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Senior Environmental Coordinator

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April 15, 2015

William F. Durham, Director
WVDEP, Division of Air Quality
601 57th Street SE
Charleston, WV 25304

**Re: Request for Class II Administrative Update
Equitrans, LP – Copley Run #70 Compressor Station
Facility ID No: 041-00009
Title V Permit #R30-04100009-2012**

Dear Mr. Durham,

Equitrans, LP (Equitrans) is submitting the enclosed Application for a Class II Administrative Update for the existing Copley Run #70 Compressor Station (Copley Run) located near Weston in Lewis County, West Virginia. Copley Run is a natural gas transmission facility that currently operates under Title V Permit #R30-041-00009-2012 (Title V Permit).

The February 17, 2015 Consent Order Agreement (CO-R13,14-E-2015-05) between the West Virginia Department of Environmental Protection and Equitrans requires the submittal of the subject permit modification application under Order for Compliance item #3.

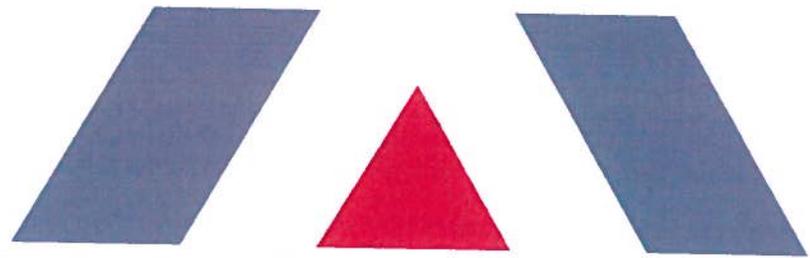
Equitrans is requesting to revise the volatile organic carbon (VOC) and carbon monoxide (CO) limits for the existing natural gas fired compressor engine #5 (CE-5) in table 5.1.1.b of the existing Title V Permit to match the engine manufacturer's emission guarantees. It should be noted that there will be no physical or operational change to the compressor engine, so the proposed revision does not meet the definition of modification under NSPS.

Additionally, Equitrans would like to correct the requirements for Dehy 004-02 listed in section 9 of the current Title V permit to reflect the classification of the unit as a "small glycol dehydration unit" under 40 CFR 63 Subpart HHH as discussed Attachment D – Regulatory Applicability.

Please contact me at 412-395-3654 or via email at msowa@eqt.com for payment of the application fee by credit card and if you have any questions regarding this application.

Sincerely,

Mark A. Sowa
Senior Environmental Coordinator



CLASS II ADMINISTRATIVE UPDATE
EQUITRANS LP
Copley Run Compressor Station

R30-04100009-2012

TRINITY CONSULTANTS
4500 Brooktree Drive
Suite 103
Wexford, PA 15090
(724) 935-2611

April 2015

Trinity 
Consultants

Environmental solutions delivered uncommonly well

TABLE OF CONTENTS

1. INTRODUCTION	3
1.1. Facility and Project Description	3
1.2. Source Status	3
1.3. R-13 application Organization	4
2. SAMPLE EMISSION SOURCE CALCULATIONS	5
3. R-13 APPLICATION FORMS	6
ATTACHMENT A: BUSINESS CERTIFICATE	
ATTACHMENT B: MAP	
ATTACHMENT C: INSTALLATION AND START UP SCHEDULE	
ATTACHMENT D: REGULATORY DISCUSSION	
ATTACHMENT E: PLOT PLAN	
ATTACHMENT F: DETAILED PROCESS FLOW DIAGRAM	
ATTACHMENT G: PROCESS DESCRIPTION	
ATTACHMENT I: EMISSION UNITS TABLE	
ATTACHMENT J: EMISSION POINTS DATA SUMMARY SHEET	
ATTACHMENT K: FUGITIVE EMISSIONS DATA SUMMARY SHEET	
ATTACHMENT L: EMISSIONS UNIT DATA SHEETS	
ATTACHMENT N: SUPPORTING EMISSION CALCULATIONS	
ATTACHMENT O: MONITORING/RECORDKEEPING/REPORTING/TESTING PLANS	
ATTACHMENT P: LEGAL AD	
ATTACHMENT S: TITLE V REVISION INFORMATION	

1. INTRODUCTION

Equitrans, LP (Equitrans) is submitting this Class II Administrative Update to the West Virginia Department of Environmental Protection (WVDEP) for a natural gas compressor station located in Lewis County, West Virginia (Copley Run Station). Specifically, this application seeks to modify the current permit emissions limits for an existing natural gas compressor engine (C-005) located at the site (permitted under Permit No. R30-04100009-2012 and R13-2397).

1.1. FACILITY AND PROJECT DESCRIPTION

The Copley Run Station is a natural gas transmission facility that compresses and dehydrates natural gas from storage wells for transportation across the pipeline. The station also dehydrates gas from nearby production wells. The station has the potential to operate 24 hours per day, 7 days per week. The station consists of five (5) natural gas reciprocating engine/integral compressors (three 1350-hp engines, one 2250-hp engine, and one 1800-hp engine), two natural gas-fired electric generators, a triethylene glycol (TEG) dehydration unit equipped with a flare, a TEG dehydration unit equipped with an indirect heater/reboiler, and six (6) storage tanks of various sizes. The facility also operates a comfort heating boiler and a hot water heater, both of which are considered insignificant sources under Title V.

The Copley Run Station is currently operating in accordance with West Virginia Department of Environmental Protection (WVDEP) Division of Air Quality Title V operating permit R30-04100009-2012, issued on December 11, 2012.

Equitrans seeks to revise the current volatile organic compound (VOC) and carbon monoxide (CO) emission limits of the existing natural gas fired compressor engine #5 (CE-5) to match those given in the manufacturer's emission guarantees. Equitrans requests that Table 5.1.1.b of the current Title V permit be amended to reflect the increase in potential emissions of the compressor engine (CE-5). It should be noted that there will be no physical or operational change to the compressor engine, and this proposed revisions does not meet the definition of a modification per New Source Performance Standard requirements.

Additionally, Equitrans would like to correct the requirements listed in Section 9 (Source Specific Requirements {40 CFR 63 Subpart HHH for Dehy 004-02}) of the current Title V permit to reflect the correct classification of Dehy 004-02. This existing glycol dehydration unit was incorrectly identified as a "large glycol dehydration unit" in Title V operating permit R30-04100009-2012 when it was issued on December 11, 2012. Dehy 004-02 has actual annual average benzene emissions less than 0.90 Mg/year and meets the definition of "small glycol dehydration unit" under 40 CFR 63 Subpart HHH. As such, the unit is only subject to requirements for small glycol dehydration units. Also, the gas/vapors from the regulated equipment are used as fuel gas in the reboiler, so the piping is not subject to the closed vent system standards and the recovery system used is not considered to be a control device as per the definitions in CFR 63.1271. See Attachment D for a detailed applicability analysis of Dehy 004-02.

A process flow diagram is included as Attachment F.

1.2. SOURCE STATUS

WVDEP must make stationary source determinations on a case-by-case basis using the guidance under the Clean Air Act (CAA) and EPA's and WVDEP's implementing regulations. The definition of stationary source in 40 CFR 51.166(b) includes the following:

"(6) Building, structure, facility, or installation means all of the pollutant emitting activities which belong to the same industrial grouping, are located on or more contiguous or adjacent properties, and are under control of the same person (or persons under common control)."

Other additional pollutant emitting facilities should be aggregated with the Copley Station for air permitting purposes if and only if all three elements of the “stationary source” definition above are fulfilled. There are currently no facilities within a half-mile radius of the Copley Station. Therefore, the Copley Station should be considered a separate stationary source with respect to permitting programs, including Title V and Prevention of Significant Deterioration (PSD). As discussed in this application, the facility is a minor source of air emissions with respect to New Source Review (NSR) and will remain a major source with respect to Title V permitting. Refer to Attachment D for detailed discussion regarding applicable requirements and compliance demonstration methodology.

1.3. R-13 APPLICATION ORGANIZATION

This West Virginia Code of State Regulations, Title 45 (CSR) Series 13 (45 CSR 13) R-13 permit application is organized as follows:

- > Section 2: Sample Emission Source Calculations;
- > Section 3: R-13 and Permission to Commence Construction Application Forms;
- > Attachment A: Business Certificate;
- > Attachment B: Map;
- > Attachment C: Installation and Start Up Schedule;
- > Attachment D: Regulatory Discussion;
- > Attachment E: Plot Plan;
- > Attachment F: Detailed Process Flow Diagram;
- > Attachment G: Process Description;
- > Attachment I: Emission Units Table;
- > Attachment J: Emission Points Data Summary Sheet;
- > Attachment K: Fugitive Emissions Data Summary Sheet;
- > Attachment L: Emissions Unit Data Sheets;
- > Attachment N: Supporting Emission Calculations;
- > Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans
- > Attachment P: Legal Ad
- > Attachment S: Title V Revision

2. SAMPLE EMISSION SOURCE CALCULATIONS

The characteristics of air emissions from the proposed revision to the natural gas compressor engine, along with the methodology for calculating emissions, are briefly described in this section of the application. Detailed emission calculations are presented in Appendix N of this application.

Emissions from the proposed project will result from the combustion of natural gas in the compressor engine (C-005). The project will not result in any emissions increase from the existing units (i.e. the compressor engines (C-001-004), TEG dehydrators, generators, etc.). The revision will only result in an overall increase of CO and VOC emissions from the compressor engine at the facility. The methods by which emissions from the tanks are calculated are summarized below.

Potential emissions of VOC and CO are calculated using emission factors provided by the manufacturer. Potential emissions of nitrogen oxides (NO_x) are based on current permit limits. Potential emissions of sulfur dioxide (SO₂), formaldehyde, particulate matter (PM/PM₁₀/PM_{2.5}), and all other hazardous air pollutants (HAPs) are calculated using U.S. EPA's AP-42 factors for two stroke lean burn engines. Potential emissions of greenhouse gas pollutants (GHGs) are calculated using U.S. EPA's emission factors from 40 CFR Part 98, Subpart C for all others.

3. R-13 APPLICATION FORMS

The WVDEP permit application forms contained in this application include all applicable R-13 application forms including the required attachments.



**WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR QUALITY**

601 57th Street, SE
Charleston, WV 25304
(304) 926-0475
www.dep.wv.gov/daq

**APPLICATION FOR NSR PERMIT
AND
TITLE V PERMIT REVISION
(OPTIONAL)**

PLEASE CHECK ALL THAT APPLY TO NSR (45CSR13) (IF KNOWN):

- CONSTRUCTION MODIFICATION RELOCATION
 CLASS I ADMINISTRATIVE UPDATE TEMPORARY
 CLASS II ADMINISTRATIVE UPDATE AFTER-THE-FACT

PLEASE CHECK TYPE OF 45CSR30 (TITLE V) REVISION (IF ANY):

- ADMINISTRATIVE AMENDMENT MINOR MODIFICATION
 SIGNIFICANT MODIFICATION

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS ATTACHMENT S TO THIS APPLICATION

FOR TITLE V FACILITIES ONLY: Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.

Section I. General

1. Name of applicant (as registered with the WV Secretary of State's Office): Equitrans LP		2. Federal Employer ID No. (FEIN):	
3. Name of facility (if different from above): Copley Run Compressor Station		4. The applicant is the: <input type="checkbox"/> OWNER <input type="checkbox"/> OPERATOR <input checked="" type="checkbox"/> BOTH	
5A. Applicant's mailing address: Route 4 Box 640 Weston, WV 26452		5B. Facility's present physical address:	
6. West Virginia Business Registration. Is the applicant a resident of the State of West Virginia? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO - If YES, provide a copy of the Certificate of Incorporation/Organization/Limited Partnership (one page) including any name change amendments or other Business Registration Certificate as Attachment A . - If NO, provide a copy of the Certificate of Authority/Authority of L.L.C./Registration (one page) including any name change amendments or other Business Certificate as Attachment A .			
7. If applicant is a subsidiary corporation, please provide the name of parent corporation: EQT Corporation			
8. Does the applicant own, lease, have an option to buy or otherwise have control of the <i>proposed site</i> ? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO - If YES, please explain: Applicant owns the site - If NO, you are not eligible for a permit for this source.			
9. Type of plant or facility (stationary source) to be constructed, modified, relocated, administratively updated or temporarily permitted (e.g., coal preparation plant, primary crusher, etc.): Natural Gas Transmission Facility		10. North American Industry Classification System (NAICS) code for the facility: 486210	
11A. DAQ Plant ID No. (for existing facilities only): 041-00009		11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only): R30-04100009-2012, R13-2397	

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

12A.

- For **Modifications, Administrative Updates** or **Temporary permits** at an existing facility, please provide directions to the *present location* of the facility from the nearest state road;
- For **Construction** or **Relocation permits**, please provide directions to the *proposed new site location* from the nearest state road. Include a **MAP as Attachment B**.

From Interstate 79 to Exit 91. Proceed toward Weston for approximately 1 mile, take a left onto Copley Road (Route 17). The station is approximately ½ mile on the left.

12.B. New site address (if applicable):

12C. Nearest city or town:
Weston

12D. County:
Lewis

12.E. UTM Northing (KM): 4,314.773

12F. UTM Easting (KM): 541.390

12G. UTM Zone: 17

13. Briefly describe the proposed change(s) at the facility:

EQT is proposing to revise the current permit emission limits for an existing natural gas compressor engine (C-005) as part of this application.

14A. Provide the date of anticipated installation or change: Upon permit issuance

- If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen:

14B. Date of anticipated Start-Up if a permit is granted:

/ /

14C. Provide a **Schedule** of the planned **Installation of/Change** to and **Start-Up** of each of the units proposed in this permit application as **Attachment C** (if more than one unit is involved).

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application:
Hours Per Day 24 Days Per Week 7 Weeks Per Year 52

16. Is demolition or physical renovation at an existing facility involved? YES NO

17. **Risk Management Plans.** If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed changes (for applicability help see www.epa.gov/ceppo), submit your **Risk Management Plan (RMP)** to U. S. EPA Region III.

18. **Regulatory Discussion.** List all Federal and State air pollution control regulations that you believe are applicable to the proposed process (*if known*). A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance (*if known*). Provide this information as **Attachment D**.

Section II. Additional attachments and supporting documents.

19. Include a check payable to WVDEP – Division of Air Quality with the appropriate **application fee** (per 45CSR22 and 45CSR13).

20. Include a **Table of Contents** as the first page of your application package.

21. Provide a **Plot Plan**, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as **Attachment E** (Refer to **Plot Plan Guidance**).

- Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).

22. Provide a **Detailed Process Flow Diagram(s)** showing each proposed or modified emissions unit, emission point and control device as **Attachment F**.

23. Provide a **Process Description** as **Attachment G**.

- Also describe and quantify to the extent possible all changes made to the facility since the last permit review (*if applicable*).

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H**.
– For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I**.

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J**.

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K**.

