

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

B721947341

FACILITY: ANR Pipeline Co. South Chester Compressor Station		SRN / ID: B7219
LOCATION: 6327 Old State Rd., JOHANNESBURG		DISTRICT: Gaylord
CITY: JOHANNESBURG		COUNTY: OTSEGO
CONTACT: Chris Waltman , Senior Environmental Specialist		ACTIVITY DATE: 11/19/2018
STAFF: Sharon LeBlanc	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: compliance evaluation for 2019 FCE. sgl		
RESOLVED COMPLAINTS:		

**INTRODUCTION**

On November 19, 2018, AQD District Staff arrived onsite to conduct stack test oversite and scheduled compliance evaluation activities at the ANR Pipeline Company South Chester Compressor Station, State Registration Number (SRN) B7219. The referenced Facility is located at 6327 Old State Road, Johannesburg, Michigan. The Facility is operated by TC PipeLines, LP (AKA Transcanada).

The referenced facility operates under Renewable Operating Permit (ROP) MI-ROP-N7219-2012. On December 28, 2016, Transcanada submitted a ROP Renewal for their South Chester Compressor Station. The application shield for the Facility was issued on January 5, 2017. The existing ROP (MI-ROP-B7219-2012a) expired on July 10, 2017.

The most recent site inspection for the Facility was conducted on November 10, 2016. The Facility at that time was reported to be in compliance at the time of the inspection.

Transcanada Staff onsite at the time of the site inspection included:

- Bruce Bendes, Environmental Specialist
- Mike Coy, Operations Team Leader
- Chris Waltman, Sr. Environmental Specialist, and
- Onsite operational staff

Stack test activities are summarized in a separate report.

**FACILITY**

The South Chester Compressor Station is a manned Facility located in the NW ¼ of Section 15, T29 N – R 2W, Otsego County, South Chester Township, Johannesburg, Michigan. The address of record is 6327 Old State Road, Johannesburg, Michigan. The entrance to the Facility is near the intersection of Old State and Lovells Roads. The Facility is fenced and gated, with an intercom system to provide access to the Facility.

The Facility operates as both Natural Gas (NG) storage and transmission facility. The Facility functions to maintain pressure in pipelines transporting NG to other ANR facilities and end users. The Facility injects into and withdraws NG from an underground storage reservoir consisting of a natural, porous rock formation. During the spring and summer seasons, the compressor engines are used to compress and inject the NG into the underground reservoir. Past descriptions of the facility included compression of NG, however despite having the word compressor in the Facility name, it is felt by more experienced staff that storage and transmission more accurately reflects the Facility activities.

During the winter season, NG is withdrawn from the underground reservoir. During withdrawal, NG free flows out of the reservoirs. If reservoir pressure is not sufficient for the gas to free flow, one or more compressor engine is brought online to compress the gas and continue flow to the pipeline. During withdrawal, the field gases are conditioned by cooling and glycol dehydration to meet pipeline quality. NG heaters are used to heat the gas as necessary.

No changes at the facility in the way of new processes or process changes since the last inspection. Some personnel changes have occurred as a result of retirements and career changes. However, these are previously documented. No equipment changes are of record for the Facility.

The Otsego County Property Records identified the following Oil & Gas properties are located north of the Facility across Old State Road:

- DTE Michigan Holdings, Inc.
- CORE Midstream LLC
- Wilderness-Chester Gas Process, and
- DCP Antrim Gas, LLC South Chester Antrim Carbon Dioxide (CO2) Removal Facility

The Facility and an Enervest Gathering Station, which is located adjacent to the Facility are located in undeveloped State lands. To the east and south of the Facility adjacent properties are listed in the Otsego County records as being held by the Government of Johannesburg, Michigan.

Weather conditions at the time of the inspection ranged from partly cloudy to overcast, with temperatures in the high 20's. Scattered snow showers and winds predominantly from the west-southwest. No VEs were noted, except for a steam plume from the operating engine.

**PERMITTING**

As previously indicated, the referenced facility operates under Renewable Operating Permit (ROP) MI-ROP-N7219-2012. On December 28, 2016, TransCanada submitted a ROP Renewal for their South Chester Compressor Station. The application shield for the Facility was issued on January 5, 2017. The existing ROP (MI-ROP-B7219-2012a) expired on July 10, 2017. All previously issued Permits to Install (PTIs) have been rolled into the ROP.

