

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

N245533467

FACILITY: BreitBurn Operating LP - KALKASKA 1-21 CPF		SRN / ID: N2455
LOCATION: SE 1/4 SE 1/4 SECT 21, KALKASKA TWP		DISTRICT: Cadillac
CITY: KALKASKA TWP		COUNTY: KALKASKA
CONTACT: Carolann Knapp, Environmental Specialist		ACTIVITY DATE: 02/10/2016
STAFF: Caryn Owens	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled Field Inspection and Records Review		
RESOLVED COMPLAINTS:		

On Wednesday, February 10, 2016, Caryn Owens of the DEQ-AQD conducted a scheduled on-site inspection of the BreitBurn Operating, LP (BreitBurn) – St. Kalkaska 1-21 facility (SRN: N2455) located in the southeast quarter of Section 21, Township 27 North, Range 8 West in Kalkaska Township, Kalkaska, Michigan. More specifically the site is located on the Southwest corner of North River Road and Independence Drive Northwest in Kalkaska. The field inspection and records review were to determine compliance with permit to install (PTIs) 611-96A and 164-90. The site is currently an area source for hazardous air pollutants (HAPs). The facility has opted out of major source applicability by limiting operational and/or production limits potential to emit (PTE) to below major source thresholds. An inspection brochure was not given to anyone at this facility, but will be emailed to the company with this inspection report. The site is an area source for National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR Part 63 Subpart HH, and NESHAP 40 CFR Part 63 Subpart ZZZZ. The State of Michigan does not have delegated authority of the area source NESHAPs, and thus these areas were not reviewed by the DEQ at this time.

#### Evaluation Summary

The activities covered during this full compliance evaluation (FCE) appear to be in compliance with PTI 611-96A and 164-90. Review of the records for the facility indicates the facility was in compliance with emission limits in accordance to the PTIs. No further actions are necessary at this time. Specific permit conditions that were reviewed are discussed below. Additionally, following receipt of the Air Stripper Emissions calculations, BreitBurn submitted a void request for PTI 164-90; claiming the air stripper remediation system is exempt under Rule 290.

#### Source Description:

The site was covered in snow, and the weather conditions were cloudy and snowing, with winds approximately 10-15 miles per hour from the north-northwest, and 12 degrees Fahrenheit. It is recommended to have a H2S monitor during the inspection. Large bucket excavators were removing snow for access to the site during the inspection. The site is a natural gas processing facility where the natural gas is extracted from the niagaran formation. The site consisted of: 14 approximately 400 barrel (bbl) above ground storage tanks, two areas of process heaters; an uncontrolled glycol dehydrator system with a flash tank and associated process heater (reboiler); a building containing an air stripper remediation system; and a building containing two compressor engines. There were several additional small storage buildings around the site.

The northern most engine was temporarily pickled and not operating during the field inspection. The southern compressor engine (EUENGINE1) was labeled as a G399 Caterpillar, and was Unit # 932, 600 horsepower (hp) rich burn compressor engine with an air to fuel ratio controller (AFRC) and a catalytic converter to reduce nitrogen oxides (NOx), carbon monoxide (CO), and volatile organic VOC emissions. EUENGINE1 was operating at 1,004 revolutions per minute (RPM), 60 pounds per square inch (psi) of pressure, and 190 degrees Fahrenheit. The catalyst temperatures could not be read because a handheld device was necessary to read the temperatures and differential pressure. The AFRC read Left bank 0.826v1479 and Right bank 0.816v1505. The stack for this engine appeared to be at least 25 feet above ground surface, and DEQ observed a steam plume exiting the stack.

The glycol dehydrator system was located outside, just southeast of the compressor building. A slight sweet petroleum odor was present in the area of the glycol dehydrator system, but quickly dissipated. DEQ observed no visible emissions from the glycol dehydrator system. The stacks of the glycol dehydrator system were at least 10 feet above ground surface.

#### Records Reviewed

##### PTI 611-96A

**EUDEHY:** Glycol dehydration system processes gas from the niagaran formation.

**Material Usage Limits**

**SC 1.1 and 1.2** – According to the records reviewed, no stripping gas is used with EUDEHY. Based on the records provided to the DEQ, the amount of natural gas processed at the facility ranged from 7 to 17 million standard cubic feet, which are below the permitted limit of 1,022 million standard cubic feet of natural gas.

**Process/Operational Limits**

**SC 1.3:** - The monthly glycol circulation rate varied between 0.08 to 0.13 gallons per minute, which is below the permitted limit of 0.67 gallons per minute.

**Testing**

**SC 1.4:** - The most recent gas analysis completed at the facility was on April 13, 2015. Copies of each annual gas analysis are maintained on file at BreitBurn Operating for a period of five years.

**Monitoring**

**SC 1.5:** - The facility monitors the natural gas processing rate on a continuous basis, and the natural gas processed is compiled on a 12-month rolling time period basis.

