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

N294044500

FACILITY: DCP Antrim Gas LLC		SRN / ID: N2940
LOCATION: 6250 OLD STATE RD, JOHANNESBURG		DISTRICT: Gaylord
CITY: JOHANNESBURG		COUNTY: OTSEGO
CONTACT: Dave Bennett , Manager Area Operations		ACTIVITY DATE: 05/24/2018
STAFF: Sharon LeBlanc	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled site inspection for fiscal year 2018. Compliance issue with respect to monitoring and recordkeeping for FGENGINES was identified during evaluation of records associated with the site inspection. sgl		
RESOLVED COMPLAINTS:		

On Thursday, May 24, 2018, AQD District Staff conducted a scheduled site inspection of the DCP Antrim Gas, LLC South Chester Antrim Carbon Dioxide (CO2) Removal Facility. The referenced facility is located at 6250 Old State Road, Johannesburg, Otsego County, Michigan (N2940). Facility operations are conducted under Renewable Operating Permit (ROP) MI-ROP-N2940-2015 issued on July 6, 2015, which expires on July 6, 2020.

AQD District Staff met with Dave Bennett, Michigan Operations Manager at the time of the visit, and he provided a tour of the site. Supplemental information required to determine compliance was requested from DCP Midstream, LP (AKA DCP) Environmental Staff.

Multiple compliance issues were noted during the August 8, 2016, scheduled site inspection. A number of which were associated with proper implementation of the Malfunction Abatement Plan (MAP) associated with the facility. A Violation Notice (VN) was issued on September 19, 2016 and was resolved on May 8, 2017.

LOCATION

Located in South Chester Township, Otsego County, Johannesburg, Michigan, the facility is located at the NE corner of Turtle Lake and Old State Roads. Note that the Otsego County Property Records identified the following properties adjacent to the Facility:

- **DTE Michigan Holdings, Inc. (West),**
- **CORE Midstream LLC (West),**
- **Wilderness-Chester Gas Process (North), and**

To the south across Old State Road, as well as to the east and west are State of Michigan undeveloped properties. The ANR South Chester Pipeline Facility (B7219) is located less than ¼-mile to the east of the Facility on the south side of Old State Road.

The CORE Midstream LLC Facility is reported to take part of the CO2 produced by the Facility and puts it "downhole". Mr. Bennett reported that this is not a contracted agreement, that the NG producers actually "own" the NG, including the CO2 removed. CORE Midstream deals with the producers directly, and that the quantity of CO2 they receive reflects those agreements.

It was noted during the May 24, 2018, inspection that the Wilderness- Chester Facility to the north of the site has been decommissioned, the buildings and equipment formerly associated with it removed. Mr. Bennett indicated that the facilities are on long term leases with the state.

FACILITY

Operations at the South Chester Antrim CO2 Removal Facility consist of removal of high concentrations of CO2 from Antrim Formation natural gas (NG) by an absorption treating process which utilizes amine. Higher CO2 concentrations dilute the NG and reduce the heating value of the gas and increases the risk of internal corrosion problems in transmission and storage facilities. The CO2 concentration of the natural gas is reduced to customer sales requirements and the Michigan Public Service Commission stipulations.

Facility staff report that as the Antrim Formation is depleted over time that higher concentrations of CO2 have been noted. It was also discussed that some locations on the west side of the State have identified H2S concentrations where previously none had been associated with the Antrim gas.

The Facility is fenced, gated and consists of 12 buildings which house not only process equipment but staff offices, the maintenance shop, and motor control centers for each plant. EUPLANT6, also referred to by the Facility as the North Chester Turtle Lake Plant or EUCHESTER10 was acquired from DTE and was added to the Facility as part of the most recent ROP Renewal. Incoming gas is treated initially at EUPLANT6. EUPLANT6 is not a part of FGPLANTRA and is reported separately in semi-annual and annual reporting.

At the time of the August 2016 site inspections EUGEN07 was not in operation and was not anticipated to be fixed in the future. At the time of the May 24, 2018, site inspection, the Facility indicated that the referenced EU would not be put back into operation and that the facility was looking at replacement of all six of their Reciprocating Internal Combustion Engines (RICE) with an additional turbine and a new emergency generator. Permitting activities potentially to begin yet this year.

No changes in process, or new processes are reported for the Facility. In addition, only maintenance activities have been conducted onsite. No new or replaced equipment is associated with the site.

Weather conditions at the time of the site inspection consisted of sunny with scattered clouds, temperatures in the 80's. Some scant steam plumes were visible but dissipated quickly. No VEs were noted.

PERMITTING

A review of records indicate that activities onsite were initiated as early as 1991, with further permitted expansions of the facility through to 1997. Initial permits were issued to Antrim Limited Partnership, after 1994 permits associated with the facility were issued to MCN Oil & Gas Company, MCNIC Pipeline & Processing, DTE Michigan Holdings, Inc., CMS Antrim Gas Company and CMS Antrim Gas, LLC. Records indicate that 8 permits were rolled into the existing ROP, five other permits were voided, as were three permit applications.

REGULATORY

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

PARAMETER	CLASSIFICATION	COMMENT
NOx	Major	Potential for Significant Deterioration (PSD) for NOx*
SO2	Minor	
CO	Synthetic Minor	
Pb	Minor	
PM	Minor	
VOC	Synthetic Minor	
HAPs	Area	

* In 2009, the source acquired adjacent property owned by MichCon Pipeline Company. It was the combined sources that resulted in the Facility being designated a PSD Facility.

Applicable Federal Requirements:

EMISSION UNIT	40 CFR SUBPART	TITLE
Source	Part 70	State Operating Permit Program
EUPLANT1HEATER, EUPLANT2HEATER, EUPLANT3HEATER, EUPLANT4HEATER, EUPLANT5HEATER, EUPLANT1HEATER,	40 CFR Part 60, Subparts A and Dc	Standards of Performance for Small Industrial-Commercial- Institutional Steam Generating Units

EUPLANT6HEATER (FGPLANTPH)		
EUTUR01, & EUTUR02 (FGTURB1AND2)	Part 60, Subpart A and GG	Standards of Performance for Stationary Gas Turbines
EUP1DEHY, EUP2DEHY, EUP3DEHY, EUP4DEHY, EUP5DEHY, & EUP6DEHY, (FGGD01)	40 CFR Part 63, Subparts A and HH	Glycol Dehydrators Area Source MACT
EUENGINE1, EUENGINE2, FGENGINES, EUGEN06, EUGEN07, EUGEN08, & EUGEN09, (FGGEN6789 & FGMACTZZZZ)	Part 63, Subpart A and ZZZZ	National Emission Standards for HAPs (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE)

The referenced facility does not process, or store petroleum liquids onsite and therefore appears to not be subject to 40 CFR Part 60 (New Source Performance Standards AKA NSPS) Subparts;

- K, Ka or Kb (Storage vessels for Petroleum Liquids);
- KKK (Equipment Leaks of VOC from onshore NG Processing Plants);
- VV (Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry);

Review of a self-initiated site inspection report dated October 11, 2016 identified the facility as subject to 40 CFR Part 98, Subpart W, as an onshore NG Processing Facility under which is required equipment leak detection and compressor monitoring activities. At the time of the referenced inspection, as well as at the time of report preparation, the AQD has not been delegated authority for the referenced subpart.

