

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

B833736883

FACILITY: ANR Pipeline Co.-Muttonville Compressor Station	SRN / ID: B8337
LOCATION: 36555 29 MILE RD., MUTTONVILLE	DISTRICT: Southeast Michigan
CITY: MUTTONVILLE	COUNTY: MACOMB
CONTACT: Mark Ogden , Operations Technician	ACTIVITY DATE: 08/23/2016
STAFF: Kerry Kelly	COMPLIANCE STATUS: Compliance
SUBJECT: FCE: Based on the field inspection and the records provided, ANR Pipeline - Muttonville Compressor Station appears to be in compliance with the conditions of their ROP and all other applicable air regulations evaluated.	
RESOLVED COMPLAINTS:	

On August 23, 2016, Sebastian Kallumkal and I (Kerry Kelly) conducted a targeted inspection at ANR Pipeline Company's Muttonville Compressor Station located at 36555 29 Mile Rd. in Lenox Twp., Michigan. The purpose of the inspection was to verify facility's compliance with requirements of Article II, Air Pollution Control, Part 55 of Act 451 of 1994 and Renewable Operating Permit No.: MI-ROP-B8337-2015.

We arrived at the site at about 11:00 AM. At the facility I met Mr. Mark Ogden, Operations Technician. We introduced ourselves to Mr. Ogden, stated the purpose of the inspection, showed him our credentials, and gave him a copy of the DEQ brochure- Environmental Inspections: Rights and Responsibilities. Mr. Ogden answered questions, provided records, escorted us during the facility walk through. Ms. Melinda Holdsworth, US Environmental – Air Permitting with TransCanada US Pipelines provided records following the inspection but was not present at the facility during the inspection.

FACILITY OVERVIEW

The Muttonville Compressor Station stores and processes natural gas. The facility has two 3200 HP, 2 stroke lean burn natural gas-fired reciprocating internal combustion engines which drive compressors to pump natural gas into and out of the underground rock formations. Normally natural gas is pumped into the storage field from early March until early November and is withdrawn from early November until early March of the following year. Natural gas will free flow early in the withdrawal season when the storage field pressure is greater than the pipeline pressure. The gas needs to be pumped out later in the season as the pressure decreases within the storage field.

During the storage period, the natural gas absorbs hydrocarbons and moisture while in the formation. The facility has installed a glycol dehydration system with two dehydration towers to treat natural gas before sending into the pipeline system. Initially the gas from the field goes through two parallel scrubbers where some of the liquids are fall out of the gas. Next the gas goes through glycol dehydration process.

In the glycol dehydration process, natural gas is pumped into one of two towers where it crosses a series of glycol trays. The glycol in these trays absorbs moisture and hydrocarbons in the natural gas and the clean gas is then sent to a pipeline. The rich (dirty) glycol containing moisture and hydrocarbons accumulates at the bottom of each tower and is sent to a 3-Phase separator which separates heavy hydrocarbons from the glycol. From the 3-Phase separator, the resulting glycol is sent through a particulate filter, a charcoal filter, and another particulate filter before being sent to a reboiler unit. The reboiler drives off moisture from the glycol at 375 to 385 degrees Fahrenheit. The resulting clean glycol (lean glycol) is recirculated back to a surge tank and then to the glycol towers. The water vapor from the reboiler goes through the still. From the still, vapors go through a series of tubes, condense, and are collected in the condensate tank (also called the BTEX tank). Condensate is pumped out of the condensate tanks and into one of two brine tanks when necessary. Vapors from the condensate tank are sent to the thermal oxidizer. In the event of a thermal oxidizer malfunction, the condensate tank vapors are released from the "condenser stack". The "condenser stack" is a two inch diameter stack located on the top of the condensate tank. The facility's ROP requires the installation and proper operation of a thermal oxidizer to control emissions from the dehydrator. Either the thermal oxidizer or the condenser is required to be in operation when the glycol dehydration system is being used. The condenser is always used when the glycol dehydrator is operating. Both the thermal oxidizer and condenser are equipped with temperature monitors as required by the facility's ROP.

REGULATORY ANALYSIS

The two identical 3200 HP, 2 stroke lean burn reciprocating internal combustion engines at the site (HAP Major source) are subject to 40 CFR 63, Subpart ZZZZ for Reciprocating Internal Combustion Engines (RICE) promulgated on February 24, 2004, by the EPA and revised on April 12, 2010. The final rule in 40 CFR 63.6590(b)(3) states that: "A stationary source RICE which is an existing spark ignition 2 stroke lean burn (2SLB) stationary RICE, an existing spark ignition 4 stroke lean burn (4SLB) stationary RICE, an existing compressor ignition (CI) stationary RICE, an existing emergency stationary RICE, an existing limited use stationary RICE, or an existing stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis does not have to meet the requirements of this subpart (40 CFR 63,

Subpart ZZZ) and of Subpart A (40 CFR 63, Subpart A) of this part. No initial notification is necessary." For Subpart ZZZZ, stationary RICE is "existing" if construction or reconstruction of that RICE commenced prior to December 19, 2002. The two RICEs at the facility were installed in 1975 and 1976. Therefore, pursuant to 40 CFR 63.6590(b)(3), they are not required to comply with any of the requirements of Subpart ZZZZ or Subpart A including initial notification requirements.