28. Check all applicable **Emissions Unit Data Sheets** listed below:

- | | | |
|--|--|--|
| <input type="checkbox"/> Bulk Liquid Transfer Operations | <input type="checkbox"/> Haul Road Emissions | <input type="checkbox"/> Quarry |
| <input type="checkbox"/> Chemical Processes | <input type="checkbox"/> Hot Mix Asphalt Plant | <input type="checkbox"/> Solid Materials Sizing, Handling and Storage Facilities |
| <input type="checkbox"/> Concrete Batch Plant | <input type="checkbox"/> Incinerator | <input type="checkbox"/> Storage Tanks |
| <input type="checkbox"/> Grey Iron and Steel Foundry | <input type="checkbox"/> Indirect Heat Exchanger | |
- General Emission Unit, specify Compressor Engine

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L**.

29. Check all applicable **Air Pollution Control Device Sheets** listed below:

- | | | |
|---|---|--|
| <input type="checkbox"/> Absorption Systems | <input type="checkbox"/> Baghouse | <input type="checkbox"/> Flare |
| <input type="checkbox"/> Adsorption Systems | <input type="checkbox"/> Condenser | <input type="checkbox"/> Mechanical Collector |
| <input type="checkbox"/> Afterburner | <input type="checkbox"/> Electrostatic Precipitator | <input type="checkbox"/> Wet Collecting System |
- Other Collectors, specify

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M**.

30. Provide all **Supporting Emissions Calculations** as **Attachment N**, or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O**.

- Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and **Example Legal Advertisement** for details). Please submit the **Affidavit of Publication** as **Attachment P** immediately upon receipt.

33. **Business Confidentiality Claims.** Does this application include confidential information (per 45CSR31)?

YES NO

- If **YES**, identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's "**Precautionary Notice – Claims of Confidentiality**" guidance found in the **General Instructions** as **Attachment Q**.

Section III. Certification of Information

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

- | | |
|--|---|
| <input type="checkbox"/> Authority of Corporation or Other Business Entity | <input type="checkbox"/> Authority of Partnership |
| <input type="checkbox"/> Authority of Governmental Agency | <input type="checkbox"/> Authority of Limited Partnership |

Submit completed and signed **Authority Form** as **Attachment R**.

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

35A. **Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

Certification of Truth, Accuracy, and Completeness

I, the undersigned **Responsible Official** / **Authorized Representative**, hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

SIGNATURE

Diana M. Charletta

(Please use blue ink)

DATE:

4/15/15

(Please use blue ink)

35B. Printed name of signee: Diana Charletta

35C. Title: Sr. Vice President

35D. E-mail: dcharletta@eqt.com

36E. Phone:

36F. FAX:

36A. Printed name of contact person (if different from above): Mark A. Sowa

36B. Title: Senior Environmental Coordinator

36C. E-mail: msowa@eqt.com

36D. Phone: 412-395-3654

36E. FAX:

PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Attachment A: Business Certificate | <input checked="" type="checkbox"/> Attachment K: Fugitive Emissions Data Summary Sheet |
| <input checked="" type="checkbox"/> Attachment B: Map(s) | <input checked="" type="checkbox"/> Attachment L: Emissions Unit Data Sheet(s) |
| <input checked="" type="checkbox"/> Attachment C: Installation and Start Up Schedule | <input type="checkbox"/> Attachment M: Air Pollution Control Device Sheet(s) |
| <input checked="" type="checkbox"/> Attachment D: Regulatory Discussion | <input type="checkbox"/> Attachment N: Supporting Emissions Calculations |
| <input checked="" type="checkbox"/> Attachment E: Plot Plan | <input checked="" type="checkbox"/> Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans |
| <input checked="" type="checkbox"/> Attachment F: Detailed Process Flow Diagram(s) | <input checked="" type="checkbox"/> Attachment P: Public Notice |
| <input checked="" type="checkbox"/> Attachment G: Process Description | <input type="checkbox"/> Attachment Q: Business Confidential Claims |
| <input type="checkbox"/> Attachment H: Material Safety Data Sheets (MSDS) | <input type="checkbox"/> Attachment R: Authority Forms |
| <input checked="" type="checkbox"/> Attachment I: Emission Units Table | <input checked="" type="checkbox"/> Attachment S: Title V Permit Revision Information |
| <input checked="" type="checkbox"/> Attachment J: Emission Points Data Summary Sheet | <input checked="" type="checkbox"/> Application Fee |

Please mail an original and three (3) copies of the complete permit application with the signature(s) to the DAQ, Permitting Section, at the address listed on the first page of this application. Please DO NOT fax permit applications.

FOR AGENCY USE ONLY – IF THIS IS A TITLE V SOURCE:

- Forward 1 copy of the application to the Title V Permitting Group and:
- For Title V Administrative Amendments:
 - NSR permit writer should notify Title V permit writer of draft permit,
- For Title V Minor Modifications:
 - Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,
 - NSR permit writer should notify Title V permit writer of draft permit.
- For Title V Significant Modifications processed in parallel with NSR Permit revision:
 - NSR permit writer should notify a Title V permit writer of draft permit,
 - Public notice should reference both 45CSR13 and Title V permits,
 - EPA has 45 day review period of a draft permit.

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

ATTACHMENT A
Business Certificate

**WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION
CERTIFICATE**

ISSUED TO:
**EQUITRANS LIMITED PARTNERSHIP
DBA EQT MIDSTREAM
1710 PENNSYLVANIA AVE
CHARLESTON, WV 25302-3934**

BUSINESS REGISTRATION ACCOUNT NUMBER: 1023-5643

This certificate is issued on: 06/22/2011

*This certificate is issued by
the West Virginia State Tax Commissioner
in accordance with Chapter 11, Article 12, of the West Virginia Code*

*The person or organization identified on this certificate is registered
to conduct business in the State of West Virginia at the location above.*

This certificate is not transferrable and must be displayed at the location for which issued.
This certificate shall be permanent until cessation of the business for which the certificate of registration
was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.

Change in name or change of location shall be considered a cessation of the business and a new
certificate shall be required.

TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them.
CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of
this certificate displayed at every job site within West Virginia.

ATTACHMENT B

Map

ATTACHMENT B - AREA MAP



Figure 1 - Map of Copley Run Station

UTM Northing (KM): 4314.773
UTM Easting (KM): 541.390
Elevation: 1,178 ft

ATTACHMENT C

Installation and Start Up Schedule

ATTACHMENT C

Schedule of Planned Installation and Start-Up

Unit	Installation Schedule	Startup Schedule
Cooper Bessemer Compressor Engine (C-005) - <i>Emission limit Increase</i>	As soon as possible	As soon as possible

ATTACHMENT D
Regulatory Discussion

ATTACHMENT D - REGULATORY APPLICABILITY

This section documents the applicability determinations made for Federal and State air quality regulations. The monitoring, recordkeeping, reporting, and testing plan is presented in Attachment O. In this section, applicability or non-applicability of the following regulatory programs is addressed:

- > Prevention of Significant Deterioration (PSD) permitting;
- > Title V of the 1990 Clean Air Act Amendments;
- > New Source Performance Standards (NSPS);
- > National Emission Standards for Hazardous Air Pollutants (NESHAP); and
- > West Virginia State Implementation Plan (SIP) regulations.

This review is presented to supplement and/or add clarification to the information provided in the WVDEP R13 permit application forms, which fulfill the requirement to include citations and descriptions of applicable statutory and administrative code requirements.

In addition to providing a summary of applicable requirements, this section of the application also provides non-applicability determinations for certain regulations, allowing the WVDEP to confirm that identified regulations are not applicable to the Copley Run Station. Note that explanations of non-applicability are limited to those regulations for which there may be some question of applicability specific to the operations at the Copley Run Station. Regulations that are categorically non-applicable are not discussed (e.g., NSPS Subpart J, Standards of Performance for Petroleum Refineries).

Prevention of Significant Deterioration (PSD) Source Classification

Federal construction permitting programs regulate new and modified sources of attainment pollutants under Prevention of Significant Deterioration (PSD) and new and modified sources of non-attainment pollutants under Non-Attainment New Source Review (NNSR). The Copley Run Station is in an area designated as attainment. PSD regulations apply when a major source makes a change, such as installing new equipment or modifying existing equipment, and a significant increase in emissions results from the change. The Copley Run Station is currently a major source with respect to the PSD program. However, the proposed emission limit changes do not exceed a significant emission rate. Furthermore, the proposed modification to the existing emission limitations do not lift a PSD avoidance limitation (i.e., the 39 ton per year limitation for NO_x and the hour restriction will remain). As such, PSD permitting is not triggered by this activity. EQT will monitor future construction activities at the site closely and will compare any future increase in emissions with the PSD thresholds to ensure these activities will not trigger this program.

Title V Operating Permit Program

Title 40 of the Code of Federal Regulations Part 70 (40 CFR 70) establishes the federal Title V operating permit program. West Virginia has incorporated the provisions of this federal program in its Title V operating permit program in West Virginia Code of State Regulations (CSR) 45-30. The major source thresholds with respect to the West Virginia Title V operating permit program regulations are 10 tons per year (tpy) of a single HAP, 25 tpy of any combination of HAP and 100 tpy of all other regulated pollutants.¹ The Copley Run Station is classified as a major source for Title V purposes and currently operates under Title V operating permit R30-04100009-2012. Potential emissions of all regulated pollutants are above the corresponding threshold(s) at this facility after the proposed revision to the emission limits. Therefore, the Copley Run Station will remain a major source for Title V purposes.

¹ On June 23, 2014, the U.S Supreme Court decision in the case of *Utility Air Regulatory Group v. EPA* effectively changed the permitting procedures for GHGs under the PSD and Title V programs.

Equitrans requests that the R13 permit modifications be incorporated into the Title V permit once the R13 permit is issued.

New Source Performance Standards

New Source Performance Standards (NSPS), located in 40 CFR 60, require new, modified, or reconstructed sources to control emissions to the level achievable by the best demonstrated technology as specified in the applicable provisions. Moreover, any source subject to an NSPS is also subject to the general provisions of NSPS Subpart A, except where expressly noted.

Equitrans is proposing to revise the current permit limits for the existing compressor engine (C-005) as part of this project. The proposed revision does not include a physical change or operational change to the compressor engine, but rather a change in emission factor. The change will not result in an increase in actual emissions from the engine. Therefore, per 60.14(a), the proposed project will not meet the definition of modification. As such, NSPS Subpart JJJJ is not applicable.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

Part 63 NESHAP allowable emission limits are established on the basis of a maximum achievable control technology (MACT) determination for a particular major source. A HAP major source is defined as having potential emissions in excess of 25 tpy for total HAP and/or potential emissions in excess of 10 tpy for any individual HAP. The Copley Station is a major source of HAP since its potential emissions of HAP are greater than the 10/25 major source thresholds.

40 CFR 63 Subpart ZZZZ: NESHAP for Stationary Reciprocating Internal Combustion Engines

The proposed project does not change any applicability determination with respect to NESHAP regulations (i.e., the classification of the engine under 40 CFR 63 Subpart ZZZZ is not affected by this change as the proposed change does not meet the definition of reconstructed).

40 CFR 63 Subpart HHH: NESHAP for Natural Gas Transmission and Storage Facilities

Although the proposed project (i.e. increase PTE for the engines) does not affect applicability under 40 CFR 63 Subpart HHH, Equitrans would like to correct the designation of the transmission dehy (004-02) from "large glycol dehydration unit", as it is designated in the current Title V permit (R30-04100009-2012), to "small glycol dehydration unit"

Dehy 004-02 has actual annual average benzene emissions less than 0.9 Mg/year and thus meets the definition of a small glycol dehydration unit as defined in 40 CFR §63.1271:

"Small glycol dehydration unit means a glycol dehydration unit, located at a major source, with an actual annual average natural gas flowrate less than 283.0 thousand standard cubic meters per day or actual annual average benzene emissions less than 0.90 Mg/yr, determined according to § 63.1282(a)."

The gas/vapors from Dehy (004-02) are routed to and used as fuel gas in the reboiler, so the piping is not subject to the closed vent system standards and does not meet the definition of a control device as defined in Subpart HHH:

"Closed-vent system means a system that is not open to the atmosphere and is composed of piping, ductwork, connections, and if necessary, flow inducing devices that transport gas or vapor from an emission point to one or more control devices. If gas or vapor from regulated equipment is routed to a process (e.g., to a fuel gas system), the conveyance system shall not be considered a closed-vent system and is not subject to closed-vent system standards."

Control device means any equipment used for recovering or oxidizing HAP or volatile organic compound (VOC) vapors. Such equipment includes, but is not limited to, absorbers, carbon absorbers, condensers, incinerators, flares, boilers, and process heaters. For the purposes of this subpart, if gas or vapor from regulated equipment is used, reused (i.e., injected into the flame zone of an enclosed combustion device), returned back to the process, or sold, then the recovery system used, including piping, connections, and flow inducing devices, is not considered to be a control device or a closed-vent system."

Equitrans has completed an applicability analysis of Subpart HHH for Dehy 004-02 and has highlighted applicable sections of Subpart HHH. Note that per §63.1270 (d)(3), each affected small glycol dehydration unit, as defined in §63.1271, located at a major source, that commenced construction before August 23, 2011, must achieve compliance no later than October 15, 2015. A summary of standards and compliance demonstration methods is included below.

§63.1275 Glycol dehydration unit process vent standards.

(a) This section applies to each glycol dehydration unit subject to this subpart that must be controlled for air emissions as specified in paragraph (c)(1) of §63.1274.

(b) Except as provided in paragraph (c) of this section, an owner or operator of a glycol dehydration unit process vent shall comply with the requirements specified in paragraphs (b)(1) and (b)(2) of this section.

(1) 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.

(i)-(ii) n/a

(iii) You must limit BTEX emissions from each existing small glycol dehydration unit, as defined in §63.1271, to the limit determined in Equation 1 of this section. The limits determined using Equation 1 of this section, must be met in accordance with one of the alternatives specified in paragraphs (b)(1)(iii)(A) through (D) of this section.

(A) Connect the process vent to a control device or combination of control devices through a closed-vent system. 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(f).

(B) Meet the emissions limit through process modifications in accordance with the requirements specified in §63.1281(e).

(C) Meet the emission limit for each small glycol dehydration unit using a combination of process modifications and one or more control devices through the requirements specified in paragraphs (b)(1)(iii)(A) and (B) of this section.

(D) Demonstrate that the emissions limit is met through actual uncontrolled operation of the small glycol dehydration unit. Document operational parameters in accordance with the requirements specified in §63.1281(e) and emissions in accordance with the requirements specified in §63.1282(a)(3).

(2) One or more safety devices that vent directly to the atmosphere may be used on the air emission control equipment installed to comply with paragraph (b)(1) of this section.

§63.1282 Test methods, compliance procedures, and compliance demonstrations.

(a) Determination of glycol dehydration unit flowrate, benzene emissions, or BTEX emissions. The procedures of this paragraph shall be used by an owner or operator to determine glycol dehydration unit natural gas flowrate, benzene emissions, or BTEX emissions.

(1) The determination of actual flowrate of natural gas to a glycol dehydration unit shall be made using the procedures of either paragraph (a)(1)(i) or (a)(1)(ii) of this section.

