October 30, 2017

Director
WVDEP – Division of Air Quality
601 57th Street SE
Charleston, WV 25304

UPS Tracking No. 1Z 865 F5F 01 9465 5057

RE: DTE Appalachia Gathering, LLC
Coopers Run Dehydration Station
G35-D Construction Application

To Whom It May Concern:

On behalf of DTE Appalachia Gathering, LLC (DTE)[1], we are submitting this G35-D Construction Application for the Coopers Run Dehydration Station. The facility is currently exempt from air permitting[2] via WV CSR §45-13-2.24.b, as it does not meet the definition of a 'stationary source'.

DTE is proposing to install new dehydration and ancillary equipment the facility, and subsequently it will no longer qualify for this exemption.

Enclosed are one (1) original hard copy and two (2) CDs with PDFs of the application, along with a check for the application fee in the amount of $3,000. The affidavit of publication for the Class I Legal Advertisement will be forwarded upon receipt.

DTE appreciates your review of this submittal. If you have any questions or comments about the attached information, please contact me at (724) 935-2611 x104.

Respectfully,

Domenic A. Tedesco

Domenic Tedesco
Senior Consultant
Trinity Consultants

Attachments

[1] DTE Appalachia Holdings, LLC purchased 100% of M3 Appalachia Gathering, LLC (M3) and retained the company's Federal Employer Identification Number (FEIN). Subsequently, M3's name was changed to DTE Appalachia Gathering, LLC (DTE). DTE sent a concurrent notification to WVDEP regarding this change.
[2] Permit Determination letter from DEP to M3 dated July 16, 2014.

PROJECT REPORT

DTE Appalachia Gathering, LLC
Coopers Run Dehydration Station

G35-D Permit Application

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

October 2017

EHS Solutions Delivered Uncommonly Well

TABLE OF CONTENTS

DTE Appalachia Gathering, LLC (DTE), which is owned by DTE Energy Company, is submitting this G35-D Permit application to the West Virginia Department of Environmental Protection (WVDEP) for an existing natural gas dehydration station located in Monongalia County, West Virginia (Coopers Run Dehydration Station or 'Coopers Run Dehy Station'). The Coopers Run Dehy Station is currently exempt from air permitting via WV CSR §45-13-2.24.b. However, with the installation of new dehydration and ancillary equipment, the facility will no longer qualify for this exemption.

1.1. FACILITY AND PROJECT DESCRIPTION

The Coopers Run Dehy Station is an existing natural gas dehydration station covered under standard industrial code (SIC) 1311. The station dehydrates natural gas for transportation across the pipeline.

The station currently consists of the following equipment:

- One (1) 140 MMSCFD dehydration unit with 1.5 MMBTU/hr reboiler;
- One (1) 400-bbl produced fluid storage tank; and
- One (1) 500-gal tri-ethylene glycol storage tank.

With this submittal, the applicant specifically seeks to do the following:

- Add one (1) 140 MMSCFD dehydration unit with 1.5 MMBTU/hr reboiler;
- Add one (1) 500-gal tri-ethylene glycol storage tank; and
- Add one (1) 210-bbl produced fluid storage tank.

A process flow diagram is included as Attachment D.

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 Coopers Run Dehy Station for air permitting purposes if, and only if, all three elements of the "stationary source" definition above are fulfilled. The Coopers Run Dehy Station is 0.4 miles away from the Coopers Run Compressor Station (facility ID 061-00205 and permit G35-D126). However, WVDEP previously determined that the Coopers Run Compressor Station was a separate stationary source from the Coopers Run Dehy Station. It should be noted that there are two (2) natural gas production facilities located within a mile radius of the facility; however, those facilities are not owned by DTE or any related legal entity.

1.3. G35-D APPLICATION ORGANIZATION

This West Virginia G35-D permit application is organized as follows:

- Section 2: Sample Emission Source Calculations;
- Section 3: Regulatory Discussion;
- Section 4: G35-D Application Form;
- Attachment A: Single Source Determination Form;
- Attachment B: Siting Criteria Waiver *(not applicable)*;
- Attachment C: Current Business Certificate;
- Attachment D: Process Flow Diagram;
- Attachment E: Process Description;
- Attachment F: Plot Plan;
- Attachment G: Area Map;
- Attachment H: G35-D Section Applicability Form;
- Attachment I: Emission Units/ERD Table;
- Attachment J: Fugitive Emission Summary Sheet(s);
- Attachment K: Storage Vessels Data Sheet(s);
- Attachment L: Natural Gas Fired Fuel Burning Unit Data Sheet(s) ;
- Attachment M: Internal Combustion Engine Data Sheet(s);
- Attachment N: Tanker Truck Loading Data Sheet;
- Attachment O: Glycol Dehydration Unit Data Sheet(s);
- Attachment P: Pneumatic Controller Data Sheet(s);
- Attachment Q: Centrifugal Compressor Data Sheet(s);
- Attachment R: Reciprocating Compressor Data Sheet(s);
- Attachment S: Blowdown and Pigging Operation Data Sheet(s);
- Attachment T: Air Pollution Control Device Data Sheet(s);
- Attachment U: Emission Calculations;
- Attachment V: Facility-wide Emission Summary Sheet(s); and
- Attachment W: Class I Legal Advertisement.

2. SAMPLE EMISSION SOURCE CALCULATIONS

The characteristics of air emissions from the facility, along with the methodology for calculating emissions, are briefly described in this section of the application. Detailed emission calculations are presented in Attachment U of this application.

Emissions at this facility will result from combustion of natural gas (in the reboilers), operation of the dehydration units and storage tanks, as well as piping blowdowns and fugitive emissions from components leaks and the facility roadway. The methods by which emissions from each of these source types is calculated are summarized below.

- **TEG Dehydration Units:** Potential emissions of hazardous air pollutants (HAPs), volatile organic compounds (VOC), and methane from the dehydration units are calculated using GRI-GLYCalc v4.0 and a site-specific gas analysis.

- **Storage Tanks and Liquid Loading:** Working, breathing and flashing emissions of VOC and HAPs from the waste fluid tanks are calculated using E&P TANK v2.0 software. Working and breathing emissions from all other tanks, along with the waste fluid loading emissions, were calculated using EPA Tanks 4.0.9d and AP-42 methodology.

- **Fugitive Emissions:** Emissions from fugitive equipment leaks are calculated using published EPA emission factors and 40 CFR Part 98, Subpart W emission factors. Emissions from blowdown events are calculated using engineering estimates of the amount of gas vented. Site specific gas analyses were used to speciate VOC, HAP, and GHG emissions.

- **Haul Roads:** Fugitive dust emitted from facility roadways has been estimated using projected vehicle miles traveled along with U.S. EPA's AP-42 factors for unpaved haul roads.[1]

Potential emissions of greenhouse gas pollutants (GHGs) are calculated using GLYCalc for the dehydration units and U.S. EPA's emission factors or methodology from 40 CFR Part 98, Subpart C for all others.

[1] U.S. EPA, AP 42, Fifth Edition, Volume I, Section 13.2.2, Unpaved Roads, November 2006.

This section documents the applicability determinations made for Federal and State air quality regulations. In this section, applicability or non-applicability of the following regulatory programs is addressed:

- Prevention of Significant Deterioration (PSD) permitting;
- Non-attainment New Source Review (NNSR) 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 G35-D operating permit application forms.

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 facility. 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 station. Regulations that are categorically non-applicable are not discussed (e.g., NSPS Subpart J, Standards of Performance for Petroleum Refineries).

3.1. PSD AND NNSR SOURCE CLASSIFICATION

Federal construction permitting programs regulate new and modified sources of attainment pollutants under Prevention of Significant Deterioration and new and modified sources of non-attainment pollutants under Non-Attainment New Source Review. PSD regulations apply when a new source is constructed in which emissions exceed major source thresholds, an existing minor source undergoes a modification in which emission increases exceed PSD major source thresholds, or an existing major source undergoes a modification in which emission increases exceed PSD significant emission rates. The facility will remain a minor source with respect to the NSR program after the project since potential emissions are below all the PSD thresholds. As such, PSD permitting is not triggered by this construction activity. NNSR regulations only apply in areas designated as non-attainment. The facility is located in Monongalia County, which is designated as attainment/unclassifiable for all criteria pollutants.[2] Therefore, NNSR regulations do not apply to the facility.

3.2. 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. The potential emissions of all regulated pollutants are below the corresponding threshold(s) at this facility after the proposed project. Therefore, the facility is not a major source for Title V purposes.

[2] U.S. EPA Green Book, http://www.epa.gov/airquality/greenbook/anayo_wv.html, as of February 13, 2017.