The glycol dehydration system is subject to 40 CFR 63, Subpart HHH for Natural Gas Transmission and Storage. The system was previously operating under 40 CFR 63.1274(d)(2) which exempted affected sources emitting less than 0.9 megagrams of benzene per year from 40 CFR 63.1274(c). 40 CFR 63.1274(c) requires pollution control devices to be installed on a glycol dehydration system's process vents and establishes other monitoring, recordkeeping, and reporting requirements. In 2012 40 CFR 63.1274(d)(2) was rescinded and appeared to be moved to 40 CFR 63.1275 (b)(1)(ii). The language in 40 CFR 63.(b)(1)(ii) reads "the owner or operator of a large glycol dehydration unit shall connect the process vent to a control device or a combination of control devices through a closed-vent system and the outlet benzene emissions from the control device(s) shall be less than 0.90 megagrams per year. The closed-vent system shall be designed and operated in accordance with the requirements of §63.1281(c). The control device(s) shall be designed and operated in accordance with the requirements of §63.1281(d), except that the performance requirements specified in §63.1281(d)(1)(i) and (ii) do not apply. The definition of large glycol dehydration unit includes "a glycol dehydration unit complying with the 0.9 Mg/yr control option under 63.1275(b)(1)(ii)". An issue with using 40 CFR 63.1275 (b)(1)(ii) is 40 CFR 63.1275 (b)(1)(ii) does not give the option to use 40 CFR 63.1275 (b)(1)(ii). 40 CFR 63.1275 (b)(1) states "for each glycol dehydration unit process vent, the owner or operator shall control air emissions by either paragraph (b)(1)(i) or (iii) of this section. This appears to be a typo and was brought to the attention of the USEPA by the AQD. The EPA responded that they were aware of the issue in the regulatory text and are working on addressing it. During the ROP renewal in 2015, ANR chose to comply with the BTEX limit in 40 CFR 63.1275 (b)(1)(iii) and also keep the 0.9 benzene limit previously established to comply with 40 CFR 63.1274(d)(2).

The facility has several storage tanks and three natural gas powered heaters that were previously determined to be exempt from permit-to-install requirements. The three 6.5 MMBTU natural gas powered heaters are used to prevent the moisture in the gas from freezing during the withdrawal season. These heaters are exempt from permit to install requirements pursuant Rule 282(b)(i). The storage tanks associated with the RICEs include a 1,000 gallon waste oil tank, an 11,300 gallon lubricating oil tank, a 1,000 gallon maintenance oil tank, and a 4,700 gallon coolant tank. The storage tanks associated with the glycol dehydrator include a 9,000 gallon triethylene glycol storage tank, a 3,700 gallon glycol maintenance storage tank, and a 1,100 gallon condensate storage tank. The facility also has two 8,820 gallon brine storage tanks which are used to store excess condensate from the glycol dehydration condensate tank. All of the tanks containing petroleum liquids are less than 40,000 gallons in volume, and, therefore, not subject to NSPS Subpart K for Petroleum Liquid Storage Tanks.

COMPLIANCE DETERMINATION

The inspection indicated the following with respect to the facility's compliance with ROP Number MI-PTI-B8337-2015.

EUGLYCDEHYDE

Condition I.1.a. sets a daily VOC emission limit of 65 pounds per day. Daily records from August 2015 through July 2016 (attachment 1), provided by Ms. Holdsworth, indicate that the highest daily emission of VOCs was 11.2 lbs occurring on February 2016.

Condition I.2 sets a 12-month rolling VOC emission limit of 12 tons per year. Records from May 2014 through July 2016 (attachment 2) indicate that the highest 12-month rolling emission of VOCs was 0.305 tons.

Condition I.3 sets a 12-month rolling benzene emission limit of 0.9 Mega grams (1 ton) per year. Records from May 2014 through July 2016 (attachment 2) indicate that the highest 12-month rolling emission of benzene was 0.022 tons.

Condition I.4 limits annual BTEX emissions to the value calculated using equation in Appendix 7 of the ROP. The calculated BTEX emission limit is 9.41 Mg/year. Ms. Holdsworth provided a copy of the BTEX calculations using the formula in Appendix 7 of the ROP (attachment 3). The actual BTEX emissions, calculated from stack test data, are less than 0.0048 Mb/year. BTEX emission data is on file at the AQD Southeast Michigan District Office in the test folder for ANR Muttonville Compressor Station. A copy of the test results page of the test report is attached to this report (attachment 4). ANR Muttonville Compressor Station appears to be in compliance with the emission limit set forth in Condition I.4.