Of note is that in addition to PTIs issued by the MDEQ AQD, US EPA permit No. EPA-5-A-79-15 was issued on June 7, 1979. The US EPA permit identified NOx emissions of over 600 tons/year. Michigan obtained delegation in September 1979, and subsequently issued PTI 147-80. Discussions resulting from the "discovery" of the EPA PSD permit in District Files has resulted in the conditions of the US EPA permit being incorporated into the ROP as part of the ongoing renewal process.

The 2012 version of the staff report indicated that the facility was a synthetic minor with respect to PSD and had accepted limits to get them out of PSD. However, a review of the 1980 permit issued to what was then the Michigan Wisconsin Pipe Line Company (147-80) and discussions between G. Torello and A. Drury on February 15, 2017 indicated that the records appear to confirm that the Facility did go through PSD review due to potential to emit NOx emissions of 639 tons/year. In addition, US EPA permit No. EPA-5-A-79-15 identifies NOx emissions of over 600 tons/year in its PSD permit issued on June 7, 1979. Michigan obtained delegation in September 1979, and subsequently issued PTI 147-80. Discussions resulting from the "discovery" of the EPA PSD permit in District Files will result in the conditions of the permit being incorporated into the ROP. Specifically, inclusion of all of the emission limits.

MDEQ AQD Permits rolled into the ROP include the following:

EMISSION UNIT	PTI NO.
EUSCGD006	75-97, 10-95 and 8-81A
EUSCENG002 and EUSCENG003	147-80 and 60-01A

**REGULATORY**

- classifications based on Potential to Emit (PTE) and other significant comments:

PARAMETER	CLASSIFICATION	COMMENT
NOx	Major	PSD review for 147-80
SO2	Minor	
CO	Major	
Pb	Minor	
PM	Minor	
VOC	Minor	
HAPs	Major	

• **Applicable Federal Requirements:**

EMISSION UNIT	40 CFR SUBPART	TITLE
Source	Part 70	State Operating Permit Program
EUSCDGS006	40 CFR Part 63, Subpart HHH	Natural Gas Transmission and Storage Facilities (Major source of HAPs)
EUSCHTR001 – EUSCHTR004 EUSCBOILER002 EUSCDGS006 (reboiler only)**	40 CFR Part 63, Subpart DDDDD	Industrial, Commercial and Institutional Boilers and Process Heaters (BOILER MACT)
EUSCGEN001*	40 CFR Part 63, Part 63, Subpart A and ZZZZ	National Emission Standards for HAPs for Stationary Reciprocating Internal Combustion Engines (RICE)

\* Note - the facility has two compressor engines (EUSCENG002 and EUSCENG003) with SI RICE that meet exemption requirements under 40 CFR 63.6590(b)(3)(i). which exempts existing spark ignition 2-stroke lean burn RICE with ratings of more than 500 HP located at a major source of HAPs emissions.

\*\* EPA Applicability determinations by US EPA Region 6 dated February 4, 2015 and February 10, 2016, were reviewed during ROP Renewal working draft preparation. The referenced documents indicated that the reboiler for the glycol dehydration unit is also subject to Subpart DDDDD (Boiler MACT). It is the company’s belief that clear language exists which would indicate that the reboiler would not be subject to the Boiler MACT and references EPA’s 2011 responses to Public Comments.

**EQUIPMENT**

The Facility is operated and monitored through a control room in the main building. The computer and associated controls are linked with the corporate offices in Houston, Texas. Emission units (EUs) associated with the Facility include the following:

- Ethylene Glycol Dehydrator with condenser control (EUSCGD006)

Installed in 1981, the company reported that the referenced unit is considered a small, existing, dehydrating unit as defined in 40 CFR 63.1271 and is subject to 40 CFR Part 63 Subpart HHH. Which is an unit at a major source with an actual annual average NG flowrate of less than 283K scm/day or actual annual average benzene emissions of less than 0.90 Mg/yr determined according to 63.1282(a).

The glycol dehydration system consists of both a two-phase and three-phase separator and glycol reboiler (AKA regenerator) with a natural gas-fired heater. The exhaust vents associated with the system includes one that transfers gases to the regenerator reboiler burner vent, and the other that transfers gases from the regenerator still column to the condenser.

The Facility reports that the system is operated primarily in the winter when gases are extracted from storage underground, but that it is held on an operational standby during the calendar year. Potential emissions generated during operation of the system are controlled by venting into the burner of the glycol regenerator. During standby periods potential emissions are controlled by the condenser.

