

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

P107559493

FACILITY: Layline Oil & Gas, LLC		SRN / ID: P1075
LOCATION: NW 1/4 NW 1/4 of Sec 12, HARRISON		DISTRICT: Bay City
CITY: HARRISON		COUNTY: CLARE
CONTACT: Matt Maciag , Field Foreman		ACTIVITY DATE: 08/11/2021
STAFF: Nathanael Gentle	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled On-site Inspection		
RESOLVED COMPLAINTS:		

On August 11, 2021, AQD staff conducted a scheduled onsite inspection at the Layline Oil and Gas Facility, SRN P1075. AQD staff were accompanied by Mr. Coty Withorn with the Oil, Gas, and Minerals Division (OGMD). Staff arrived onsite at 10:22 AM and departed at 12:20 PM. The purpose of the inspection was to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environment Great Lakes and Energy, Air Quality Division (AQD) Administrative Rules; and to evaluate compliance with the facilities Permit to Install (PTI), PTI No. 130-19A. EGLE staff were originally to be assisted onsite by Layline Oil and Gas Field Foreman, Mr. Matt Maciag, but were instead assisted by Layline Oil and Gas Pumper Mr. Joel Hollar. Requested records were provided by Mr. Ray Brodeur.

Facility Description and History

The Layline Oil and Gas Facility, SRN P1075 is a sour oil and gas production facility located at NW ¼, NW ¼, NW ¼ of Section 12, T20N-R6W, Winterfield Township, MI. Coordinates for the facility are 44.144613000, -84.987233000. The facility is located on private property with nearby residences approximately 300 ft northwest of the facility. Layline Oil Gas, SRN P1075, is a synthetic minor source for SO_x. The MAERS report for 2020 was received on time and complete.

Equipment onsite at the facility consists of two heater treaters, each with a rated heat input capacity of 0.5 MMBtu/hr, two 400-barrel oil storage tanks, a separator, and a flare. Material processed onsite comes from two flowing wells, the State A2 and the Blevins, S.C. III. 2. The State A2 well is a sour well, pulling material from the Detroit River Sour Zone. The Blevins well is not in the sour zone and is currently a sweet well. Material from the wells flows to the site 24/7. Chokes located at the well heads allow personnel to adjust the flowrate of material entering the facility.

As previously mentioned, two heater treaters are onsite. The heater treaters are fueled by sweet natural gas pulled out of nearby gas lines transporting gas from the Richfield zone. Each heater treater processes material from one of the two wells processed at the facility. Material consisting of oil, natural gas, and brine solution flow into the heater treaters. The heater treaters separate the three components. Gas separated in the heater treaters is sent directly to the flare. Oil is sent to one of the two onsite storage tanks where it will later be trucked out. Brine solution separated out by the heater treaters is sent to a water tank at another site down the line where it is then sent to a disposal zone by a vacuum well.

A Separator is also located at the facility. Material flowing to the separator comes from a variety of wells other than the State A2 and the Blevins. All wells that feed the separator are reported to be sweet. Material from the separator is piped to a nearby facility. Being the separator is a closed

system with no air emissions that processes only sweet gas, it appears to meet the requirements of exemption R. 288(2)(d).

Two violation notices (VNs) are on record for the facility. On September 17, 2019 a violation notice (VN) was issued for a Rule 201 violation. The facility was installed and in production prior to issuance of a permit. Layline Oil and Gas submitted a PTI application and Permit to Install (PTI) No. 130-19 was issued on November 19, 2019. Another VN was issued to the facility on April 14, 2020 for an exceedance of material limits. H₂S concentration data from 3/10/2020 indicated the source exceeded the 160 lb/day H₂S limit set forth by PTI No. 130-19 on March 18, 2020, and March 25 through April 5, 2020. In response to the VN, the facility submitted an application for a new PTI that would modify the allowable limits for H₂S and SO₂. On October 13, 2020, PTI No. 130-19A was issued to the facility and replaced PTI No. 130-19. PTI No. 130-19A eliminated daily limits of H₂S and instead established a monthly limit of 8,133 lbs/month of H₂S and an annual limit of 48.8 tons per year of H₂S.

Evaluation of Emission Units

The heater treaters were operating at the time of inspection. Visible emissions were not observed from the unit's stacks. Gas separated in the heater treaters is sent directly to the onsite flare. Each heater treater is equipped with a device to monitor gas flow going to the flare, S.C. I.V. 4. The heater treater receiving material from the sour State A2 well is equipped with a digital meter. The heater treater receiving material from the Blevins well is equipped with a paper disc meter. Gas flow is monitored daily to ensure the equipment is working properly, and quarterly calibrations are completed.

Oil separated in the heater treaters is sent to one of two onsite tank batteries, each with a volume of 400 barrels. Vapors produced by the stored fluids are sent to the flare for combustion, S.C. III. 1. Fluid levels in the storage tanks are monitored daily. Oil is trucked out regularly to be further processed offsite. Tanks onsite are equipped with a vapor return system, S.C. IV. 3. Vapors from tank loadout are captured and sent to the flare.

The onsite flare is equipped with a continuously burning pilot flame. The pilot flame is fueled by propane obtained from an onsite propane storage tank. Fueling with propane ensures gas containing 1 grain or less of hydrogen sulfide is used, S.C. IV. 1.a. Fluid levels in the propane tank are monitored daily. The propane tank is on a refill schedule and filled once a week to ensure enough fuel is always available for the pilot flame. The flare is equipped with a thermocouple to monitor the pilot flame status. In the event pilot flame goes out, the thermocouple temperature will drop below the set temperature range, and fluid flow to the facility is ceased, S.C. IV. 1. Fluid flow is shut down directly at the well head of the sour State A2 well. An Invalco valve is also installed before the heater treater. Phone alerts are sent out to field crew members. If the pilot flame goes out, crews will pull the pilot down and relight it. Once the temperature is back up to the setpoint, valves open back up and production resumes. Each well is also equipped with a murphy switch. In the event fluid pressure is too high, the murphy switches close, ceasing fluid flow from the wells to the facility.

Quarterly readings of the concentration of hydrogen sulfide, H₂S, in the sour gas sent to the FGOILPRODUCTION flare are completed, S.C. VI. 1.b. Samples are collected at the well head. Samples are collected by pulling a gauge, a needle valve is inserted and gas flows into a Tedlar bag. The bag is sealed, and samples are sent to a laboratory for analysis. Records for the last 4 quarterly readings of the concentration of hydrogen sulfide were requested. Records for the 5 most recent sampling results were provided. Samples were taken on 4/9/2020, 9/30/2020, 12/30/2020, 3/16/2021, and 6/17/2021. Analysis was completed on the same day the samples were collected, or within a few days of the collection date. Analysis of all 5 samples was completed by SPL at the Traverse City Laboratory. The lowest H₂S reading was 25000 ppm(v) for the sample collected on 4/9/2020. The highest H₂S reading was 35000 ppm(v) for the sample collected on 9/30/2020. The average value of H₂S for the five sampling dates provided was 31,400 ppm(v).

Volumetric flow rates of sour gas going to the flare per day, per calendar month and per 12-month rolling time period are recorded, S.C. VI.1.a. Appropriate records appear to be in place. Daily records for the volumetric flow rate of sour gas going to the flare for the period of August 2020 to July 2021 were provided and reviewed. During the 12-month period reviewed, the highest daily flow rate recorded was 98 MCF/Day on March 26, 2021. The lowest daily flowrate recorded was 0 MCF/Day. There were 6 days during the reviewed period in which 0 MCF/Day was recorded. At the time of inspection, the meter read 62 MCF of sour gas for the prior day. Based on the current flow rate at the time of inspection, the equipment projected 80 MCF of sour gas would be sent to the flare during that day.

Monthly records for the volumetric flow rate of sour gas going to the flare were provided and reviewed for the period of August 2020 to July 2021. During the 12-month period of records reviewed, January 2021 was the month with the highest volume of gas flow with 2072 MCF of sour gas sent to the flare. The lowest monthly volume was 971.2 MCF in September 2020. During the 12-month period provided, a volume of 20.95 MMCF of sour gas was sent to the flare. This value is well below the permitted limit of 44.17 MMCF/year.

Volumetric flowrate records of sour gas and gas sampling results are used to calculate monthly and 12-month rolling mass flowrate of H₂S, S.C. VI. 2. Monthly and 12-month rolling H₂S mass flow rate records were provided and reviewed for the period of August 2020 to July 2021. The permitted monthly limit of H₂S for the facility is 8,133 lbs/month. The month with the highest mass flow rate of H₂S was November 2020 with 6141.6 lbs/month, H₂S recorded. The facility remained below the permitted limit for all months reviewed. The lowest mass flowrate of H₂S occurred in September 2020 with 2185.7 lbs/month, H₂S. Using monthly mass flowrate records of H₂S, 12-month rolling time period records are tabulated. PTI 130-19A establishes a limit of 48.8 tons/ year of H₂S sent to the flare based on 12-month rolling time period. The highest 12-month rolling time period in the records reviewed occurred at the end of July 2021 with a value of 29.60 tons/12 months, H₂S, well below the permitted limit. The lowest 12-month rolling time period occurred at the end of December 2020 with a value of 20.34 tons/12 months, H₂S.

Calculations and records for the monthly and 12-month rolling time period of SO₂ emissions are maintained, S.C. VI. 3. SO₂ emissions are calculated using volumetric flowrate records of sour gas and gas sampling results. A 95% destruction efficiency is assumed. Monthly and 12-month rolling time period SO₂ emission records for the period of August 2020 to July 2021 were provided and

reviewed. During the reviewed period, the month with the highest SO₂ emissions was November 2020 with 10982.7 lbs/month, SO₂. The month with the lowest SO₂ emissions was September 2020 with 3908.3 lbs/month, SO₂ emitted. The permitted limit of SO₂ emissions for the facility is 89.0 tpy based on a 12-month rolling time period as determined at the end of each calendar month. During the record period reviewed, the highest 12-month rolling SO₂ emissions period occurred at the end of July 2021 with 52.93 tons/12 months, SO₂ emitted, below the facilities permitted limit. The lowest 12-month rolling SO₂ emissions period occurred at the end of December 2020 with 36.4 tons/ 12 months, SO₂ emitted.

The Layline Oil and Gas facility is equipped with H₂S monitors. The air monitors are positioned around the facility to monitor H₂S levels onsite. Measurements taken by the monitors are sent digitally to Layline Oil and Gas personnel. In the event H₂S levels in excess of 25 ppm are detected, Layline Oil and Gas personnel are sent a phone alert and respond to the site. If levels in excess of 50 ppm H₂S are detected, the facility is automatically shut in.

Routine maintenance is conducted at the facility. Layline Oil and Gas Pumpers monitor the facility daily to ensure all equipment is operating properly. Some examples of tasks completed daily include, checking piping for leaks, performing a visual assessment of onsite tanks, and checking equipment valves. If a problem is observed measures are taken to correct the issue.

Summary

The Layline Oil and Gas Facility, SRN P1075, is a sour oil and gas production facility located in Clare County, MI. The facility is a synthetic minor source of SO_x. One active PTI is associated with the facility, PTI No. 130-19A. Material processed onsite comes from two flowing wells, the State A2 and the Blevins. The State A2 well is a sour well, pulling material from the Detroit Sour Zone. The Blevins well is not in the sour zone and is currently a sweet well. Condensate consisting of oil, natural gas and other liquids is fed into the facility to heater treaters. Two heater treaters are onsite; each processes material from one of the two wells processed onsite. The heater treaters are fueled with sweet natural gas. The heater treaters separate the three components. Brine separated out is sent to a waste disposal zone with a vacuum well. Oil is sent to onsite storage tanks where it is later trucked out. Gas from the heater treater and vapors from stored materials are combusted in a flare. Appropriate records are maintained and were provided for review. Based on the records reviewed, the facility appears to be operating within the limits of PTI No. 130-19A. At this time, the facility appears to be in compliance.



DATE 8/25/2021

SUPERVISOR 

NAME