Condition III.1 requires that the thermal oxidizer be operated at or above 760 degrees Celsius (1400 degrees Fahrenheit), with a minimum residence time of 0.5 seconds, and with a VOC destruction efficiency of 95%. Records (Attachment 1) indicate that the oxidizer has been operated at a temperature greater than 1400 degrees Fahrenheit

between August 2015 through July 2016. The residence time and destruction efficiency requirements are met per manufacturer's specifications.

Condition III.2 requires that the glycol dehydration system shall not be operated during a thermal oxidizer malfunction unless the condenser exhaust temperature is lower than 140 degrees Fahrenheit. The submitted records for August 2015 through July 2016 (attachment 1) indicate that the thermal oxidizer temperatures were above 1400 degrees Fahrenheit when operating and the condenser exhaust temperature, when operating in conjunction with the thermal oxidizer, was below 140 degrees Fahrenheit.

Condition III.3 requires the process vents from EUGLYCDEHYDE be vented to a control device or a combination of control devices through a closed-vent system. I inspected the glycol dehydration system. The system appears to be a closed vent system. The process vents (reboiler still) are directed first to a condenser. From the condenser the liquid condensate and vapors travel to the condensate tank. The condensate tank has a two inch diameter stack that can be opened to release emissions directly from the condensate tank. The temperature sensor for the condenser is located on the condensate tank stack. When the condensate tank stack is closed, emissions will travel to the thermal oxidizer.

Condition III. 4. requires the control device(s) must be either a thermal oxidizer that reduces the concentration of BTEX to meet the emission limit in SC I.4, or the TOC or total HAP concentration in the exhaust gases at the outlet of the incinerator is reduced to a level equal to or less than 20 ppmv on a dry basis corrected to 3% oxygen or a condenser or other non-destructive control device that is designed and operated to reduce the mass content of BTEX in the gases vented by 95%. The thermal oxidizer stack test results report, for the stack test conducted March 4, 2015 (attachment 4), indicates the BTEX emissions from the thermal oxidizer are less than the limit in SC I.4. The condenser curve provided by Ms. Holdsworth (attachment 5) appears to demonstrate the condenser reduces the BTEX emissions in the gases vented by 95%.

Condition III.5. requires the permittee control HAP emissions from each GCG separator (flash tank) vent unless BTEX emissions from the reboiler vent and the flash tank are reduced to a level less than the limit in condition I.4. The thermal oxidizer stack test results report (attachment 4), for the stack test conducted March 4, 2015, indicates the BTEX emissions from the thermal oxidizer are less than the limit in SC I.4.

According to Condition III.6, the permittee shall operate and maintain EUGLYCDEHYDE, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Records and documents submitted by ANR indicate the pollution control equipment is operated within the specified maximum and minimum temperatures that have demonstrated emission reductions and that the temperature monitors are calibrated and maintained according to manufacturer's recommendations.

Condition III.7. states each control device shall be operating at all times and demonstrate compliance according to Condition VI.13. Records provided indicate the control device/devices are operational when the glycol dehydration unit is in use.

When using a condenser to demonstrate continuous compliance with emission limits the control device shall be operated at a maximum operating temperature established in accordance with the requirements of VI.17. When using a thermal oxidizer to demonstrate continuous compliance with emission limits the control device shall be operated at the minimum operating temperature established in accordance with the requirements of VI.17 or a minimum of 1400°F. The submitted records for August 2015 through July 2016 (attachment 1) indicate that the thermal oxidizer temperatures were above 1400 degrees Fahrenheit when operating and the condenser exhaust temperature was below the maximum temperature of 140 degrees Fahrenheit.

Condition IV.1 requires that the glycol dehydration system not be used unless a properly operating flash tank which removes VOCs from the glycol stream and routes them to the reboiler is installed and operated properly. I observed the flash tank (three phase separator) connected to the system near the reboiler during the August 23, 2016 inspection. A diagram of the process flow, including the flash tank, was provided by Mr. Ogden (attachment 6).

Condition IV.2: This condition says the permittee shall not operate the glycol dehydration system unless the glycol regenerator still is equipped with a properly installed and operating thermal oxidizer except as specified in Condition IV.3. The glycol regenerator still is equipped with a thermal oxidizer and a condenser.

Condition IV.3 states that the glycol dehydration system may be operated in the event of a thermal oxidizer malfunction if the condenser is installed and operated properly. The system is designed such that the condenser operates at all times while the dehydration unit is operating.