(i) The owner or operator shall install and operate a monitoring instrument that directly measures natural gas flowrate to the glycol dehydration unit with an accuracy of plus or minus 2 percent or better. The owner or operator shall convert the annual natural gas flowrate to a daily average by dividing the annual flowrate by the number of days per year the glycol dehydration unit processed natural gas.

- (ii) The owner or operator shall document, to the Administrator's satisfaction, the actual annual average natural gas flowrate to the glycol dehydration unit.
- (2) The determination of actual average benzene or BTEX emissions from a glycol dehydration unit shall be made using the procedures of either paragraph (a)(2)(i) or (ii) of this section. Emissions shall be determined either uncontrolled or with federally enforceable controls in place.
- (i) The owner or operator shall determine actual average benzene or BTEX emissions using the model GRI-GLYCalc™, Version 3.0 or higher, and the procedures presented in the associated GRI-GLYCalc™ Technical Reference Manual. Inputs to the model shall be representative of actual operating conditions of the glycol dehydration unit and may be determined using the procedures documented in the Gas Research Institute (GRI) report entitled "Atmospheric Rich/Lean Method for Determining Glycol Dehydrator Emissions" (GRI-95/0368.1); or
- (ii) The owner or operator shall determine an average mass rate of benzene or BTEX emissions in kilograms per hour through direct measurement by performing three runs of Method 18 in 40 CFR part 60, appendix A; or ASTM D6420-99 (Reapproved 2004) (incorporated by reference as specified in §63.14), as specified in §63.772(a)(1)(ii); or an equivalent method; and averaging the results of the three runs. Annual emissions in kilograms per year shall be determined by multiplying the mass rate by the number of hours the unit is operated per year. This result shall be converted to megagrams per year.

West Virginia SIP Regulations

The Copley Run Station is currently permitted under the regulations contained in West Virginia's Title 45 Legislative Rule Department of Environmental Protection Office of Air Quality (WVDEP regulations). The Code of State regulations fall under two main categories, those regulations that are generally applicable (e.g., permitting requirements), and those that have specific applicability (e.g., PM standards for manufacturing equipment).

45 CSR 4: To Prevent and Control the Discharge of Air Pollutants into the Air Which Causes or Contributes to an Objectionable Odor

According to 45 CSR 4-3:

No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public.

As stated in the R30-04100009-2012 Fact Sheet, the Copley Run Station is subject to this requirement. In accordance with their Title V permit, the Copley Run Station will maintain appropriate records and take appropriate response measures of all odor complaints.

45 CSR 16: Standards of Performance for New Stationary Sources

45 CSR 16-1 incorporates the federal Clean Air Act (CAA) standards of performance for new stationary sources set forth in 40 CFR Part 60 by reference. As noted above, no NSPS are applicable to the proposed change.

45 CSR 34: Emissions Standards for Hazardous Air Pollutants

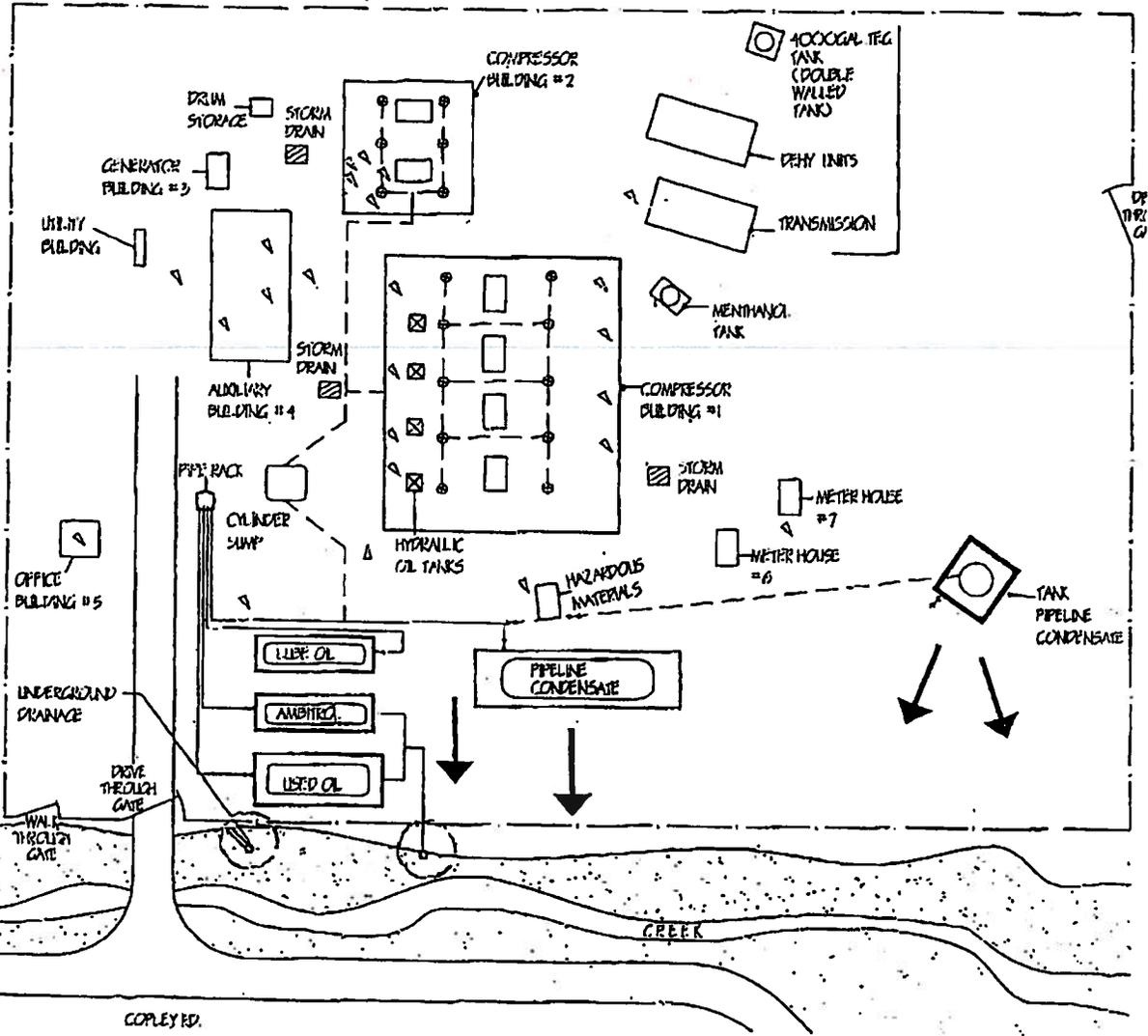
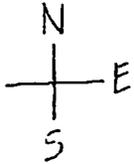
45 CSR 34-1 incorporates the federal Clean Air Act (CAA) national emissions standards for hazardous air pollutants (NESHAPs) as set forth in 40 CFR Parts 61 and 63 by reference. As noted above, no NESHAP are applicable to the proposed change.

Non-Applicability of Other SIP Rules

A thorough examination of the West Virginia SIP rules with respect to applicability at the Copley Run Station reveals many SIP regulations that do not apply or impose additional requirements on operations. Such SIP rules include those specific to a particular type of industrial operation that is categorically not applicable to the Copley Run Station.

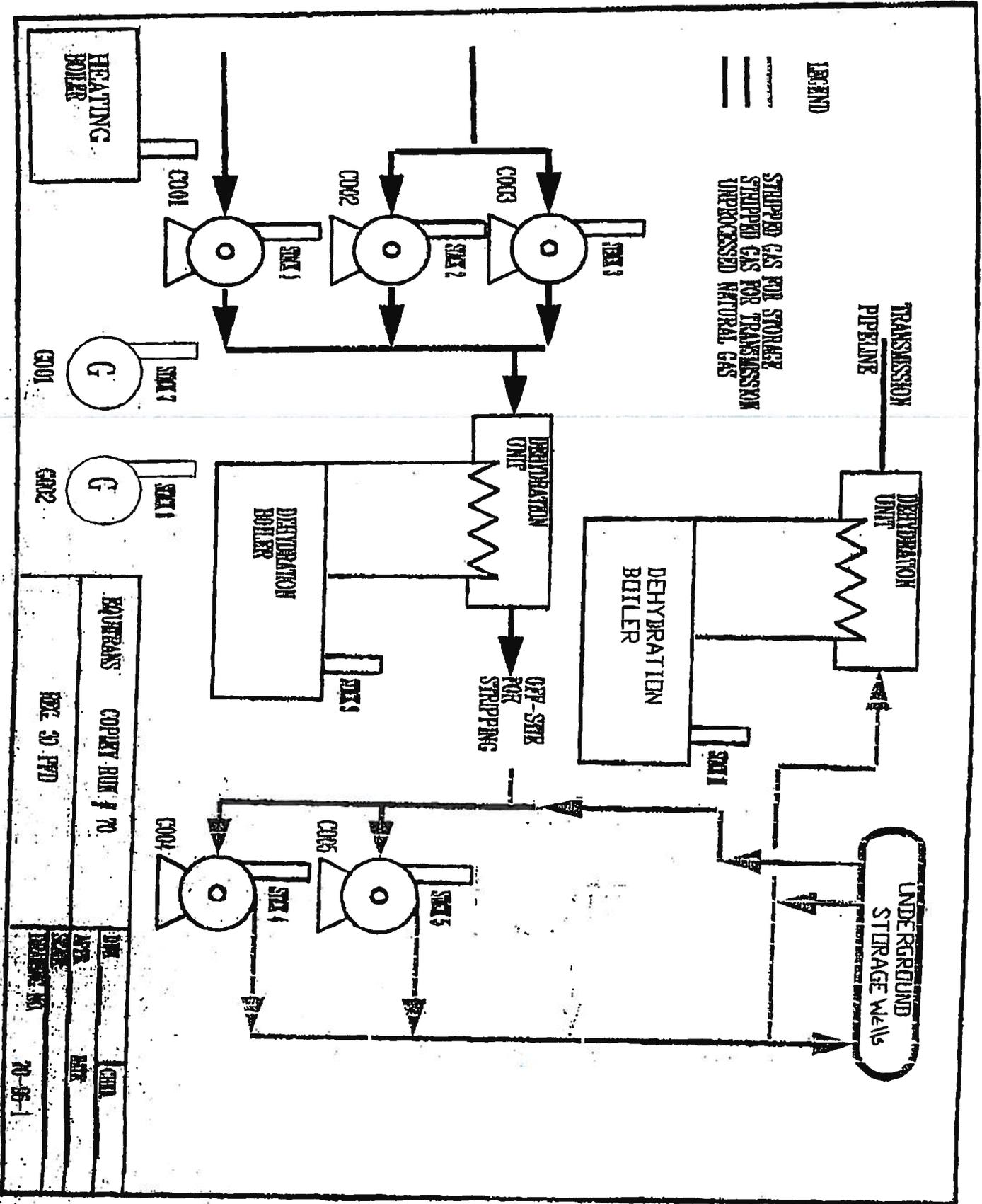
ATTACHMENT E

Plot Plan



ATTACHMENT F

Detailed Process Flow Diagram



ATTACHMENT G

Process Description

ATTACHMENT G - PROCESS DESCRIPTION

The project involves revising the current permit limits of the existing natural gas fired compressor engine at the Copley Run compressor station.

The Copley Run Station is a natural gas transmission station that compresses and dehydrates natural gas from nearby storage wells for transportation across the pipeline. The process of the compression and dehydration of natural gas occurs in the following way:

- > Natural gas enters the compressor station. Pipeline liquids are removed from the gas stream along the pipeline via a slug catcher.
- > The gas then enters compression.
- > The gas then enters a glycol towers where TEG glycol absorbs the water out of the gas stream. The water is boiled out of the glycol at the reboiler and recirculated through a closed loop system.
- > The gas is then measured and enters transmission pipeline

A process flow diagram is included as Attachment F.

ATTACHMENT I

Emission Units Table

Attachment I

Emission Units Table

(includes all emission units and air pollution control devices
that will be part of this permit application review, regardless of permitting status)

Emission Unit ID ¹	Emission Point ID ²	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type ³ and Date of Change	Control Device ⁴
001-01	C-001	Reciprocating Engine/Integral Compressor; Cooper Bessemer Model GMVH10; Serial #48769	1981	2250 HP	Existing, No Change	None
001-02	C-002	Reciprocating Engine/Integral Compressor; Cooper Bessemer Model GMVH10; Serial #48771	1981	1350 HP	Existing, No Change	None
001-03	C-003	Reciprocating Engine/Integral Compressor; Cooper Bessemer Model GMVH10; Serial #48772	1981	1350 HP	Existing, No Change	None
001-04	C-004	Reciprocating Engine/Integral Compressor; Cooper Bessemer Model GMVH10; Serial #48770	1980	1800 HP	Existing, No Change	None
001-05	C-005	Reciprocating Engine/Integral Compressor; Cooper Bessemer Model GMVH10; Serial #49126	1993	1350 HP	Modified – Revising Permit Limits	None
G-001	G-001	Natural Gas Fired Electric Generator; International Harvester Model V549; Serial #174686	1987	2.2 MMBTU/hr	Existing, No Change	None
G-002	G-002	Natural Gas Fired Electric Generator; Cummins Model GTA12; Serial #25183763	1993	2.2 MMBTU/hr	Existing, No Change	None
003-01	003-01	Natural Gas Fired Heating Boiler; Ajax Model WG-675 D; Serial # 81-33656	1981	0.675 MMBTU/hr	Existing, No Change	None
003-02	003-02	Natural Gas Fired Hot Water Heater; WL Jackson Mfg. Co. Model G 030 05; Serial # 66552-1080	1987	0.03 MMBTU/hr	Existing, No Change	None
004-01	Dehy Flare	Triethylene Glycol dehydration unit; Natco Model 5 GR-3000-TX10; also consists of a flare and a natural gas fired reboiler (Dehy Boiler #1)	1992	0.65 MMBtu/hr, 46 MMScf/day (Dehy)	Existing, No Change	004-01 Dehy Flare
004-02	Dehy	Triethylene Glycol unit; Natco Model GS 3100E; also dehydration consists of a natural gas fired reboiler (Dehy Boiler #2) and an indirect heater.	1992	1.67 MMBtu/hr and 1.2 MMBtu/hr 140 MMScf/day (Dehy)	Existing, No Change	None

Copley 1	Copley 1	Triethylene Glycol horizontal fixed roof storage tank	1992	4,000 gallons	Existing, No Change	None
Copley 2	Copley 2	Pipeline Condensate horizontal fixed roof storage tank	1992	20,000 gallons	Existing, No Change	None
Copley 3	Copley 3	Crude Oil horizontal fixed roof storage tank	1992	2,000 gallons	Existing, No Change	None
Copley 4	Copley 4	Methanol horizontal fixed roof storage tank	1992	2,000 gallons	Existing, No Change	None
Copley 5	Copley 5	Used Oil horizontal fixed roof storage tank	1992	7,500 gallons	Existing, No Change	None
Copley 6	Copley 6	Ambitrol horizontal fixed roof storage tank	1992	3,000 gallons	Existing, No Change	None

¹ For Emission Units (or Sources) use the following numbering system: 1S, 2S, 3S,... or other appropriate designation.