In addition, the existing engines have a manufacture date prior to 2006 which would exempt them from being subject to NSPS Subparts IIII and JJJJ for Compression Ignition (CI) RICE and Spark Ignition (SI) RICE, respectively.

Subpart OOOO would apply to onshore affected facilities that are constructed, modified or reconstructed after August 23, 2011. Based on available information it appears that the referenced subpart is not applicable at this time but that future changes may be subject to the referenced subpart.

EQUIPMENT

The referenced facility consists of six process plants for removing high concentrations of CO2 from Antrim formation NG using an absorption treatment process utilizing methyldithanolamine (MDEA), also referred to as amine. Each plant contained one NG fired media heater (EUPLANT#HEATER), one MDEA process (EUPLANT#AMINE), and one Triethylene glycol dehydrator (EUP#DEHY).

In addition to the six CO2 removal plants the facility has:

- Six NG-fired RICE generator engines,
  - Two NG-fired 930 HP Caterpillar 399 TA engines with 3-way catalysts (EUENGINE1, EUENGINE2)
  - Four NG-fired 1,150 HP Caterpillar 3156 lean burn generator engines (EUGEN06, EUGEN07, EUGEN08 and EUGEN09)
- Two NG-fired 3.5 MW, Centaur 40-T4700 turbines. (EUTUR01 and EUTUR02)

As previously reported installation dates reported for equipment onsite for 1991 through 1997. Flexible groups (FGs) are based on the type of equipment rather than plant numbers. MDEA processes 1-5

(EUPLANT1AMINE through EUPLANT5AMINE) make up the FGPLANTRA. MDEA process plant 6 is also referred to by the Facility as the" North Chester Turtle Lake Plant" and is reported to use FGENGINES as their power source. The Flexible Groups are summarized below:

EMISSION UNIT	FLEXIBLE GROUP
EUENGINE1, EUENGINE2	FGENGINES
EUGEN06, EUGEN07, EUGEN08 and EUGEN09	FGGEN6789,
EUENGINE1, EUENGINE2, EUGEN06, EUGEN07, EUGEN08 and EUGEN09	FGMACTZZZZ
EUTUR01 and EUTUR02	FGTURB1AND2
EUPLANT1AMINE, EUPLANT2AMINE, EUPLANT3AMINE, EUPLANT4AMINE and EUPLANT5AMINE	FGPLANTRA
EUPLANT1HEATER, EUPLANT2HEATER, EUPLANT3HEATER, EUPLANT4HEATER, EUPLANT5HEATER and EUPLANT6HEATER	EUPLANTPH
EUP1DEHY, EUP2DEHY, EUP3DEHY, EUP4DEHY, EUP5DEHY and EUP6DEHY	FGGD01

Other equipment identified onsite includes:

- **Four 7,000 BTU/hr, NG-fired shop space heaters (EUSHOPHEAT1 through EUSHOPHEAT4),**
- **One 140,000 BTU/hr, NG-Fired, office building space heater (EUBUILDINGHEAT1), and**
- **One 105,000 BTU/hr, NG-fired, office building space heater (EUBUILDINGHEAT2).**

The six above referenced heaters appear to be exempt from permitting under Rule 282 (2)(b)(i) for sweet gas fired, space heating with rated capacity of <50,000 BTU/hour.

REPORTING

In addition to prompt reporting of deviations pursuant to General Condition 21 and 22 under MI-ROP-N2940-2015 the Facility is required to complete the following reporting:

EMISSION UNIT	SEMI-ANNUAL (GC 23 and SC VII.2)	ANNUAL (GC 19 & 20 and SC VII.3)	OTHER REPORTING
EUPLANT6AMINE	Y	Y	
FGENGINES (EUENGINE1 & EUENGINE2)	Y	Y	
FGMACTZZZZ (EUENGINE1, EUENGINE2, EUGEN06, EUGEN07, EUGEN08 & EUGEN09)	Y	Y	40 CFR 63.6645 and Part 63 Subpart A (SC VII.4) and Subpart ZZZZ (SC IX.1)
FGTURB1AND2 (EUTUR01 and EUTUR02)	Y	Y	
FGGEN6789 (EUGEN06, EUGEN08 and EUGEN09)	Y	Y	
FGPLANTRA (EUPLANT1AMINE, through EUPLANT5AMINE)	Y	Y	
FGPLANTPH (EUPLANT1HEATER through EUPLANT6HEATER)	Y	Y	Subpart Dc (SC IX.1)
FGGD01 (EUP1DEHY through EUP6DEHY)	Y	Y	Subpart HH

TESTING

Emissions testing required under MI-ROP-N2940-2015 includes:

EMISSION UNIT	PARAMETER	EMISSION LIMIT	TESTING FREQUENCY	MOST RECENT TEST
FGENGINES (EUENGINE1 & EUENGINE2)	NOx	18 tpy (SC I.1)	every 5 years (V.1)	June 26 & 27, 2014 **
FGTURB1AND2 (EUTUR01 and EUTUR02)	NOx	167 ppm, (corrected to 15% O2)(SC I.1) and 17.1 pph (SC I.2)	every 5 years (V.1)	June 5, 2014
FGTURB1AND2 (EUTUR01 and EUTUR02)	CO	50 ppm, (corrected to 15% O2)(SC I.3) and 5.3 pph (SC I.4)	every 5 years (V.1)	June 5, 2014
FGGEN6789 (EUGEN06, EUGEN08 and EUGEN09)*	NOx	5.5 pph (SC I.1)	every 5 years (V.1) and 180-days after restarting EUGEN07 (V.2)	May 28 & 29, 2014 EUGEN07 was not operating and was not tested at that time.
FGGEN6789 (EUGEN06, EUGEN08 and EUGEN09)*	CO	4.0 pph (SC I.3)	every 5 years (V.1) and 180-days after restarting EUGEN07 (V.2)	May 28 & 29, 2014 EUGEN07 was not operating and was not tested at that time.
EUPLANT1HEATER	NOX	5.6 pph (SC I.1)	every 5 years (V.1)	June 25, 2014
EUPLANT2HEATER, EUPLANT3HEATER, EUPLANT4HEATER and EUPLANT5HEATER	NOx	5.2 pph (SC I.2)	every 5 years (V.1)	June 23 – 25, 2014
EUPLANT3HEATER, EUPLANT4HEATER and EUPLANT5HEATER	CO	3.0 pph (SC I.4)	every 5 years (V.2)	June 23 – 25, 2014

* EUGEN07 was not operational at the time of testing, nor during the August 2016 compliance inspection. Per SC V.2 the engine is required to test within 180-days after restarting. Recent discussions with Facility staff indicated that EUGEN07 will not be repaired and restarted.