**Recordkeeping/Reporting/Notification**

**SC 1.6 -1.8:** - The facility completes all calculations in formats acceptable by the DEQ, and the records are properly maintained. The facility reported monthly and 12-month rolling time period emission rates of VOC, Benzene, Toluene, EthylBenzene, Xylene, and Total HAP for EUDEHY.

**Stack/Vent Restrictions**

**SC 1.9:** – During the field inspection, the stacks height and diameters associated with EUDEHY appeared to be in compliance with the permitted limits.

**FGENGINES:** FGENGINES consists of one 600 hp Caterpillar 399 NA (EUENGINE1 – south engine) and one 830 hp Caterpillar 399 TA (EUENGINE2 – north engine) natural gas fired, rich burn, reciprocating internal combustion engines with catalytic converters and AFRCs for control. At the time of the inspection, EUENGINE2, the northern-most engine was temporarily pickled and not operating.

**Emission Limits:**

**SC 2.1a & 2.1b:** - FGENGINES is limited to 41.5 tons per 12-month rolling time period of NOx and 0.8 tons per 12-month rolling time period of formaldehyde. Based on the records reviewed from December 2014 through December 2015, and the highest emissions reported for NOx were 3.6 tons per 12-month rolling time period and 0.1 tons per 12-month rolling time period for formaldehyde. The emissions are compliant with permitted limits.

**Material Usage Limits**

**SC 2.2** – According to the wet gas analysis, the facility burns only sweet natural gas in FGENGINES.

**Process/Operational Parameters:**

**SC 2.3:** - Based on the records reviewed, the FGENGINES did not operate without the catalytic converters or AFRCs in service.

**Equipment**

**SC 2.4:** – Based on the records reviewed, it appears the AFRCs and catalytic converters are maintained and operated according to manufacturer's recommendations.

**Recordkeeping/Reporting/Notification**

**SC 2.5 – 2.6e:** - The facility completes all calculations in formats acceptable by the DEQ, and the records are properly maintained. The facility reported monthly and 12-month rolling time period records: of the amount of natural gas burned at the facility; the hours of operation FGENGINES operated without a catalyst; and emission rates of NOx and formaldehyde. Additionally, the facility submitted maintenance logs completed for FGENGINES. Based on the maintenance records, EUENGINE1 (Unit #932) was serviced 1 to 9 times per month from December 2014 through December 2015 for replacing filters, valves, spark plugs, gaskets, hoses, and/or repair leaks, and cleaning and inspecting the catalyst. It appears that majority of the time, the catalytic inlet and outlet temperatures are inverted, but BreitBurn

completed testing to show that the catalytic converter was meeting the destruction efficiency across the catalyst. Therefore, the reported inverted temperatures are not a concern.

**Stack/Vent Restrictions:**

**SC 2.7a & 2.7b:** - Based on visible observations during the field inspection, the stacks of both engines appeared to be at least 25 feet above ground surface, in compliance with the permitted limits.

**FGFACILITY:** All process equipment at the facility including equipment covered by other permits, grand-fathered equipment and exempt equipment.

**Emission Limits:**

**SC 3.1a – 3.1c:** - FGFACILITY is limited to 60 tons per 12-month rolling time period of NOx, less than 9 tons per 12-month rolling time period of each HAP, and less than 22 tons per 12-month rolling time period of total HAPs. Based on the records reviewed from December 2014 through December 2015, and the highest emissions reported for NOx were 4 tons per 12-month rolling time period, 0.1 tons per 12-month rolling time period for formaldehyde (HAP), and 1.0 tons per 12-month rolling time period of total HAPs. The emissions are compliant with permitted limits.

**Monitoring**

**SC 3.2:** - The facility monitors the fuel consumption of on-site equipment at least on a monthly basis, or on a more frequent basis, if needed.

**Recordkeeping/Reporting/Notification**

**SC 3.3 & 3.4:** - The facility completes all calculations in formats acceptable by the DEQ, and the records are properly maintained. The facility reported monthly and 12-month rolling time period emission rates of NOx, individual HAP, and total HAPs for FGFACILITY.

**PTI 164-90:**

This PTI was for an air stripper treatment system for the removal of VOCs from the groundwater.

**SC 14:** Based on the records reviewed from December 2014 through December 2015, the highest VOC emission rate from the air stripper reported was 0.0003 pounds per hour and 0.2 tons per year, which is less than the permitted limits of 0.2 pounds of VOCs per hour and 0.9 tons per year.

**SC 15:** During the field inspections, no visible emissions were observed from the air stripper stack.

**SC 16 & 17:** The facility monitors and records the flow rate and total VOC concentration of the influent and effluent water streams of the air stripper, in an acceptable manner, the Air Stripper Emissions Calculation Worksheet is attached.

**SC 18:** The air stripper stack appeared to be unobstructed, and at least 24 feet above ground surface which is within permitted limits.

NAME

Caryn Owens

DATE

2/10/16

SUPERVISOR

[Signature]