² For Emission Points use the following numbering system: 1E, 2E, 3E, ... or other appropriate designation.

³ New, modification, removal

⁴ For Control Devices use the following numbering system: 1C, 2C, 3C,... or other appropriate designation.

ATTACHMENT J

Emission Points Data Summary Sheet

**Attachment J
EMISSION POINTS DATA SUMMARY SHEET**

Table 1: Emissions Data																		
Emission Point ID No. <i>(Must match Emission Units Table & Plot Plan)</i>	Emission Point Type ¹	Emission Unit Vented Through This Point <i>(Must match Emission Units Table & Plot Plan)</i>		Air Pollution Control Device <i>(Must match Emission Units Table & Plot Plan)</i>		Vent Time for Emission Unit <i>(chemical processes only)</i>		All Regulated Pollutants - Chemical Name/CAS ³ <i>(Speciate VOCs & HAPS)</i>	Maximum Potential Uncontrolled Emissions ⁴		Maximum Potential Controlled Emissions ⁵		Emission Form or Phase <i>(At exit conditions, Solid, Liquid or Gas/Vapor)</i>	Est Method Used ⁶	Emission Concentration ⁷ <i>(ppmv or mg/m⁴)</i>			
		ID No.	Source	ID No.	Device Type	Short Term ²	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr						
C-005	Upward Vertical stack	001-005	Compressor engine	NA	NA	NA	NA	NO _x	10.0	39.0	10.0	39.0	Gas/Vapor	O ^A				
								CO	5.95	22.94	5.95	22.94						
								SO ₂	0.01	0.02	0.01	0.02						
								PM/PM ₁₀ /PM _{2.5}	0.48	1.85	0.48	1.85						
								VOC	1.49	5.74	1.49	5.74						
								CO _{2e}	1.160	4.471	1.160	4.471						

A – Emissions calculated using Manufacturer vendor guarantee for CO and VOC, AP-42 for non GHG pollutants, and 40 CFR Part 98 Subpart C for GHG.

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET. Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

¹ Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.

² Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (i.e., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).

³ List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS₂, VOCs, H₂S, Inorganics, Lead, Organics, O₃, NO, NO₂, SO₂, SO₃, all applicable Greenhouse Gases (including CO₂ and methane), etc. DO NOT LIST H₂, H₂O, N₂, O₂, and Noble Gases.

⁴ Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

⁵ Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

⁶ Indicate method used to determine emission rate as follows: MB = material balance, ST = stack test (give date of test); EE = engineering estimate, O = other (specify).

⁷ Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m³) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO₂ use units of ppmv (See 45CSR10).

ATTACHMENT K

Fugitive Emissions Data Summary Sheet

Attachment K

FUGITIVE EMISSIONS DATA SUMMARY SHEET

The FUGITIVE EMISSIONS SUMMARY SHEET provides a summation of fugitive emissions. Fugitive emissions are those emissions which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening. Note that uncaptured process emissions are not typically considered to be fugitive, and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET.

Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions).

APPLICATION FORMS CHECKLIST - FUGITIVE EMISSIONS	
1.)	Will there be haul road activities? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (no change to existing) <input type="checkbox"/> If YES, then complete the HAUL ROAD EMISSIONS UNIT DATA SHEET.
2.)	Will there be Storage Piles? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete Table 1 of the NONMETALLIC MINERALS PROCESSING EMISSIONS UNIT DATA SHEET.
3.)	Will there be Liquid Loading/Unloading Operations? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (no change to existing) <input type="checkbox"/> If YES, complete the BULK LIQUID TRANSFER OPERATIONS EMISSIONS UNIT DATA SHEET.
4.)	Will there be emissions of air pollutants from Wastewater Treatment Evaporation? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
5.)	Will there be Equipment Leaks (e.g. leaks from pumps, compressors, in-line process valves, pressure relief devices, open-ended valves, sampling connections, flanges, agitators, cooling towers, etc.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (no change to existing) <input type="checkbox"/> If YES, complete the LEAK SOURCE DATA SHEET section of the CHEMICAL PROCESSES EMISSIONS UNIT DATA SHEET.
6.)	Will there be General Clean-up VOC Operations? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
7.)	Will there be any other activities that generate fugitive emissions? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET or the most appropriate form.
If you answered "NO" to all of the items above, it is not necessary to complete the following table, "Fugitive Emissions Summary."	

FUGITIVE EMISSIONS SUMMARY	All Regulated Pollutants Chemical Name/CAS ¹	Maximum Potential Uncontrolled Emissions ²		Maximum Potential Controlled Emissions ³		Est. Method Used ⁴
		lb/hr	ton/yr	lb/hr	ton/yr	
Haul Road/Road Dust Emissions Paved Haul Roads	NA	---	---	---	---	---
Unpaved Haul Roads	PM PM ₁₀ PM _{2.5}	---	---	---	---	---
Storage Pile Emissions	NA	---	---	---	---	---
Loading/Unloading Operations	VOC	---	---	---	---	---
Wastewater Treatment Evaporation & Operations	NA	---	---	---	---	---
Equipment Leaks	VOC	---	---	---	---	---
General Clean-up VOC Emissions	NA	---	---	---	---	---
Other	NA	---	---	---	---	---

¹ List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS₂, VOCs, H₂S, Inorganics, Lead, Organics, O₃, NO, NO₂, SO₂, SO₃, all applicable Greenhouse Gases (including CO₂ and methane), etc. DO NOT LIST H₂, H₂O, N₂, O₂, and Noble Gases.

² Give rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

³ Give rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

⁴ Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

ATTACHMENT L

Emissions Unit Data Sheet

**Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL**

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): C-005

<p>1. Name or type and model of proposed affected source:</p> <p>Compressor Engine #5 : Cooper Bessemer GMVHR natural gas fired compressor engine</p>
<p>2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.</p>
<p>3. Name(s) and maximum amount of proposed process material(s) charged per hour:</p> <p>NA</p>
<p>4. Name(s) and maximum amount of proposed material(s) produced per hour:</p> <p>Does not produce any materials. Compresses natural gas to maintain pipeline pressure.</p>
<p>5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:</p> <p>Internal combustion of natural gas.</p>

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable):		
(a) Type and amount in appropriate units of fuel(s) to be burned:		
Pipeline quality natural gas – 9,180 scf/hr		
(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:		
Pipeline quality natural gas with negligible H ₂ S and ash content.		
(c) Theoretical combustion air requirement (ACF/unit of fuel):		
@	°F and	psia.
(d) Percent excess air: Unknown		
(e) Type and BTU/hr of burners and all other firing equipment planned to be used:		
9.91 MMBtu/hr spark ignition reciprocating internal combustion engine.		
(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:		
NA		
(g) Proposed maximum design heat input: 9.91 × 10 ⁶ BTU/hr.		
7. Projected operating schedule:		
Hours/Day	24	Days/Week
		7
		Weeks/Year
		52

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:			
@	°F and		psia
a. NO _x	10.00	lb/hr	grains/ACF
b. SO ₂	0.01	lb/hr	grains/ACF
c. CO	5.95	lb/hr	grains/ACF
d. PM ₁₀	0.48	lb/hr	grains/ACF
e. Hydrocarbons		lb/hr	grains/ACF
f. VOCs	1.49	lb/hr	grains/ACF
g. Pb	NA	lb/hr	grains/ACF
h. Specify other(s)			
Benzene	0.02	lb/hr	grains/ACF
Toluene	0.01	lb/hr	grains/ACF
Xylene	0.003	lb/hr	grains/ACF
Formaldehyde	0.55	lb/hr	grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing
 Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING

None.

RECORDKEEPING

The permittee shall maintain a record of the hours of operation of compressor engine C-005 to demonstrate compliance with Section 5.1.1. of this permit. Said records shall be maintained in accordance with 3.4.2. of this permit.

REPORTING

None

TESTING

None

MONITORING. PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

See attached manufacturer specification sheet

ATTACHMENT N

Supporting Emission Calculations

**Equitrans - Copley Run Station
Facility-Wide Emissions Summary**

Process/Facility	Potential Emissions (lb/hr)					
	NOx	CO	VOC	SO ₂	PM ¹	HAPs
Compressor Engine #1 (C-001)	52.38	6.38	1.98	0.01	0.80	1.32
Compressor Engine #2 (C-002)	5.95	5.95	1.49	0.01	0.48	0.79
Compressor Engine #3 (C-003)	5.95	5.95	1.49	0.01	0.48	0.79
Compressor Engine #4 (C-004)	41.90	5.10	1.59	0.01	0.64	1.05
Compressor Engine #5 (C-005)	10.00	5.95	1.49	0.01	0.48	0.79
#1 Dehy Reboiler (004-01)	0.06	0.05	0.00	0.00	0.00	0.00
#1 TEG Dehydrator & Flash Tank Routed to Flare (004-01)	0.06	0.05	1.39	0.00	0.00	0.39
#2 Dehy Reboiler (004-02)	0.15	0.13	0.01	0.00	0.01	0.00
#2 TEG Dehydrator & Flash Tank Recirculated to Reboiler (004-02)	-	-	0.68	-	-	0.00
#2 Dehy Indirect Heater (004-02)	0.11	0.09	0.01	0.00	0.01	0.00
Generator #1 (G-001)	4.99	8.18	0.07	0.00	0.04	0.06
Generator #2 (G-002)	4.99	8.18	0.07	0.00	0.04	0.06
Heating Boiler (003-01)	0.06	0.05	0.00	0.00	0.00	0.00
Hot Water Heater (003-02)	0.00	0.00	0.00	0.00	0.00	0.00
Site Wide Emissions (lb/hr)	126.63	46.08	10.25	0.04	2.99	5.27

¹ PM = PM₁₀ = PM_{2.5}

Process/Facility	Potential Emissions (tpy)					
	NOx	CO	VOC	SO ₂	PM ¹	HAPs
Compressor Engine #1 (C-001)	229.43	27.94	8.69	0.04	3.50	5.76
Compressor Engine #2 (C-002)	26.07	26.07	6.52	0.03	2.10	3.46
Compressor Engine #3 (C-003)	26.07	26.07	6.52	0.03	2.10	3.46
Compressor Engine #4 (C-004)	183.54	22.35	6.95	0.03	2.80	4.61
Compressor Engine #5 (C-005)	38.55	23.94	5.74	0.02	1.85	3.04
#1 Dehy Reboiler (004-01)	0.26	0.22	0.01	0.00	0.02	0.00
#1 TEG Dehydrator & Flash Tank Routed to Flare (004-01)	0.25	0.21	6.08	0.00	0.02	0.59
#2 Dehy Reboiler (004-02)	0.68	0.57	0.04	0.00	0.05	0.01
#2 TEG Dehydrator & Flash Tank Recirculated to Reboiler (004-02)	-	-	2.97	-	-	0.00
#2 Dehy Indirect Heater (004-02)	0.49	0.41	0.03	0.00	0.04	0.01
Generator #1 (G-001)	21.87	35.85	0.29	0.01	0.19	0.28
Generator #2 (G-002)	21.87	35.85	0.29	0.01	0.19	0.28
Heating Boiler (003-01)	0.27	0.23	0.02	0.00	0.02	0.01
Hot Water Heater (003-02)	0.01	0.01	0.00	0.00	0.00	0.00
Site Wide Emissions (tpy)	549.37	198.71	44.12	0.17	12.86	21.52

¹ PM = PM₁₀ = PM_{2.5}

Equitrans - Copley Run Station
 Facility-Wide Emissions Summary

Process/Facility	HAPs - Potential Emissions (lb/hr)					
	Benzene	Ethylbenzene	Toluene	Xylenes	n-Hexane	Formaldehyde
Compressor Engine #1 (C-001)	3.21E-02	1.78E-03	1.59E-02	4.43E-03	7.35E-03	9.12E-01
Compressor Engine #2 (C-002)	1.92E-02	1.07E-03	9.55E-03	2.66E-03	4.41E-03	5.47E-01
Compressor Engine #3 (C-003)	1.92E-02	1.07E-03	9.55E-03	2.66E-03	4.41E-03	5.47E-01
Compressor Engine #4 (C-004)	2.56E-02	1.43E-03	1.27E-02	3.54E-03	5.88E-03	7.30E-01
Compressor Engine #5 (C-005)	1.92E-02	1.07E-03	9.55E-03	2.66E-03	4.41E-03	5.47E-01
#1 Dehy Reboiler (004-01)	1.26E-06	-	2.05E-06	-	1.08E-05	4.51E-05
#1 TEG Dehydrator & Flash Tank Routed to Flare (004-01)	3.22E-02	2.09E-02	2.67E-02	2.59E-02	1.53E-02	-
#2 Dehy Reboiler (004-02)	3.25E-06	-	5.26E-06	-	2.78E-03	1.16E-04
#2 TEG Dehydrator & Flash Tank Recirculated to Reboiler (004-02)	2.20E-04	2.20E-04	2.20E-04	2.20E-04	2.20E-04	-
#2 Dehy Indirect Heater (004-02)	2.33E-06	-	3.78E-06	-	2.00E-03	8.33E-05
Generator #1 (G-001)	3.48E-03	5.46E-05	1.23E-03	4.29E-04	-	4.51E-02
Generator #2 (G-002)	3.48E-03	5.46E-05	1.23E-03	4.29E-04	-	4.51E-02
Heating Boiler (003-01)	1.31E-06	-	2.13E-06	-	1.13E-03	4.69E-05
Hot Water Heater (003-02)	5.83E-08	-	9.44E-08	-	5.00E-05	2.08E-06
Site Wide Emissions (lb/hr)	0.15	0.03	0.09	0.04	0.05	3.37

Process/Facility	HAPs - Potential Emissions (tpy)					
	Benzene	Ethylbenzene	Toluene	Xylenes	n-Hexane	Formaldehyde
Compressor Engine #1 (C-001)	0.140	0.008	0.070	0.019	0.032	3.995
Compressor Engine #2 (C-002)	0.084	0.005	0.042	0.012	0.019	2.397
Compressor Engine #3 (C-003)	0.084	0.005	0.042	0.012	0.019	2.397
Compressor Engine #4 (C-004)	0.112	0.006	0.056	0.016	0.026	3.196
Compressor Engine #5 (C-005)	0.074	0.004	0.037	0.010	0.017	2.109
#1 Dehy Reboiler (004-01)	0.000	-	0.000	-	0.005	0.000
#1 TEG Dehydrator & Flash Tank Routed to Flare (004-01)	0.141	0.092	0.117	0.113	0.114	-
#2 Dehy Reboiler (004-02)	0.000	-	0.000	-	0.012	0.001
#2 TEG Dehydrator & Flash Tank Recirculated to Reboiler (004-02)	0.000	0.000	0.000	0.000	0.000	-
#2 Dehy Indirect Heater (004-02)	0.000	-	0.000	-	0.009	0.000
Generator #1 (G-001)	0.015	0.000	0.005	0.002	-	0.198
Generator #2 (G-002)	0.015	0.000	0.005	0.002	-	0.198
Heating Boiler (003-01)	0.000	-	0.000	-	0.005	0.000
Hot Water Heater (003-02)	0.000	-	0.000	-	0.000	0.000
Site Wide Emissions (tpy)	0.67	0.12	0.37	0.19	0.26	14.49