3.3. NEW SOURCE PERFORMANCE STANDARDS

New Source Performance Standards, 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. The following is a summary of applicability and non-applicability determinations for NSPS regulations of relevance to the facility. Besides 40 CFR 60 Subpart A (NSPS Subpart A), which is similar to 40 CFR 63 Subpart A (NESHAP Subpart A), the following NSPS could potentially apply to the facility:

- 40 CFR Part 60 Subparts D, Da, Db, and Dc – Steam Generating Units
- 40 CFR Part 60 Subparts K, Ka, and Kb – Storage Vessels for Petroleum Liquids/Volatile Organic Liquids
- 40 CFR Part 60 Subpart OOOO – Crude Oil and Natural Gas Production, Transmission, and Distribution
- 40 CFR Part 60 Subpart OOOOa – Crude Oil and Natural Gas Facilities

3.3.1. NSPS Subparts D, Da, Db, and Dc - Steam Generating Units

These subparts apply to steam generating units of various sizes, all greater than 10 MMBtu/hr. The proposed project does not include any steam generating units with a heat input greater than 10 MMBtu/hr, therefore the requirements of these subparts do not apply.

3.3.2. NSPS Subparts K, Ka, and Kb - Storage Vessels for Petroleum Liquids/Volatile Organic Liquids

These subparts apply to storage tanks of certain sizes constructed, reconstructed, or modified during various time periods. Subpart K applies to storage tanks constructed, reconstructed, or modified prior to 1978, and Subpart Ka applies to those constructed, reconstructed, or modified prior to 1984. Both Subparts K and Ka apply to storage tanks with a capacity greater than 40,000 gallons. Subpart Kb applies to volatile organic liquid (VOL) storage tanks constructed, reconstructed, or modified after July 23, 1984 with a capacity equal to or greater than 75 m^3 (~19,813 gallons). All of the tanks at the facility have a capacity of 19,813 gallons or less. As such, Subparts K, Ka, and Kb do not apply to the storage tanks at the facility.

3.3.3. NSPS Subpart OOOO — Crude Oil and Natural Gas Production, Transmission, and Distribution

Subpart OOOO – *Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution*, applies to affected facilities that commenced construction, reconstruction, or modification after August 23, 2011 and before September 18, 2015. The facility does not include any existing sources that are affected sources under this regulation, nor will any new sources fall into this date range. Therefore, the facility has no applicable requirements under this regulation.

3.3.4. NSPS Subpart OOOOa — Crude Oil and Natural Gas Facilities

Subpart OOOOa, Standards of Standards of Performance for Crude Oil and Natural Gas Facilities, applies to affected facilities that commenced construction, reconstruction, or modification after September 18, 2015. The rule includes provisions for the following facilities:

- Hydraulically fractured wells;
- Centrifugal compressors located between the wellhead and the point of custody transfer to the natural gas distribution segment;
- Reciprocating compressors located between the wellhead and the point of custody transfer to the natural gas distribution segment;

- Continuous bleed natural gas-driven pneumatic controllers with a bleed rate of > 6 scfh located in the production, gathering, processing, or transmission and storage segments (excluding natural gas processing plants);
- Continuous bleed natural gas-driven pneumatic controllers located at natural gas processing plants;
- Pneumatic pumps located in the production, gathering, processing, or transmission and storage segments;
- Storage vessels located in the production, gathering, processing, or transmission and storage segments;
- The collection of fugitive emissions components at a well site;
- The collection of fugitive emissions components at a compressor station; and
- Sweetening units located onshore that process natural gas produced from either onshore or offshore wells.

The new waste fluid storage tank will be a 'storage vessel' as defined by the regulation, however, potential emissions of VOC will be less than six tons per year. Therefore, it will not be a storage vessel affected facility under the rule.

All pneumatic controllers currently at or proposed to be located at the facility are intermittent or low-bleed. Therefore, they will not be subject to any pneumatic controller requirements under Subpart OOOOa. As currently proposed, there are no other affected source categories under the rule that will apply to the proposed equipment involved in this project.

3.3.5. Non-Applicability of All Other NSPS

NSPS are developed for particular industrial source categories. Other than NSPS developed for natural gas processing plants (Subparts OOOO and OOOOa) and associated equipment (Subpart K-Kb), the applicability of a particular NSPS to the facility can be readily ascertained based on the industrial source category covered. All other NSPS are categorically not applicable to the proposed project.

3.4. NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

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 facility is an area (minor) source of HAP since its potential emissions of HAP are less than the 10/25 major source thresholds. Besides 40 CFR 63 Subpart A (NESHAP Subpart A), which is similar to 40 CFR 60 Subpart A (NSPS Subpart A), the following NESHAP could potentially apply to the facility:

- 40 CFR Part 63 Subpart HH – Oil and Natural Gas Production Facilities
- 40 CFR Part 63 Subpart JJJJJJ – Industrial, Commercial, and Institutional Boilers

3.4.1. NESHAP Subpart HH – Oil and Natural Gas Production Facilities

This MACT standard contains requirements for both major and area sources of HAP. The benzene emissions from the dehydrator vents will be less than 0.90 megagrams per year (1 tpy), therefore, the dehydrators are exempt from the requirements of NESHAP Subpart HH pursuant to 40 CFR §63.764(e)(1)(ii), except for the requirement to keep records of the actual average natural gas flow rate or actual average benzene emissions, per 40 CFR §63.774(d)(1). The applicant will continue to comply with the requirements of Subpart HH.

3.4.2. NESHAP JJJJJJ – Industrial, Commercial, and Institutional Boilers

This MACT standard applies to industrial, commercial, and institutional boilers of various sizes and fuel types at area sources. There are no boilers at the facility, therefore this subpart does not apply.

3.5. WEST VIRGINIA SIP REGULATIONS

The facility is potentially subject to regulations contained in the West Virginia Code of State Regulations, Chapter 45 (Code of State 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).

3.5.1. 45 CSR 2: To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers

45 CSR 2 applies to fuel burning units, defined as equipment burning fuel "for the primary purpose of producing heat or power by indirect heat transfer". The reboilers are fuel burning units and therefore must comply with this regulation. Per 45 CSR 2-3, opacity of emissions from units shall not exceed 10 percent, based on a six-minute block average. Note that as the reboilers are less than 10 MMBtu/hr, they are exempt from PM emission limits.

3.5.2. 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.

The facility is generally subject to this requirement. However, due to the nature of the process at the station, production of objectionable odor during normal operation is unlikely.

3.5.3. 45 CSR 6: To Prevent and Control the Air Pollution from the Combustion of Refuse

45 CSR 6 applies to activities involving incineration of refuse, defined as "the destruction of combustible refuse by burning in a furnace designed for that purpose. For the purposes of this rule, the destruction of any combustible liquid or gaseous material by burning in a flare or flare stack, thermal oxidizer or thermal catalytic oxidizer stack shall be considered incineration." There are no control devices at the facility that utilize 'incineration'.

3.5.4. 45 CSR 10: To Prevent and Control Air Pollution from the Emission of Sulfur Oxides

This rule potentially applies to fuel burning units, including glycol dehydration unit reboilers. Per 45 CSR 10-10.1, units rated less than 10 MMBtu/hr are exempt from the SO_2 emission limitations and testing, monitoring, recordkeeping, and reporting requirements of this rule. The reboilers are rated less than 10 MMBtu/hr and as such are exempt from this rule.

3.5.5. 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 CSR Part 60 by reference. As such, by complying with all applicable requirements of 40 CFR Part 60 at the facility, the applicant will be complying with 45 CSR 16.

3.5.6. 45 CSR 17: To Prevent and Control Particulate Matter Air Pollution from Materials Handling, Preparation, Storage and Other Sources of Fugitive Particulate Matter

According to 45 CSR 17-3.1:

No person shall cause, suffer, allow or permit fugitive particulate matter to be discharged beyond the boundary lines of the property lines of the property on which the discharge originates or at any public or residential location, which causes or contributes to statutory air pollution.

Due to the nature of the activities at the facility, it is unlikely that fugitive particulate matter emissions will be emitted under normal operating conditions. However, the applicant will take measures to ensure any fugitive particulate matter emissions will not cross the property boundary should any such emissions occur.

3.5.7. 45 CSR 21-28: Petroleum Liquid Storage in Fixed Roof Tanks

45 CSR 21-28 applies to any fixed roof petroleum liquid storage tank with a capacity greater than 40,000 gallons located in Putnam County, Kanawha County, Cabell County, Wayne County, and Wood County. The capacity of each storage tank at the facility is less than 40,000 gallons and the facility is not located in the listed counties. Therefore, 45 CSR 21-28 does not apply to the storage tanks at this station.

3.5.8. 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 CPR Parts 61 and 63 by reference. As such, by complying with all applicable requirements of 40 CFR Parts 61 and 63 at the facility, the applicant will be complying with 45 CSR 34.

3.5.9. Non-Applicability of Other SIP Rules

A thorough examination of the West Virginia SIP rules with respect to applicability at the facility 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 facility.

