpart KKK, Subpart Kb, and Subpart LLL, but the source commenced construction prior to the effective dates of the regulations and has not been modified. The above ground storage tanks at the source are not subject to 40 CFR Part 60 Subpart Kb because they were used prior to ownership of the Property.

The emergency flares and SVSO2STACK were visible from off site. SVFLARESTACK had a visible pilot flame burning with no visible emissions. There were no visible emissions from SVSO2STACK. The EUDEHY flare stack had a visible flame and light visible emissions (5% opacity).

On-Site Inspection

Natural gas, brine, condensate and oil flow to Aztec from on-site wells and wells located at two off-site locations. The Manistee Producing facility is located approximately 1 half mile

away and includes a Caterpillar 3306 compressor engine to move gas from 4 wells to Aztec. The Bullis well site has one Caterpillar 3304 compressor engine. Both engines are well below 10 MMBtu heat input.

The main building in the central portion of the site contains separation equipment, a two-part heater treater (one for heating, one for separation) that has replaced EUHEATERTREATER and amine (Sulfinol per Mr. Austin) gas sweetening process equipment (EUSWEETENING). Most of this equipment was in operation at the time of the inspection. There are a couple of production units with burners - low black stacks - that are no longer in operation. EUSWEETENING includes an amine reboiler used to reclaim the Sulfinol solution. The reboiler burns natural gas and sour gas from the sweetening process. Exhaust gasses are sent to SVSO2STACK which is a 150' tall stack.

Brine and crude oil separated from the gas stream are stored in three 400bbl above ground storage tanks (EUTANK01, EUTANK02, EUTANK03) equipped with a vapor recovery system which was operating at the time of the inspection.

The other main building on the southwest portion of the site contains a 3-stage compressor and engine (EUNATGASENG01), a compressor and engine EUNATGASENG02 used for the refrigeration process (EUENGLPLANT), and a glycol dehydrator (EUDEHY).

EUNATGASENG01 was operating at the time of the inspection running at 1383 rpm with no visible emissions from the exhaust. The compressor skid has the identification number NGCS8 and includes EUNATGASENG01 which is identified as a Caterpillar G3406 in-line 6-cylinder engine. This is consistent with the description in the ROP which also indicates it is a rich burn engine. There were no control devices on the engine exhaust.

The compressor engine and refrigeration process were not in use at the time of the inspection and have not been since 2014 according to Mr. Ward. Two NGL storage tanks (EUBULLET01 and EUBULLET02) and an iron sponge are also associated with this process.

EUDEHY was operating at the time of the inspection as mentioned, there was light opacity at the flare, but there were no significant odors.

All of the process equipment on site, as well as the crude oil and brine tanks are connected to SVFLARESTACK for emergency venting. As indicated above, SVFLARESTACK was being maintained with a pilot flame. Mr. Ward stated that the large pilot flame is maintained due to the plant being located near lake Michigan and is subject to high winds off the lake.

Compliance Evaluation

EUDEHY:

EUDEHY underlying applicable requirements are from 40 CFR, Part 63, Subpart HH. Aztec is an area source and the State of Michigan has not been given delegated authority of 40 CFR, Part 63, Subpart HH for area sources from USEPA. Therefore, a compliance evaluation with regard to Subpart HH has not been conducted.

FGSOURGASPLANT:

FGSOURGASPLANT includes the natural gas sweetening process (amine process), refrigeration process of the NGLs, glycol dehydrator, and above ground storage tanks. The emission units include EUSWEETENING, EUTANK01, EUTANK02, EUTANK03, EUBULLET01, EUBULLET02, EUDEHY, and EUNGLPLANT, and uses a vapor recovery unit, reboiler fire tube (SVSO2STACK), emergency bypass flare (SVFLARESTACK), and glycol dehydrator flare for pollution control measures.

Emission Limits:

I.1: Sulfur dioxide (SO₂) is permitted to 1,350 pounds (lbs) per day based on a 24-hour average. According to the 2020 monthly records, maximum SO₂ emissions each month were reported between 86 to 130 lbs per day based on a 24-hr average. The SO₂ emissions were within the permitted limits.

Material Limits:

II Not applicable for FGSOURGASPLANT.

Process/Operational Restrictions:

III.1: The acid gas stream is sent to the amine reboiler to be combusted, and in case of an emergency, the acid gas is sent to the emergency bypass flare.

III.2: Alarms are located at each flare in case the pilot light is extinguished. The plant would be shut down if the bypass flare could not be restarted within one hour of operation.