Condition IV.4. says the closed vent system shall route all gases, vapors, and fumes emitted from the material in an

emission unit to a control device that meets the requirements specified in condition III.4. The closed-vent system must be designed and operated with no detectable emissions. Any bypass devices in the closed-vent system that could divert emissions from entering the control device shall be equipped with a flow indicator at the inlet to the bypass device that takes readings every 15 minutes, and that sounds an alarm when the bypass device is open; or the bypass device valve at the inlet to the bypass device shall be secured using a car-seal or lock and key. I inspected the glycol dehydration system at Muttonville Compressor Station. The system appears to be a closed vent system where the gases, vapors, and fumes are directed to a condenser followed by a thermal oxidizer. A leak detection test was done on the equipment on March 4, 2016 and the test report indicates no leaks were detected (attachment 4). Mr. Ogden said there is a relief valve that releases gases, vapors, fumes to the BTEX tank which is controlled by the thermal oxidizer. In addition, a flow meter is installed on the stack to the BTEX tank.

Condition IV.5 requires each continuous parameter monitoring system (CPMS) measure data values at least once every hour and record either each block average value for each 1-hour period or shorter periods calculated from all measured data values during each period. If values are measured more frequently than once per minute, a single value for each minute may be used to calculate the hourly (or shorter period) block average instead of all measured values. AQD received a 40 CFR 63 Subpart HHH compliance notification from ANR Pipeline Company that certifies a thermocouple is installed and is maintained, calibrated and inspected in accordance with manufacturer's specifications. The certification report also includes a CPMS plan which defines the daily averages consisting of a single valid hourly average and hourly averages consisting of two valid 15-minute readings.

Condition IV.6 (b) says the condenser temperature monitoring device shall have a minimum accuracy of ± 2 percent of the temperature being monitored in $^{\circ}\text{C}$, or $\pm 2.5^{\circ}\text{C}$, whichever value is greater and that the temperature sensor be installed at a location in the exhaust vent stream from the condenser. AQD received a 40 CFR 63 Subpart HHH compliance notification from ANR Pipeline Company that certifies a thermocouple is installed and is maintained, calibrated and inspected in accordance with manufacturer's specifications. Mr. Ogden indicated the temperature sensor for the condenser is in the valve.

Condition V.1 requires that the chemical composition of the natural gas processed by the glycol dehydration system be determined at least once every five years. Ms. Holdsworth sent the gas analysis performed for samples collected in February 2014. The chemical analytical results are attached to this report (attachment 7).

Condition V.2. requires the determination of the actual flow rate of natural gas to EUGLYCDEHYDE shall be made by either installing and operating a monitoring instrument that directly measures natural gas flowrate to EUGLYCDEHYDE with an accuracy of ± 2 percent or better. The annual natural gas flowrate shall be converted to a daily average by dividing the annual flowrate by the number of days per year each EU processed natural gas. ANR has installed a monitor to measure the natural gas flow rate to the thermal oxidizer and condenser.

Condition V.3. states the determination of the actual average BTEX emissions from EUGLYCDEHYDE with thermal oxidizer control device and/or condenser shall be made using GRI-GLYCalc™, Version 3.0 or higher. Inputs to the model shall be representative of actual operating conditions of each glycol dehydration unit. ANR submitted the GRI-GLYCalc™, Version 3.0 or higher report (attachment 12).

Condition V.4 requires the permittee perform "no detectable emissions" testing for closed vent systems using the test methods and procedures specified in 40 CFR 63.1282(b). A leak detection test was done on the equipment on EUGLYCDEHYDE and the test report indicates no leaks were detected (attachment 4).

Condition V.5. states if the permittee chooses to conduct a performance test to demonstrate that a control device meets the requirements of III.4 (40 CFR 1281(f)(1)) the permittee shall conduct emissions testing for compliance with the BTEX emission limit calculated using Equation 1 by October 15, 2015 in accordance with the appropriate Federal test method. ANR Pipeline Company conducted a stack test to determine compliance with the BTEX limit and submitted a stack test report. The results of the stack test were provided and are attached (attachment 4).

Condition V.6. says for condenser control devices, the permittee may use the procedures documented in the GRI report entitled "Atmospheric Rich/Lean method for Determining Glycol Dehydrator Emissions". (GRI-95/0368.1) as inputs for the model GRI-GLYCalc™, version 3.0 or higher, to generate a condenser performance curve as an alternative to the performance testing required in V.4. ANR used GRI-GLYCalc™, Version 3.0 or higher report (attachment 12) to make a condenser curve.

Condition VI.1 requires a temperature monitor for the thermal oxidizer be maintained. AQD received a 40 CFR 63 Subpart HHH compliance notification from ANR Pipeline Company that certifies a thermocouple is installed and is maintained, calibrated and inspected in accordance with manufacturer's specifications.

Condition VI.2 requires a temperature monitor be maintained to monitor the condenser exhaust temperature. AQD received a 40 CFR 63 Subpart HHH compliance notification from ANR Pipeline Company that certifies a

thermocouple is installed and is maintained, calibrated and inspected in accordance with manufacturer's specifications.

Condition VI.3 requires the thermal oxidizer temperature be recorded daily (except in the event of a thermal oxidizer malfunction). Ms. Holdsworth provided daily records of the thermal oxidizer temperature from August 2015 through July 2016 (attachment 1). These records indicate compliance with this condition.