4. G35-D APPLICATION FORMS

The WVDEP permit application forms contained in this application include all applicable G35-D application forms including the required attachments.

west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone (304) 926-0475
Fax (304) 926-0479
www.dep.wv.gov

G35-D GENERAL PERMIT REGISTRATION APPLICATION

PREVENTION AND CONTROL OF AIR POLLUTION IN REGARD TO THE CONSTRUCTION, MODIFICATION, RELOCATION, ADMINISTRATIVE UPDATE AND OPERATION OF NATURAL GAS COMPRESSOR AND/OR DEHYDRATION FACILITIES

☒CONSTRUCTION
☐MODIFICATION
☐RELOCATION
☐CLASS I ADMINISTRATIVE UPDATE
☐CLASS II ADMINISTRATIVE UPDATE

SECTION 1. GENERAL INFORMATION

Name of Applicant (as registered with the WV Secretary of State's Office): DTE Appalachia Gathering, LLC

Federal Employer ID No. (FEIN): 45-0718671

Applicant's Mailing Address: 333 Technology Drive, Suite 255

City: Canonsburg | State: PA | ZIP Code: 15317

Facility Name: Coopers Run Compressor Station

Operating Site Physical Address: See lat/long
If none available, list road, city or town and zip of facility.

City: Blacksville | Zip Code: 26521 | County: Monongalia

Latitude & Longitude Coordinates (NAD83, Decimal Degrees to 5 digits):
Latitude: 39.70213
Longitude: -80.19867

SIC Code: 1311

NAICS Code: 211111

DAQ Facility ID No. (For existing facilities)
n/a

CERTIFICATION OF INFORMATION

This G35-D General Permit Registration Application shall be signed below by a Responsible Official. A Responsible Official is a President, Vice President, Secretary, Treasurer, General Partner, General Manager, a member of the Board of Directors, or Owner, depending on business structure. A business may certify an Authorized Representative who shall have authority to bind the Corporation, Partnership, Limited Liability Company, Association, Joint Venture or Sole Proprietorship. Required records of daily throughput, hours of operation and maintenance, general correspondence, compliance certifications and all required notifications must be signed by a Responsible Official or an Authorized Representative. If a business wishes to certify an Authorized Representative, the official agreement below shall be checked off and the appropriate names and signatures entered. **Any administratively incomplete or improperly signed or unsigned G35-D Registration Application will be returned to the applicant. Furthermore, if the G35-D forms are not utilized, the application will be returned to the applicant. No substitution of forms is allowed.**

I hereby certify that is an Authorized Representative and in that capacity shall represent the interest of the business (e.g., Corporation, Partnership, Limited Liability Company, Association Joint Venture or Sole Proprietorship) and may obligate and legally bind the business. If the business changes its Authorized Representative, a Responsible Official shall notify the Director of the Division of Air Quality immediately.

I hereby certify that all information contained in this G35-D General Permit Registration Application and any supporting documents appended hereto is, to the best of my knowledge, true, accurate and complete, and that all reasonable efforts have been made to provide the most comprehensive information possible.

Responsible Official Signature: K.D. Magyar
Name and Title: Kenneth D. Magyar, VP, Project Development & Business Development
Phone: (724) 416-7263 Fax: n/a
Email: Kenneth.Magyar@dteenergy.com Date: OCT. 26. 2017

If applicable:
Authorized Representative Signature: _____
Name and Title: Phone: Fax:
Email: Date:

If applicable:
Environmental Contact Adam T. Snee
Name and Title: Adam Snee, Gas Pipeline Engineer Phone: (724) 416-7822 Fax:
Email: adam.snee@dteenergy.com Date: OCT. 26, 2017

OPERATING SITE INFORMATION

Briefly describe the proposed new operation and/or any change(s) to the facility:
Addition of compression and ancillary equipment to the facility.

Directions to the facility:
From 601 57th St SE, Charleston, WV 25304: head northeast on 57th St SE toward Washington Ave SE (travel 0.1 mi). Turn left onto MacCorkle Ave SE (travel 1.8 mi). Turn right onto 36th St SE (travel 0.2 mi). Continue onto 36th St Southeast Bridge (travel 0.2 mi). Use the right lane to take the ramp onto I-64 W/I-77 N (travel 0.1 mi). Merge onto I-64 W/I-77 N (travel 2.5 mi). Use the right 2 lanes to take the Interstate 77 N/Interstate 79 N exit toward Parkersburg (travel 0.5 mi). Continue onto I-77 N (travel 1.4 mi). Keep right at the fork to continue on I-79 N, follow signs for Clarksburg (travel 131 mi). Take exit 132 for US-250 S (travel 0.1 mi). Turn right onto US-250 S/Fairmont Ave/White Hall Blvd (travel 0.1 mi). Turn right onto Middletown Rd (0.9 mi). Turn right onto Industrial Park Rd (travel 1.4 mi). Turn left onto Manley Chapel Rd (travel 1.6 mi). Turn right onto Co Rd 27 (travel 1.0 mi_. Continue onto Everson St (travel 341 ft). Everson St turns slightly left and becomes Co Rd 27 (travel 0.6 mi). Turn left onto US-19 S (travel 0.4 mi). Turn right onto WV-218 N (travel 4.4 mi). Turn right onto US-250 S (travel 0.3 mi). Turn left onto WV-218 N/Main St and continue to follow WV-218 N (travel 6.9 mi). Turn right onto WV-218 N/Jefferson St and continue to follow WV-218 N (travel 9.0 mi). Turn right onto the access road, travel 1.8 miles and the facility will be on your left.

ATTACHMENTS AND SUPPORTING DOCUMENTS

I have enclosed the following required documents:

Check payable to WVDEP – Division of Air Quality with the appropriate application fee (per 45CSR13 and 45CSR22).

☒ Check attached to front of application.
☐ I wish to pay by electronic transfer. Contact for payment (incl. name and email address):
☐ I wish to pay by credit card. Contact for payment (incl. name and email address):

☒$500 (Construction, Modification, and Relocation) ☐$300 (Class II Administrative Update)
☐$1,000 NSPS fee for 40 CFR60, Subpart IIII, JJJJ and/or OOOO and/or OOOOa [1]
☒$2,500 NESHAP fee for 40 CFR63, Subpart ZZZZ and/or HH [2]

[1] Only one NSPS fee will apply.
[2] Only one NESHAP fee will apply. The Subpart ZZZZ NESHAP fee will be waived for new engines that satisfy requirements by complying with NSPS, Subparts IIII and/or JJJJ.
NSPS and NESHAP fees apply to new construction or if the source is being modified.

☒ Responsible Official or Authorized Representative Signature (if applicable)	
☒ Single Source Determination Form **(must be completed in its entirety)** – Attachment A	
☐ Siting Criteria Waiver (if applicable) – Attachment B	☒ Current Business Certificate – Attachment C
☒ Process Flow Diagram – Attachment D	☒ Process Description – Attachment E
☒ Plot Plan – Attachment F	☒ Area Map – Attachment G
☒ G35-D Section Applicability Form – Attachment H	☒ Emission Units/ERD Table – Attachment I
☒ Fugitive Emissions Summary Sheet – Attachment J	
☒ Storage Vessel(s) Data Sheet (include gas sample data, USEPA Tanks, simulation software (e.g. ProMax, E&P Tanks, HYSYS, etc.), etc. where applicable) – Attachment K	
☒ Natural Gas Fired Fuel Burning Unit(s) Data Sheet (GPUs, Heater Treaters, In-Line Heaters if applic.) – Attachment L	
☒ Internal Combustion Engine Data Sheet(s) (include manuf. performance data sheet(s) if applicable) – Attachment M	
☒ Tanker Truck Loading Data Sheet (if applicable) – Attachment N	
☒ Glycol Dehydration Unit Data Sheet(s) (include wet gas analysis, GRI- GLYCalc™ input and output reports and information on reboiler if applicable) – Attachment O	
☒ Pneumatic Controllers Data Sheet – Attachment P	
☒ Centrifugal Compressor Data Sheet – Attachment Q	
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☒ Air Pollution Control Device/Emission Reduction Device(s) Sheet(s) (include manufacturer performance data sheet(s) if applicable) – Attachment T	
☒ Emission Calculations (please be specific and include all calculation methodologies used) – Attachment U	
☒ Facility-wide Emission Summary Sheet(s) – Attachment V	
☒ Class I Legal Advertisement – Attachment W	
☒ One (1) paper copy and two (2) copies of CD or DVD with pdf copy of application and attachments	

ATTACHMENT A

Single Source Determination Form

All attachments must be identified by name, divided into sections, and submitted in order.

ATTACHMENT A - SINGLE SOURCE DETERMINATION FORM

Classifying multiple facilities as one "stationary source" under 45CSR13, 45CSR14, and 45CSR19 is based on the definition of Building, structure, facility, or installation as given in §45-14-2.13 and §45-19-2.12. The definition states:

"Building, Structure, Facility, or Installation" means all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control). Pollutant-emitting activities are a part of the same industrial grouping if they belong to the same "Major Group" (i.e., which have the same two (2)-digit code) as described in the Standard Industrial Classification Manual, 1987 (United States Government Printing Office stock number GPO 1987 0-185-718:QL 3).