III.3: As stated above, FGSOURGASPLANT is connected to a vapor recovery unit, a reboiler fire tube (SVSO2STACK), and/or the emergency bypass flare (SVFLARESTACK).

III.4: As stated previously, a vapor recovery unit is connected to the above ground storage tanks containing brine water and sour crude oil. If the vapor recovery unit is down, the recovery unit vents to the emergency bypass flare.

III.5 & 6: All inflowing streams to FGSOURGASPLANT shall be shut off if the concentration of hydrogen sulfide (H₂S) in the building is greater than 20 parts per million (ppm). A warning goes off if the concentration is at 10 ppm of H₂S, and then if the concentration of H₂S goes above 20 ppm, the facility will shut-in. Operation of FGSOURGASPLANT may be resumed only after successful corrective measures have been applied. This is more stringent than the ROP limits that state that all the inflowing streams to FGSOURGASPLANT shall be shut off if the concentration of H₂S in the building is greater than 100ppm, and a visual alarm to indicate when the H₂S concentration is greater than 50 ppm.

Design/Equipment Parameters:

IV.1: A device is located inside the main processing building, located in the central portion of the site, which monitors the amount of gas produced on a daily basis.

IV.2: An H₂S system is installed inside the buildings to monitor the concentration of H₂S inside the buildings. As mentioned above, a visual alarm (each of the buildings is equipped with a warning light system near the entrance) will go off is the concentration inside the building is greater than 10ppm of H₂S. H₂S (and LEL) monitors are calibrated quarterly. Precision Gas Detection and Measurement was on-site at the time of the inspection conducting calibrations.

· **Testing Sampling:**

V.1: Daily non-certified visible emissions (VE) observations from the flares and reboiler stack. Daily plant inspections of each of the flares are conducted and recorded on a daily log sheet.

· **Monitoring/ Recordkeeping:**

VI.1: The mass flow rate of H₂S going into the sweetening process is monitored and reported monthly. Records from the past 12 months indicate the highest daily avg. H₂S mass flow rate each month ranged from 86 lbs/day to 130 lbs/day. The H₂S concentration is measured each month using colormetric tubes. Photocopies of each tube are maintained on file.

VI.2: Aztec calculates and records SO₂ emissions on a pound per day, based on a 24-hour average, in an acceptable manner.

VI.3: The Company monitors and records the amount of gas produced on a daily basis both electronically and with paper circle charts.

VI.4: The facility continuously monitors the concentration of H₂S in the amine process building and compressor engines building.

VI.5: The facility has a “Desk Journal” logbook that records abnormal conditions. Most days routine activities and operations are cited. Abnormal conditions are noted and are taken care of in a timely manner. DEQ received no complaints about the facility within this past year. Mr. Ward stated that they do occasionally get complaints about odors when they are working on something or making repairs but they work with the local fire dept.(most of the complaints go to the fire dept.) to notify them these activities are occurring. The AQD has not received any complaints regarding Aztec Producing Company since the last Full Compliance Evaluation.

· **Reporting:**

VII.1-4: Monthly, Semi-annual, and annual reporting for ROP certification were submitted to the DEQ in a timely manner. No deviations were reported.

· **Stack/Vent Restrictions**

VIII.1 & 2: The emergency bypass flare (SVFLARESTACK) is required to be 75 feet tall and the SO₂ reboiler fire tube stack (SVSO2STACK) is supposed to be 150 feet tall and no more than 12 inches in diameter. There have been no changes to SVFLARESTACK and SVSO2STACK which appear to be of the appropriate dimensions.

· **Other Requirements**

IX.1: At the time of the inspection the facility has the appropriate fencing and signage as required by the ROP.

FGRICEMACTZZZZ:

FGRICEMACTZZZZ underlying applicable requirements are from 40 CFR, Part 63, Subpart ZZZZ. Aztec Producing Company is an area source with regards to 40 CFR, Part 63, Subpart ZZZZ. Because the RICE at Aztec Producing Company are non-emergency, non-black start 4SRB engines ≤ 250 HP, the following MACT requirements from Table 2d(10) to Subpart ZZZZ of Part 63 are applicable:

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| <p>10. Non-emergency, non-black start 4SRB stationary RICE ≤500 HP</p> | <p>a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first;¹</p> |
| | <p>b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and</p> |
| | <p>c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.</p> |

These requirements are met through routine maintenance.

Summary

Based on this Full Compliance Evaluation of source operations and recordkeeping it appears Aztec Producing Company was in compliance with MI-ROP-B7093-2019 and the Air Pollution Control Rules at the time of the inspection.

NAME _____

DATE _____

SUPERVISOR _____