It should be noted that in addition to the condenser, the Facility pipes gases from the separator to the reboiler, prior to the condenser. The condenser addresses exhaust from the reboiler still vent.

- **2 NG Compressors** equipped with Reciprocating Internal Combustion Engines (RICE) EUSCENG002 and EUSCENG003 (AKA Compressor Engine A and Compressor Engine B) (FGSCENG)

RICE associated with the NG-fired compressors consist of Cooper Bessemer Model 12Q145LM 3600 HP, 29.47 MMBTU/hr heat input, 2 cycle, lean-burn units. The referenced units are used to inject NG into the storage field. It should also be commented that based on the age of the engines, they are operated at approximately 3000 Hp rather than the 3600 Hp they are rated for.

The following summarizes the compressor engine IDs:

ROP ID	MAERS ID	FACILITY ID
EUSCENG002	EUSC002	Unit 1, Compressor Engine A S/N 48587
EUSCENG003	EUSC003	Unit 2, Compressor Engine B S/N 48588

At the time of November 19, 2018, site inspection, EUSCENG002 was not operational. The Engine had been reported to have been recently rebuilt, and was started up for the purposes of emissions testing, when the engine failed. Based on correspondence and records provided as part of this compliance evaluation, EUSCENG002 was not operated during November or December 2017 while work on ancillary systems for the engine at that time.

These two NG compressors are not subject to the RICE MACT (Subpart ZZZZ) based on 63.6590 (b)(3)(i). With respect to the NSPS requirements of subpart JJJJ (Spark Ignition RICE), EUSCENG002 and EUSCENG003 were reported exempt from the referenced subpart based on the installation date. More specifically, the referenced units as >500 HP, lean burn engines they were ordered, manufactured, modified or reconstructed before June 12, 2006. The existing units were identified as having been installed in 1981.

- **Emergency Generator** used for emergency backup power. (EUSCGEN001)

This EU consists of one Waukesha Model F2859GU 526 HP, 4.21 MMTU/hr heat input, 4 cycle, rich-burn NG-fired RICE. Note: that the emergency generator was exempt from Rule 201 permitting in 1981, as Rule 285 (vi)(c) exempted internal combustion engines of less than 10,000,000 BTU/hr heat input. (effective 1/18/1980) Under the recently re-revised exemptions, the referenced emergency generator would be exempt under Rule 285 (2)(g). The EU is included in the ROP based on applicability of the RICE MACT to emergency generators. MI-ROP-B7219-2012A contains only a high-level citation to the RICE MACT. (SC IX.1)

**Rule 201 Exempt EUs-**

- 4 NG-fired **withdrawal gas heaters** (EUSCHTR001 - 004)

The referenced process heaters (10 million BTU/Hr Sivallis heaters) will be added to the renewed ROP as they have been identified as being subject to the boiler MACT (subpart DDDDD). These processes were reported to be exempt from Rule 201 permitting based on Rule 282 (2)(b)(i) for sweet NG-fired equipment with a rated heat capacity of less than 50 million BTU/Hr used in oil and gas production. Previous reference to these units clumped them all under the same EU (EUSCHTR001).

- **Boiler** (EUSCBOILER002)

EUSCBOILER002 is a Cleaver Brooks NG-fired 1.35 MMBTU/hr hot water heater. The unit was reported to be exempt from permitting under Rule 282 (2)(b)(i) for sweet NG-fired equipment with a rated heat capacity of less than 50 million BTU/Hr used for service water heating.

Under the Boiler MACT, hot water heaters are defined as a tankless unit which provides hot water on demand; a closed vessel with a capacity of less than or equal to 120 US gallons in which water is heated and withdrawn for use external of the vessel; or hot water boilers with a heat input of less than 1.6 million BTU/hr. Previously the Facility reported that the Cleaver brooks EU was insignificant, and not subject to the boiler MACT, more recently the Facility has indicated that EUSCBOILER002 has a capacity of 520 gallons and is not exempt from the Boiler MACT (Subpart DDDDD). The EU will be added to the renewed ROP.

Note: EUSCHBOILER001, was reported to no longer exist onsite, and was requested to be removed from the ROP.