The Source Determination Rule for the oil and gas industry was published in the Federal Register on June 3, 2016 and will become effective on August 2, 2016. EPA defined the term "adjacent" and stated that equipment and activities in the oil and gas sector that are under common control will be considered part of the same source if they are located on the same site or on sites that share equipment and are within ¼ mile of each other.

Is there equipment and activities in the same industrial grouping (defined by SIC code)?
Yes ☒ No ☐

Is there equipment and activities under the control of the same person/people?
Yes ☐ No ☒

Is there equipment and activities located on the same site or on sites that share equipment and are within ¼ mile of each other?
Yes ☐ No ☒

ATTACHMENT A: SINGLE SOURCE DETERMINATION MAP

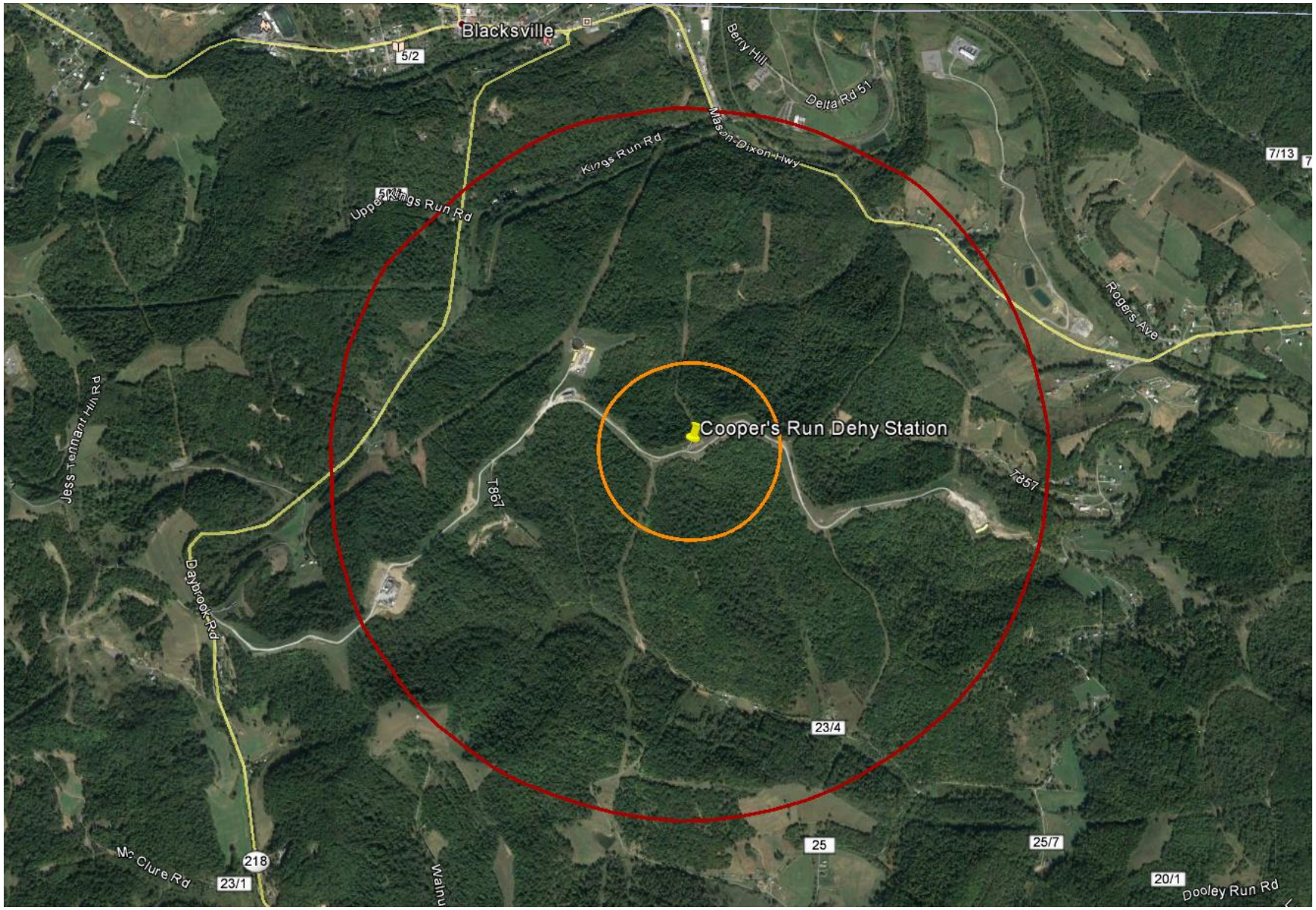

Figure 1 - Map of Location with 0.25 Mile (0range) and 1 Mile (Red) Radius Circles

Coordinates:
Latitude: 39° 42' 7.66" N, Longitude: -80° 11' 55.21" W

ATTACHMENT B

Siting Criteria Waiver *(not applicable)*

ATTACHMENT B – SITING CRITERIA WAIVER – NOT APPLICABLE
If applicable, please complete this form and it must be notarized.

G35-D General Permit
Siting Criteria Waiver

WV Division of Air Quality 300' Waiver

I _____ hereby
Print Name

acknowledge and agree that _____ will
General Permit Applicant's Name

construct an emission unit(s) at a natural gas compressor and/or dehydration facility that will be located within 300' of my dwelling and/or business.

.

I hereby offer this waiver of siting criteria to the West Virginia Department of Environmental Protection Division of Air Quality as permission to construct, install and operate in such location.

Signed:

_____

Signature Date

_____

Signature Date

Taken, subscribed and sworn before me this _____ day of

_____, 20_____.

My commission expires: _____

SEAL_____
Notary Public

ATTACHMENT C

Current Business Certificate

WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION
CERTIFICATE

ISSUED TO:
DTE APPALACHIA GATHERING, LLC
ONE ENERGY PLAZA, 2055 WCB
DETROIT, MI 48226-0000

BUSINESS REGISTRATION ACCOUNT NUMBER: **2252-1954**

This certificate is issued on: **05/5/2017**

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.

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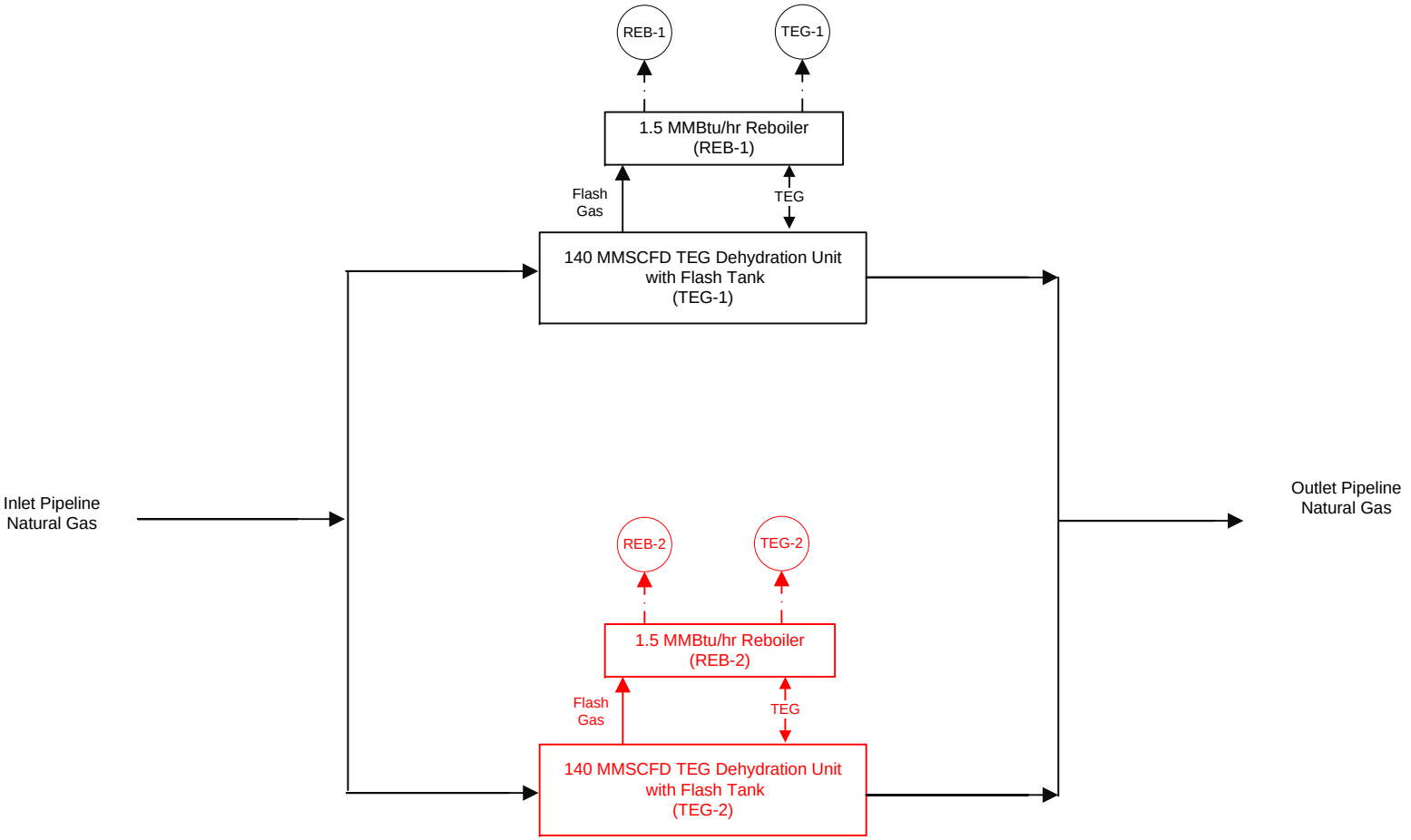
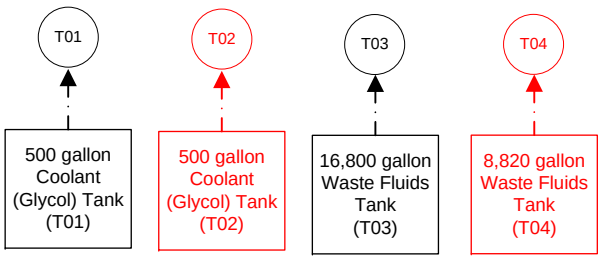
ATTACHMENT D