** In electronic correspondence resulting from evaluation of 12-month rolling NOX emissions, DCP indicated that the 2014 testing of FGENGINES was not required at the time of testing and has not been used by the Facility to determine emissions.

A review of District Files indicated that test protocols (SC VII.4), seven-day notifications (SC VII.5) and test reports (SC VII.6) appear to have been submitted in a timely manner in compliance with permit conditions.

It should also be noted that copies of the May and June 2014 Test Reports could not be found in District Files. Documentation in the District Files reported that CO test results of Turbine 1 of FGTURB1AND2 exceeded the CO lb/hr limit at that time. A VN was issued on August 21, 2014. The Facility response

dated September 10, 2014, included a schedule of compliance which included re-permitting of the referenced EU with a higher CO emission limit. The VN was resolved on March 19, 2015.

STACKS

In order to determine compliance with stack dimensions in the ROP, Facility staff conducted As-built review and where necessary actual field measurement to confirm dimensions. Stack/Vent restrictions (VIII) for exhaust gases for EU/FG onsite include:

EU/FG	Maximum Exhaust Dimensions (inches)	Minimum Height Above Land Surface (feet)	In Compliance with ROP Stack Restrictions
EUPLANT6AMINE	12	50	Yes (11" X 50')
EUTUR01	48	34	Yes (36" X 34'6")
EUTUR02	48	34	Yes (36" X 34'6"')
EUGEN06	10	35	Yes (9" X 36')
EUGEN07	10	35	Yes (9" X 36')
EUGEN08	10	35	Yes (9" X 36')
EUGEN09	10	35	Yes (9" X 36')
EUPLANT1AMINE	16	75	Yes (15.25" X 76.6')
EUPLANT2AMINE	16	75	Yes (15.25" X 75')
EUPLANT3AMINE	16	75	Yes (15.25" X 75')
EUPLANT4AMINE	16	75	Yes (15.25" X 75')
EUPLANT5AMINE	16	75	Yes (15.25" X 75')
EUPLANT1HEATER	72	100	Yes (11" X 106')
EUPLANT2HEATER	72	95	Yes (11.5" X 95' 2.5")
EUPLANT3HEATER	72	95	Yes (11.5" X 95' 2.5")
EUPLANT4HEATER	72	95	Yes (11.5" X 95' 2.5"')
EUPLANT5HEATER	72	95	Yes (11.5" X 95' 2.5")

COMPLIANCE

VNs were issued in August 2014 as a result of failed CO verification testing for EUTURB01 of FGTURB1AND2, and more recently in September 2016 for various compliance issues many related to implementation of the MAP for FGENGINES.

The compliance status for the facility has been based on information provided during the May 24, 2018, site inspection, as well as on supplemental data and reports submitted upon request or to meet permit requirements identified under MI-ROP-N2940-2015. Supplemental data was reviewed for compliance with permit conditions, however, only random dates are presented in this document.

EUPLANT6AMINE – The emission unit is also known as the "Plant 6 MDEA CO2 Process", "North Chester Turtle Lake Plant" or former "EUCHESTER10". NG is processed at a rate of 35 MMSCFD. The ROP contains no testing requirements for this EU.

Material/Operational Limits– Limits for EUPLANT6AMINE include a process in limit of no more than 4,950,000 cubic feet of CO2 in the EU per day (SC III.1) and CO2 emissions of no more than 574,250 lbs per day (SC I.1). Data provided confirmed compliance with the referenced limits.

Design/Operational Restrictions – Under the ROP, the permittee is required to install, calibrate, maintain and operate a device to monitor and record;

- NG flow entering EUPLANT6AMINE (continuously) (SC IV.1),
- CO2 content of NG entering EUPLANT6AMINE (SC IV.2).

Data provided by the Facility clearly indicated that CO2 content and NG flow are continuously monitored by the Facility in compliance with permit conditions.

Monitoring/Recordkeeping – The permittee shall monitor and record:

- The flow rate of natural gas entering the plant on a continuous basis (SC VI.1),
- The CO2 content of the NG entering the EU on a daily basis (SC VI.2),
- The calculated amount of the CO2 processed for the calendar day (SC VI.4), and
- The calculated CO2 emission rate from EUPLANT6AMINE for each calendar day (SC VI.3).

Data for 2017 and the first quarter of 2018 was reviewed as part of the compliance evaluation. Data provided confirmed compliance. Random data points noted during the review reported the following:

DATE	NG FLOW RATE (per day) (SC VI.1)	CO2 CONTENT (per day) (SC VI.2)	CO2 Processed (cubic feet per day) (SC VI.4)	CO2 EMISSION RATE (lb per day) (SC VI.3)
Feb. 7, 2017	16,039	18.9290	2,943 MCF	341,385 lbs
April 18, 2017	20,460	23,2996	4,584 MCF	531,739 lbs
August 28, 2017	17,570	18.8400	3,211 MCF	372,473 lbs
October 12, 2017	0	19.8185	0 MCF	0 lbs
December 17, 2017	16,046	19.6328	3,146 MCF	364,933 lbs
LIMITS	NA	NA	4,950,000 cubic feet per day. (SC III.1)	574,250 lb per day (SC I.1)

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Reporting - Prompt reporting of deviations pursuant to GC 21 & 22 (SC VII.1) as well as semi-annual and annual reporting requirements (SC VI.2 & VII.3) have been addressed previously in this report.

FGENGINES - This FG includes two NG-fired, 930 HP Caterpillar 399 TA, rich-burn engines equipped with 3-way catalysts (EUENGINE1 and EUENGINE2) (AKA Turtle Lake #1 south and Turtle Lake #2 north). No material limits are associated with this FG.

Operational Limits – The engines (EUENGINE1 and EUENGINE2) of FGENGINES shall not be operated unless the following has been installed, maintained and operated in a satisfactory manner:

- 3-way catalysts for each engine, (SC III.1)
- A calibrated device to continuously monitor and record the flow rate of NG being burned in FGENGINES, (SC III.5),
- Temperature gauge or thermocouple to monitor the operation of the catalyst, (SC III.3)
- A differential pressure gauge or manometer to monitor the operation of each catalyst (SC III.4)

As part of the May 24, 2018 site inspection, AQD Staff has confirmed the installation of the above referenced equipment in compliance with the permit conditions.