- 28 Space Heaters (EUSCSPHTR002)

The referenced NG-fired furnaces/ space heaters are reported to have a rated capacity of 200,000 BTU/hr (or less) each and are reported exempt under Rule 282 (2)(b)(i) for sweet NG-fired equipment with a rated heat capacity of less than 50 million BTU/Hr used for space heating. The referenced units are reported to be exempt under 40 CFR Part 63 Subpart A and DDDDD because they are used for space heat and do not meet the definition of process heater as defined in the subpart. Previously they were identified under the ID EUSCHTR002. They are not included in the ROP.

- NG-fired Water Heater (EUSCWHTR003)

The EU is reported to be rated a 53,000 BTU/hr water heater (note WH in EU designation) and is reported by the company to be exempt under Subpart DDDDD. The unit is reported to be exempt from permitting under Rule 282 (2)(b)(i) for sweet NG-fired equipment with a rated heat capacity of less than 50 million BTU/Hr used for service water heating. This EU is not included in the ROP.

- Tanks

The following table summarizes tanks associated with the facility. None are included in the ROP.

ROP ID	MAERS ID	Tank IDs	Content	Total Capacity (gallons)	Exemption Claimed
EUSCTNK001	ESC008	T8, T9 and T10	Hydrocarbon/Brine	51,800	Rule 284 (2) (e)
EUSCTNK003	See Below		MISC		Rule 282(b)(i)
		T1	Ambitrol tank	4,900	Rule 284 (2) (i)
	EUSCTANKS (GLY)	T2 and T17	Ethylene Glycol	8,400 *	Rule 284 (2) (i)
	EUSCTANKS (GLY)	T4	Ethylene Glycol	2,632 *	Rule 284 (2) (i)
	EUSCTANKS (WW)	T15	Waste Water	4,475	Rule 284 (2) (i)
	EUSCTANKS (GLY)	T27	Ethylene Glycol	300 *	Rule 284 (2) (i)
EUSCTNK005	EUSCTANKS (OIL)	T5	Lubricating Oil	10,000 *	Rule 284 (2) (c)
EUSCTNK006	EUSCTANKS (OIL)	T6	Lubricating Oil	1,600 *	Rule 284 (2) (c)
EUSCTNK007	EUSCTANKS (OIL)	T7	Used Oil	1,900 *	Rule 284 (2) (d)
EUSCTNK013		T13	Diesel Fuel Oil	1,000	

	EUSCTANKS (#2 distillate)				Rule 284 (2) (e)
EUSCTNK016		T16	Condensate	660	Rule 284 (2) (e)
EUSCTNK025		T25	Condensate Slop	300	Rule 284 (2) (e)
		Outlet separator safety tank	Condensate	150	

**Note that MAERS reported that the following sources were installed in 2011:**

- EUSCTANKS (OIL) 11,900 gallon total capacity
- EUSCTANKS(WW) 4,475 gallon total capacity
- ESC008, three condensate tanks, 51,800 gallon total capacity
- EUSCTANKS(GLY) 14,575 gallon total capacity
- EUSCTANKS (#2 distillate)

**COMPLIANCE**

The most recent site inspection for the Facility was conducted on November 10, 2016. The Facility at that time was reported to be in compliance with permit requirements. No complaints, Violation Notices, Consent Orders or other compliance issues are of record for the Facility since the November 10, 2016, site inspection. Compliance will be determined based on conditions of MI-ROP-N7219-2012A.

It should be noted that per the ROP, the Facility is required to promptly report deviations pursuant to General Conditions 21 and 22 of Part A of the ROP. The Facility is also required to report semiannual and annual deviations (SC VII.1, 2 & 3) for EUSCGD006, EUSCGEN001 and FGSCENG. A review of records indicate that the Facility has submitted the required semiannual and annual reports in a timely manner and in compliance with permit requirements.

**EUDCGD006 – Glycol Dehydrator**

The glycol dehydration system consists of both a two-phase and three-phase separator and glycol reboiler (AKA regenerator) with a natural gas-fired heater. The exhaust vents associated with the system includes one that transfers gases to the regenerator reboiler burner vent, and the other that transfers gases from the regenerator still column to the condenser.

At the time of the site visit, EUDCGD006 was not operating, as the compressors were transferring NG from the fields into underground storage.