Process Flow Diagram

*** Note that this is a simplified diagram for the purposes of explaining basic facility flow and emission points. The actual design is more complex and may vary.**





Source Legend

Existing Source

New Source

Flow Legend

Gas Flow

Stack Emissions

Emission Point

Control Device

DTE Appalachia Gathering, LLC

Process Flow Diagram
Coopers Run Dehydration Station

Trinity Consultants

October 2017

ATTACHMENT E

Process Description

ATTACHMENT E: PROCESS DESCRIPTION

DTE Appalachia Gathering, LLC is proposing to install additional dehydration and ancillary equipment at the existing Coopers Run Dehydration Station.

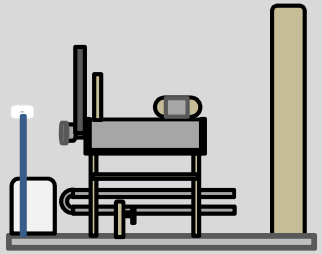
The Coopers Run Dehydration Station dehydrates natural gas prior to transmission along the pipeline system. The process starts when the station's inlet gas stream passes through triethylene glycol (TEG) dehydration units. Each TEG unit introduces TEG to the stream in a contact tower to absorb water vapor from the gas to meet customer specifications. The TEG from each unit is then sent to the natural gas-fired reboiler, which uses heat to evaporate entrained water from the TEG. The TEG is then discharged back to the contact tower for reuse, while the natural gas stream from the contact towers flow into the pipeline to be transported further along the pipeline system. There are also several small tanks that the facility.

A process flow diagram is included as Attachment D.

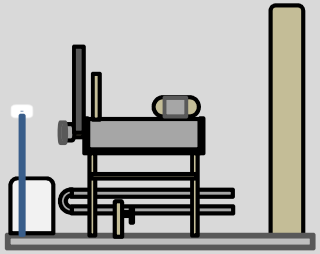
Plot Plan

NOTE: This diagram is not to scale. Locations and distances between surface equipment are not known at this time.

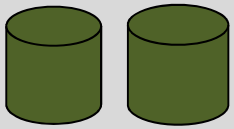
Entrance to facility



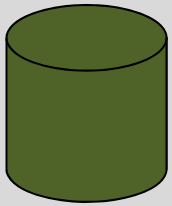
Tri-ethylene Glycol Dehydrator
TEG-1 (140 MMSCFD)
REB-1 (1.5 MMbtu/hr)



Tri-ethylene Glycol Dehydrator
TEG-2 (140 MMSCFD)
REB-2 (1.5 MMbtu/hr)



Triethylene Glycol Tanks
T01 and T02
(500 gallons, each)



Waste Fluid Tank
T03
(16,800 gallons)

Waste Fluid Tank
T04
(8,820 gallons)

Attachment F

Plot Plan

ATTACHMENT G

Area Map

ATTACHMENT G: AREA MAP

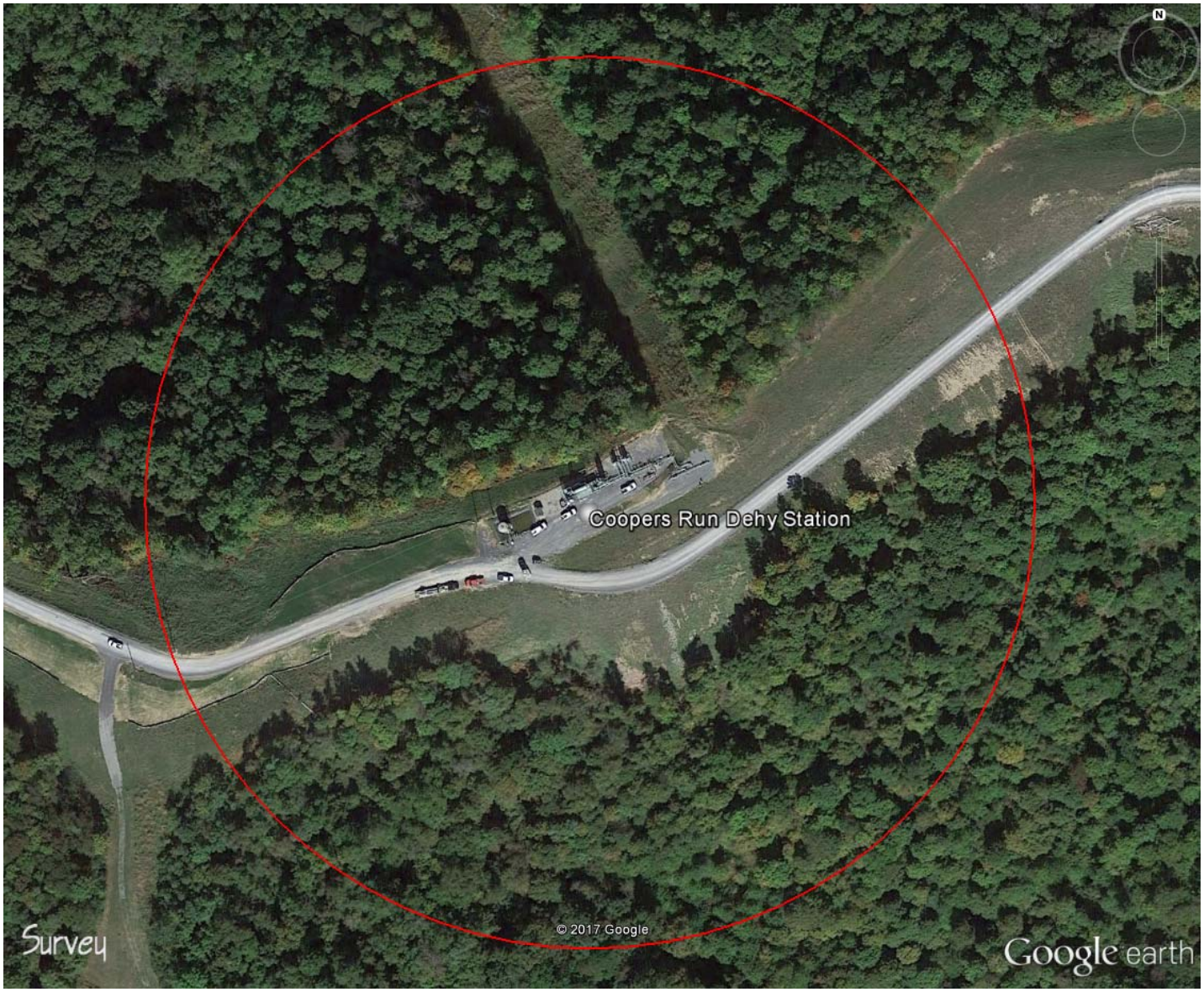


Figure 1 - Map of Location with 300 foot Boundary Circle

UTM Northing (KM):	4,395.004	UTM Easting (KM):	568.698	Elevation:	~1,500 ft

ATTACHMENT H

G35-D Section Applicability Form

ATTACHMENT H – G35-D SECTION APPLICABILITY FORM

General Permit G35-D Registration
Section Applicability Form

General Permit G35-D was developed to allow qualified applicants to seek registration for a variety of sources. These sources include storage vessels, gas production units, in-line heaters, heater treaters, glycol dehydration units and associated reboilers, pneumatic controllers, centrifugal compressors, reciprocating compressors, reciprocating internal combustion engines (RICEs), tank truck loading, fugitive emissions, completion combustion devices, flares, enclosed combustion devices, and vapor recovery systems. All registered facilities will be subject to Sections 1.0, 2.0, 3.0, and 4.0.