Emission Limits - Emission limits associated with FGENGINES is limited to 18 tons/year of NOx based on a 12-month rolling time period and determined at the end of each calendar month (SC I.1). Emissions reported for the FG were reviewed for the calendar year of 2017 and the first quarter of 2018. Data initially presented was comprised of hand held analyzer data generated during recent catalyst verification activities (September 9, 2016). Discussions with DCP environmental staff indicated that the use of the EF from the hand-held analyzer was is error, as other states in which DCP has facilities allow for it's use, but Michigan does not.

Per ROP monitoring and recordkeeping requirements for FGENGINES, determination of compliance with emission limits is to be shown with 12-month rolling total NOx emissions calculated using stack test data (SC VI.1). The Facility has indicated that June 2014 stack test was conducted without an existing permit requirement. They further indicated that the test data was not representative due to problems during the testing, and despite submittal to AQD TPU and approval of the test data to determine compliance.

The Facility has indicated that they would like to use MAERS EFs to show compliance with permit limits, however, as previously indicated SC VI.1 does not allow for that option. The Facility has historically used MAERS EFs for annual emission reporting. MAERS reported emissions for FG Engines for the previous calendar years are summarized below:

CALENDAR YEAR	NOx EMISSION FACTOR	NG USAGE (MMCF)	12-MONTH ROLLING NOx TOTAL (TPY)
2017	65.5 lb/MMCF (Hand Held Meter)	131.29	3.57 (14.7 using MAERS EF)
2016	2.254 E3 lb/MMCF (MAERS EF)	118.42	13.35
2015	2.254 E3 lb/MMCF (MAERS EF)	24.82	2.80
2014	2.254 E3 lb/MMCF (MAERS EF)	70.5	7.95
2013	2.254 E3 lb/MMCF (MAERS EF)	125.52	14.15
2012 (engines reported separately)	2.254 E3 lb/MMCF (MAERS EF)	132.97	14.99
LIMIT	NA	NA	18 TPY (SC I.1 and VI.1)

Testing Activities– Incorporated as part of the most recent ROP, the permittee is required every 5 years to perform testing to establish emission factors for demonstration of compliance with annual NOx limits. (SC V.1) As previously indicated, testing was completed June 26 and 27, 2014, though testing was not required by permit at that time. The requirement for testing was not in effect until July 6, 2015. Subsequent testing would be required on or before June 26 and 27, 2019.

Reported EFs determined by the 2014 testing of FGENGINES include the following:

DATE	NOx EMISSIONS (lb/hr)	CO EMISSIONS (lb/hr)	EMISSION UNIT
6/26/2014	0.08	25.63	EUENGINE1
6/27/2014	4.59	33.72	EUENGINE2

Note that some of the spreadsheets provided by the Facility indicated that additional testing was conducted on September 19, 2016, however upon further communications with the company the data represented reflects portable analyzer data collected by a contractor and does not reflect the quality of data that would be achieved with verification testing. As previously reported, the Facility has indicated that June 2014 stack test was not representative due to problems during the testing, and despite submittal to AQD TPU and approval of the use of the test data to determine compliance. NOX emission calculations based on the June 2014 test results indicated that the Facility may have exceeded 12-month rolling total NOx Limits. Additional evaluation of operational data using EFs from PTIs issued for the equipment, appear to indicate totals below the 18 TPY NOx limit.

It should be noted, that at the time of the 2015 ROP Renewal activities, the submittal of the June 2014 test results had been considered to meet testing requirements that would determine EFs for the engines. During the 2015 ROP Renewal the ROP was amended to include testing requirement SC V.1 and recordkeeping requirement SC VI.1. At the time of ROP renewal and continuing until winter 2015, the two engines were not operating. At the time of the August 8, 2016, site inspection the engines had not operated for a full 12-months, and the inspector indicated that a determination of NOX emissions for 12-months of operation could not be made at that time.

Monitoring/Recordkeeping – Under the ROP, the permittee is required to monitor and record:

- The permittee shall calculate and record monthly and 12-month rolling total NOx emissions using emission factors derived from the most recent stack test. (SV VI.1)
- NG-usage (continuous) of FGENGINES (SC VI.2)
- Differential pressure across each 3-way catalyst (Monthly) (SC VI.4)
- Inlet and Outlet temperatures of each 3-way catalyst (Daily) (SC VI.5), and
- Perform and maintain records of all maintenance for each 3-way catalyst (SC VI.3)

With the exception of NOx emission calculations (SC VI.1), records provided by the Facility confirmed that the above referenced records are maintained in compliance with permit requirements. As discussed previously, the Facility has been unable to provide records as required under SC VI.1.

Other required records for random dates for the 2017 calendar year and first quarter of 2018 included the following for EUENGINE01:

DATE	EUENGINE1 Differential Pressure (SC VI.4)	EUENGINE1 Inlet Temp (SC VI.5)	EUENGINE1 Outlet Temp (SC VI.5)
2/17/2017	2.2	1027	1052
6/9/2017	2.5	980	1103
10/22/2017	2.7	1050	1073
2/5/2018	2.1	987	1043
MAP RANGE	=/- 2-inches	>650	<1350, and higher than inlet Temp

Records for random dates for the 2017 calendar year and first quarter of 2018 included the following for EUENGINE02:

DATE	EUENGINE2 Differential Pressure (SC VI.4)	EUENGINE2 Inlet Temp (SC VI.5)	EUENGINE2 Outlet Temp (SC VI.5)
2/17/2017	2.4	1001	1016
6/9/2017	3.0	941	1027
10/22/2017	2.1	979	994
2/5/2018	3.7	1008	1004*
MAP RANGE	=/- 2-inches	>650	<1350, and higher than inlet Temp

* Note that the outlet temp reported for 2/5/2018 is outside of the acceptable range per the Malfunction Abatement Plan (MAP). Based on daily field log sheets this condition was from February 1 through 11, 2018.

NG usage records for FGENGINES for random dates during the 2017 calendar year and first quarter of 2018 included the following:

DATE	FGENGINES NG USAGE (MCF) (SC VI.5)
2/17/2017	1058
6/9/2017	1036
10/22/2017	931
2/5/2018	798

Maintenance records (SC VI.5) for the 3-way catalysts (miratech/IQ-20C) provided by the facility for FGENGINES was conducted by Archrock Staff and included the following dates:

UNIT	ANNUAL INSPECTION & WASHING	EMISSION ANALYSIS
EUENGINE1 (AKA Turtle Lake #1 south)	October 26, 2017, Nov. 13, 2017 **	October 26, 2017, Nov. 13, 2017*
EUENGINE2 (AKA Turtle Lake North unit #2)	October 19, 2017**	October 19, 2016, October 19, 2017*

*Emissions analysis data provided by the company confirmed the 90% NOx and 80% CO control efficiencies for the catalysts.