Equitrans - Copley Run Station
 Facility-Wide Emissions Summary

Process/Facility	GHG - Potential Emissions (lb/hr) ²			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
Compressor Engine #1 (C-001)	1931	0.036	0.0036	1933
Compressor Engine #2 (C-002)	1159	0.022	0.0022	1160
Compressor Engine #3 (C-003)	1159	0.022	0.0022	1160
Compressor Engine #4 (C-004)	1545	0.029	0.0029	1547
Compressor Engine #5 (C-005)	1159	0.022	0.0022	1160
#1 Dehy Reboiler (004-01)	76	0.000	0.0001	76
#1 TEG Dehydrator & Flash Tank Routed to Flare (004-01)	68	4.692	0.0012	185
#2 Dehy Reboiler (004-02)	195	0.000	0.0004	195
#2 TEG Dehydrator & Flash Tank Recirculated to Reboiler (004-02)	0	0.496	0.0000	12
#2 Dehy Indirect Heater (004-02)	140	0.000	0.0003	140
Generator #1 (G-001)	257	0.005	0.0005	257
Generator #2 (G-002)	257	0.005	0.0005	257
Heating Boiler (003-01)	79	0.001	0.0001	79
Hot Water Heater (003-02)	4	0.000	0.0000	4
Site Wide Emissions (lb/hr)	8,029	5.33	0.02	8,167

Process/Facility	GHG - Potential Emissions (tpy) ²			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
Compressor Engine #1 (C-001)	8460	0.160	0.0160	8469
Compressor Engine #2 (C-002)	5076	0.096	0.0096	5081
Compressor Engine #3 (C-003)	5076	0.096	0.0096	5081
Compressor Engine #4 (C-004)	6768	0.128	0.0128	6775
Compressor Engine #5 (C-005)	4467	0.084	0.0084	4471
#1 Dehy Reboiler (004-01)	333	0.000	0.0006	333
#1 TEG Dehydrator & Flash Tank Routed to Flare (004-01)	297	20.553	0.0054	812
#2 Dehy Reboiler (004-02)	855	0.000	0.0016	856
#2 TEG Dehydrator & Flash Tank Recirculated to Reboiler (004-02)	0	2.173	0.0000	54
#2 Dehy Indirect Heater (004-02)	614	0.000	0.0012	615
Generator #1 (G-001)	1126	0.021	0.0021	1127
Generator #2 (G-002)	1126	0.021	0.0021	1127
Heating Boiler (003-01)	346	0.007	0.0007	346
Hot Water Heater (003-02)	15	0.000	0.0000	15
Site Wide Emissions (tpy)	34,559	23.34	0.07	35,164

² Carbon equivalent emissions (CO₂e) are based on the following Global Warming Potentials (GWP) from 40 CFR Part 98, Table A-1

Carbon Dioxide (CO ₂)	1
Methane (CH ₄)	25
Nitrous Oxide (N ₂ O)	298

**Compressor Engine
(C-005)**

Source Designation:	
Manufacturer:	Cooper-Bessemer
Model No.:	GMVHR
Serial No.:	49126
Stroke Cycle:	2-stroke
Type of Burn:	Lean
Year Installed/Date Manufactured	1993
Fuel Used:	Natural Gas
Fuel High Heating Value (HHV) (Btu/scf):	1,080
Rated Horsepower (bhp):	1,350
Specific Fuel Consumption (Btu/bhp-hr)	
Maximum Fuel Consumption at 100% Load (scf/hr):	9,180
Heat Input (MMBtu/hr)	9.91
Stack Designation:	C-005

Operational Details:

Potential Annual Hours of Operation (hr/yr):	7,709
Potential Fuel Consumption (MMscf/yr):	70.77

Criteria and Manufacturer Specific Pollutant Emission Factors:

Pollutant	Emission Factors ^a	Units
CO	2.00	g/bhp-hr
SO ₂	5.88E-04	lb/MMBtu
PM ₁₀ (Filterable)	3.84E-02	lb/MMBtu
PM _{2.5} (Filterable)	3.84E-02	lb/MMBtu
PM Condensable	9.91E-03	lb/MMBtu
PM Total	4.83E-02	lb/MMBtu
VOC	0.50	g/bhp-hr
CO ₂	5.30E+01	kg/MMBtu
CH ₄	1.00E-03	kg/MMBtu
N ₂ O	1.00E-04	kg/MMBtu

Criteria and Manufacturer Specific Pollutant Emission Rates:

Pollutant	Potential Emissions	
	(lb/hr) ^b	(tons/yr) ^c
NO _x ^d	10.00	38.55
CO	5.95	22.94
SO ₂	0.01	0.02
PM ₁₀ (Filterable)	0.38	1.47
PM _{2.5} (Filterable)	0.38	1.47
PM Condensable	0.10	0.38
PM Total	0.48	1.85
VOC (excludes formaldehyde)	1.49	5.74
CO ₂	1,159	4,467
CH ₄	0.02	0.08
N ₂ O	0.00	0.01
CO ₂ ^e	1,160	4,471

Hazardous Air Pollutant (HAP) Potential Emissions:

Pollutant	Emission Factor (lb/MMBtu) ^a	Potential Emissions	
		(lb/hr) ^b	(tons/yr) ^c
HAPs:			
Acenaphthene	1.33E-06	1.32E-05	5.08E-05
Acenaphthylene	3.17E-06	3.14E-05	1.21E-04
Acetaldehyde	7.76E-03	7.69E-02	2.97E-01
Acrolein	7.78E-03	7.71E-02	2.97E-01
Benzene	1.94E-03	1.92E-02	7.41E-02
Benzo(b)fluoranthene	8.51E-09	8.44E-08	3.25E-07
Benzo(a)pyrene	5.68E-09	5.63E-08	2.17E-07
Benzo(g,h,i)perylene	2.48E-08	2.46E-07	9.48E-07
Biphenyl	3.95E-05	3.92E-04	1.51E-03
1,3-Butadiene	8.20E-04	8.13E-03	3.13E-02
Carbon Tetrachloride	6.07E-05	6.02E-04	2.32E-03
Chlorobenzene	4.44E-05	4.40E-04	1.70E-03
Chloroform	4.71E-05	4.67E-04	1.80E-03
Chrysene	6.72E-07	6.66E-06	2.57E-05
1,3-Dichloropropene	4.46E-05	4.42E-04	1.70E-03
Ethylbenzene	1.08E-04	1.07E-03	4.13E-03
Ethylene Dibromide	7.34E-05	7.28E-04	2.80E-03
Fluoranthene	3.61E-07	3.58E-06	1.38E-05
Fluorene	1.69E-06	1.68E-05	6.46E-05
Formaldehyde	5.52E-02	5.47E-01	2.11E+00
Methanol	2.48E-03	2.46E-02	9.48E-02
Methylene Chloride	1.47E-04	1.46E-03	5.62E-03
n-Hexane	4.45E-04	4.41E-03	1.70E-02
Phenanthrene	3.53E-06	3.50E-05	1.35E-04
Phenol	4.21E-05	4.17E-04	1.61E-03
Pyrene	5.84E-07	5.79E-06	2.23E-05
Styrene	5.48E-05	5.43E-04	2.09E-03
Toluene	9.63E-04	9.55E-03	3.68E-02
1,1,2,2-Tetrachloroethane	6.63E-05	6.57E-04	2.53E-03
Tetrachloroethane	6.63E-05	6.57E-04	2.53E-03
1,1,2-Trichloroethane	5.27E-05	5.22E-04	2.01E-03
2,2,4-Trimethylpentane	8.46E-04	8.39E-03	3.23E-02
Vinyl Chloride	2.47E-05	2.45E-04	9.44E-04
Xylene	2.68E-04	2.66E-03	1.02E-02
Polycyclic Organic Matter:			
Naphthalene	9.63E-05	9.55E-04	3.68E-03
2-Methylnaphthalene	2.14E-05	2.12E-04	8.18E-04
PAH	1.34E-04	1.33E-03	5.12E-03
Total HAP		7.90E-01	3.04E+00

^a Formaldehyde, SO₂, PM, and HAP emission factors from AP-42 Section 3.2, Table 3.2-1 "Uncontrolled Emission Factors for 2-Stroke Lean-Burn Engines," Supplement F, August 2000. VOC, CO emission factors are based on manufacturer's data. Greenhouse gas emission factors are based on 40 CFR Part 98, Subpart C, Tables C-1 and C-2 for natural gas combustion.

^b Emission Rate (lb/hr) = Rated Capacity (MMBtu/hr or bhp) × Emission Factor (lb/MMBtu or lb/bhp-hr).

^c Annual Emissions (tons/yr)_{Potential} = (lb/hr)_{Emissions} × (Maximum Allowable Operating Hours, 7,709 hr/yr) × (1 ton/2000 lb).

^d NOx emission rates are taken from Table 5.1.1 b of current Title V permit limits: R30-04100009-2012

K. a. c

SUMMARY OF GROVE CITY PRODUCTION TEST DATA
 GMVH-6C2, EQUITRANS, SO-1220, MO-49126
 TURBOCHARGER: CB13A, MO-8008

March 20, 1

Log/Line	2/2	1/2	1/4	1/6	2/2	2/4	2/6	2/8
Date	3/7/92	3/6/92	3/6/92	3/6/92	3/7/92	3/7/92	3/7/92	3/7/92
Time	0815-1215	1830	1945	2100	1315	1415	1515	1630
Test Description	FULL SPEED	60% SPEED	60% SPEED					
"	FULL LOAD	FULL LOAD	FULL LOAD	116%	75% LOAD	50% LOAD	50% LOAD	92% SPEED
"	AVERAGE	MAX AIR	MIN AIR	AMBIENT	VAR AIR	VAR AIR	VAR AIR	VAR AIR
Engine Speed % Full	100	100	100	100	100	100	60	60
Engine Speed RPM	330	330	330	330	330	330	198	198
Torque % Rated	100	100	100	116	75	50	50	92
Brake Load BHP	1350	1350	1350	1566	1012	675	405	745
BMEP Psi	125.3	125.3	125.3	145.3	94.0	62.7	62.7	115.3
Barometer In Hg	28.29	28.51	28.50	28.50	28.25	28.20	28.20	28.22
Gas DLHV BTU/Scf	925.6	925.4	925.5	925.1	925.5	925.5	925.5	925.6
FUEL Guarantee	6850							
BSFC BTU/BHP-Hr	6793	6814	6734	6898	7023	6763	6402	6948
AGA Flow Scfm	165.1	165.7	163.7	194.6	128.0	82.2	46.7	93.2
Gas Flow Lb/Hr	442.3	441.3	436.1	518.4	340.9	219.0	124.4	248.3
Exh. Bypass %Open	13.63	0.00	19.10	19.20	17.90	20.70	0.00	3.30
Air Flow Scfm	5641	6069	5324	6382	4325	2726	2597	3564
Air Flow Lb/Hr	24106	25938	22751	27272	18482	11649	11097	15230
Displacement %	228.41	245.78	215.58	258.42	175.12	110.38	175.26	240.52
Turbo Speed RPM	19425	20536	18410	20401	15980	10720	10054	13585
Blower In Deg F	80.7	78.2	79.4	58.6	79.7	80.3	79.1	80.8
Blower In -In H2O	4.13	4.60	3.50	5.00	2.40	0.90	0.90	1.50
Blower Out Deg F	237.0	251.0	218.1	232.0	186.1	131.5	125.9	157.7
Blower Out In Hg	30.78	35.40	26.60	36.40	19.00	7.70	6.80	16.80
Air Manif Deg F	109.9	104.5	106.5	74.2	110.8	105.9	109.5	109.1
Air Manif In Hg	30.55	35.20	26.40	36.20	18.70	7.40	6.70	11.80
Cyl Head Deg F	335.3	301.0	315.3	316.3	317.2	291.3	255.3	321.7
Pre-Turbo Deg F	685	654	697	695	677	695	619	612
Pre-Turbo In Hg	27.55	31.50	23.00	32.40	16.50	6.40	5.70	9.90
Exhaust Deg F	511	466	534	499	546	610	619	505
Exhaust In H2O	3.18	3.40	1.80	4.00	1.80	0.60	0.45	1.00
FG Manif Psig	48.3	50.0	45.0	55.5	36.0	23.0	18.5	27.0
Pilot Gas Psig	45.4	49.0	41.0	51.0	33.0	21.0	17.0	26.0
Ignition Deg BTC	4	4	4	2	4	4	6*ATC	2*ATC
Peak Press Psig	1077	1021	1078	1123				
Standard Deviation	47.0	52.8	40.3	56.2				
JW Flow GPM	304							
JW In Deg F					302	302	302	300
JW Out Deg F	169.9	169.6	167.6	170.2	170.4	169.4	168.0	169.2
AW Flow GPM	166	166	167	164	166	166	164	164
AW In Deg F	109.1	105.8	106.8	68.6	111.6	107.3	111.2	110.0
AW Out Deg F	117.6	116.6	113.9	81.8	115.4	107.8	111.6	112.5
LO Flow GPM	182	178	178	179	180	180	110	111
LO In Deg F	149.6	151.0	152.0	150.9	154.1	143.2	155.1	148.4
LO Out Deg F	162.5	164.0	165.3	164.0	165.0	156.8	164.4	162.6
Turbo Oil Out Deg F	180	184	180	183	176	168	161	163
Turbo Bearing Deg F	211	220	208	220	196	174	178	193
Main Bearing Deg F	168	170	170	168	169	171	165	162
LO Header Press Psig	35.9	35.0	35.0	36.0	36.0	36.5	16.0	16.0
Oxygen % Dry	15.40	16.40	15.70	15.50	15.40	14.60	16.20	14.90
NOx Guarantee	2.00							
NOx Gm/BHP-Hr	1.89	0.57	4.29	1.44	1.74	0.88	0.91	27.42
NO2 Gm/BHP-Hr	0.23	0.40	0.50	0.30	0.16	0.36	0.46	1.90
CO Guarantee	2.00							
CO Gm/BHP-Hr	0.27	0.57	0.14	0.30	0.41	0.88	0.70	0.10
THC Guarantee	5.00							
THC Gm/BHP-Hr	2.83	3.70	2.28	2.64	3.31	4.73	7.04	3.40
NMHC Guarantee	0.50							
NMHC Gm/BHP-Hr	0.20	0.26	0.17	0.20	0.23	0.33	0.51	0.27

CYLINDER HEAD: GMVR-11-1A
 AFTERCOOLER: 2-02H-179-016

POWER CYLINDER: GMVG-9-A#5
 GAS VALVE: GMV15-3S#4

PISTON: GMVH-5-3A
 IGNITION: ALTRONIC II CPU

SUMMARY OF GROVE CITY PRODUCTION TEST DATA
 GMVH-6C2, EQUITRANS, SO-1220, MO-49127
 TURBOCHARGER: CB13A, MO-8009

April 06, 19'

