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

B648163850

FACILITY: ANR Pipeline Company - Capac Compressor Station		**SRN / ID:** B6481
LOCATION: 4876 KETTLEHUT RD., CAPAC		**DISTRICT:** Warren
CITY: CAPAC		**COUNTY:** SAINT CLAIR
CONTACT: Chris McFarlane , Analyst - US Natural Gas Environmental		**ACTIVITY DATE:** 08/01/2022
STAFF: Shamim Ahammod	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Conducted a scheduled inspection of ANR Pipeline Company-Capac Compressor Station to determine the company's compliance with the requirements of Permit to Install (PTI) No. 136-20.		
RESOLVED COMPLAINTS:		

On August 2, 2022, the Michigan Department of Environment, Great Lakes and Energy-Air Quality Division (EGLE-AQD) staff, I (Shamim Ahammod) conducted a scheduled inspection of ANR Pipeline Company-Capac Compressor Station (SRN: B6481) located at 4876 Kettlehut RD, CAPAC, MI 48014. The purpose of the inspection was to determine the company's compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); the Air Pollution Control Rules; and the conditions of Permit to Install (PTI) No. 136-20.

SOURCE DESCRIPTION

ANR Pipeline Company-Capac Compressor Station is a natural gas compression and transmission station. The facility stopped injecting gas into the field in 2004. Capac Compressor Station withdraws natural gas from the storage field twenty-four hours a day, seven days a week using a 700 HP electric motor reciprocating compressor to compress the gas prior to the dehydration system. In addition to the 700 HP electric motor, this facility has seven storage tanks, two furnaces, one diesel-fired emergency generator, and one glycol dehydrator system. There are a total of 20 gas-fired heaters/water heaters. All are exempt sources. There were an additional 8 heaters in the unit building that were taken out of service when the compressor engines were retired.

The facility operates the glycol dehydration system (EUCP003) to remove moisture and hydrocarbons from natural gas. The system consists of a flash vessel, heat exchanger and filters, distillation column, and a reboiler/surge tank. The emissions to the atmosphere from the glycol dehydration unit (EUCP003) are destroyed by a thermal oxidizer.

A condenser is used as a backup to the thermal oxidizer. Capac Compressor Station operates a diesel fuel-fired emergency electricity generator on-site for interruptions in power supply to the facility.

INSPECTION

At 11:23 AM, I arrived at the facility and was greeted by Lisa Fishbeck, Environmental Analyst. I introduced myself, provided credentials, and stated the purpose of the inspection. In the conference room, I met with Nicholas Rudolph, Area Manager, and Mark Ogden, field staff. I discussed PTI No. 136-20 conditions and requested the record and monitoring information. Then CAPAC staff and I toured the facility.

Permit History and Opt-out permit

ANR Pipeline Company-Capac Compressor Station submitted a Permit to Install (PTI) application to establish opt-out limits to void their Title V permit. On March 31, 2021, EGLE-AQD approved and issued a Permit to Install (PTI) No. 136-20.

ANR Pipeline Company-Capac Compressor Station was requesting to establish Title V opt-out limits for HAPs. ANR removed equipment from the Capac site which lowered the potential for criteria pollutants and HAPs to below Title V thresholds. Due to the change in policy for once-in always-in, ANR would no longer be subject to NESHAP Subpart HHH if the facility is an area source of HAPs.

ANR Pipeline Company-Capac Compressor Station proposed to limit the maximum dry gas throughput to 6 MMSCF/day for the glycol dehydrator system to ensure HAP emissions will remain below the applicable major source thresholds. The emergency generator proposed to have a 500 hrs/yr limit.

Regulatory Analysis
Applicable State Rules
Rule 205- Enforceable Emission Limits

- ANR has requested an enforceable limit for the maximum dry gas throughput of the glycol dehydration system to 6 MMSCF/day to ensure HAP emissions remain below major thresholds. Though despite this, the facility is not subject to new source review (NSR).