** Review of Archrock reports for catalyst inspection and emission analysis identified a discrepancy in cleaning and testing dates, it appears that the activity summary table may have incorrectly switched dates between the two EUs. The data presented in the table reflects the data from the site visit reports.

As previously indicated, DCP June 2014 stack test data for FGENGINES is presently being contested by the Facility, and as such, NOX emissions (derived from the most recent stack test data) are not available for calculation of emissions in compliance with SC VI.1. This represents a non-compliance issue for the facility.

Reporting – As previously indicated, semi-annual, annual and testing reporting requirements have been completed in general compliance with the permit conditions.

Other Requirements- FGENGINES is the only EU/FG which requires a Preventative Maintenance MAP (SC IX.1) (SC II.2). The referenced document as required by permit condition must identify the appropriate differential pressure (SC III.4) and temperature ranges (SC III.3) for proper operation. In addition, it must amongst other requirements identify corrective procedures or operational change that shall be taken in the event of a malfunction.

The referenced document was originally submitted by the Facility on April 20, 2011 and was approved by Gaylord Field Office AQD Staff on April 21, 2011. An updated MAP was prepared and submitted (December 16, 2016) as a result of compliance issues identified during the August 2016 compliance evaluation and identified in the September 19, 2016 VN. The updated MAP was approved by AQD District Staff on December 15, 2016. A review of operating parameters with respect to the PM/MAP include differential pressures across the catalyst, inlet and outlet temperatures, et al.

As previously noted review of handwritten log sheets for the month of February 2018 reported that the catalyst inlet and outlet temperatures were outside of the PM/MAP operating ranges. Discussions with Facility Staff indicated that the issue was the result of one of the 2 thermocouple sensors/probes for the post catalyst temperature failing. A new sensor probe was ordered, and the functional portion of the existing probe was wired into to the engine AFRC, this resulted in incorrect numbers being remotely displayed (and recorded on the log sheets) while the correct numbers were displayed locally. The new probe was received on February 13, 2018 and installed correcting the issue. Based on the records reviewed and the actions taken, it appears that the Facility is following the PM/MAP for FGENGINES.

FGMACTZZZZ - This flexible group contains not only the two engines of FGENGINES (equipped with three-way catalyst) but also four NG-fired, four-stroke, lean burn, Caterpillar 3516, 1,150 HP generator engines located in a remote area. All six units are reported to be subject to 40 CFR, part 63, Subpart ZZZZ (NESHAP for RICE). No emission and/or material limits, or any associated verification testing are required for the FG. ROP conditions for this FG are those required for remotely located RICE.

Operational Limits – EUs within FGMACTZZZZ are required to be operated and maintained in a manner consistent with good safety and air pollution control practices (SC III.2). The practices will be according to either the manufacturer's emission-related operation and maintenance instructions, or according to the permittee's own maintenance plan for the operation and maintenance of the engines and pollution

control devices consistent with good air pollution control practices for minimizing emissions. (SC III.3) In addition, the permittee is required to:

- Minimize each engine's idle time during start-up and minimize the time needed for appropriate and safe loading of the engine (not to exceed 30 minutes) (SC III.4)
- Perform the following work practices every 2,160 hours of operation or annually (whichever comes first) (SC III.1)
  - o Change oil and filter, or utilize the oil analysis program
  - o Inspect spark plugs and replace as necessary
  - o Inspect all hoses and belts, replacing as necessary.

A review of RICE MACT records for the facility indicated the following:

Emission Unit	SC III.1 Completion Dates	Catalyst Inspection, Cleaning & Testing	Oil Sampling
ENG-1	Jan. 4, 2017 March 30, 2017 June 26, 2017 Sept. 21, 2017 Dec 22, 2017 Feb. 14, 2018 May 1, 2018	October 19, 2016, Oct. 26, 2017 Nov 13, 2017 (replacement of catalyst)	January 2, 2018 Feb. 28, 2018
ENG-2	Jan. 5, 2017 March 31, 2017 June 28, 2017 Sept. 22, 2017 Dec. 12, 2017 Feb 13, 2018 May 2, 2018	October 19, 2016, Oct. 19, 2017	Jan. 2, 2018 Feb. 28, 2018 March 30, 2018
GEN-06	March 15, 2017 March 12, 2018	Not Applicable *	Not Applicable**
GEN-07	Unit Inoperable/disabled	Unit Inoperable/disabled	Unit Inoperable/disabled
GEN-08	March 13, 2017 March 13, 2018	Not Applicable *	Not applicable **
GEN-09	March 14, 2017 March 14, 2018	Not Applicable *	Not applicable**

* catalyst cleaning and testing activities are only for ENG-1 and ENG-2, the generators have no pollution control devices associated with them.

** Oil changed annually, meeting requirement, oil sampling program not required.

Data provided with respect to RICE MACT requirements confirmed general compliance.

Monitoring/Recordkeeping – RICE within this FG are required to meet the definition of remote stationary engine on the initial compliance date of October 19, 2013, will be re-evaluated of the status every 12 months (SC VI.1) and shall keep records of the initial and annual evaluations of the remote status (SC VI.2). If any RICE is determined to no longer meet the remote status, it shall comply with all requirements for non-remote, non-emergency, spark-ignition, four-stroke lean-burn and rich burn engines within one year (SC VI.2)

Initial evaluations were conducted by the company in July 2012 and annually in subsequent Julys. A review of the evaluation summaries and the companies' comprehensive non-remote listing identified the Facility as remote.

Reporting - As previously indicated, semi-annual, annual and testing reporting requirements have been completed in general compliance with the permit conditions.

Other Requirements- FGMACTZZZZ are required to comply with all applicable requirements of the NESHAP as specified in 40 CFR, Part 63, Subpart ZZZZ. Based on the information reviewed it appears that the Facility is in general compliance with subpart requirements as incorporated into the ROP.

FGTURB1AND2 – This FG consists of two NG-fired, Centaur 40-T4700 turbines (EUTUR01 & EUTUR02) with name plate capacities of 3.5 MW.

Operational & Material Limits - The permittee shall use only sweet natural gas (< 15 ppmv) as fuel for FGTURB1AND2. (SC III.1) In addition, the permittee is restricted to NG fuel of no more than 0.8% by weight total sulfur (40 CFR 60.633(b). (SC II.1) Copies of laboratory analyticals collected from the TEG Dehydrator at the DCP Antrim Plant 1 on March 26, 2018, indicated non-detect (<1ppm) hydrogen sulfide concentrations.