Condition VI.4 requires the condenser exhaust system temperature be recorded daily when the glycol dehydration system is operating. Ms. Holdsworth provided daily records of the condenser exhaust temperature from August 2015 through July 2016 (attachment 1). These records indicate compliance with this condition.

Condition VI.5 requires that the total hours of operation of the glycol dehydrator shall be recorded daily. Ms. Holdsworth provided daily records of the daily operating hours of the thermal oxidizer and condenser from August 2015 through July 2016 (attachment 1). The sum of the thermal oxidizer and condenser daily operating hours is equal to the hours of operation of the glycol dehydration unit.

Condition VI.6 mandates that the total hours of operation for the thermal oxidizer shall be recorded daily. Ms. Holdsworth provided daily records of the thermal oxidizer daily operating hours from August 2015 through July 2016 (attachment 1). These records indicate compliance with this condition.

Condition VI.7 requires the amount of natural gas processed through the glycol dehydrator be recorded daily. Ms. Holdsworth provided daily records of the amount of natural gas processed in the glycol dehydrator and whether the thermal oxidizer and/or condenser were operating for August 2015 through July 2016 (attachment 1). The sum of the gas processed when the thermal oxidizer (Therm Ox Thruput) and condenser (Condenser Thruput) is equal to the glycol dehydration unit throughput.

Condition VI.8 mandates VOC emissions in pounds shall be calculated daily. Ms. Holdsworth provided daily records of the VOC emissions for the glycol dehydration system from August 2015 through July 2016 (attachment 1). These records indicate compliance with this condition.

Condition VI.9. requires the 12-month rolling emission records be calculated for benzene and VOCs at the conclusion of each month. Ms. Holdsworth provided 12-month rolling records of the benzene and VOC emissions for the glycol dehydration system from May 2014 through July 2016 (attachment 2). These records indicate compliance with this condition.

Condition VI.10. necessitates the permittee maintain records of the annual facility natural gas throughput each year. Ms. Holdsworth provided records of the natural gas throughput for the facility (attachment 13).

Condition VI.11 requires the permittee continuously monitor and record the temperature on the thermal oxidizer or condenser and calculate the daily average temperature for each operating day. Compliance with these requirements were assessed in Condition IV.4., Condition VI.3. and Condition VI.4.

Condition VI.12. indicates the permittee may demonstrate compliance with BTEX emission limit for the condenser by establishing a site-specific condenser performance curve, recording the daily average condenser outlet temperature, determining the condenser efficiency for the current operating day, and calculating the 30-day average BTEX emission reduction. Compliance is achieved if the average BTEX emission reduction is equal to or greater than the minimum percent reduction established in the performance curve. Ms. Holdsworth provided records of the performance curve (attachment 5), the daily average condenser exhaust temperature (attachment 1), and the 30-day BTEX emission reduction from the condenser (attachment 8). The lowest 12-month rolling BTEX emissions reduction efficiency reported was 97.46, which is above the minimum percent reduction in the performance curve (95%).

Condition VI.13. requires each closed-vent system and each bypass device be inspected, except for parts of the closed-vent system that are designated unsafe to inspect or difficult to inspect. A copy of the LDAR test conducted is on file at the DEQ-AQD Southeast Michigan District Office.

Condition VI.14. states any parts of the closed-vent system that are designated unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger and a the permittee has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times is in place are exempt from the inspection requirements of Condition VI.13. Ms. Holdsworth provided a list of the LDAR inspection points (attachment 9). This report does not indicate any areas as unsafe to inspect.

Condition VI.15. requires records of any parts of the closed-vent system that are designated difficult to inspect because the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a

support surface and the permittee has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times is in place are exempt from the inspection requirements of Condition VI.13. Ms. Holdsworth provided a list of the LDAR inspection points (attachment 9). There are 30 inspection points identified in this report, 26 of which were designated as difficult to inspect. An inspection plan and the reason the areas were identified as difficult to inspect (attachment 10) were also provided by Ms. Holdsworth. According to the document provided by Ms. Holdsworth the areas were considered difficult to inspect because they couldn't be inspected without elevating the inspecting personnel more than 2 meters above a support surface.

Condition VI. 16. requires the permittee calculate the daily average value for each monitored operating parameter for each operating day, except for inlet gas flowrate. Compliance with these requirements were assessed in Condition IV.4., Condition VI.3. and Condition VI.4.

Condition VI.17. mandates that the permittee establish a minimum operating parameter value or a maximum operating parameter value, as appropriate for the control device, to define the conditions at which the control device must be operated to continuously achieve the emission limits in Section I of EUGLYDEHYDE for control devices used to comply with 40 CFR, Part 63 Subpart HHH. The minimum operating parameter of 1400 degrees Fahrenheit for the thermal oxidizer was established by ANR through stack testing conducted on March 4, 2015. The maximum condenser operating parameter of 140 degrees Fahrenheit was established by a condenser performance curve using the procedures in "Atmospheric Rich/Lean Method for Determining Glycol Dehydrator Emissions" (GRI-95/0368.1) as inputs for the model GRI-GLYCalctm, Version 3.0.