Rule 702 – New sources of VOCs

- Not subject to Rule 702 because the project did not trigger NSR.

Rule 224- T- BACT

- The project is not subject to Rule 224 because the project is not a “modification” by definition. To “modify” means a physical change or change in the method of operation which increases the amount of air contaminant which is not already allowed. Since this application is to lower emissions of air contaminants, it is not considered a modification under the rule. Therefore, Rule 224 does not apply.

Rule 225- Screening Levels for TACs

- The project is not subject to Rule 225 because the project is not a “modification” by definition. To “modify” means a physical change or change in the method of operation which increases the amount of air contaminant which is not already allowed. Since this application is to lower emissions of air contaminants, it is not considered a modification under the rule. Therefore, Rule 225 does not apply.

REGULATORY ANALYSIS

EUCP003
Emission Unit Conditions

The purpose of the glycol dehydration unit (EUCP003) is to remove excess moisture from natural gas when it is withdrawn from the storage field at reduced pressure. Natural gas was being withdrawn from the storage field at the time of the inspection and EUCP003 was in operation.
Pollution Control Equipment: thermal oxidizer and condenser

Emission Limits
Per SC I.1-2, I reviewed the VOC emission records for EUCP003 from February 2020 through July 2022. Following is the summary of the records:

Pollutant	Emission	Limit	Time period	Equipment
1. Volatile Organic Compound (VOC)	The highest daily VOC emission was 4 lb/day on 26 June 2022.	45.5 pounds	Daily	Glycol dehydration unit and associated equipment

2. VOC	The highest 12-Month rolling VOC emissions reported was 0.022 tons.	8.3 tons	12-month rolling.	Glycol dehydration unit and associated equipment
3. Benzene	The highest 12-month rolling Benzene emissions reported was 0.006.	1 ton (0.9 megagrams)	12-month rolling	Glycol dehydration unit and associated equipment

VOC and benzene emission factors were calculated using the GRI-GLYCalc and 2019 gas analysis report. VOC and Benzene emissions from the glycol dehydration system were less than 1% of the permit limits. This satisfies the permit conditions set forth in SC I.1 and SC I.2.

Material Limits

Material	Limit	Time period/ Operating scenario	Equipment	Monitoring/Testing Method
1. Dry natural gas throughput	6 MMSCF/day	Daily	EUCP003	SC VI.5

Per VI.6, The permittee shall monitor and record the maximum dry gas throughput of the glycol dehydrator system daily. I reviewed the daily records of dry gas throughput of the glycol dehydrator system from January 2021 through July 2022 and found the daily maximum dry gas throughput of the glycol dehydrator system was 3.9 MMSCF/day which is less than the daily throughput limit of 6 MMSCF/day.

Process/operational Restrictions

Per SC III.1, The permittee shall not operate the glycol dehydration unit unless the thermal oxidizer operating temperature is at least 760°C (1400°F), a minimum residence time of at least 0.5 seconds is maintained, and the VOC destruction efficiency is at least 95 percent by weight, except during a thermal oxidizer malfunction as specified in SC IV.3.

- During the inspection, at the temperature monitor screen, I observed the thermal oxidizer temperature was 1540°F, above the minimum operating temperature of 1400°F. I reviewed the thermal oxidizer daily temperature record from January 2021 through July 2022 and found thermal oxidizer operating temperature was always above the minimum operating temperature of 1400°F.

Per SC III.2, The permittee shall not operate the glycol dehydration unit during thermal oxidizer malfunction unless the condenser exhaust temperature is 140°F or less

- During the period of January 2021 through July 2022, the permittee several times used the condenser, and the exhaust temperature of the condenser was less than 140°F.

Per SC III.3, The permittee does not use stripping gas in EUCP003 according to Chris McFarlane, Environmental Service Manager, TC Energy.