Emission Limits - NOx and CO emission limits for the two turbines associated with FGTURB1AND2 are limited to ppm and pph. As previously indicated, testing for the 13 EUs onsite was conducted in May-June 2014. A CO exceedance for EUTUR01 was reported during the referenced testing and resulted in an August 21, 2014 VN and permit modification.

Testing Activities– The permittee is required every 5 years to perform verification testing of NOx and CO emission rates associated with each turbine. (SC V.1) As previously indicated, the required testing was completed in May-June 2014. Future verification activities are not required to be completed until May 2019. The following tables summarize the test data for the FG:

EMISSION UNIT	DATE	NOX (ppm corrected to 15% O2 on dry gas basis)	NOx (lb/Hr)
EUTUR01	6/5/2014	81	14.5
EUTUR02	6/5/2014	83	13.9
LIMIT		167 ppm (SC I.1)	17.1 lb/Hr (SCI.2)

EMISSION UNIT	DATE	CO (ppm corrected to 15% O2 on dry gas basis)	NOx (lb/Hr)
EUTUR01	6/5/2014	24	2.6
EUTUR02	6/5/2014	22	2.2
LIMIT		50 ppm (SC I.3)	5.3 lb/Hr (SCI.4)

Monitoring/Recordkeeping – In compliance with the ROP, has maintained a record of the NG quality characteristics in the form of gas chromatograph analysis from each plant, as well as sample collection for laboratory analysis for gaseous fuel specifying the maximum total sulfur content. (SC VI.1) Data provided confirmed compliance.

Reporting – As previously indicated, semi-annual, annual and testing reporting requirements have been completed in general compliance with the permit conditions.

Other Requirements- The permittee is required to comply with the Federal Standards of 40 CFR, Part 60 Subpart GG as they apply to each turbine of FGTURB1AND2. (SC IX.1) Compliance with this high-level citation would appear to be met in compliance with the other EU conditions.

FGGEN6789 -This FG consists of four 1,150 Hp, NG-fired Caterpillar 3516 lean burn generator engines, (EUGEN06, EUGEN07, EUGEN08 and EUGEN09) with no associated pollution control devices. The generator engines provide backup power if there are issues with FGTURB1AND2.

Permit conditions under this FG includes no material or operational limits. These four EUS are also included under FGMACTZZZZ.

Emission Limits - Emission limits for FGEN6789 include NOX and CO limits in both lb/hr and tons per month. As previously indicated, verification testing was conducted in May-June 2014, and stack test results at that time confirmed compliance with appropriate limits (SC I.1 and I.4).

Monthly emissions were reviewed for 2017 and the first quarter of 2018. (SC VI.1) Data provided confirmed compliance. Monthly emissions for random dates are presented below:

MONTH	NOX EMISSIONS (ton/month)	CO EMISSIONS (ton/month)	EMISSION UNIT
March 2017	0.13	0.19	EUGEN06
July 2017	0.07	0.10	EUGEN06
September 2017	0.02	0.02	EUGEN06
October 2017	0.06	0.10	EUGEN06
December 2017	0.12	0.18	EUGEN06
Not Operating	Not Operating	Not Operating	EUGEN07
March 2017	0.00	0.00	EUGEN08
July 2017	0.05	0.04	EUGEN08
September 2017	0.03	0.02	EUGEN08
October 2017	0.11	0.08	EUGEN08
December 2017	0.34	0.26	EUGEN08
March 2017	0.00	0.00	EUGEN09
July 2017	0.02	0.03	EUGEN09
September 2017	0.01	0.02	EUGEN09
October 2017	0.04	0.08	EUGEN09
December 2017	0.12	0.24	EUGEN09
LIMIT	2.0 ton/month (SC I.2)	1.5 ton/month (SC I.5)	

Testing Activities– The permittee is required every 5 years to perform testing (SC V.1) to verify compliance with lb/ hr NOx (SC I.1) and CO (SC I.3) limits. As previously indicated, the required testing was completed in May-June 2014. The test data is to be used to establish emission factors to be used to determine emissions. (SC VI.1)

DATE	NOx EMISSIONS (lb/hr)	CO EMISSIONS (lb/hr)	EMISSION UNIT
5/28/2014	2.7	1.3	EUGEN06
Not Tested/Not Operating	UNK	UNK	EUGEN07
5/29/2014	3.1	2.4	EUGEN08
5/29/2014	1.1	2.2	EUGEN09
NA	5.5 lb/hr (SC I.1)	4.0 lb/hr (SC I.3)	LIMIT

Conditions also require NOx and CO verification testing of EUGEN07 within 180-days after restarting the engine (SC V.2). A review of District Files indicated that at the time of the August 2016 site inspection, EUGEN07 was not operating and had not been tested with the other EUS in 2014.

Monitoring/Recordkeeping – Records required for each engine includes:

- Daily hours of operation for each (SC VI.2)
- Daily average generator output in kilowatts (SC VI.2)

- Calculated NOx emissions in tons/month based on EF from the most recent testing (SC I.2 and SC VI.1), (previously presented) and
- Calculated CO emissions in tons/month based on EF from the most recent testing (SC I.4 and SC VI.1) (previously presented).

Daily hours of operation for each of the generator for random days in the 2017 calendar year as well as the first quarter of 2018 are presented below:

DATE	EUGEN6 Daily Hours of Operation	EUGEN7 Daily Hours of Operation	EUGEN8 Daily Hours of Operation	EUGEN9 Daily Hours of Operation
February 5, 2017	Not Operating	Not Operating	Not Operating	Not Operating
April 17, 2017	24	Not Operating	24	24
August 15, 2017	Not Operating	Not Operating	Not Operating	Not Operating
October 2, 2018	24	Not Operating	24	24
February 15, 2018	Not Operating	Not Operating	Not Operating	Not Operating

Daily average generator outputs for each of the generator engines for random days in the 2017 calendar year as well as the first quarter of 2018 are presented below:

DATE	EUGEN6 Daily average output (Kilowatts)	EUGEN7 Daily average output (Kilowatts)	EUGEN8 Daily average output (Kilowatts)	EUGEN9 Daily average output (Kilowatts)
February 5, 2017	Not Operating	Not Operating	Not Operating	Not Operating
April 17, 2017	493	Not Operating	433	476
August 15, 2017	Not Operating	Not Operating	Not Operating	Not Operating
October 2, 2017	483	Not Operating	480	341
February 15, 2018	Not Operating	Not Operating	Not Operating	Not Operating

Reporting - As previously indicated, semi-annual, annual and testing reporting requirements have been completed in general compliance with the permit conditions.