General Permit G35-D allows the registrant to choose which sections of the permit they are seeking registration under. Therefore, please mark which additional sections that you are applying for registration under. If the applicant is seeking registration under multiple sections, please select all that apply. Please keep in mind, that if this registration is approved, the issued registration will state which sections will apply to your affected facility.

GENERAL PERMIT G35-D APPLICABLE SECTIONS	
☒ Section 5.0	Storage Vessels Containing Condensate and/or Produced Water[1]
☐ Section 6.0	Storage Vessel Affected Facility (NSPS, Subpart OOOO/OOOOa)
☐ Section 7.0	Control Devices and Emission Reduction Devices not subject to NSPS Subpart OOOO/OOOOa and/or NESHAP Subpart HH
☒ Section 8.0	Small Heaters and Reboilers not subject to 40CFR60 Subpart Dc
☐ Section 9.0	Pneumatic Controllers Affected Facility (NSPS, Subpart OOOO/OOOOa)
☐ Section 10.0	Centrifugal Compressor Affected Facility (NSPS, Subpart OOOO/OOOOa)[2]
☐ Section 11.0	Reciprocating Compressor Affected Facility (NSPS, Subpart OOOO/OOOOa)[2]
☐ Section 12.0	Reciprocating Internal Combustion Engines, Generator Engines. Microturbine Generators
☒ Section 13.0	Tanker Truck Loading[3]
☒ Section 14.0	Glycol Dehydration Units[4]
☒ Section 15.0	Blowdown and Pigging Operations
☒ Section 16.0	Fugitive Emission Components (NSPS, Subpart OOOOa)

1 *Applicants that are subject to Section 5 may also be subject to Section 6 if the applicant is subject to the NSPS, Subpart OOOO/OOOOa control requirements or the applicable control device requirements of Section 7.*

2 *Applicants that are subject to Section 10 and 11 may also be subject to the applicable RICE requirements of Section 12.*

3 *Applicants that are subject to Section 13 may also be subject to control device and emission reduction device requirements of Section 7.*

4 *Applicants that are subject to Section 14 may also be subject to the requirements of Section 8 (reboilers). Applicants that are subject to Section 14 may also be subject to control device and emission reduction device requirements of Section 7.*

ATTACHMENT I

Emission Units/ERD Table

ATTACHMENT I – EMISSION UNITS / EMISSION REDUCTION DEVICES (ERD) TABLE

Include ALL emission units and air pollution control devices/ERDs that will be part of this permit application review. Do not include fugitive emission sources in this table. Deminimis storage tanks shall be listed in the Attachment K table. This information is required for all sources regardless of whether it is a construction, modification, or administrative update.

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed	Manufac. Date[3]	Design Capacity	Type[4] and Date of Change	Control Device(s)[5]	ERD(s)[6]
TEG-1	TEG-1	140 MMSCFD Dehydration Unit	2014	2014	140 MMSCFD	Existing	REB-1	---
REB-1	REB-1	1.5 MMBtu/hr Reboiler	2014	2014	1.5 MMBTU/hr	Existing	None	---
TEG-2	TEG-2	140 MMSCFD Dehydration Unit	TBD	TBD	140 MMSCFD	New	REB-2	---
REB-2	REB-2	1.5 MMBtu/hr Reboiler	TBD	TBD	1.5 MMBTU/hr	New	None	---
T01	T01	Tri-ethylene Glycol Tank	2014	2014	500 Gallon	Existing	None	---
T02	T02	Tri-ethylene Glycol Tank	TBD	TBD	500 Gallon	New	None	---
T03	T03	Waste Fluids Tank	2014	2014	16,800 Gallon	Existing	None	---
T04	T04	Waste Fluids Tank	TBD	TBD	8,820 Gallon	New	None	---
L01	L01	Liquid Loading	---	---	105,840 Gallons	Existing/New	None	---
---	---	Fugitives	---	---	---	Existing/New	None	---
---	---	Haul Roads	---	---	---	Existing	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] When required by rule
[4] New, modification, removal, existing
[5] For Control Devices use the following numbering system: 1C, 2C, 3C,... or other appropriate designation.
[6] For ERDs use the following numbering system: 1D, 2D, 3D,... or other appropriate designation.

ATTACHMENT J

Fugitive Emission Summary Sheet(s)

ATTACHMENT J – FUGITIVE EMISSIONS SUMMARY SHEET

Sources of fugitive emissions may include loading operations, equipment leaks, blowdown emissions, etc.
Use extra pages for each associated source or equipment if necessary.

Source/Equipment: Fugitive Emissions

Leak Detection Method Used	☐ Audible, visual, and olfactory (AVO) inspections	☐ Infrared (FLIR) cameras	☐ Other (please describe)	☒ None required

Is the facility subject to quarterly LDAR monitoring under 40CFR60 Subpart OOOOa? ☐ Yes ☒ No. If no, why? No equipment is subject to OOOOa

Component Type	Closed Vent System	Count	Source of Leak Factors (EPA, other (specify))	Stream type (gas, liquid, etc.)	Estimated Emissions (tpy)		
					VOC	HAP	GHG (CO_2e)
Pumps	☐ Yes ☒ No	3	U.S. EPA. Office of Air Quality Planning and Standards. Protocol for Equipment Leak Emission Estimates. Table 2-1. (EPA-453/R-95-017, 1995).	☐ Gas ☒ Liquid ☐ Both	0.58	<0.01	0.13
Valves	☐ Yes ☒ No	93	U.S. EPA. Office of Air Quality Planning and Standards. Protocol for Equipment Leak Emission Estimates. Table 2-1. (EPA-453/R-95-017, 1995).	☒ Gas ☐ Liquid ☐ Both	0.02	<0.01	11.26
Safety Relief Valves	☐ Yes ☒ No	10	U.S. EPA. Office of Air Quality Planning and Standards. Protocol for Equipment Leak Emission Estimates. Table 2-1. (EPA-453/R-95-017, 1995).	☒ Gas ☐ Liquid ☐ Both	0.04	<0.01	1.79
Open Ended Lines	☐ Yes ☒ No	6	U.S. EPA. Office of Air Quality Planning and Standards. Protocol for Equipment Leak Emission Estimates. Table 2-1. (EPA-453/R-95-017, 1995).	☒ Gas ☐ Liquid ☐ Both	<0.01	<0.01	1.64
Sampling Connections	☐ Yes ☒ No	---	N/A	☐ Gas ☐ Liquid ☐ Both	---	---	---
Connections (Not sampling)	☐ Yes ☒ No	356	U.S. EPA. Office of Air Quality Planning and Standards. Protocol for Equipment Leak Emission Estimates. Table 2-1. (EPA-453/R-95-017, 1995).	☐ Gas ☐ Liquid ☒ Both	0.03	<0.01	4.78
Compressors	☐ Yes ☒ No	---	N/A	☐ Gas ☐ Liquid ☐ Both	---	---	---
Flanges	☐ Yes ☐ No	---	(included in connections)	☐ Gas ☐ Liquid ☐ Both	---	---	---
Other[1]	☐ Yes ☒ No	15	40 CFR 98 Subpart W	☒ Gas ☐ Liquid ☐ Both	0.16	<0.01	134.49

[1] Other equipment types may include compressor seals, relief valves, diaphragms, drains, meters, etc.

Please indicate if there are any closed vent bypasses (include component):

Specify all equipment used in the closed vent system (e.g. VRU, ERD, thief hatches, tanker truck loading, etc.)

ATTACHMENT K

Storage Vessel Data Sheet(s)

ATTACHMENT K – STORAGE VESSEL DATA SHEET

Complete this data sheet if you are the owner or operator of a storage vessel that contains condensate and/or produced water. This form must be completed for ***each*** new or modified bulk liquid storage vessel(s) that contains condensate and/or produced water. (If you have more than one (1) identical tank (i.e. 4-400 bbl condensate tanks), then you can list all on one (1) data sheet). **Include gas sample analysis, flashing emissions, working and breathing losses, USEPA Tanks, simulation software (ProMax, E&P Tanks, HYSYS, etc.), and any other supporting documents where applicable.**

The following information is REQUIRED:

☒ Composition of the representative sample used for the simulation
☒ For each stream that contributes to flashing emissions:
- ☒ Temperature and pressure (inlet and outlet from separator(s))
- ☒ Simulation-predicted composition
- ☒ Molecular weight
- ☒ Flow rate

☒ Resulting flash emission factor or flashing emissions from simulation
☒ Working/breathing loss emissions from tanks and/or loading emissions if simulation is used to quantify those emissions

Additional information may be requested if necessary.