Log/Line	1/2-8	1/10	1/12	1/14	2/2	2/4	2/6	2/8
Date	3/30/92	3/31/92	3/31/92	3/31/92	4/1/92	4/1/92	4/1/92	4/1/92
Time	1000-1400	1145	1245	1400	1045	1145	1245	1345
Test Description	FULL SPEED	FULL SPEED	FULL SPEED	FULL SPEED	MIN SPEED	MIN SPEED	FULL SPEED	FULL SPEED
"	FULL LOAD	FULL LOAD	FULL LOAD	FULL SPEED				
"	AVERAGE	MAX AIR	MIN AIR	AMBIENT				
Engine Speed % Full	100	100	100	110%	92%	50%	50%	75%
Engine Speed RPM	330	330	330	100	60	60	100	100
Torque % Rated	100	100	100	330	198	198	330	330
Brake Load BHP	1350	1350	1350	110	92	50	50	75
BMEP Psi	125.3	125.3	125.3	1485	745	405	675	1012
Barometer In Hg	28.31	28.37	28.35	137.8	115.3	62.7	62.7	94.0
Gas DLHV BTU/Scf	925.2	925.3	925.2	925.2	28.26	28.26	28.26	28.25
FUEL Guarantee	6850				925.8	925.7	925.7	925.4
BSFC BTU/BHP-Hr	6628	6691	6516	6655	7519	9245	7438	6946
AGA Flow Scfm	161.2	162.7	158.5	178.0	100.8	67.4	90.4	126.6
Gas Flow Lb/Hr	431.1	435.2	423.9	476.2	270.2	180.6	242.1	339.0
Exh. Bypass %Open	3.85	0.00	9.80	6.50	20.80	0.00	10.20	4.00
Air Flow Scfm	5669	6013	5339	6523	2736	2587	2730	4233
Air Flow Lb/Hr	24226	25697	22815	27878	11692	11057	11666	18090
Displacement %	229.56	243.49	216.18	264.16	184.65	174.62	110.54	171.42
Turbo Speed RPM	19086	20119	17985	20430	10588	10132	10580	15380
Blower In Deg F	80.0	80.5	80.4	60.0	76.2	82.4	78.5	81.4
Blower In -In H2O	3.45	4.00	2.90	4.40	0.80	0.65	0.80	2.00
Blower Out Deg F	230.7	247.9	214.8	233.3	126.1	128.2	128.1	181.4
Blower Out In Hg	29.90	34.00	25.60	36.20	7.40	6.85	7.50	17.55
Air Manif Deg F	109.7	109.9	112.1	90.0	109.0	109.4	109.6	105.9
Air Manif In Hg	29.70	33.80	25.40	36.00	7.40	6.80	7.45	17.35
Cyl Head Deg F	325	322	334	323	344	243	278	307
Pre-Turbo Deg F	664	652	686	673	748	631	671	654
Pre-Turbo In Hg	26.30	30.60	22.80	31.10	6.10	5.70	6.25	15.20
Exhaust Deg F	486	460	522	472	651	542	586	526
Exhaust In H2O	0.70	0.90	0.65	0.95	0.20	0.10	0.10	0.35
FG Manif Psig	42.0	43.5	39.0	48.0	21.9	15.1	19.4	30.0
Pilot Gas Psig	41.0	43.0	38.0	48.0	20.5	15.0	19.4	29.2
Ignition Deg BTC	4	4	4	2	2 ATC	8 ATC	4	4
Peak Press Psig	958							
Standard Deviation	52.5			891				
JW Flow GPM	322	322	322	322	324	324	324	324
JW In Deg F	163.5	163.2	162.2	161.0	163.8	167.0	164.1	164.2
JW Out Deg F	170.8	170.6	170.0	168.6	171.2	170.6	169.3	169.8
AW Flow GPM	170	173	173	173	174	174	174	174
AW In Deg F	108.2	108.0	111.4	86.1	109.5	110.0	109.0	105.7
AW Out Deg F	116.6	117.3	117.9	97.5	110.1	110.5	109.6	109.5
LO Flow GPM	174	173	173	173	106	106	175	175
LO In Deg F	153.0	152.0	153.6	154.7	142.0	156.0	156.9	160.0
LO Out Deg F	164.6	164.5	165.1	164.0	167.4	160.4	161.6	166.3
Turbo Oil Out Deg F	176	179	173	177	156	154	163	175
Turbo Bearing Deg F	201	211	195	211	178	173	172	191
Main Bearing Deg F	168	169	167	168	161	156	156	164
LO Header Press Psig	42.0	42.0	42.0	42.0	25.0	25.0	45.0	44.0
Turbo Oil Press Psig	26.0	26.0	26.0	26.0	15.5	15.0	26.0	26.5
NOx Guarantee	2.00							
NOx Gm/BHP-Hr	0.88	0.41	2.78	0.39	24.56	0.89	0.41	0.56
NO2 Gm/BHP-Hr	0.51	0.37	0.51	0.31	2.07	0.81	0.38	0.51
CO Guarantee	2.00	2.00	2.00	2.00	2.00			
CO Gm/BHP-Hr	0.51	1.02	0.22	0.88	0.17	1.00	1.44	0.69
THC Guarantee	5.00	5.00	5.00	5.00	5.00			
THC Gm/BHP-Hr	4.01	5.94	3.28	5.37	3.43	13.45	7.23	4.89
NMHC Guarantee	0.50	0.50	0.50	0.50	0.50			
NMHC Gm/BHP-Hr	0.22	0.34	0.17	0.32	0.27	1.01	0.53	0.31

CYLINDER HEAD: GMVR-11-1A
 AFTERCOOLER: 2-02H-179-016

POWER CYLINDER: GMVG-9-A#5
 GAS VALVE: GMV15-3S#4

PISTON: GMVH-5-3A
 IGNITION: ALTRONIC II CPU

**Glycol Dehydrator #2 (Transmission) Emission Calculations
(004-02)**

GRI-GLYCalc Version 4.0 - CONTROLLED EMISSIONS SUMMARY				POTENTIAL TO EMIT***	
CONTROLLED REGENERATOR/FLASH GAS EMISSIONS					
Pollutant	(lbs/hr)	(lbs/day)	(tons/yr)	(lbs/hr)	(tons/yr)
Methane	0.0338	0.812	0.1482	0.04	0.16
Ethane	0.0620	1.488	0.2715	0.07	0.30
Propane	0.1025	2.459	0.4488	0.11	0.49
Isobutane	0.0329	0.789	0.1440	0.04	0.16
n-Butane	0.0890	2.136	0.3899	0.10	0.00
Isopentane	<0.0001	<0.001	<0.0001	0.00	0.00
n-Pentane	<0.0001	<0.001	<0.0001	0.00	0.00
Cyclopentane	<0.0001	<0.001	<0.0001	0.00	0.00
n-Hexane	<0.0001	<0.001	<0.0001	0.00	0.00
Cyclohexane	<0.0001	<0.001	<0.0001	0.00	0.00
Other Hexanes	<0.0001	<0.001	<0.0001	0.00	0.00
Heptanes	<0.0001	<0.001	<0.0001	0.00	0.00
Methylcyclohexane	<0.0001	<0.001	<0.0001	0.00	0.00
2,2,4-Trimethylpentane	<0.0001	<0.001	<0.0001	0.00	0.00
Benzene	<0.0001	<0.001	<0.0001	0.00	0.00
Toluene	<0.0001	<0.001	<0.0001	0.00	0.00
Ethylbenzene	<0.0001	<0.001	<0.0001	0.00	0.00
Xylenes	<0.0001	<0.001	<0.0001	0.00	0.00
C8 + Heavier Hydrocarbons	<0.0001	0.001	0.0001	0.00	0.00
Total Emissions	0.3202	7.686	1.4027	0.35	1.54
Total Hydrocarbon Emissions	0.3202	7.686	1.4027	0.35	1.54
Total VOC Emissions	0.2244	5.386	0.9830	0.25	1.08
Total HAP Emissions	<0.0001	<0.001	<0.0001	0.00	0.00

*Based on GRI GlyCalc 4.0 run at emission scenario of maximum rated dry gas flowrate of 140 MMscf/day and average actual operating conditions of T and P of 84°F and 516 psig, respectively and long-chain gas analysis for Copley Run Station (dated 12/4/2014)

**Using 0.0005% for all NIL compounds reported on extended gas analysis

*** Potential to emit is calculated by adding 10% to GRI GlyCalc results. The 10% compliance margin will help account for variation in the extended gas analysis.

GRI-GLYCalc Version 4.0 - FLASH TANK EMISSIONS SUMMARY				POTENTIAL TO EMIT***	
FLASH TANK OFF GAS EMISSIONS					
Pollutant	(lbs/hr)	(lbs/day)	(tons/yr)	(lbs/hr)	(tons/yr)
Methane	0.4171	10.010	1.8269	0.46	2.01
Ethane	0.2843	6.824	1.2453	0.31	1.37
Propane	0.2167	5.200	0.9491	0.24	1.04
Isobutane	0.0546	1.311	0.2392	0.06	0.26
n-Butane	0.1211	2.907	0.5305	0.13	0.58
Isopentane	<0.0001	<0.001	<0.0001	0.00	0.00
n-Pentane	<0.0001	<0.001	<0.0001	0.00	0.00
Cyclopentane	<0.0001	<0.001	<0.0001	0.00	0.00
n-Hexane	<0.0001	<0.001	<0.0001	0.00	0.00
Cyclohexane	<0.0001	<0.001	<0.0001	0.00	0.00
Other Hexanes	<0.0001	<0.001	<0.0001	0.00	0.00
Heptanes	<0.0001	<0.001	<0.0001	0.00	0.00
Methylcyclohexane	<0.0001	<0.001	<0.0001	0.00	0.00
2,2,4-Trimethylpentane	<0.0001	<0.001	<0.0001	0.00	0.00
Benzene	<0.0001	<0.001	<0.0001	0.00	0.00
Toluene	<0.0001	<0.001	<0.0001	0.00	0.00
Ethylbenzene	<0.0001	<0.001	<0.0001	0.00	0.00
Xylenes	<0.0001	<0.001	<0.0001	0.00	0.00
C8 + Heavier Hydrocarbons	0.0001	0.001	0.0002	0.00	0.00
Total Emissions	1.0939	26.254	4.7914	1.20	5.27
Total Hydrocarbon Emissions	1.0939	26.254	4.7914	1.20	5.27
Total VOC Emissions	0.3925	9.420	1.7192	0.43	1.89
Total HAP Emissions	<0.0001	<0.001	<0.0001	0.00	0.00

*Based on GRI GlyCalc 4.0 run at emission scenario of maximum rated dry gas flowrate of 140 MMscf/day and average actual operating conditions of T and P of 84°F and 516 psig, respectively and long-chain gas analysis for Copley Run Station (dated 12/4/2014)

**Using 0.0005% for all NIL compounds reported on extended gas analysis

*** Potential to emit is calculated by adding 10% to GRI GlyCalc results. The 10% compliance margin will help account for variation in the extended gas analysis.

Case Name: Copley Station Dehy 004-02
 File Name: Z:\Client\EQT Corporation\West Virginia\Copley\Projects\153901.0062 R-13
 Permit Emissions Increase\Draft\20150407 Draft R13 Application Revised\Attachment N -
 Emission Calculations\2015-0409_Copley Run_Dehy 004-02_PTE (RL).ddf
 Date: April 09, 2015

DESCRIPTION:

Description: PTE
 Gas Analysis Sample Date: 12/4/2014
 Vapors are routed to reboiler for control.

Annual Hours of Operation: 8760.0 hours/yr

EMISSIONS REPORTS:

CONTROLLED REGENERATOR EMISSIONS

Component	lbs/hr	lbs/day	tons/yr
Methane	0.0338	0.812	0.1482
Ethane	0.0620	1.488	0.2715
Propane	0.1025	2.459	0.4488
Isobutane	0.0329	0.789	0.1440
n-Butane	0.0890	2.136	0.3899
Isopentane	<0.0001	<0.001	<0.0001
n-Pentane	<0.0001	<0.001	<0.0001
Cyclopentane	<0.0001	<0.001	<0.0001
n-Hexane	<0.0001	<0.001	<0.0001
Cyclohexane	<0.0001	<0.001	<0.0001
Other Hexanes	<0.0001	<0.001	<0.0001
Heptanes	<0.0001	<0.001	<0.0001
Methylcyclohexane	<0.0001	<0.001	<0.0001
2,2,4-Trimethylpentane	<0.0001	<0.001	<0.0001
Benzene	<0.0001	<0.001	<0.0001
Toluene	<0.0001	<0.001	<0.0001
Ethylbenzene	<0.0001	<0.001	<0.0001
Xylenes	<0.0001	<0.001	<0.0001
C8+ Heavies	<0.0001	0.001	0.0001
Total Emissions	0.3202	7.686	1.4027
Total Hydrocarbon Emissions	0.3202	7.686	1.4027
Total VOC Emissions	0.2244	5.386	0.9830
Total HAP Emissions	<0.0001	<0.001	<0.0001
Total BTEX Emissions	<0.0001	<0.001	<0.0001

UNCONTROLLED REGENERATOR EMISSIONS

Component	lbs/hr	lbs/day	tons/yr
Methane	0.6767	16.240	2.9638
Ethane	1.2399	29.757	5.4306
Propane	2.0492	49.182	8.9757
Isobutane	0.6577	15.784	2.8806
n-Butane	1.7802	42.725	7.7974
Isopentane	<0.0001	0.001	0.0001

n-Pentane	<0.0001	0.001	0.0001
Cyclopentane	<0.0001	<0.001	<0.0001
n-Hexane	<0.0001	<0.001	<0.0001
Cyclohexane	<0.0001	0.001	0.0002
Other Hexanes	0.0001	0.003	0.0005
Heptanes	0.0002	0.004	0.0008
Methylcyclohexane	0.0001	0.002	0.0004
2,2,4-Trimethylpentane	<0.0001	<0.001	<0.0001
Benzene	0.0001	0.002	0.0003
Toluene	0.0001	0.003	0.0005
Ethylbenzene	<0.0001	<0.001	<0.0001
Xylenes	<0.0001	0.001	0.0002
C8+ Heavies	0.0006	0.013	0.0024

Total Emissions	6.4049	153.718	28.0535
Total Hydrocarbon Emissions	6.4049	153.718	28.0535
Total VOC Emissions	4.4884	107.721	19.6591
Total HAP Emissions	0.0002	0.005	0.0009
Total BTEX Emissions	0.0002	0.005	0.0009