FGPLANTRA – This FG consists of five of the six MDEA processes (EUPLANT1AMINE through EUPLANT5AMINE) for removing CO2 from the NG stream. No pollution control devices are associated with the EUs. No material limits or process/operational restrictions are associated with the FG.

Emission Limits – Emission limits associated with the FG include both a monthly CO2 emission limit (SC I.1) as well as a 0% opacity limit for EUPLANT3AMINE and EUPLANT4AMINE (SC I.2). CO2 content of incoming gas streams are continuously monitored and recorded for FGPLANTRA (SC IV.1), and emissions are calculated monthly and random monthly totals are presented below.

DATE	CO2 EMISSIONS (tons per calendar month)
February 2017	38,705
July 2017	47,486

October 2017	38,953
January 2018	40,953
March 2018	40,936
LIMIT	73,343 tons (SC I.1)

Testing Activities– Testing activities for the FG are limited to conducting and recording of daily 6-minute non-certified VE observations for EUPLANT3AMINE and EUPLANT4AMINE. The facility reports that the 6-minute time period is adhered to by staff. The intent of the condition is verification of the presence of VEs and need not follow the procedures specified in USEPA Test Method 9. Should VEs be observed the permittee shall immediately initiate and document corrective actions (SC V.1) No VEs were noted at the time of the inspection.

Monitoring/Recordkeeping –The permittee is required to install, calibrate, maintain and operate a device to monitor (continuously) and record the CO2 content of the NG entering each MDEA process (EUPLANT#AMINE) (SC IV.1 and VI.1). In addition, the permittee is required to:

- monitor and record daily the gas processing rate for each MDEA process (EUPLANT#AMINE), (SC VI. 2) and
- calculate and record the CO2 emission rate from FGPLANTRA in tons per calendar month at the end of each month (SC VI.3).

The data provided for each of the five plants indicated the records are complete and in compliance with permit requirements. Data provided identified the inlet and outlet gas volumes for each of the 5 MDEA processes and CO2 incoming and outgoing gas stream concentrations (by percent) as well as the hours of operation.

Reporting -- As previously indicated, semi-annual, annual and testing reporting requirements have been completed in general compliance with the permit conditions.

FGPLANTPH – This FG includes six media heaters consisting of:

- four NG-fired media heaters, each with a rated capacity of 51.231 MMBTU/hr heat input, (EUPLANT2HEATER through EUPLANT5HEATER)
- one NG-fired media heater with a rated capacity of 40 MMBTU/hr, (EUPLANT1HEATER) and
- one NG-fired media heater with a rated heat input capacity of 27 MMBTU/hr. (EUPLANT6HEATER)

No material or process/operational restrictions exist for this FG.

Emission Limits - With the exception of EUPLANT6HEATER, NOx and/or CO emissions in lb/hr and ton/month exist for EUs within this flexible group and include:

EU	NOX (lb/hr)*	NOX (tons/month)	CO (lb/hr)*	CO (tons/month)
EUPLANT1HEATER	5.6 lb/hr (SC I.1)	NA	NA	NA
EUPLANT2HEATER	5.2 lb/hr (SC I.2)	1.9 ton/month (SC I.3)	NA	NA
EUPLANT3HEATER	5.2 lb/hr (SC I.2)	1.9 ton/month (SC I.3)	3.0 lb/hr (SC I.4)	1.1 tons/month (SC I.5)
EUPLANT4HEATER	5.2 lb/hr (SC I.2)	1.9 ton/month (SC I.3)	3.0 lb/hr (SC I.4)	1.1 tons/month (SC I.5)
EUPLANT5HEATER	5.2 lb/hr (SC I.2)	1.9 ton/month (SC I.3)	3.0 lb/hr (SC I.4)	1.1 tons/month (SC I.5)
EUPLANT6HEATER	NA	NA	NA	NA

*Emission limits are verified using stack test analysis.

Testing Activities– The permittee is required every 5 years to perform testing (SC V.1 and V.2) to verify compliance with lb/ hr NOx (SC I.1 and I.2) and CO (SC I.4) limits. As previously indicated, the required testing on site was completed in May-June 2014.

At the time of the June 23 through 25, 2018, Testing the following emission rates were reported:

Emission Unit	NOx Emissions (lb/hr)	NOx Limit (lb/hr)
EUPLANT1HEATER	2.9	5.6 lb/hr (SC I.1)
EUPLANT2HEATER	4.8	5.2 lb/hr (SC I.2)
EUPLANT3HEATER	3.8	5.2 lb/hr (SC I.2)
EUPLANT4HEATER	3.8	5.2 lb/hr (SC I.2)
EUPLANT5HEATER	4.7	5.2 lb/hr (SC I.2)
EUPLANT6HEATER	Not Tested	NA

Monitoring/Recordkeeping – The permittee is required to install, calibrate, maintain and operate a device to monitor and record the NG combusted for each of the six heaters under FGPLANTPH. (SC IV.1) Records of the amount of NG combusted monthly are required under SC VI.1.

Emission Unit	Feb. 2017	May 2017	August 2017	Nov. 2017	March 2018
EUPLANT1 HEATER	11,996 mcf	15,612 mcf	9,942 mcf	10,581 mcf	12,167 mcf
EUPLANT2 HEATER	34,922 mcf	42,908 mcf	35,263 mcf	39,841 mcf	40,061 mcf
EUPLANT3 HEATER	39,885 mcf	40,352 mcf	37,985 mcf	35,083 mcf	35,967 mcf
EUPLANT4 HEATER	27,819 mcf	84 mcf	31,613 mcf	35,019 mcf	38,758 mcf
EUPLANT5 HEATER	41,454 mcf	44,158 mcf	41,581 mcf	40,845 mcf	39,143 mcf
EUPLANT6 HEATER	29,796 mcf	31,445 mcf	22,796 mcf	23,373 mcf	24,281 mcf

No monthly limits to NG usage are spelled out in the permit.