GENERAL INFORMATION

1. Bulk Storage Area Name Coopers Run Dehydration Station	2. Tank Name Waste Fluids Tanks
3. Emission Unit ID number T03 & T04	4. Emission Point ID number T03 & T04
5. Date Installed , Modified or Relocated *(for existing tanks)* Was the tank manufactured after August 23, 2011? ☒ Yes ☐ No	6. Type of change: ☒ New construction ☐ New stored material ☐ Other ☐ Relocation
7A. Description of Tank Modification *(if applicable)* N/A	
7B. Will more than one material be stored in this tank? *If so, a separate form must be completed for each material.* ☐ Yes ☒ No	
7C. Was USEPA Tanks simulation software utilized? ☐ Yes ☒ No ***If Yes, please provide the appropriate documentation and items 8-42 below are not required.***	

TANK INFORMATION

8. Design Capacity *(specify barrels or gallons).* Use the internal cross-sectional area multiplied by internal height. 16,800 gal & 8,820 gal	
9A. Tank Internal Diameter (ft.) 12 & 10	9B. Tank Internal Height (ft.) 20 & 15
10A. Maximum Liquid Height (ft.) 20 & 15	10B. Average Liquid Height (ft.) 10 & 7.5
11A. Maximum Vapor Space Height (ft.) 20 & 15	11B. Average Vapor Space Height (ft.) 10 & 7.5
12. Nominal Capacity *(specify barrels or gallons).* This is also known as "working volume". 16,800 gal & 8,820 gal	
13A. Maximum annual throughput (gal/yr) **See attached emissions calculations for all throughput values**	13B. Maximum daily throughput (gal/day) **See attached emissions calculations for all throughput values**
14. Number of tank turnovers per year **See attached emissions calculations for all throughput values**	15. Maximum tank fill rate (gal/min) **See attached emissions calculations for all throughput values**
16. Tank fill method ☐ Submerged ☒ Splash ☐ Bottom Loading	
17. Is the tank system a variable vapor space system? ☐ Yes ☒ No If yes, (A) What is the volume expansion capacity of the system (gal)? (B) What are the number of transfers into the system per year?	
18. Type of tank (check all that apply): ☒ Fixed Roof ☒ vertical ☐ horizontal ☐ flat roof ☒ cone roof ☐ dome roof ☐ other (describe) ☐ External Floating Roof ☐ pontoon roof ☐ double deck roof ☐ Domed External (or Covered) Floating Roof ☐ Internal Floating Roof ☐ vertical column support ☐ self-supporting ☐ Variable Vapor Space ☐ lifter roof ☐ diaphragm ☐ Pressurized ☐ spherical ☐ cylindrical ☐ Other (describe)	

PRESSURE/VACUUM CONTROL DATA

19. Check as many as apply:

☐ Does Not Apply ☐ Rupture Disc (psig)

☐ Inert Gas Blanket of _____ ☐ Carbon Adsorption[1]

☐ Vent to Vapor Combustion Device[1] (vapor combustors, flares, thermal oxidizers, enclosed combustors)

☐ Conservation Vent (psig) ☐ Condenser[1]

Vacuum Setting Pressure Setting

☐ Emergency Relief Valve (psig)

Vacuum Setting Pressure Setting

☒ Thief Hatch Weighted ☒ Yes ☐ No

[1] Complete appropriate Air Pollution Control Device Sheet

20. Expected Emission Rate (submit Test Data or Calculations here or elsewhere in the application).

Material Name	**Flashing Loss**		**Breathing Loss**		**Working Loss**		**Total Emissions Loss**		**Estimation Method[1]**
	lb/hr	**tpy**	**lb/hr**	**Tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	
Waste Fluids*	0.06	0.27	<0.01	<0.01	<0.01	<0.01	0.06	0.27	E&P TANK v2.0

[1] EPA = EPA Emission Factor, MB = Material Balance, SS = Similar Source, ST = Similar Source Test, Throughput Data, O = Other (specify)
Remember to attach emissions calculations, including TANKS Summary Sheets and other modeling summary sheets if applicable.

Emissions values are on a per-tank basis

TANK CONSTRUCTION AND OPERATION INFORMATION			
21. Tank Shell Construction: ☒ Riveted ☐ Gunite lined ☐ Epoxy-coated rivets ☐ Other (describe)			
21A. Shell Color:	21B. Roof Color:	21C. Year Last Painted:	
22. Shell Condition (if metal and unlined): ☐ No Rust ☒ Light Rust ☐ Dense Rust ☐ Not applicable			
22A. Is the tank heated? ☒ Yes ☐ No	22B. If yes, operating temperature: Varies	22C. If yes, how is heat provided to tank? Electric – when needed to prevent freezing	
23. Operating Pressure Range (psig): zero (no pressure, atmospheric) **Must be listed for tanks using VRUs with closed vent system.**			
24. Is the tank a **Vertical Fixed Roof Tank**? ☒ Yes ☐ No	24A. If yes, for dome roof provide radius (ft):	24B. If yes, for cone roof, provide slop (ft/ft):	
25. Complete item 25 for **Floating Roof Tanks** ☐ Does not apply ☒			
25A. Year Internal Floaters Installed:			
25B. Primary Seal Type *(check one):* ☐ Metallic (mechanical) shoe seal ☐ Liquid mounted resilient seal ☐ Vapor mounted resilient seal ☐ Other (describe):			
25C. Is the Floating Roof equipped with a secondary seal? ☐ Yes ☐ No			
25D. If yes, how is the secondary seal mounted? *(check one)* ☐ Shoe ☐ Rim ☐ Other (describe):			
25E. Is the floating roof equipped with a weather shield? ☐ Yes ☐ No			
25F. Describe deck fittings:			
26. Complete the following section for **Internal Floating Roof Tanks** ☒ Does not apply			
26A. Deck Type: ☐ Bolted ☐ Welded	26B. For bolted decks, provide deck construction:		
26C. Deck seam. Continuous sheet construction: ☐ 5 ft. wide ☐ 6 ft. wide ☐ 7 ft. wide ☐ 5 x 7.5 ft. wide ☐ 5 x 12 ft. wide ☐ other (describe)			
26D. Deck seam length (ft.):	26E. Area of deck (ft^2):	26F. For column supported tanks, # of columns:	26G. For column supported tanks, diameter of column:
27. Closed Vent System with VRU? ☐ Yes ☒ No			
28. Closed Vent System with Enclosed Combustor? ☐ Yes ☒ No			
SITE INFORMATION - Not Applicable: Tank calculations performed using E&P TANK software			
29. Provide the city and state on which the data in this section are based:			
30. Daily Avg. Ambient Temperature (°F):	31. Annual Avg. Maximum Temperature (°F):		
32. Annual Avg. Minimum Temperature (°F):	33. Avg. Wind Speed (mph):		
34. Annual Avg. Solar Insulation Factor (BTU/ft^2-day):	35. Atmospheric Pressure (psia):		
LIQUID INFORMATION - Not Applicable: Tank calculations performed using E&P TANK software			
36. Avg. daily temperature range of bulk liquid (°F):	36A. Minimum (°F):	36B. Maximum (°F):	
37. Avg. operating pressure range of tank (psig):	37A. Minimum (psig):	37B. Maximum (psig):	
38A. Minimum liquid surface temperature (°F):	38B. Corresponding vapor pressure (psia):		
39A. Avg. liquid surface temperature (°F):	39B. Corresponding vapor pressure (psia):		
40A. Maximum liquid surface temperature (°F):	40B. Corresponding vapor pressure (psia):		
41. Provide the following for each liquid or gas to be stored in the tank. Add additional pages if necessary.			
41A. Material name and composition:			
41B. CAS number:			
41C. Liquid density (lb/gal):			
41D. Liquid molecular weight (lb/lb-mole):			
41E. Vapor molecular weight (lb/lb-mole):			
41F. Maximum true vapor pressure (psia):			
41G. Maximum Reid vapor pressure (psia):			
41H. Months Storage per year. From: To:			
42. Final maximum gauge pressure and temperature prior to transfer into tank used as inputs into flashing emission calculations.			

STORAGE TANK DATA TABLE

List all deminimis storage tanks (i.e. lube oil, glycol, diesel etc.)

Source ID #[1]	Status[2]	Content[3]	Volume[4]
T01	Existing	Tri-ethylene Glycol	500 gallons
T02	New	Tri-ethylene Glycol	500 gallons

1. Enter the appropriate Source Identification Numbers (Source ID #) for each storage tank located at the compressor station. Tanks should be designated T01, T02, T03, etc.
2. Enter storage tank Status using the following:
   - EXIST Existing Equipment
   - NEW Installation of New Equipment
   - REM Equipment Removed
3. Enter storage tank content such as condensate, pipeline liquids, glycol (DEG or TEG), lube oil, diesel, mercaptan etc.
4. Enter the maximum design storage tank volume in gallons.

