

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

N593533824

FACILITY: DTE Gas Company - Alpena Compressor Station		SRN / ID: N5935
LOCATION: 8512 E. ARNOLD LAKE ROAD, HARRISON		DISTRICT: Saginaw Bay
CITY: HARRISON		COUNTY: CLARE
CONTACT: Phillis Rynne, PE , Staff Engineer, Environmental Management & Resourc		ACTIVITY DATE: 03/10/2016
STAFF: Sharon LeBlanc	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled site inspection of compressor station. Facility has been inactive for a number of years, however it has recently conducted refurbishment activities to bring the EU to a contracted active status. Due to change in status, the facility is working to bring the EU into compliance within the required time frames.		
RESOLVED COMPLAINTS:		

On Thursday, March 10, 2016, AQD District Staff conducted a scheduled site inspection at the DTE Gas Company Alpena Compressor Station (SRN N5395), 8512 E. Arnold Lake Road, Harrison, Clare County, Michigan. DTE representatives Phillis Rynne and Rob Simmons provided a tour of the facility. The facility was not operating upon arrival and has not operated for a number of years.

One Renewable Operating Permit (MI-ROP-N5935-2014a) is associated with the facility, and was approved on January 8, 2016. One ROP Modification is presently under EPA 45-day review, and is discussed later in this report. Based on potential to emit, the facility is major for NOx and CO. The facility is also reported to be an area source of HAPs.

The purpose of the visit was to confirm compliance with the referenced permit.

#### FACILITY

The Alpena Compressor Station (ACS) is located in the northeast corner of Clare County, on the south side of E. Arnold Lake Road. The nearest intersection is North Athey Avenue and E. Arnold Lake Road. The facility is surrounded by predominantly large privately owned parcels, some of which are residential in nature.

Historically, the facility was utilized to increase the pressure of the natural gas in the pipeline allowing it to continue to move. The name "Alpena" reflects the location of the largest recipient/destination of the natural gas in the lines when the facility was in operation. When the Antrim gas fields came into production, there was no longer a need for the facility to push gas, so the facility which is an unmanned station was taken out of full-time operation.

The station is fenced, and locked with three northern buildings housing equipment, two sheds, four above ground storage tanks with secondary containment (used oil, lube oil, glycol mix, and EUHYDROCARBONTNK), above ground gas chillers, NGL separator and radiator. The southernmost shed houses five Shafer valve operators. The western most shed houses the inline separators for the mainline pipeline coming onto the station.

Equipment housed within buildings include the natural gas fired reciprocating engine (EUWHITESUPERIOR) and associated compressor housed on the east side of the site.

In addition, a natural gas fired boiler (EUBOILER), water heater (EUWATERHEATER), two air compressors and a newly installed emergency generator are housed in the office building located on the west side of the site.

The remaining equipment building onsite previously housed two turbines which were reported to have been removed from site over 15 years ago. The building is presently used for various maintenance activities when required.

#### RECENT CHANGES

Changes reported to have occurred at the facility since the March 31, 2014 site inspection include the replacement of a previously existing generator (EUEMERGEN previously identified as EUGENERATOR) with a Kohl emergency generator, and installation of an enzymatic parts cleaner. The previous generator was subject to 40 CRF Part 63 Subpart ZZZZ for RICE. However, the new unit is subject to 40

CFR Part 60 Subpart JJJJ NSPS for Spark Ignition (SI) RICE. The requirements for the new equipment will be incorporated in the ROP Renewal in 2019. Requirements in the ROP for EUEMERGEN were removed as part of a minor modification resulting in MI-ROP-N5935-2014a.

The facility also reported the installation of an enzymatic part cleaner. This is reported to be exempt from permitting.

AQD Staff was notified that the facility would be put into operation, and that the existing compressor would be refurbished, and pollution controls installed to meet requirements under 40 CFR Part 63, Subpart ZZZZ for Reciprocating Internal Combustion Engines (RICE). During testing conducted in Summer 2015, the company determined that the O2 levels were above those defined as rich burn, and that the Non-Selective Catalytic Reduction (NSCR) in the ROP would no longer be appropriate, to meet the CO and formaldehyde emission limits, and that a oxidation catalyst would be required. On November 3, 2015, the facility submitted an application for an ROP modification to address the needed changes. As previously indicated the proposed changes are under EPA 45-day review at the time of document preparation.

**Exempt Equipment** - includes the following natural/sweet gas fired equipment which were determined exempt from permitting under Rule 201;

- AJAX 1,250,000BTU/hr boiler (EUBOILER),
- 37K BTU/hr water heater (EUWATERHEATER),
- Newly installed Kohl Emergency Generator, and
- 1000-gallon above ground sweet crude oil storage tank (EUHYDROCARBONTNK).

Historically the facility has indicated that the water heater and boiler are exempt under Rule 282(b)(i), and the generator is reported to be exempt under Rule 285(g). EUHYDRCARBONTNK is reported to be exempt under Rule 284(e). As noted above the emergency generator has been determined to be subject to the RICE MACT, and has been included in the most recent ROP renewal application.

**Grandfathered Equipment** - EUWHITESUPERIOR, the 2000 HP, Spark Ignition, 4SLB, natural gas fired reciprocating engine used to power the natural gas pipeline compressor was installed in 1975, and is reported to be grandfathered from NSR requirements.

## COMPLIANCE HISTORY

Prior to the March 19, 2016, site inspection, the most recent inspections were conducted on March 31, 2014 and March 22, 2012. No compliance issues were noted in conjunction with either inspection. There are no Violation Notices of record for the facility since the last site inspection.

Semiannual and annual certifications and emission reporting is submitted in a timely manner, with no deviations or emission exceedances reported.