The permittee is also required to calculate and record NOx (SC VI.2) and CO (SC VI.3) emission rates in tons/month. Data provided confirmed compliance. Calculated NOx emissions for random dates for 2017 and the first quarter of 2018 are summarized below:

DATE	EUPLANT2 HEATER (ton/month)	EUPLANT3 HEATER (ton/month)	EUPLANT4 HEATER (ton/month)	EUPLANT5 HEATER (ton/month)
Feb. 5, 2017	0.28800	0.28800	0.22800	0.28200
April 12, 2017	0.69120	0.54720	0.11970	0.67680
July 16, 2017	0.88800	0.7630	0.71820	0.88360
Sept 10, 2017	0.57360	0.45410	0.45410	0.56400
Nov. 19, 2017	1.09440	0.86640	0.86640	1.07160
March 21, 2018	1.20960	0.77900	0.95760	1.16325
NOx LIMIT (ton/month) (SC I.3)	1.9	1.9	1.9	1.9

Calculated CO emissions for random dates for 2017 and the first quarter of 2018 are summarized below:

DATE		EUPLANT4 HEATER (ton/month)	

	EUPLANT3 HEATER (ton/month)		EUPLANT5 HEATER (ton/month)
Feb. 5, 2017	0.00060	0.00060	0.00060
April 12, 2017	0.00144	0.00032	0.001444
July 16, 2017	0.00189	0.00189	0.00188
Sept 10, 2017	0.00120	0.00120	0.00120
Nov. 19, 2017	0.00228	0.00228	0.00228
March 31, 2018	0.00205	0.00252	0.00248
CO LIMIT (ton/month) (SC I.5)	1.1	1.1	1.1

Reporting - As previously indicated, semi-annual, annual and testing reporting requirements have been completed in general compliance with the permit conditions

Other Requirements- The permittee is required to comply with the applicable requirements of 40 CFR, Part 60, Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. Compliance with this high-level citation is based on compliance with conditions associated with FGPLANTPH.

FGGD01 – This FG consists of a total of six triethylene glycol (TEG) dehydrators (EUP1DEHY through EUP6DEHY). No emission, material or testing limits are associated with this FG. The 2015 site report indicated that the Facility is not a major source of hazardous air pollutants and that the AQD has not been delegated authority to enforce 40 CFR 63 Subpart HH, AQD staff did not determine if the facility was in compliance with those requirements.

Operational Limits – The permittee is required to install and properly operate flash and processed water tanks for the dehydrators (SC III.1, III.2 and IV.1). Properly operating flash tanks will volatilize organic compounds from the rich glycol stream and re-route them to the to the process heater for use as fuel. (SC III.1 and .2) Facility operations are conducted in general compliance with permit conditions.

Monitoring/Recordkeeping – In order to meet the exemption criteria of 40 CFR 83.476(b)(1) for glycol dehydrators the facility shall either have:

- Actual annual average flow rate of NG of less than 85,000 cubic meters/day (3,001,746 cubic ft/day) (SC VI.1), or
- Actual average benzene emissions of less than 0.99 ton/year (SC VI.2).

The required monitoring is kept in compliance with permit conditions. The actual emissions were determined using GRI-GLYCalc 4.0. The 2017 MAERS reporting for the FG reported 9,360 lbs of VOC for the calendar year.

EMISSION UNIT	ACTUAL FLOW RATE (MMscf/day)	Regenerator Annual Uncontrolled VOC (TPY)
EUP1DEHY	8.6	4.17
EUP2DEHY	30.1	3.66
EUP3DEHY	39	3.72
EUP4DEHY	22.8	3.07
EUP5DEHY	39.0	3.78
EUP6DEHY	10.6	5.38
THRESHOLDS	3.001746 (MMSCF/day) (SC VI.1)	0.99 TPY (SC VI.2)

Reporting -- As previously indicated, semi-annual, annual and testing reporting requirements have been completed in general compliance with the permit conditions.

Other Requirements- The ROP identifies compliance with the applicable requirements of 40 CFR, Part 63, Subpart HH – National Emission Standards for Hazardous Air Pollutants for Oil and Natural Gas Production Facilities. Compliance with this high-level citation is based on compliance with conditions associated with FGPLANTPH.

SUMMARY -

On Thursday, May 24, 2018, AQD District Staff conducted a scheduled site inspection of the DCP Antrim Gas, LLC (DCP) South Chester Antrim Carbon Dioxide (CO2) Removal Facility. The referenced facility is located at 6250 Old State Road, Johannesburg, Otsego County, Michigan (N2940). Facility operations are conducted under Renewable Operating Permit (ROP) MI-ROP-N2940-2015 issued on July 6, 2015, which expires on July 6, 2020.

AQD District Staff met with Dave Bennett, Michigan Operations Manager at the time of the visit, and was provided a tour of the site. Supplemental information required to determine compliance was requested from DCP Midstream, LP (AKA DCP) Environmental Staff on April 25, 2018, in anticipation of a site inspection for the fiscal year. With supplemental information requests following the May 24, 2018, site inspection.

Located in South Chester Township, Otsego County, Johannesburg, Michigan, the facility is located at the NE corner of Turtle Lake and Old State Roads. Operations at the South Chester Antrim CO2 Removal Facility consist of removal of high concentrations of CO2 from Antrim Formation natural gas (NG) by an absorption treating process which utilizes amine. Higher CO2 concentrations dilute the NG and reduce the heating value of the gas and increases the risk of internal corrosion problems in transmission and storage facilities. The CO2 concentration of the natural gas is reduced to customer sales requirements and the Michigan Public Service Commission stipulations.

Multiple compliance issues were noted during the August 8, 2016, scheduled site inspection. Most associated with proper implementation of the Malfunction Abatement Plan (MAP) associated with the facility. A Violation Notice (VN) was issued on September 19, 2016 and was resolved on May 8, 2017.

Evaluation of data as part of the May 24, 2018 site inspection indicated that with the exception of some minor discrepancies identified in ArchRock catalyst maintenance records for FGENGINES the Facility was in general compliance with conditions associated with PM/MAP.

DCP June 2014 stack test data for FGENGINES is presently being contested by the Facility, and as such, NOX emission factors (derived from the most recent stack test data) were not available for calculation of emissions in compliance with SC VI.1. Failure to conduct supplemental testing has resulted in the Facility not having an emission factor to determine the 12-month rolling total NOX emissions which is a violation of SC VI.1 for recordkeeping. Failure to be able to provide the required records has resulted in failure to confirm compliance with NOX emission limits for the FG.

At the time of the 2015 ROP Renewal activities, the ROP was amended to include the testing requirement (SCV.1) and recordkeeping requirement (SC VI.1) for FGENGINES. Submittal of the June 2014 test results was considered to meet testing requirements (SC V.1) to determine EFs to be used for emission calculations (SC VI.1) for the engines. The permit condition for FGENGINES had not been evaluated prior to the May 24, 2018, site investigation because at the time of the ROP renewal and continuing until winter 2015, the two engines were not operating. In addition, at the time of the August 8, 2016, site inspection the engines had not operated for a full 12-months, and the inspector indicated that a determination of NOX emissions for 12-months of operation could not be made at that time.

A VN will be issued for failure to provide NOX emission records for FGENGINES Monitoring/Recordkeeping Condition SC VI.1.

MACES- Activity Report

NAME Steblanc DATE 8/23/18 SUPERVISOR SN