Design/Equipment parameters

Per IV.1, The permittee shall not operate the glycol dehydration unit unless a properly operating flash tank, which would volatilize organic compounds out of the rich glycol stream and route them to the glycol dehydration unit reboiler unit, is installed and operating properly.

Per IV.2, The permittee shall not operate the glycol dehydration unit unless the glycol regenerator still is equipped with a properly installed and operating thermal oxidizer, except as specified in SC IV.3 below.

- Per SC IV.1 and SC IV.2, at the time of the inspection, I observed, that a flash tank (3-phase separator) was installed. Rich glycol feeds the flash tank. Flash gas (VOCs) go to the reboiler and are burned as fuel (when the burner is on). If the reboiler is off, flash gas goes to the BTEX tank, which has control (i.e., either the thermal oxidizer or condenser). The thermal oxidizer is the primary control, and the condenser is the backup control.

Per IV.3, The permittee may operate the glycol dehydration unit in the event of a thermal oxidizer malfunction if the glycol regenerator still is equipped with a properly installed and operating condenser.

- Per SC IV.3, at the time of the inspection, I observed, that a glycol regenerator still was equipped with a condenser. More details are explained in SC III.2 (Process/Operational restrictions).

Per SC IV.4, The permittee shall equip and maintain an operating temperature monitor for the thermal oxidizer.

- A temperature transmitter is installed inside of the stack and used to monitor the thermal oxidizer temperature.

Per IV.5, The permittee shall equip and maintain an exhaust gas temperature monitor for the condenser.

- A temperature transmitter is installed inside of the stack and used to monitor the condenser temperature.

Per IV.6, The permittee shall install, operate and maintain a device to monitor and record the natural gas throughput on a dry basis through the glycol dehydration unit.

- The permittee remotely controls and records the natural gas throughput on a dry basis through the glycol dehydration unit. More details are explained in SC II.1 (materials limit).

Testing/sampling
Per SC V.1, The permittee shall determine the composition, including the VOC and benzene content, of the natural gas processed in the glycol dehydration system at least once every five years. The natural gas composition shall be determined by a method or methods which are standard in the natural gas industry, subject to approval by the Air Quality Division. The permittee shall recalculate the emission factor specified in SC VI.9 each time the natural gas is analyzed to determine composition including VOC and benzene content.

- As specified in SC V.1, the permittee shall determine the composition, including VOC and benzene content of the natural gas processed in the glycol dehydration system at least once every five years. The most recent gas analyses were conducted on February 12, 2019, and before that the gas analysis was conducted in March 2014.

Per VI.8, The permittee shall separately calculate and record VOC and benzene emissions from the glycol dehydration unit on a monthly basis, in tons, and on a 12-month rolling time period basis, in

tons per year. The permittee shall make these monthly and 12-month rolling time period records available to the AQD upon request no later than the 15th of the next calendar month.

- See the details in FGFACILITY conditions and SC II.2-3 (Material Limits).

Monitoring/Recordkeeping
Per VI.2, The permittee shall monitor and record the thermal oxidizer operating temperature on a daily basis when the glycol dehydration unit is operating, except in the event of a thermal oxidizer malfunction.

- Details are explained in SC III.1(Process/operational Restrictions).

Per VI.3, The permittee shall monitor and record the condenser exhaust gas temperature on a daily basis when the glycol dehydration unit is operating, as specified in SC IV.3 above.

- Details are explained in SC III.1(Process/operational Restrictions).

Per VI.4, The permittee shall monitor and record the total hours of operation of the glycol dehydration unit for each day.

- I reviewed the "Monthly Dehydration System Monitoring Report" that records the total hours of operation of thermal oxidizer and condenser for each day from January 2021 through July 2022.
- The total hours of operation of the glycol dehydration unit for each day are the summation of hours of operation of the thermal oxidizer and condenser for each day.