Conditions VI.18. through VI.21. explain deviations of the control devices. ANR submitted an annual and semi-annual deviation report on time on February 22, 2016 and July 26, 2016. No deviations were reported in either of these reports.

Condition VI.22. requires maintenance of records specified in 40 CFR 63.10(b)(2). Recordkeeping addressed in 40 CFR 63.10 pertains to maintenance, startup, shutdown, and malfunctions with regards to control equipment. Ms. Holdsworth provided maintenance records for the glycol dehydration system (attachment 14)

Condition VI.23. mandates the permittee keep continuous and daily records of operating parameters, condenser efficiency, hours vent stream was diverted from the control, and visual inspections of bypasses when closure mechanism is used as a bypass. Each record required in SC VI. 23. was evaluated in previous conditions.

Condition VI.24. requires the permittee maintain records identifying all parts of the closed-vent system that are designated as unsafe to inspect in accordance with condition VI.14, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment. Ms. Holdsworth provided a list of the LDAR inspection points (attachment 9). This report does not indicate any areas as unsafe to inspect.

Condition VI.25. requires records identifying all parts of the closed-vent system that are designated as difficult to inspect in accordance with condition VI.15, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment. Ms. Holdsworth provided a list of the LDAR inspection points (attachment 9). There are 30 inspection points identified in this report, 26 of which were designated as difficult to inspect. An inspection plan and the reason the areas were identified as difficult to inspect (attachment 10) were also provided by Ms. Holdsworth. According to the document provided by Ms. Holdsworth the areas were considered difficult to inspect because they couldn't be inspected without elevating the inspecting personnel more than 2 meters about a support surface.

Condition VI.26. mandates the permittee maintain records for each inspection conducted during which a leak or defect is detected. The results of the LDAR assessment conducted on March 4, 2016 indicate no leaks were detected (attachment 4).

Condition VI.27. requires the permittee maintain a record that the LDAR inspection was performed, the date of the inspection, and a statement that no leaks or defects were detected for each inspection during which no leaks or defects are detected. The results of the LDAR assessment conducted on March 4, 2016 indicate no leaks were detected (attachment 4).

Condition VI.28. requires the permittee maintain records of the occurrence and duration of each malfunction of process equipment or the air pollution control equipment and monitoring equipment. The permittee shall maintain records of actions taken during periods of malfunction to minimize emissions in accordance with condition III.4 including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. Ms. Holdsworth indicated that if any malfunctions occurred they would be reported in the semi-annual and annual deviation reports. No deviations were reported for EUGLYCDEHYDE in the semi-annual and annual deviation reports submitted February 22, 2016 and July 26, 2016.

Condition VII. 1. requires prompt reporting of deviations pursuant to General Conditions (GC) 21 and 22 of Part A. No deviations were reported for EUGLYCDEHYDE in the semi-annual and annual deviation reports submitted February 22, 2016 and July 26, 2016.

Semi-annual and annual deviation reports, required in Conditions VII. 2. and 3, were received by AQD on time (February 22, 2016 and July 26, 2016). No deviations were reported for EUGLYCDEHYDE.

Condition VII.4. requires the permittee submit the notification of the planned date of a performance test and site-specific test plan at least 60 days before the test. ANR submitted a stack test plan and notification of the planned date of the test on January 16, 2015 for the test conducted on March 4, 2015.

Condition VII.5. requires the permittee submit a Notification of Compliance Status Report as required under 40 CFR 63.9(h) within 180 days after October 15, 2015. ANR submitted a Notification of Compliance Status Report on April 13, 2016 which appears to include the applicable information required in Condition VII.5.

Semi-annual and annual deviation reports, required in Condition VII. 6. were received by AQD on time (February 22, 2016 and July 26, 2016). No deviations were reported for EUGLYCDEHYDE.

Condition VII.7. requires a period report or notification submitted whenever a process change is made, or a change in any of the information submitted in the Notification of Compliance Status Report. Mr. Odgen indicated there were no changes to EUGLYCOLDEHY and no changes were reported in the February 22, 2016 and July 26, 2016 periodic reports.

Condition VII.8. requires a performance test results report be submitted within 60 days after completing a performance test. AQD received the stack test report with results included on May 1, 2016 for the stack test conducted on March 4, 2016.

Conditions VIII.1 and Condition VIII.2 mandate that the condenser and thermal oxidizer stacks discharge unobstructed vertically 20 feet above ground level. Based on my observations at the facility, the stacks appear to meet this requirement.