FLASH GAS EMISSIONS

Component	lbs/hr	lbs/day	tons/yr
Methane	0.4171	10.010	1.8269
Ethane	0.2843	6.824	1.2453
Propane	0.2167	5.200	0.9491
Isobutane	0.0546	1.311	0.2392
n-Butane	0.1211	2.907	0.5305
Isopentane	<0.0001	<0.001	<0.0001
n-Pentane	<0.0001	<0.001	<0.0001
Cyclopentane	<0.0001	<0.001	<0.0001
n-Hexane	<0.0001	<0.001	<0.0001
Cyclohexane	<0.0001	<0.001	<0.0001
Other Hexanes	<0.0001	<0.001	<0.0001
Heptanes	<0.0001	<0.001	<0.0001
Methylcyclohexane	<0.0001	<0.001	<0.0001
2,2,4-Trimethylpentane	<0.0001	<0.001	<0.0001
Benzene	<0.0001	<0.001	<0.0001
Toluene	<0.0001	<0.001	<0.0001
Ethylbenzene	<0.0001	<0.001	<0.0001
Xylenes	<0.0001	<0.001	<0.0001
C8+ Heavies	0.0001	0.001	0.0002

Total Emissions	1.0939	26.254	4.7914
Total Hydrocarbon Emissions	1.0939	26.254	4.7914
Total VOC Emissions	0.3925	9.420	1.7192
Total HAP Emissions	<0.0001	<0.001	<0.0001
Total BTEX Emissions	<0.0001	<0.001	<0.0001

FLASH TANK OFF GAS

Component	lbs/hr	lbs/day	tons/yr
Methane	8.3420	200.208	36.5380
Ethane	5.6863	136.471	24.9060
Propane	4.3337	104.010	18.9818
Isobutane	1.0924	26.217	4.7847
n-Butane	2.4225	58.139	10.6103

Isopentane	<0.0001	0.001	0.0002
n-Pentane	<0.0001	0.001	0.0002
Cyclopentane	<0.0001	<0.001	<0.0001
n-Hexane	<0.0001	<0.001	<0.0001
Cyclohexane	<0.0001	<0.001	<0.0001
Other Hexanes	0.0001	0.003	0.0005
Heptanes	0.0001	0.002	0.0004
Methylcyclohexane	<0.0001	<0.001	0.0001
2,2,4-Trimethylpentane	<0.0001	<0.001	<0.0001
Benzene	<0.0001	<0.001	<0.0001
Toluene	<0.0001	<0.001	<0.0001
Ethylbenzene	<0.0001	<0.001	<0.0001
Xylenes	<0.0001	<0.001	<0.0001
C8+ Heavies	0.0011	0.027	0.0050

Total Emissions	21.8784	525.081	95.8272
Total Hydrocarbon Emissions	21.8784	525.081	95.8272
Total VOC Emissions	7.8501	188.402	34.3833
Total HAP Emissions	<0.0001	<0.001	0.0001
Total BTEX Emissions	<0.0001	<0.001	<0.0001

EQUIPMENT REPORTS:

COMBUSTION DEVICE

Ambient Temperature: 60.00 deg. F
 Excess Oxygen: 15.00 %
 Combustion Efficiency: 95.00 %
 Supplemental Fuel Requirement: 1.50e-001 MM BTU/hr

Component	Emitted	Destroyed
Methane	5.00%	95.00%
Ethane	5.00%	95.00%
Propane	5.00%	95.00%
Isobutane	5.00%	95.00%
n-Butane	5.00%	95.00%
Isopentane	5.00%	95.00%
n-Pentane	5.00%	95.00%
Cyclopentane	5.00%	95.00%
n-Hexane	5.00%	95.00%
Cyclohexane	5.00%	95.00%
Other Hexanes	5.00%	95.00%
Heptanes	5.00%	95.00%
Methylcyclohexane	5.00%	95.00%
2,2,4-Trimethylpentane	5.00%	95.00%
Benzene	5.00%	95.00%
Toluene	5.00%	95.00%
Ethylbenzene	5.00%	95.00%
Xylenes	5.00%	95.00%
C8+ Heavies	5.00%	95.00%

ABSORBER

NOTE: Because the Calculated Absorber Stages was below the minimum allowed, GRI-GLYCalc has set the number of Absorber Stages to 1.25 and has calculated a revised Dry Gas Dew Point.

Calculated Absorber Stages: 1.25
 Calculated Dry Gas Dew Point: 5.72 lbs. H2O/MMSCF

Temperature: 84.0 deg. F
 Pressure: 516.0 psig
 Dry Gas Flow Rate: 140.0000 MMSCF/day
 Glycol Losses with Dry Gas: 0.4320 lb/hr
 Wet Gas Water Content: Saturated
 Calculated Wet Gas Water Content: 60.15 lbs. H2O/MMSCF
 Calculated Lean Glycol Recirc. Ratio: 2.02 gal/lb H2O

Component	Remaining in Dry Gas	Absorbed in Glycol
Water	9.50%	90.50%
Carbon Dioxide	99.93%	0.07%
Nitrogen	100.00%	0.00%
Methane	100.00%	0.00%
Ethane	99.98%	0.02%
Propane	99.97%	0.03%
Isobutane	99.95%	0.05%
n-Butane	99.94%	0.06%
Isopentane	99.94%	0.06%
n-Pentane	99.92%	0.08%
Cyclopentane	99.89%	0.11%
n-Hexane	99.92%	0.08%
Cyclohexane	99.39%	0.61%
Other Hexanes	99.89%	0.11%
Heptanes	99.72%	0.28%
Methylcyclohexane	99.21%	0.79%
2,2,4-Trimethylpentane	99.93%	0.07%
Benzene	93.76%	6.24%
Toluene	90.89%	9.11%
Ethylbenzene	98.58%	1.42%
Xylenes	82.87%	17.13%
C8+ Heavies	98.81%	1.19%

FLASH TANK

Flash Control: Combustion device
 Flash Control Efficiency: 95.00 %
 Flash Temperature: 199.0 deg. F
 Flash Pressure: 44.0 psig

Component	Left in Glycol	Removed in Flash Gas
Water	99.87%	0.13%
Carbon Dioxide	38.67%	61.33%
Nitrogen	7.14%	92.86%
Methane	7.50%	92.50%
Ethane	17.90%	82.10%
Propane	32.11%	67.89%
Isobutane	37.58%	62.42%
n-Butane	42.36%	57.64%
Isopentane	42.83%	57.17%

n-Pentane	47.00%	53.00%
Cyclopentane	75.60%	24.40%
n-Hexane	57.05%	42.95%
Cyclohexane	82.92%	17.08%
Other Hexanes	51.72%	48.28%
Heptanes	68.89%	31.11%
Methylcyclohexane	84.80%	15.20%
2,2,4-Trimethylpentane	55.24%	44.76%
Benzene	96.65%	3.35%
Toluene	97.47%	2.53%
Ethylbenzene	98.30%	1.70%
Xylenes	98.82%	1.18%
C8+ Heavies	42.74%	57.26%

REGENERATOR

No Stripping Gas used in regenerator.

Component	Remaining in Glycol	Distilled Overhead
Water	22.16%	77.84%
Carbon Dioxide	0.00%	100.00%
Nitrogen	0.00%	100.00%
Methane	0.00%	100.00%
Ethane	0.00%	100.00%
Propane	0.00%	100.00%
Isobutane	0.00%	100.00%
n-Butane	0.00%	100.00%
Isopentane	14.82%	85.18%
n-Pentane	15.06%	84.94%
Cyclopentane	93.16%	6.84%
n-Hexane	92.54%	7.46%
Cyclohexane	13.41%	86.59%
Other Hexanes	4.17%	95.83%
Heptanes	15.61%	84.39%
Methylcyclohexane	5.53%	94.47%
2,2,4-Trimethylpentane	92.75%	7.25%
Benzene	7.86%	92.14%
Toluene	15.73%	84.27%
Ethylbenzene	94.11%	5.89%
Xylenes	31.45%	68.55%
C8+ Heavies	34.77%	65.23%

STREAM REPORTS:

WET GAS STREAM

Temperature: 84.00 deg. F
 Pressure: 530.70 psia
 Flow Rate: 5.84e+006 scfh

Component	Conc. (vol%)	Loading (lb/hr)
-----------	-----------------	--------------------

Water	1.27e-001	3.51e+002
Carbon Dioxide	1.17e-001	7.93e+002
Nitrogen	7.45e-001	3.21e+003
Methane	8.49e+001	2.10e+005
Ethane	9.79e+000	4.53e+004
Propane	3.10e+000	2.10e+004
Isobutane	4.29e-001	3.84e+003
n-Butane	7.62e-001	6.82e+003
Isopentane	1.13e-005	1.25e-001
n-Pentane	7.74e-006	8.60e-002
Cyclopentane	1.85e-007	1.99e-003
n-Hexane	4.81e-007	6.38e-003
Cyclohexane	5.40e-007	7.00e-003
Other Hexanes	1.60e-005	2.12e-001
Heptanes	6.16e-006	9.51e-002
Methylcyclohexane	9.07e-007	1.37e-002
2,2,4-Trimethylpentane	4.21e-007	7.41e-003
Benzene	8.69e-008	1.04e-003
Toluene	9.16e-008	1.30e-003
Ethylbenzene	1.87e-009	3.06e-005
Xylenes	1.27e-008	2.08e-004
C8+ Heavies	5.39e-006	1.41e-001
Total Components	100.00	2.91e+005

DRY GAS STREAM

Temperature: 84.00 deg. F
 Pressure: 530.70 psia
 Flow Rate: 5.83e+006 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	1.21e-002	3.34e+001
Carbon Dioxide	1.17e-001	7.92e+002
Nitrogen	7.46e-001	3.21e+003
Methane	8.50e+001	2.10e+005
Ethane	9.80e+000	4.53e+004
Propane	3.10e+000	2.10e+004
Isobutane	4.29e-001	3.84e+003
n-Butane	7.62e-001	6.81e+003
Isopentane	1.13e-005	1.25e-001
n-Pentane	7.74e-006	8.59e-002
Cyclopentane	1.85e-007	1.99e-003
n-Hexane	4.81e-007	6.38e-003
Cyclohexane	5.38e-007	6.96e-003
Other Hexanes	1.60e-005	2.12e-001
Heptanes	6.16e-006	9.48e-002
Methylcyclohexane	9.01e-007	1.36e-002
2,2,4-Trimethylpentane	4.21e-007	7.40e-003
Benzene	8.16e-008	9.80e-004
Toluene	8.34e-008	1.18e-003
Ethylbenzene	1.85e-009	3.02e-005
Xylenes	1.06e-008	1.72e-004
C8+ Heavies	5.33e-006	1.40e-001
Total Components	100.00	2.91e+005

LEAN GLYCOL STREAM

Temperature: 84.00 deg. F
 Flow Rate: 1.07e+001 gpm

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.85e+001	5.93e+003
Water	1.50e+000	9.04e+001
Carbon Dioxide	9.24e-013	5.57e-011
Nitrogen	2.39e-013	1.44e-011
Methane	5.03e-018	3.03e-016
Ethane	5.43e-008	3.27e-006
Propane	4.31e-009	2.60e-007
Isobutane	8.71e-010	5.25e-008
n-Butane	1.73e-009	1.04e-007
Isopentane	8.89e-008	5.36e-006
n-Pentane	8.89e-008	5.36e-006
Cyclopentane	8.89e-008	5.36e-006
n-Hexane	8.89e-008	5.36e-006
Cyclohexane	8.89e-008	5.36e-006
Other Hexanes	8.89e-008	5.36e-006
Heptanes	5.34e-007	3.21e-005
Methylcyclohexane	8.89e-008	5.36e-006
2,2,4-Trimethylpentane	8.89e-008	5.36e-006
Benzene	8.89e-008	5.36e-006
Toluene	3.56e-007	2.14e-005
Ethylbenzene	8.89e-008	5.36e-006
Xylenes	2.67e-007	1.61e-005
C8+ Heavies	4.89e-006	2.95e-004
Total Components	100.00	6.02e+003

RICH GLYCOL STREAM

Temperature: 84.00 deg. F
 Pressure: 530.70 psia
 Flow Rate: 1.14e+001 gpm
 NOTE: Stream has more than one phase.

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.31e+001	5.93e+003
Water	6.41e+000	4.08e+002
Carbon Dioxide	8.73e-003	5.57e-001
Nitrogen	2.26e-003	1.44e-001
Methane	1.42e-001	9.02e+000
Ethane	1.09e-001	6.93e+000
Propane	1.00e-001	6.38e+000
Isobutane	2.75e-002	1.75e+000
n-Butane	6.60e-002	4.20e+000
Isopentane	1.32e-006	8.44e-005
n-Pentane	1.19e-006	7.57e-005
Cyclopentane	1.19e-007	7.61e-006
n-Hexane	1.59e-007	1.01e-005
Cyclohexane	7.56e-007	4.82e-005
Other Hexanes	3.90e-006	2.48e-004

Heptanes	4.69e-006	2.99e-004
Methylcyclohexane	1.79e-006	1.14e-004
2,2,4-Trimethylpentane	1.64e-007	1.05e-005
Benzene	1.11e-006	7.05e-005
Toluene	2.19e-006	1.40e-004
Ethylbenzene	9.09e-008	5.79e-006
Xylenes	8.12e-007	5.17e-005
C8+ Heavies	3.11e-005	1.98e-003

Total Components	100.00	6.37e+003

FLASH TANK OFF GAS STREAM

 Temperature: 199.00 deg. F
 Pressure: 58.70 psia
 Flow Rate: 3.45e+002 scfh

Component	Conc. (vol%)	Loading (lb/hr)

Water	3.28e+000	5.38e-001
Carbon Dioxide	8.52e-001	3.41e-001
Nitrogen	5.23e-001	1.33e-001
Methane	5.71e+001	8.34e+000
Ethane	2.08e+001	5.69e+000
Propane	1.08e+001	4.33e+000
Isobutane	2.06e+000	1.09e+000
n-Butane	4.58e+000	2.42e+000
Isopentane	7.35e-005	4.83e-005
n-Pentane	6.11e-005	4.01e-005
Cyclopentane	2.91e-006	1.86e-006
n-Hexane	5.56e-006	4.36e-006
Cyclohexane	1.07e-005	8.23e-006
Other Hexanes	1.53e-004	1.20e-004
Heptanes	1.02e-004	9.30e-005
Methylcyclohexane	1.94e-005	1.74e-005
2,2,4-Trimethylpentane	4.50e-006	4.68e-006
Benzene	3.32e-006	2.36e-006
Toluene	4.22e-006	3.54e-006
Ethylbenzene	1.02e-007	9.83e-008
Xylenes	6.31e-007	6.10e-007
C8+ Heavies	7.32e-004	1.14e-003

Total Components	100.00	2.29e+001

FLASH TANK GLYCOL STREAM

 Temperature: 199.00 deg. F
 Flow Rate: 1.13e+001 gpm

Component	Conc. (wt%)	Loading (lb/hr)

TEG	9.35e+001	5.93e+003
Water	6.42e+000	4.08e+002
Carbon Dioxide	3.39e-003	2.15e-001
Nitrogen	1.62e-004	1.03e-002
Methane	1.07e-002	6.77e-001
Ethane	1.95e-002	1.24e+000
Propane	3.23e-002	2.05e+000