## COMPLIANCE EVALUATION

The only Rule 201, non-exempt equipment included in the ROP at this time is EUWHITESUPERIOR. As previously noted, the newly installed Kohl emergency generator will be incorporated into the ROP Renewal in 2019.

**Operating Status** - At the time of the inspection the facility was not operating, and was reported to have not been operated for a number of years with the exception of equipment bump-starts and short interval operation for maintenance purposes. As of December 1, 2015, the Company has contractually had the facility "available" for use.

EUWHITESUPERIOR was reported to have not been operated at all for the past few years. Fuel usage for the referenced reciprocating engine (White Superior 2000 HP) is based on measure changes in pressure on in house metering. In essence, the fuel use is determined based on the increased pressure achieved in the lines. At the time of inspection EUWHITESUPERIOR has been refurbished, and the oxidation catalyst in the process of being installed. The catalyst is located at the south side of the compressor building. The EU is still in the 200-hour burn-in period for the refurbished RICE. A total of 16 hours of

maintenance operation was reported for the facility. At the time of permitting, the facility anticipated operation of more than 24 hours per calendar year for EUWHITESUPERIOR.

The continuous parameter monitoring system (CPMS) required to monitor the inlet temp for the catalyst is in place, and the site specific monitoring plan required under Special Condition III.5 is in draft form. A draft copy has been submitted to the District Office. Once the oxidation catalyst is installed, the company had indicated that a revised CPMS plan will be submitted for review. Confirmation of the CPMS monitoring requirements will be conducted in conjunction with testing activities scheduled to be completed on or before June 2016. These requirements include:

- Auto Shutdown of the EU of the EU is reported to occur if the catalyst inlet temp exceeds 1350 degrees F.
- Catalyst inlet operating temperatures from 450 degrees to 1350 degrees F.
- Monitoring and recording of catalyst inlet monitoring records at least once every 15 minutes, with 4 hour rolling-average.

EUWHITESUPERIOR has an Allen-Bradley view panel for onsite confirmation of operating conditions. However, as the EU was not operating, the data was unable to be brought up onsite, but is available at the Kalkaska Michigan, operations.

EUBOILER was operational at the time of the site inspection, and provides heat to the facility buildings.

The hour meter for the newly installed Kohl emergency generator indicated a total operation of 9.5 hours. Per subpart JJJJ the unit may run up to 100 hours per year for maintenance checks and readiness testing and up to 50 hours per year in non-emergency situations (non-peak shaving or any situation which is part of a financial arrangement with another agency). Based on the limited number of hours operated, it appears that the unit still meets the emergency operation status requirements. The AQD inspector noted that a maintenance log for the emergency generator had not been started yet, but that the forms were ready.

**Material Use** - Equipment associated with the facility are reported to operate on sweet natural gas. As previously indicated, fuel use for the EUWHITESUPERIOR is calculated based on the change in pressure on the natural gas lines achieved by the engine and its associated compressor(s). No volume limits exist for the EU.

**Emission Points** – One emission point is identified in the facility ROP. SV-05 is the stack for exhaust gases associated with EUWHITESUPERIOR. The permit does not specify dimensions or emission limits for the stack. At the time of the inspection, the emission point was still in the process of installing the oxidation catalyst.

**Monitoring/Recordkeeping**- Monitoring and recordkeeping conditions/requirements are specified in the ROP for EUWHITESUPERIOR. At the time of the inspection, records required under the permit have not been created due to the very limited operation and untested nature of the referenced EU. These records include:

- Copies of each notification and report submitted to comply with subpart ZZZZ (Initial notification received by the District January 11, 2011),
- Records of occurrence and duration of each malfunction of process equipment or pollution controls or monitoring equipment (NA at this time),
- Records of performance tests and evaluations for the EU, as well as the monitoring equipment (EU compliance testing to be initiated in June),
- Records of required maintenance performed on pollution control devices and monitoring equipment (NA at this time as the devices have been or are in the process of being installed) , and
- Records of actions taken during periods of malfunction to minimize emissions,

Monitoring and recordkeeping conditions/requirements associated with the new Kohl emergency generator under subpart JJJJ, include hours of operation for both emergency and non-emergency operations.

District Staff anticipates conducting a supplemental inspection and/or records review later in the fiscal year to confirm that the appropriate monitoring and recordkeeping activities are being conducted.

**Testing-** Testing requirements for EUWHITESUPERIOR include testing for verification of the catalyst system efficiency is required within 180 days after the stationary source begins operation. Testing is presently scheduled to be conducted in June 2016.

Initial compliance requirements for EUWHITESUPERIOR include the following:

- Average CO emissions reductions of 93% or more or an average CO concentration of 47ppmvd or less at 15%O<sub>2</sub>.

Evaluation of compliance will be made upon receipt of the initial testing report.

Within one year of startup of the new Kohl emergency generator, the unit must conduct initial performance tests for verification of NO<sub>x</sub>, CO and VOC emissions. At the time of the inspection the generator had only recently been installed, and testing was not yet required to have occurred.

**Reporting** – The ROP for the facility require prompt reporting of deviations associated with EUWHITESUPERIOR as well as the newly installed Kohl generator. In addition, semiannual reporting of monitoring and deviations as well as annual certification of compliance are required under conditions of the ROP. Reports including MAERS, have been received on a timely basis for the facility, and as the facility has not operated, no deviations have occurred or were reported.

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Total hours of operation reported for EUWHITESUPERIOR and the newly installed Kohl emergency generator are reported to be 16 and 9.5 hours respectively, well below any thresholds, and any required testing or scheduled maintenance is not required at this time. Based on information reported and records reviewed, the facility is under compliance at the time of the inspection.

NAME Sharon Blair

DATE 3/22/16

SUPERVISOR C. Hae