Per SC VI.5, The permittee shall monitor and record the maximum dry gas throughput of the glycol dehydrator system on a daily basis.

- Details are explained in SC II.1 (Material Limit).

Per SC VI.6, The permittee shall monitor and record the total hours of operation of the thermal oxidizer for each day.

- I reviewed the "Monthly Dehydration System Monitoring Report" from January 2021 through July 2022 that records the total hours of operation of the thermal oxidizer unit for each day

Per VI.7, The permittee shall calculate and record the amount of VOC emissions, in pounds, from the glycol dehydration unit for each calendar day. The calculated VOC emissions for each day of a calendar month shall be available to the AQD upon request no later than the 15th of the next calendar month.

- Details are explained in SC I.1-2 (Emission Limit).

Per VI.8, The permittee shall separately calculate and record VOC and benzene emissions from the glycol dehydration unit on a monthly basis, in tons, and on a 12-month rolling time period basis, in tons per year. The permittee shall make these monthly and 12-month rolling time period records available to the AQD upon request no later than the 15th of the next calendar month.

- Details are explained in SC I.1-3 (Emission Limit).

Reporting
NA

Stack/vent restrictions
I observed the exhaust stacks appeared vertical and unobstructed. SVCP007 (oxidizer) and SVCP003 (condenser) stack appeared to be at least 16 feet above ground in height.

EUCPGENERATOR

The facility operates a CAT 3406DI diesel fuel-fired compression ignition (CI) engine, and a standby emergency electricity generator (305 hp, 4 strokes) to generate electricity during emergencies. The engine was installed in 1978

Material Limit
Per SC II.1, the permittee shall burn only ultra-low sulfur diesel fuel, in EUCPGENERATOR with the maximum sulfur content of 15 ppm (0.0015 percent) by weight, and a minimum Cetane index of 40 or a maximum aromatic content of 35 volume percent.

- Chris McFarlane provided a safety data sheet from the fuel supplier that indicates the name of the oil supplier or laboratory, the sulfur content, and the cetane index or aromatic content of the fuel oil. According to the safety data sheet, the permittee only burns ultra-low sulfur diesel fuel with the maximum sulfur content of 15 ppm (0.0015 percent) by weight.

Process/Operational restrictions
Per SC III.1, the permittee shall not operate EUCPGENERATOR for more than 500 hours per year on a 12-month rolling time basis as determined at the end of each calendar month. The 500 hours include the hours for the purpose of necessary maintenance checks and readiness testing.

- I reviewed the EUCPGENERATOR operational hours from January 2021 through June 2022. The highest reported 12-month rolling hours of operation for EUCPGENERATOR was 25.60 hours.

Design/Equipment Parameters
Per IV.1, I observed a non-resettable hour meter was installed on the engine and the total operation time of the emergency generator was 598.8 hours on August 2, 2022. In my last inspection on November 6, 2019, the total operation time of the emergency generator was 547.6 hours. The engine has been operated since 2013.
Per IV.2, the EUCPGENERATOR nameplate capacity shall not exceed 305 HP at full prime for the engine, as certified by the equipment manufacturer. At the time of inspection, I observed the capacity of the engine is 305HP in the nameplate.

Testing/Sampling
NA

Monitoring/recordkeeping
Per SC VI.2, the permittee shall monitor and record, in a satisfactory manner, the hours of operation for EUCPGENERATOR on a monthly and 12-month rolling time period basis.
As required in SC VI.2, I reviewed the records of the hour of operation for EUCPGENERATOR on a monthly and 12-month rolling time period basis from January 2021 through July 2022. Details are explained in SC III.1 (Process/Operational restrictions).

Per SC VI.3, the permittee shall maintain fuel supplier certification records, ASTM specifications, or fuel sample analyses for each delivery, or storage tank of fuel oil, used in EUCPGENERATOR, demonstrating that the fuel meets the requirements of 40 CFR 80.510(b). The certification or

analyses shall include the name of the oil supplier or laboratory, the sulfur content, and the cetane index or aromatic content of the fuel oil.