Condition IX.1 requires the permittee comply with all applicable requirements of 40 CFR 63, Subpart A and Subpart HHH-National Emission Standards for Hazardous Air Pollutants (NESHAP) from Natural Gas Transmission and Storage Facilities. ANR Muttonville Compressor Station appears to be in compliance with the applicable requirements in 40 CFR 63, Subpart A and Subpart HHH.

Condition IX.2. mandates the permittee determine major source status using the maximum annual facility natural gas throughput calculated according to 40 CFR 63.1270(a)(1)(i) through (a)(1)(iv). As an alternative to calculating the maximum natural gas throughput, the owner or operator of a new or existing source may use the facility design maximum natural gas throughput to estimate the maximum potential emissions. ANR Pipeline Company determined Muttonville Compressor Station major source status using the maximum annual facility natural gas throughput.

Condition IX.3. refers to applicability and designation of affected source. ANR has determined Muttonville Compressor Station is a major source subject to 40 CFR 63 Subpart HHH.

Condition IX.4. requires that a site-specific monitoring plan be prepared that addresses the monitoring system design, data collection, and the quality assurance and quality control elements. ANR submitted a Notification of Compliance Status Report on April 13, 2016 which contains information required in Condition IX.4.

FGCOMPENGINES

I inspected the engines at Muttonville Compressor Station and verified they are 3,200 hp, Clark TLAD8 reciprocating internal combustion engines. The engines were not operating during the inspection.

Condition III.1. requires that pipeline quality natural gas shall be burned in the RICEs. Mr. Odgen stated that only pipeline quality natural gas is combusted in the FGCOMPENGINES.

Condition VI.1 requires that the quantity of natural gas combusted in the RICEs be monitored and recorded monthly. Records of monthly natural gas usage from January 2016 through July 2016 indicate compliance with this condition.

Condition VI.2. requires the permittee maintain a record of the size and installation date of the reciprocating internal combustion engines to demonstrate compliance. The size and installation date of FGCOMPENGINES are included in the description of the engines in MI-ROP-B8337-2015.

Condition VII. 1. requires prompt reporting of deviations pursuant to General Conditions (GC) 21 and 22 of Part A.

No deviations were reported for FGCOMPENGINES in the semi-annual and annual deviation reports submitted February 22, 2016 and July 26, 2016.

Semi-annual and annual deviation reports, required in Conditions VII. 2. and 3, were received by AQD on time (February 22, 2016 and July 26, 2016). No deviations were reported for FGCOMPENGINES.

Condition VIII. requires that the stacks for the RICES discharge unobstructed vertically to the ambient air. Based on the field portion of the inspection, the RICE stacks comply with this requirement.

Condition IX. 1. states the permittee shall comply with the applicable requirements of 40 CFR Part 63 (National Emission Standards for Hazardous Air Pollutants for Source Categories) Subpart A (General Provisions) and Subpart ZZZZ (National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines). FGCOMPENGINES do not have to meet the requirements 40 CFR Part 63 Subpart ZZZZ pursuant to 40 CFR 63.6590(b)(3)(i). 40 CFR 63.6590(b)(3)(i) states existing spark ignition 2 stroke lean burn (2SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions do not have to meet the requirements of 40 CFR 63 Subpart ZZZZ.

EUMVGENERATOR

I inspected the nameplate on EUMVGENERATOR and verified it was a Waukesha L1616GSIU engine. The generator was not operating during the inspection.

Condition III.1. states the permittee shall operate EUMVGENERATOR in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the AQD which may include, but is not limited to, monitoring results, review of operations and maintenance procedures, review of operation and maintenance records, and inspections of the source. ANR provided records of maintenance and testing for EUMVGENERATOR (attachment 15). According to 40 CFR 63.6600(c) emergency generators greater than 500 HP located at a major source of HAPs are not required to comply with the emission limitations and operating limitations in Table 1a, 2a, 2c, and 2d and Table 1b or 2b.

Conditions III. 2. and III.3: In order to be considered an emergency stationary RICE the engine must not run for more than 100 hours per year for non-emergency purposes, including maintenance checks and readiness testing. The use in emergency situations is unlimited. Records of the date, time, hour readings, generator run hours, and reason for operating were provided by ANR. Based on these records EUGENERATOR operated for 10.4 hours between August 19, 2015 and August 16, 2016 for testing and emergency purposes only. The engine did not run for emergency purposes during this same time period. These records appear to demonstrate that the generator is operating as an emergency generator as described in 40 CFR 63(f) and are in compliance with Conditions III.2. and III.3.

Condition IV.1. requires the permittee equip EUMVGENERATOR with a non-resettable hour meter. I inspected EUMVGENERATOR and observed a non-resettable hours meter which read 938.7 hours.

Condition VI.1. states the permittee shall record the beginning and ending dates; total number of operational hours; whether operational instance was for emergency; readiness testing, maintenance checks, or other use; and the description of use; for each instance that EUMVGENERATOR is operated. Records of the date, time, hour readings, generator run hours, and reason for operating were provided by ANR for August 19, 2015 through August 16, 2016.