**OPERATION LIMITS** - EUSCGD006 is limited to operation under the following conditions for the system condenser:

- The glycol regenerator still is equipped with a condenser and the condenser including any associated monitoring equipment, is installed and operating properly. (SC III.1)
- The condenser shall be equipped with a maintained exhaust gas temperature monitor (SC IV.1)
- exhaust gas temperatures of 140 degrees Fahrenheit or less. (SC III.2)
- The condenser shall be equipped with a maintained alarm that activates when the exhaust gas temperature exceeds 140 degrees Fahrenheit (SV IV.2)

At the time of the site inspection, the dehy system included a condenser with a temperature monitor and alarm. The system and it's monitors appear to be operating properly. Facility staff report that maintenance activities are tracked via work order. Thermo couples are tested annually for calibration.

The ROP limits the maximum operating temperature of the condenser to less than 140 degrees Fahrenheit. But the Facility uses an equipment setpoint of 125 degrees as determined by the 2015 performance curve, to guarantee compliance with permit conditions.

The Facility reported that the only temperature alarms were reported to have occurred on April 5, 2018, in which the station reported getting some slugs of water in the system. Two events were reported, one of 15-minute duration and the other for 5 minutes. A review of records indicated that for the period of January 2017 through November 2018 the highest temperature for the condenser exhaust was 66 degrees Fahrenheit (March 11, 2018). It should be noted that Facility Staff report that in addition to the alarms, the system is reported to shut down during alarm conditions. Records reviewed were found to be consistent with the requirements of SC VI.1.

- NG used as fuel for the glycol dehydrator contains no more than 20 grains of total sulfur per 100 cubic feet. (SC III.3)

During discussions during the November 19, 2018, site inspection. It was indicated that the Facility is limited to no greater than 20 grains of total sulfur per 100 scf by the ANR Pipeline Company FERC Gas Tariff agreement. It was further indicated that this document is used for other facilities to demonstrate compliance with the SO<sub>2</sub> limit in their respective air permits. District staff indicated that verification was specified in the permit to be by laboratory analysis, and a copy was requested electronically. In response to the initial request, the Facility provided a copy of sample analysis for a gas sample collected for analysis on January 4, 2018. However, review of the document indicated that no analysis for sulfur or hydrogen sulfide was included in the parameters. Upon further requests, the Facility provided copies of a gas analysis for a sample collected on February 24, 2017, that indicated hydrogen sulfide concentrations of 0.45 ppm (<8 grains), and in compliance with the permit condition.

- Emissions from the 2-phase and 3-phase separators will be incinerated in the burner of the glycol regenerator reboiler. (SC III.3)

Facility staff confirmed that the gaseous emissions from both separators are piped to the burner of the glycol regenerator/reboiler for destruction in compliance with the permit conditions. They also report that this incineration represents the primary pollution control for the system, as the greater volume of emissions is generated from the separators and the dehy itself.

- The glycol circulation rate shall not exceed 6.0 gpm. Compliance ensured by only two of three recirculation pumps being in operation at any time. (SC III.4)
- Fixed circulation rate of 3 gpm for each recirculation pump. (SC IV.3)

With respect to the glycol recirculation pumps, the Facility reports that only one pump is operated at a time, and at a fixed rate of 3 gpm. The system logic controlling the pumps is for operation of two pumps, with the second pump reported to operate only on rare occasions. The third pump being a redundant pump, only used should one of the other two fail.

- The Permittee shall not use stripping gas in the glycol regenerator still (SC III.5)

No stripping gas is reported to be used in the glycol regenerator still.

- EUSCGD006 shall be operated with no detectable emissions except from its designed process vents (SC III.6)

The dehydrator was not operating at the time of the site visit, as the engines were pushing gas into storage, so verification of visible emissions was not possible at that time. Facility staff report that process vents are hard-piped and should show no detectable emissions.

**MATERIAL LIMITS** - EUSCGD006 is limited to a limit of 225 million scf/day, as determined by the end of the calendar month (SC II.1). TransCanada staff report that the gas flow is monitored using a flow meter and that TransCanada Gas Control has established a setpoint limit of 225 million scf/day limiting the actual volume through the plant to below the limit. In addition, it was indicated that the field was incapable of producing that much flow. A review of records provided by the Facility for the period of January 2017 through November 2018 indicated the highest daily throughput (as recorded by condenser throughput) during the period was 203.5 million scf/day reported on January 6, 2017. The highest daily throughput in 2018 was reported to be 196.6 million scf/day on January 7, 2018.