Isobutane	1.04e-002	6.58e-001
n-Butane	2.80e-002	1.78e+000
Isopentane	5.69e-007	3.61e-005
n-Pentane	5.61e-007	3.56e-005
Cyclopentane	9.06e-008	5.75e-006
n-Hexane	9.12e-008	5.79e-006
Cyclohexane	6.29e-007	3.99e-005
Other Hexanes	2.02e-006	1.28e-004
Heptanes	3.24e-006	2.06e-004
Methylcyclohexane	1.53e-006	9.68e-005
2,2,4-Trimethylpentane	9.10e-008	5.78e-006
Benzene	1.07e-006	6.82e-005
Toluene	2.15e-006	1.36e-004
Ethylbenzene	8.97e-008	5.69e-006
Xylenes	8.05e-007	5.11e-005
C8+ Heavies	1.33e-005	8.48e-004

Total Components	100.00	6.35e+003

FLASH GAS EMISSIONS

Flow Rate: 1.38e+003 scfh
Control Method: Combustion Device
Control Efficiency: 95.00

Component	Conc. (vol%)	Loading (lb/hr)

Water	6.10e+001	3.99e+001
Carbon Dioxide	3.77e+001	6.03e+001
Nitrogen	1.31e-001	1.33e-001
Methane	7.15e-001	4.17e-001
Ethane	2.60e-001	2.84e-001
Propane	1.35e-001	2.17e-001
Isobutane	2.58e-002	5.46e-002
n-Butane	5.73e-002	1.21e-001
Isopentane	9.20e-007	2.41e-006
n-Pentane	7.65e-007	2.01e-006
Cyclopentane	3.64e-008	9.28e-008
n-Hexane	6.95e-008	2.18e-007
Cyclohexane	1.34e-007	4.12e-007
Other Hexanes	1.91e-006	6.00e-006
Heptanes	1.28e-006	4.65e-006
Methylcyclohexane	2.43e-007	8.68e-007
2,2,4-Trimethylpentane	5.63e-008	2.34e-007
Benzene	4.15e-008	1.18e-007
Toluene	5.28e-008	1.77e-007
Ethylbenzene	1.27e-009	4.91e-009
Xylenes	7.90e-009	3.05e-008
C8+ Heavies	9.16e-006	5.68e-005

Total Components	100.00	1.02e+002

REGENERATOR OVERHEADS STREAM

Temperature: 212.00 deg. F
Pressure: 14.70 psia
Flow Rate: 6.76e+003 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	9.90e+001	3.17e+002
Carbon Dioxide	2.75e-002	2.15e-001
Nitrogen	2.06e-003	1.03e-002
Methane	2.37e-001	6.77e-001
Ethane	2.32e-001	1.24e+000
Propane	2.61e-001	2.05e+000
Isobutane	6.36e-002	6.58e-001
n-Butane	1.72e-001	1.78e+000
Isopentane	2.40e-006	3.08e-005
n-Pentane	2.35e-006	3.02e-005
Cyclopentane	3.15e-008	3.94e-007
n-Hexane	2.82e-008	4.32e-007
Cyclohexane	2.31e-006	3.46e-005
Other Hexanes	8.02e-006	1.23e-004
Heptanes	9.74e-006	1.74e-004
Methylcyclohexane	5.23e-006	9.15e-005
2,2,4-Trimethylpentane	2.06e-008	4.19e-007
Benzene	4.52e-006	6.28e-005
Toluene	7.00e-006	1.15e-004
Ethylbenzene	1.77e-008	3.35e-007
Xylenes	1.85e-006	3.50e-005
C8+ Heavies	1.82e-005	5.53e-004
Total Components	100.00	3.24e+002

COMBUSTION DEVICE OFF GAS STREAM

Temperature: 1000.00 deg. F
 Pressure: 14.70 psia
 Flow Rate: 3.26e+000 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Methane	2.45e+001	3.38e-002
Ethane	2.40e+001	6.20e-002
Propane	2.70e+001	1.02e-001
Isobutane	6.58e+000	3.29e-002
n-Butane	1.78e+001	8.90e-002
Isopentane	2.48e-004	1.54e-006
n-Pentane	2.44e-004	1.51e-006
Cyclopentane	3.27e-006	1.97e-008
n-Hexane	2.92e-006	2.16e-008
Cyclohexane	2.39e-004	1.73e-006
Other Hexanes	8.31e-004	6.16e-006
Heptanes	1.01e-003	8.69e-006
Methylcyclohexane	5.42e-004	4.57e-006
2,2,4-Trimethylpentane	2.14e-006	2.10e-008
Benzene	4.68e-004	3.14e-006
Toluene	7.25e-004	5.74e-006
Ethylbenzene	1.84e-006	1.68e-008
Xylenes	1.92e-004	1.75e-006
C8+ Heavies	1.89e-003	2.76e-005
Total Components	100.00	3.20e-001



Certificate of Analysis
 Number: 2030-14120108-001A

Carencro Laboratory
 4790 NE Evangeline Thruway
 Carencro, LA 70520

Gary Vermillion
 Gas Analytical Services
 PO Box 1028
 Bridgeport, WV 26330

Dec. 15, 2014

Field: EQT
 Station Name: Copely Run Station
 Sample Point: Master Meter
 Cylinder No: 10080
 Analyzed: 12/11/2014 08:23:29 by CC49

Sampled By: PK-GAS
 Sample Of: Gas Spot
 Sample Date: 12/04/2014 13:05
 Sample Conditions: 250 psig
 Method: GPA 2286

Analytical Data

Components	Mol. %	Wt. %
Carbon Dioxide	0.117	0.264
Hydrogen Sulfide	N/R	N/R
Nitrogen	0.745	1.070
Methane	84.214	69.239
Ethane	9.786	15.081
Propane	3.097	6.999
Iso-Butane	0.429	1.278
n-Butane	0.762	2.270
Iso-Pentane	0.220	0.813
n-Pentane	0.180	0.666
Cyclopentane	0.009	0.031
n-Hexane	0.067	0.283
Cyclohexane	0.013	0.055
Other Hexanes	0.102	0.429
n-Heptane	0.030	0.151
Other Heptanes	0.069	0.339
Methylcyclohexane	0.024	0.115
2,2,4-Trimethylpentane	NIL	0.001
Benzene	0.003	0.010
Toluene	0.004	0.019
Ethylbenzene	NIL	0.003
Xylenes	0.005	0.026
C8 + Heavies	0.124	0.858
	100.000	100.000

Hydrocarbon Laboratory Manager

Quality Assurance:

The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

ATTACHMENT O

Monitoring/Recordkeeping/Reporting/Testing Plans

ATTACHMENT O - MONITORING, RECORDING, REPORTING, AND TESTING PLANS

Plan Type	Emission unit	Pollutant	Requirements	Frequency	Method of Measurement	Regulatory Reference
Record keeping	Compressor Engine (C-005)	N/A	The permittee shall maintain a record of the hours of operation of compressor engine C-005 to demonstrate compliance with Section 5.1.1. of this permit. Said records shall be maintained in accordance with 3.4.2. of this permit	Monthly	N/A	45CSR13 - Permit No. R13-2397 - Condition 4.4.4.

ATTACHMENT P

Legal Ad

AIR QUALITY PERMIT NOTICE Notice of Application

Notice is given that Equitrans, LP has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Class II Administrative Update for an existing natural gas transmission station (Copley Run Compressor Station) located on Copley Road (at 38.98096, -80.522139), Weston, in Lewis County, West Virginia.

The applicant estimates the potential increase to discharge the following Regulated Air Pollutants as a result of the change will be:

Particulate Matter (PM) = 0.00 tpy
Sulfur Dioxide (SO₂) = 0.00 tpy
Volatile Organic Compounds (VOC) = 4.97 tpy
Carbon Monoxide (CO) = 11.34 tpy
Nitrogen Oxides (NO_x) = 0.00 tpy
Hazardous Air Pollutants (HAPs) = 0.00 tpy
Greenhouse Gases (CO₂e) = 0.00 tpy

This facility is currently in operation and is seeking to revise the current permit emission limits for an existing natural gas compressor engine. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1227, during normal business hours.

Dated this **XX** day of April, 2015.

By: Equitrans, LP
Diana Charletta, Sr. Vice President – Midstream Operations
625 Liberty Avenue Suite 1700
Pittsburgh, PA 15222

ATTACHMENT S

TITLE V REVISION INFORMATION

Attachment S
Title V Permit Revision Information

1. New Applicable Requirements Summary	
Mark all applicable requirements associated with the changes involved with this permit revision:	
<input type="checkbox"/> SIP	<input type="checkbox"/> FIP
<input checked="" type="checkbox"/> Minor source NSR (45CSR13)	<input type="checkbox"/> PSD (45CSR14)
<input type="checkbox"/> NESHAP (45CSR15)	<input type="checkbox"/> Nonattainment NSR (45CSR19)
<input type="checkbox"/> Section 111 NSPS (Subpart(s) _____)	<input checked="" type="checkbox"/> Section 112(d) MACT standards (Subpart(s) <u>HHH</u> _____)
<input type="checkbox"/> Section 112(g) Case-by-case MACT	<input type="checkbox"/> 112(r) RMP
<input type="checkbox"/> Section 112(i) Early reduction of HAP	<input type="checkbox"/> Consumer/commercial prod. reqts., section 183(e)
<input type="checkbox"/> Section 129 Standards/Reqts.	<input type="checkbox"/> Stratospheric ozone (Title VI)
<input type="checkbox"/> Tank vessel reqt., section 183(f)	<input type="checkbox"/> Emissions cap 45CSR§30-2.6.1
<input type="checkbox"/> NAAQS, increments or visibility (temp. sources)	<input type="checkbox"/> 45CSR27 State enforceable only rule
<input type="checkbox"/> 45CSR4 State enforceable only rule	<input type="checkbox"/> Acid Rain (Title IV, 45CSR33)
<input type="checkbox"/> Emissions Trading and Banking (45CSR28)	<input type="checkbox"/> Compliance Assurance Monitoring (40CFR64) ⁽¹⁾
<input type="checkbox"/> NO _x Budget Trading Program Non-EGUs (45CSR1)	<input type="checkbox"/> NO _x Budget Trading Program EGUs (45CSR26)
<p>⁽¹⁾ If this box is checked, please include Compliance Assurance Monitoring (CAM) Form(s) for each Pollutants Specific Emission Unit (PSEU) (See Attachment H to Title V Application). If this box is not checked, please explain why Compliance Assurance Monitoring is not applicable:</p> <p style="margin-left: 40px;">There are no proposed physical or operational changes to the compressor engine (C-005) that would affect CAM applicability that was previously addressed as part of the Title V Renewal application submitted in 2011.</p>	

2. Non Applicability Determinations
<p>List all requirements, which the source has determined not applicable to this permit revision and for which a permit shield is requested. The listing shall also include the rule citation and a rationale for the determination.</p> <p>40 CFR Part 60 – The proposed project includes a revision to emission limits of the compressor engine (C-005). This revision does not meet the definition of a modification per 60.14(a), and is not subject to NSPS regulations</p>
<input type="checkbox"/> Permit Shield Requested <i>(not applicable to Minor Modifications)</i>

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

3. Suggested Title V Draft Permit Language

Are there any changes involved with this Title V Permit revision outside of the scope of the NSR Permit revision? Yes No If Yes, describe the changes below.

Also, please provide **Suggested Title V Draft Permit language** for the proposed Title V Permit revision (including all applicable requirements associated with the permit revision and any associated monitoring /recordkeeping/ reporting requirements). OR attach a marked up pages of current Title V Permit. Please include appropriate citations (Permit or Consent Order number, condition number and/or rule citation (e.g. 45CSR§7-4.1)) for those requirements being added / revised.

Title V Permit R30-0410009-2012 incorrectly designates the transmission dehy (Dehy 004-02) as a large glycol dehydration unit under 40 CFR 63 Subpart HHH. The unit actually meets the definition of small glycol dehydration unit. Equitrans is requesting that the permit language in Section 9 of the Title V permit be revised to reflect the applicable requirements of Subpart HHH for Dehy 004-02.

Please see Attachment D for a detailed applicability analysis and suggested permit language for the unit.

4. Active NSR Permits/Permit Determinations/Consent Orders Associated With This Permit Revision

Permit or Consent Order Number	Date of Issuance	Permit/Consent Order Condition Number
R13-2397B	05/07/2007	Condition 4.1.1
	/ /	
	/ /	

5. Inactive NSR Permits/Obsolete Permit or Consent Orders Conditions Associated With This Revision

Permit or Consent Order Number	Date of Issuance	Permit/Consent Order Condition Number
	MM/DD/YYYY	
	/ /	
	/ /	

6. Change in Potential Emissions

Pollutant	Change in Potential Emissions (+ or -), TPY
VOC	+ 4.97
CO	+ 11.34

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

7. Certification For Use Of Minor Modification Procedures (Required Only for Minor Modification Requests)

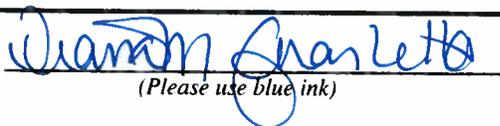
Note: This certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete. The criteria for allowing the use of Minor Modification Procedures are as follows:

- i. Proposed changes do not violate any applicable requirement;
- ii. Proposed changes do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit;
- iii. Proposed changes do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient air quality impacts, or a visibility increment analysis;
- iv. Proposed changes do not seek to establish or change a permit term or condition for which there is no underlying applicable requirement and which permit or condition has been used to avoid an applicable requirement to which the source would otherwise be subject (synthetic minor). Such terms and conditions include, but are not limited to a federally enforceable emissions cap used to avoid classification as a modification under any provision of Title I or any alternative emissions limit approved pursuant to regulations promulgated under § 112(j)(5) of the Clean Air Act;
- v. Proposed changes do not involve preconstruction review under Title I of the Clean Air Act or 45CSR14 and 45CSR19;
- vi. Proposed changes are not required under any rule of the Director to be processed as a significant modification;

Notwithstanding subparagraph 45CSR§30-6.5.a.1.A. (items i through vi above), minor permit modification procedures may be used for permit modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches, to the extent that such minor permit modification procedures are explicitly provided for in rules of the Director which are approved by the U.S. EPA as a part of the State Implementation Plan under the Clean Air Act, or which may be otherwise provided for in the Title V operating permit issued under 45CSR30.

Pursuant to 45CSR§30-6.5.a.2.C., the proposed modification contained herein meets the criteria for use of Minor permit modification procedures as set forth in Section 45CSR§30-6.5.a.1.A. The use of Minor permit modification procedures are hereby requested for processing of this application.

(Signed):


(Please use blue ink)

Date:

4 / 15 / 15
(Please use blue ink)

Named (typed):
Diana Charletta

Title:
Sr. VP
Midstream
Operations

Note: Please check if the following included (if applicable):

- Compliance Assurance Monitoring Form(s)
- Suggested Title V Draft Permit Language

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.