Condition VII. 1. requires prompt reporting of deviations pursuant to General Conditions (GC) 21 and 22 of Part A. No deviations were reported for EUMVGENERATOR in the semi-annual and annual deviation reports submitted February 22, 2016 and July 26, 2016.

Semi-annual and annual deviation reports, required in Conditions VII. 2. and 3, were received by AQD on time (February 22, 2016 and July 26, 2016). No deviations were reported for EUMVGENERATOR.

Condition VII. 4. requires if EUMVGENERATOR operates for the purpose specified in Condition III.3.b and Condition III.3.c, the permittee shall submit an annual report. Records provided by ANR indicate that EUMVGENERATOR did not operate for the purposes in Condition III.3.b and Condition III.3.c.

Condition IX. 1. requires the permittee comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants (NESHAP) as specified in 40 CFR, Part 63, Subparts A and ZZZZ, as they apply to EUMVGENERATOR. It appears EUMVGENERATOR is in compliance with the applicable requirements in 40 CFR, Part 63, Subparts A and ZZZZ.

FGMACTDDDDD

The emission units in FGMACTDDDDD include EUMVBOILER1 and EUMVHEATERS. I inspected EUMVBOILER1 and verified it is a Kewanee Model L35-100-G, 4.2 MMBtu/hr natural gas-fired boiler. EUMVHEATERS are three 6.5 MMBtu/hr natural gas-fired.

Condition III. 1. requires the permittee conduct an initial performance tune-up no later than January 31, 2016 for EUMVHEATERS according to 40 CFR 63.7540(a)(11). Subsequent biennial tune-ups must be conducted no more than 25 months after the previous tune-up. On May 15, 2015 and January 12, 2016, AQD received an Initial Notification of Compliance Status from ANR for the process heaters and the boiler, including statements that an initial tune-up and a one-time energy assessment were conducted, as required by 40 CFR 63 Subpart DDDDD.

Condition III.2. requires the permittee conduct an initial performance tune-up no later than January 31, 2016 for EUMVBOILER1 according to 40 CFR 63.7540(a)(12). Subsequent 5-year tune-ups must be conducted no more than 61 months after the previous tune-up. On January 12, 2016, AQD received an Initial Notification of Compliance Status from ANR for the the boiler, including a statement that an initial tune-up was conducted, as required by 40 CFR 63 Subpart.

Condition III.3. requires the permittee complete a one-time energy assessment specified in Table 3.4(a) through (h) no later than January 31, 2016 for all Emission Units in FGMACTDDDDD. On May 15, 2015 and January 12, 2016, AQD received an Initial Notification of Compliance Status from ANR for the process heaters and the boiler, a statement a one-time energy assessment was conducted, as required by 40 CFR 63 Subpart DDDDD.

Condition VI.1. requires the permittee maintain a copy of each notification and report submitted to comply with 40 CFR, Part 63, Subpart DDDDD including all documentation supporting any Initial Notification or Notification of Compliance Status or Semiannual Compliance report that was submitted, according to the requirements in 40 CFR 63.10(b)(2)(xiv) and any records of performance tests, fuel analyses, or other compliance demonstrations and performance evaluations as required in 40 CFR 63.10(b)(2)(viii). ANR keeps these records in an electronic database and at the facility according to Ms. Holdsworth.

Condition VII.1. requires prompt reporting of deviations pursuant to General Conditions (GC) 21 and 22 of Part A. No deviations were reported for FGMACTDDDDD in the semi-annual and annual deviation reports submitted February 22, 2016 and July 26, 2016.

Semi-annual and annual deviation reports, required in Conditions VII. 2. and 3, were received by AQD on time (February 22, 2016 and July 26, 2016). No deviations were reported for FGMACTDDDDD.

Condition VII.4. requires the permittee submit a compliance report with the annual certification of compliance in VII.3 above. The compliance report for EUMVHEATERS is due every two years starting in 2018. The compliance report for EUMVBOILER1 is due every five years starting in 2021. On May 15, 2015 and January 12, 2016, AQD received an Initial Notification of Compliance Status from ANR for the process heaters and the boiler, including statements that an initial tune-up and a one-time energy assessment were conducted, as required by 40 CFR 63 Subpart DDDDD.

Condition VII.5. requires the permittee submit a Notification of Compliance Status (NOCS) following the initial compliance demonstration. On May 15, 2015 and January 12, 2016, AQD received an Initial Notification of Compliance Status from ANR for the process heaters and the boiler, including statements that an initial tune-up and a one-time energy assessment were conducted, as required by 40 CFR 63 Subpart DDDDD.

CONCLUSION

Based on the field inspection and the records provided, ANR Pipeline - Muttonville Compressor Station appears to be in compliance with the conditions of their ROP and all other applicable air regulations evaluated.

NAME K. Kelly DATE 10/3/16 SUPERVISOR SK