**EMISSION LIMITS** - EUSCGD006 is limited to daily emissions of VOCs, and 12-month rolling total VOC and benzene emissions. VOC emissions are reported annually and in a timely manner as part of the MAERS Program. MAERS emissions for 2016 and 2017 are summarized below:

Calendar Year	Total VOC (tons/year)	Benzene (tons/year)
2016	0.19	NR
2017	0.12	NR
Limits	6 tons/year (SC I.2)	0.992 tons/year (SC I.3)

12-month Daily VOC emissions are limited to 33 lbs/day (SC I.1) A review of records for the period of January 2017 through November 2018 indicated that the highest VOC emissions for the period was 19.5 lb/day reported on January 6, 2017. Records were also noted to be consistent with understood operation of the system, which was reported to be limited to winter months (November/December through March/April).

End of 12-Month Rolling Period	Total VOC (tons/year)	Benzene (tons/year)
July 30., 2017	0.143	0.014
December 31, 2017	0.12	0.01
April 30, 2018	0.56	0.05
November 30, 2018	0.56	0.05
Limits	6 tons/year (SC I.2)	0.992 tons/year (SC I.3)

**TESTING ACTIVITIES** –EUSCGD006 is required by permit to sample and analyze the wet gas stream every five years for constituent components (SC V.1). The SPL analytical report provided by the company as a result of the initial request failed to address all parameters required by permit specifically sulfur component(s). Supplemental information was provided on January 4, 2019, showing compliance the 20 grain/100scf sulfur limit.

In addition, the Facility is required to test the regenerator still condenser for capture efficiency once every five years. (SC V.2) This condition was met by the facility completing an efficiency calculation using procedures documented in “Atmospheric Rich/Lean Method for Determining Glycol Dehydrator Emissions” as inputs for the model GRI-GLYCalc version 3.0 or higher. The required document was submitted as part of the April 22, 2015, LDAR Assessment Report for the Facility. Based on the date of submittal, it appears that the next evaluation would be due before April 2020.

**MONITORING/RECORDKEEPING** –Per the ROP the permittee is required to monitor and record the following parameters:

- Total amount of NG processed through EUSCGD006 per calendar day. (SC VI.3)
- Maximum annual NG throughput, and records of it’s calculation. (SC VI.6 & 7)
- Total hours of operation of dehy system on a monthly and 12-month-rolling time period. (SC VI.2)

As previously reported the Facility monitors and records NG-flow using a meter to determine the volume processed per day, month and year in compliance with the above referenced permit conditions.

The Permittee is required to monitor/ calculate and record the following on a daily, monthly and 12-month rolling basis:

- VOC emissions (SC VI.4)
- Benzene emissions (SC VI.5)

VOC and Benzene emissions are based on EFs determined using GRI-GLYCalc Version 3.0 or higher and the volume of NG being processed. Records provided indicated that calculations were conducted in compliance with permit conditions.



**REPORTING** - The Facility is required by permit to report any stack tests conducted to satisfy the requirements of Subpart HHH. (SC VII.4), and to submit a report of all test results within 60-days of the last day of testing. (SC VII.5)

**STACK/VENT RESTRICTIONS** - Per Permit, Stack restrictions are limited to the regenerator still column which vents through the condenser. SC VIII.1 restricts the referenced stack to a maximum diameter of 2-inches and minimum height of 24 ft above land surface. Based on information provided the stack is in compliance with permit conditions.

**OTHER REQUIREMENTS**- Include a high level citation of 40 CFR Subpart A and HHH as they apply to EUSCGDS006 (SC IX.1). Per the April 11, 2016, Notice of Compliance Status for the referenced subpart, the Facility reports being in compliance with all applicable requirements. Submittals in District Files for the referenced subpart include:

Date Received	Report Type	Reported Compliance
8/23/2018	semiannual compliance report 2018	Y
2/23/2018	semiannual compliance report 2017	Y
9/11/2017	semiannual compliance report 2017	Y
3/16/2017	semiannual compliance report 2016	Y

**EUSCGEN001- Emergency Generator Engine**

The referenced EU as already indicated consists of a Waukesha 526 Hp, 4-cycle rich burn, NG-fired engine which powers the emergency electricity generator. No pollution control device is associated with the EU. MI-ROP-B7219-2012A contains no emission limits, material limits, testing requirements or stack restrictions.

**OPERATION LIMITS** - EUSCGEN001 is limited to the following operational restrictions:

- Operation as necessary during emergencies (SC III.1)
- Operation of the engine for the purpose of maintenance checks and readiness testing recommended by Federal, State or local Government, engine manufacturer, vendor or insurance company associated with the engine (SC III.2)
- Operation of engine for up to 50 hours per year for non-emergency situations (SC III.3)

EUSCGEN001 is equipped with a non-resettable hour meter in compliance with SC IV.1. The Facility reports that the EU is run monthly for maintenance purposes. It was ran the previous Friday (November 16, 2018) under outage purposes. Records provided by the Facility indicated that for the 2017 calendar year and for 2018 (to December 3, 2018), EUSCGEN001 operated for a total of 8.6 hours and 9.3 hours for non-emergency purposes, respectively.

**MONITORING/RECORDKEEPING** – Requirements for EUSCGEN001, are limited to recording of the hours of operation for the EU per calendar year. (SC VI.1) The referenced records were provided by the Facility upon request and confirm that appropriate levels of documentation for the hours of operation and reason for operation is documented.

**OTHER REQUIREMENTS**- The ROP contains a high-level citation requiring compliance with 40 CFR Part 63, Subpart A and ZZZZ (RICE MACT) as they apply to EUSCGEN001. Requirements for emergency generators have been previously added to the ROP, therefore compliance with permit conditions would indicate general compliance with the subpart.

It should be noted that in addition to required information per MI-ROP-B7219-2012A, the Facility provided a summary of engine maintenance, oil sample collection as well as any additional testing.

**FGSCENG – Compressor Engines**

This flexible group consists of two Cooper Bessemer model 12Q145LM, 3600 HP, NG-fired RICE. No controls are associated with the EUs. No material limits or equipment design conditions are provided for the EU.

**OPERATION LIMITS** – EUSCENG002 and EUSCENG003 (FGSCENG) are limited to the following operational limits.

- NG used as fuel for the glycol dehydrator contains no more than 20 grains of total sulfur per 100 cubic feet. (SC III.3)

As previously indicated, during discussions on November 19, 2018, site inspection. It was indicated that the Facility is limited to no greater than 20 grains of total sulfur per 100 scf by the ANR Pipeline Company FERC Gas Tariff agreement. It was further indicated that this document is used for other facilities to demonstrate compliance with the SO2 limit in their respective air permits. District staff indicated that verification was specified in the permit to be by laboratory analysis, and a copy was requested electronically. In response to the initial request, the Facility provided a copy of sample analysis for a gas sample collected for analysis on January 4, 2018. However, review of the document indicated that no analysis for sulfur or hydrogen sulfide was included in the parameters. Supplemental information was provided on January 4, 2019, verifying compliance with the referenced limit.

**EMISSION LIMITS** – Nox limits in lb/hour and grams per Hp, are required by permit. Verification is required by permit and is discussed below. Testing to date has verified that engine emissions are below permit limits for NOx.

The ROP does not contain a ton per year NOx limit. NOx emissions for FGSCENG for 2017 and 2018 are summarized below.

Emission Unit	NOx Emissions 2017	NOx Emissions 2018
EUSCENG002	14.734	36.948
EUSCENG003	-0-	5.562

**TESTING ACTIVITIES** –FGSCENG is required to be tested every 5 years for the nitrogen oxide emissions (SC V.1). A review of District Files appears to indicate that timely submittal of test protocols, 7-day notifications and test reports were being conducted in a timely manner. Test results for the November 19, 2018 testing had not been received at the time of report preparation. Only one of the two existing engines (EUSCENG003) was tested, and testing of the EUSCENG002 will be scheduled by the Facility after repairs can be made, and the engines will be put back into operation. Which at this time is anticipated to be summer 2019. Historical test results in District Files are summarized in the table below:

EMISSION UNIT	EUSCENG002	EUSCENG003	LIMIT
TEST RESULTS (June 17, 2014)	27.62 lb/Hr 3.99 g/Bhp/Hr	13.08 lb/Hr 1.81 g/Bhp/Hr	72.9 lb/Hr (SC I.1) 9.2 g/bhp/Hr (SC I.2)
TEST RESULTS (July 22, 2009)	32.45 lb/Hr 4.22 g/Bhp/Hr	--*	72.9 lb/Hr (SC I.1) 9.2 g/bhp/Hr (SC I.2)
(TEST RESULTS August 5, 2004)	31.91 lb/Hr 4.00 g/Bhp/Hr	--*	72.9 lb/Hr (SC I.1) 9.2 g/bhp/Hr (SC I.2)
(TEST RESULTS April 18, 2000)	20.2 lb/Hr 2.62 g/Bhp/Hr	--*	72.9 lb/Hr (SC I.1) 9.2 g/bhp/Hr (SC I.2)

\*Note a review of District Files indicates that only one Engine was tested for pre- 2014 test activities. In each case it appears that Unit 1 or A (AKA EUSCENG002) was the unit tested. There is also a notation in the 3/4/2008 staff report that engine testing had been completed in August 2004, and that additional testing would be required before November 13, 2011. It is unclear as to why that date, as a 5-year test cycle would have indicated testing in 2009.