Natural Gas Fired Fuel Burning Unit Data Sheet(s)

ATTACHMENT L – SMALL HEATERS AND REBOILERS NOT SUBJECT TO 40CFR60 SUBPART DC
DATA SHEET

Complete this data sheet for each small heater and reboiler not subject to 40CFR60 Subpart Dc at the facility. ***The Maximum Design Heat Input (MDHI) must be less than 10 MMBTU/hr.***

Emission Unit ID#[1]	Emission Point ID#[2]	Emission Unit Description (manufacturer, model #)	Year Installed/ Modified	Type[3] and Date of Change	Maximum Design Heat Input (MMBTU/hr)[4]	Fuel Heating Value (BTU/scf)[5]
REB-1	REB-1	Reboiler #1	2014	Existing	1.5	1,031
REB-2	REB-2	Reboiler #2	TBD	New	1.5	1,031

1 Enter the appropriate Emission Unit (or Source) identification number for each fuel burning unit located at the production pad. Gas Producing Unit Burners should be designated GPU-1, GPU-2, etc. Heater Treaters should be designated HT-1, HT-2, etc. Heaters or Line Heaters should be designated LH-1, LH-2, etc. For sources, use 1S, 2S, 3S…or other appropriate designation. Enter glycol dehydration unit Reboiler Vent data on the Glycol Dehydration Unit Data Sheet.

2 Enter the appropriate Emission Point identification numbers for each fuel burning unit located at the production pad. Gas Producing Unit Burners should be designated GPU-1, GPU-2, etc. Heater Treaters should be designated HT-1, HT-2, etc. Heaters or Line Heaters should be designated LH-1, LH-2, etc. For emission points, use 1E, 2E, 3E…or other appropriate designation.

3 New, modification, removal

4 Enter design heat input capacity in MMBtu/hr.

5 Enter the fuel heating value in BTU/standard cubic foot.

Internal Combustion Engine Data Sheet(s)

ATTACHMENT M – INTERNAL COMBUSTION ENGINE DATA SHEET – NOT APPLICABLE

Complete this data sheet for each internal combustion engine at the facility. Include manufacturer performance data sheet(s) or any other supporting document if applicable. Use extra pages if necessary. *Generator(s) and microturbine generator(s) shall also use this form.*

Emission Unit ID#[1]				
Engine Manufacturer/Model				
Manufacturers Rated bhp/rpm				
Source Status[2]				
Date Installed/ Modified/Removed/Relocated[3]				
Engine Manufactured /Reconstruction Date[4]				
Check all applicable Federal Rules for the engine (include EPA Certificate of Conformity if applicable)[5]	☐40CFR60 Subpart JJJJ ☐JJJJ Certified? ☐40CFR60 Subpart IIII ☐IIII Certified? ☐40CFR63 Subpart ZZZZ ☐ NESHAP ZZZZ/ NSPS JJJJ Window ☐ NESHAP ZZZZ Remote Sources	☐40CFR60 Subpart JJJJ ☐JJJJ Certified? ☐40CFR60 Subpart IIII ☐IIII Certified? ☐40CFR63 Subpart ZZZZ ☐ NESHAP ZZZZ/ NSPS JJJJ Window ☐ NESHAP ZZZZ Remote Sources	☐40CFR60 Subpart JJJJ ☐JJJJ Certified? ☐40CFR60 Subpart IIII ☐IIII Certified? ☐40CFR63 Subpart ZZZZ ☐ NESHAP ZZZZ/ NSPS JJJJ Window ☐ NESHAP ZZZZ Remote Sources	☐40CFR60 Subpart JJJJ ☐JJJJ Certified? ☐40CFR60 Subpart IIII ☐IIII Certified? ☐40CFR63 Subpart ZZZZ ☐ NESHAP ZZZZ/ NSPS JJJJ Window ☐ NESHAP ZZZZ Remote Sources
Engine Type[6]				
APCD Type[7]				
Fuel Type[8]				
H_2S (gr/100 scf)				
Operating bhp/rpm				
BSFC (BTU/bhp-hr)				
Hourly Fuel Throughput	ft^3/hr	ft^3/hr	ft^3/hr	ft^3/hr
Annual Fuel Throughput (Must use 8,760 hrs/yr unless emergency generator)	$MMft^3$/yr	$MMft^3$/yr	$MMft^3$/yr	$MMft^3$/yr
Fuel Usage or Hours of Operation Metered	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐

Calculation Methodology[9]	**Pollutant[10]**	**Hourly PTE (lb/hr)[11]**	**Annual PTE (tpy)[11]**	**Hourly PTE (lb/hr)[11]**	**Annual PTE (tpy)[11]**	**Hourly PTE (lb/hr)[11]**	**Annual PTE (tpy)[11]**	**Hourly PTE (lb/hr)[11]**	**Annual PTE (tpy)[11]**

1 Enter the appropriate Source Identification Number for each natural gas-fueled reciprocating internal combustion compressor/generator engine located at the compressor station. Multiple compressor engines should be designated CE-1, CE-2, CE-3 etc. Generator engines should be designated GE-1, GE-2, GE-3 etc. Microturbine generator engines should be designated MT-1, MT-2, MT-3 etc. If more than three (3) engines exist, please use additional sheets.

2 Enter the Source Status using the following codes:

NS	Construction of New Source (installation)	ES	Existing Source
MS	Modification of Existing Source	RS	Relocated Source
REM	Removal of Source		

3 Enter the date (or anticipated date) of the engine's installation (construction of source), modification, relocation or removal.

4 Enter the date that the engine was manufactured, modified or reconstructed.

5 Is the engine a certified stationary spark ignition internal combustion engine according to 40CFR60 Subpart IIII/JJJJ? If so, the engine and control device must be operated and maintained in accordance with the manufacturer's emission-related written instructions. You must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required. If the certified engine is not operated and maintained in accordance with the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine and you must demonstrate compliance as appropriate.

Provide a manufacturer's data sheet for all engines being registered.

6 Enter the Engine Type designation(s) using the following codes:

2SLB	Two Stroke Lean Burn	4SRB	Four Stroke Rich Burn
4SLB	Four Stroke Lean Burn		

7 Enter the Air Pollution Control Device (APCD) type designation(s) using the following codes:

A/F	Air/Fuel Ratio	IR	Ignition Retard
HEIS	High Energy Ignition System	SIPC	Screw-in Precombustion Chambers
PSC	Prestratified Charge	LEC	Low Emission Combustion
NSCR	Rich Burn & Non-Selective Catalytic Reduction	OxCat	Oxidation Catalyst
SCR	Lean Burn & Selective Catalytic Reduction		

8 Enter the Fuel Type using the following codes:

PQ	Pipeline Quality Natural Gas	RG	Raw Natural Gas /Production Gas	D	Diesel

9 Enter the Potential Emissions Data Reference designation using the following codes. Attach all reference data used.

MD	Manufacturer's Data	AP	AP-42	
GR	GRI-HAPCalc™	OT	Other	(please list)

10 Enter each engine's Potential to Emit (PTE) for the listed regulated pollutants in pounds per hour and tons per year. PTE shall be calculated at manufacturer's rated brake horsepower and may reflect reduction efficiencies of listed Air Pollution Control Devices. Emergency generator engines may use 500 hours of operation when calculating PTE. PTE data from this data sheet shall be incorporated in the *Emissions Summary Sheet*.

11 PTE for engines shall be calculated from manufacturer's data unless unavailable.

Engine Air Pollution Control Device
(Emission Unit ID#, use extra pages as necessary)

Air Pollution Control Device Manufacturer's Data Sheet included? Yes ☐ No ☐	
☐ NSCR ☐ SCR ☐ Oxidation Catalyst	
Provide details of process control used for proper mixing/control of reducing agent with gas stream: N/A	
Manufacturer	Model #:
Design Operating Temperature: ^{o}F	Design gas volume:
Service life of catalyst:	Provide manufacturer data? ☐Yes ☐ No
Volume of gas handled: acfm at ^{o}F	Operating temperature range for NSCR/Ox Cat: From ^{o}F to ^{o}F
Reducing agent used, if any:	Ammonia slip (ppm):
Pressure drop against catalyst bed (delta P): inches of H_2O	
Provide description of warning/alarm system that protects unit when operation is not meeting design conditions:	
Is temperature and pressure drop of catalyst required to be monitored per 40CFR63 Subpart ZZZZ? ☐ Yes ☐ No	
How often is catalyst recommended or required to be replaced (hours of operation)?	
How often is performance test required? ☐ Initial ☐ Annual ☐ Every 8,760 hours of operation ☐ Field Testing Required ☐ No performance test required. If so, why (please list any maintenance required and the applicable sections in NSPS/GACT,	

Tanker Truck Loading Data Sheet(s)

ATTACHMENT N – TANKER TRUCK LOADING DATA SHEET

Complete this data sheet for each new or modified bulk liquid transfer area or loading rack at the facility. This is to be used for bulk liquid transfer operations to tanker trucks. