

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

ACTIVITY REPORT: Scheduled Inspection

N832730678

FACILITY: LINN Operating INC -NCharlton 34 (Marstrand Antrim		SRN / ID: N8327
LOCATION: NE 1/4 NW 1/4 SECTION 34 T31N R01W, CHARLTON TWP		DISTRICT: Gaylord
CITY: CHARLTON TWP		COUNTY: OTSEGO
CONTACT: Diane Lundin , Senior EHS Representative		ACTIVITY DATE: 08/14/2015
STAFF: Bill Rogers	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled Inspection and Record Review		
RESOLVED COMPLAINTS:		

On August 14, 2015, I inspected the Linn Energy Marstrand Antrim facility.

Permit 215-09, Table EUDEHY, Condition I.1 sets a benzene limit of 0.056 pounds per hour. Results from a GRI Gly-Calc computer model, attached, report a benzene emission rate of 0.0435 pounds per hour, uncontrolled. This meets the permit requirement.

Condition III.1 requires compliance with the glycol dehydrator MACT standard, 40 CFR 63, Subpart HH. This requires extensive pollution control efforts unless the dehydrator is exempt. There are two grounds for exemption: The dehydrator may be shown to emit less than 0.90 megagrams (about one ton) of benzene per year, or gas processed may be shown to be less than 85,000 standard cubic meters per day (about 3 million cubic feet per day). Linn provided results of a study from Gosling Czubak, attached, indicating that direct measurement shows the gas flow for the Marstrand 34 facility is less than 3 million cubic feet per day. In addition, calculating annual emissions by multiplying the hourly emission rate estimated by 24 hours a day, 365 days a year, gives a benzene emission rate of 0.19 tons per year. The dehydrator at this facility meets both possible exemptions from the pollution control requirements of Subpart HH.

Condition III.2 limits dehy recirculation pump rate to no more than 10 strokes per minute. Attached records indicate the pump is running at 8 strokes per minute.

Condition V.1 requires annual analysis of the natural gas. Results of an analysis dated November 6, 2014, are attached.

Condition VI.2 requires monitoring and recording the dehy pump speed in strokes per minute once per day. An example sheet from the records sent to me which includes this information is attached.

Condition VI.3 requires that if the operator claims exemption from the more stringent pollution control requirements of Subpart HH they must either document that gas processed through the dehydrator is less than 85,000 cubic meters per day and/or that benzene emissions are less than 0.90 megagrams per year. As discussed above, the operator has submitted documentation sufficient to prove the dehydrator meets both of these exemptions.

Condition VI.4 requires calculating benzene emissions. Results of benzene emission calculations are attached.

Condition VI.5 requires recording pump stroke rate from the dehydrator pump each day. A sheet including this information is attached.

Condition VI.6 requires keeping records of wet gas composition. A record of the most recent analysis of the wet gas is attached.

Condition VIII.1 requires the dehydrator still vent have maximum diameter of 2 inches and a minimum height of 21 feet above ground. During my inspection I estimated the dimensions of this stack as 2 inches diameter and about 27 feet above ground.

Table EUENGINE, Condition I.1 sets a NOx emission limit of 89 tons per 12 month rolling time period. Emissions estimates, attached, claim an emission rate of 43.22 tons per 12 month rolling time period.

Condition 1.2 sets a CO limit of 8 tons per 12 month rolling time period Emissions estimates, attached, claim an emission rate of 3.13 tons per 12 month rolling time period.

Condition II.1 limits fuel usage for ENENGINE unless the engine has a pollution control device installed. If there were a pollution control device this condition would be void. The engine at this facility has a catalytic oxidizer in the exhaust line, but there are no thermocouple wires leading to it (which would allow recording its temperature), no display for catalyst temperature, and no record of catalyst data in the facility records. It appears likely the supposed catalytic oxidizer is an empty shell and does not operate as a pollution control device. The fuel limit, therefore applies.

The fuel usage limit is 40.8 million cubic feet per 12 month rolling time period. A data sheet, attached, reports fuel usage of 22.2 million cubic feet per 12 month rolling time period. This complies with Condition II.1.

Condition III.1 requires a Malfunction Abatement Plan. We accepted a MAP from the company for this facility on December 11, 2009.

Condition III.2 prohibits operating an engine without an add-on control device for more than 200 hours per year. Condition IV.1 requires pollution control devices to be installed and operating properly. As discussed above, I believe the catalytic oxidizer is not operating and that the company does not count it as a pollution control device, so these conditions are not applicable.

Condition IV.2 requires a device to monitor and record natural gas use for EUENGINE. Condition VI.2 requires monitoring and recording fuel use in the engine. Fuel use information in attached data sheets makes it appear this device is in place and in use.

Condition VI.3 requires a maintenance log. Example pages from the maintenance log are attached.

Condition VI.5 requires monthly fuel use records. Monthly fuel use is included in attached data sheets.

Condition VI.6 requires monthly and 12 month NOx emission calculations. Condition VI.7 requires monthly and 12 month CO emission calculations. These values are included on an attached emission report sheet.

Condition VIII.1 sets stack dimensions as a maximum diameter of 12 inches and a minimum height of 39 feet. I paced out the length of the stack's shadow compared to the length of my own shadow. Based on this estimate it appears the stack dimensions meet this condition.

Table FGFACILITY, Condition II.1, prohibits burning sour gas in the facility. Gas analysis data, attached, indicates the gas processed at the facility is not sour. I didn't see any evidence of sour gas being burned at the facility.

COMMENTS:

The facility compressor shed contains one Caterpillar natural gas fired compressor engine. It is labeled as GCS 833 in metal letters welded to the engine mount, identifying it as Unit 833 of Gas Compression Services. It was running at 1008 RPM. Engine oil pressure was 60 PSI, engine water temperature 180 degrees f, and compressor oil pressure 55 PSI.

There is a catalytic oxidizer in the exhaust pipe, but it has no wires running to it, there is no temperature readout for it, and plant operators were not recording catalyst information on the plant data sheet. Therefore it appears to me that the pollution control device is not operating. However, Permit 215-09 allows operating without a control device as long as natural gas fired in the engine is less than 40.8 million cubic feet per 12 month rolling time period.

I took temperatures on the outside of the catalytic oxidizer using AQD's remote thermometer. Temperature was 468 degrees f on the inlet side and 432 degrees f on the outlet side. A drop in temperature rather than a rise across a catalytic oxidizer suggests the oxidizer is not burning any pollutants out of the air, which is a likely indication that the oxidizer is not operating.

The exhaust leaves the building through a horizontal pipe to a horizontal muffler outside. Following the muffler an elbow directs the exhaust to a tall vertical stack. The exhaust is unobstructed vertically upward.

The glycol dehydrator is in a shed adjacent to the compressor shed. The burner capacity was not marked. The dehydrator still vent was high. Permit conditions require 2 inches diameter or less and 21

feet height or more; to me it appeared to be 2 inches diameter and closer to 30 feet in height, perhaps 27 feet. The dehy burner stack was perhaps 8 inches diameter and 22 feet high.

Tanks on site included the following:

Inside a well maintained lined berm, one 400 barrel tank which was unlabeled but was likely a brine tank; also two smaller tanks, perhaps half the capacity of the large one. One of these was labeled slop tank and the other condensate.

In the compressor shed two 300-gallon drum on stilt style tanks, one labeled ISO 100 lube oil and the other labeled as engine oil.

Near the dehy shed, two 300-gallon drum on stilt tanks and two larger drum on stilt tanks. The 300 gallon size tanks were labeled Techni-Hib and Techni-Wet. One of the larger tanks was labeled Techni-Hib and the other as methanol. I didn't see a triethylene glycol tank, as I would have expected, but there was another 300 gallon drum on stilts tank inside the dehydrator shed itself. I didn't see a label on this tank, but it would be reasonable to think it could be glycol.

Facility maintenance appeared good. I didn't see any stained soils that might indicate leaks or spills.

There are two concrete pads which appear to be the remains of two more buildings which were once on this site. This hints the facility may contain less equipment and have less capacity than it once did.

NAME William J Rogers L

DATE 8/26/15

SUPERVISOR 