- Chris McFarlane provided a safety data sheet from the fuel supplier that indicates the name of the oil supplier or laboratory, the sulfur content, and the cetane index or aromatic content of the fuel oil. See more details in SC II.1 (Material Limit).

OTHER REQUIREMENT(S)

Per IX.1. The permittee shall comply with the provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR Part 63, Subpart A and ZZZZ, as they apply to EUCPGENERATOR. (40 CFR Part 63, Subparts A and ZZZZ, 40 CFR 63.6595).

- EGLE-AQD is not delegated to enforce the area source requirements for this NESHAP.

FGFACILITY CONDITIONS

Pollution Control Equipment Glycol dehydrator has a thermal oxidizer with a condenser as a backup.

Pollutant	Limit	Time Period/Operating Scenario	Monitoring/Testing Method
Individual HAPs	8.9 tpy	12-month rolling time period as determined at the end of each calendar month	SC VI.2
Aggregate HAPs	22.4 tpy	12-month rolling time period as determined at the end of each calendar month	SC VI.2

From January 2021 through July 2022, I reviewed the monthly HAP emissions and 12- month rolling HAP emission, it appears the facility did not exceed the individual HAPs emissions of 8.9 tpy and aggregate HAPs emissions of 22.4 ton per year. Detail records are given below:

	Monthly HAP Emissions (tons)					Rolling 12 HAP Emissions (tons)				
Month	n-Hexane	Benzene	Toluene	Xylenes	Total HAPS	n-Hexane	Benzene	Toluene	Xylenes	Total HAPS
Jan-21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feb-21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar-21	0.01	0.05	0.05	0.01	0.12	0.01	0.05	0.05	0.01	0.12
Apr-21	0.01	0.07	0.07	0.01	0.15	0.02	0.12	0.12	0.02	0.28
May-21	0.01	0.08	0.08	0.01	0.19	0.03	0.20	0.20	0.04	0.47
Jun-21	0.01	0.06	0.06	0.01	0.14	0.04	0.26	0.26	0.05	0.61
Jul-21	0.01	0.05	0.05	0.01	0.13	0.05	0.32	0.31	0.06	0.73
Aug-21	0.01	0.06	0.06	0.01	0.14	0.06	0.38	0.37	0.07	0.87
Sep-21	0.00	0.01	0.01	0.00	0.03	0.06	0.39	0.39	0.07	0.91
Oct-21	0.00	0.00	0.00	0.00	0.00	0.06	0.39	0.39	0.07	0.91
Nov-21	0.00	0.00	0.00	0.00	0.00	0.06	0.39	0.39	0.07	0.91
Dec-21	0.00	0.00	0.00	0.00	0.00	0.06	0.39	0.39	0.07	0.91
Jan-22	0.00	0.00	0.00	0.00	0.00	0.06	0.39	0.39	0.07	0.91
Feb-22	0.00	0.00	0.00	0.00	0.00	0.06	0.39	0.39	0.07	0.91
Mar-22	0.00	0.00	0.00	0.00	0.00	0.05	0.34	0.34	0.06	0.78
Apr-22	0.00	0.00	0.00	0.00	0.00	0.04	0.27	0.27	0.05	0.63
May-22	0.01	0.07	0.08	0.01	0.17	0.04	0.26	0.26	0.05	0.61
Jun-22	0.02	0.10	0.10	0.02	0.23	0.05	0.30	0.31	0.05	0.71
Jul-22	0.01	0.05	0.05	0.01	0.12	0.05	0.30	0.31	0.05	0.70

Conclusion

Based on an onsite inspection, review of records, and discussion with facility staff, the facility appears to be in compliance with the conditions of PTI No. 136-20.

NAME Shamim Ahammod DATE 09/30/2022 SUPERVISOR K. Kelly