**MONITORING/RECORDKEEPING** – Under MI-ROP-B7219-2012A, the permittee is required to complete the following for each engine on a calendar month basis:

- Record fuel consumption (SC VI.1)
- Record hours of operation (SC VI.2), and
- Calculate the nitrogen oxide emissions in lb/hr. (SC VI.3)

The Facility reports metered fuel usage, and hours of operation. The records provided were complete with respect to permit requirements and appear to be accurate. Some discrepancies in hours of operation were provided in a cover letter and reported that when auxiliary components of one of the engines had been worked on and indicated false hours operation on the electronic logs. Fuel use records confirmed that that the EUs had not been in operation.

Tables provided summarizing monthly NOx emission calculations were provided and indicated that emission factors were based on July 2014 test results and provided the conversion from g/Bhp/Hr to lb/MMscf. SC VI.4 requires the permittee to recalculate the emission factor each time a stack test (acceptable to the AQD) is performed. The company has at the time of the information request used the information from the most recent test as required.

**REPORTING** – In addition to semi-annual and annual compliance reporting, the Facility is required to submit a copy of a complete test protocol 30-days prior to testing (SC VII.4) and submit a report of all test results within 60-days following the last day of testing (SC VII.5). A review of the AQD database indicates that the test protocol for the 2009 and 2014 testing activities were received by AQD TPU staff either on the day of testing or after testing was completed. Test protocols for the 2018 testing were received in compliance with permit requirements. The report summarizing test results is due on or before January 19, 2019.

**STACK/VENT RESTRICTIONS** - Stacks for EUSCENG002 and EUSCENG003 are both required not to exceed a maximum of 24-inches in diameter, and meet a minimum height requirement of 49 feet above land surface. The stacks are reported to meet the permit requirements.

#### **SUMMARY**

On November 19, 2018, AQD District Staff arrived onsite to conduct stack test oversight and scheduled compliance evaluation activities at the ANR Pipeline Company South Chester Compressor Station, State Registration Number (SRN) B7219. The referenced Facility is located at 6327 Old State Road, Johannesburg, Michigan. The Facility is operated by TC PipeLines, LP (AKA Transcanada).

The referenced facility operates under Renewable Operating Permit (ROP) MI-ROP-N7219-2012. On December 28, 2016, Transcanada submitted a ROP Renewal for their South Chester Compressor Station. The application shield for the Facility was issued on January 5, 2017. The existing ROP (MI-ROP-B7219-2012a) expired on July 10, 2017.

The most recent site inspection for the Facility was conducted on November 10, 2016. The Facility at that time was reported to be in compliance at the time of the inspection.

Transcanada Staff onsite at the time of the site inspection included:

- Bruce Bendes, Environmental Specialist
- Mike Coy, Operations Team Leader
- Chris Waltman, Sr. Environmental Specialist, and
- Onsite operational staff

At the time of the inspection, only EUENG003 was operating and putting NG into storage. Operation of EUSCGD006 is limited to period of NG extraction. Weather conditions at the time of the inspection were below freezing and ranged from partly cloudy to overcast, with temperatures in the high 20's. Scattered snow showers and winds predominantly from the west-southwest.

A request for data was submitted to the Facility on November 28, 2018, with data received on December 7, 2018 and January 4, 2019.

With respect to NOx verification testing that was scheduled for the Facility, only one of the two engines (EUSCENG003) was able to be tested due to an engine failure prior to testing. EUSCENG002 is anticipated to be repaired and available for testing summer 2019. The test report for EUSCENG003 is anticipated to be received on or before January 11, 2019.

Based on the information obtained, it appears that the Facility is operating in compliance with the referenced ROP.

MACES- Activity Report

NAME Sharon C. Blane

DATE 4/24/2019

SUPERVISOR SN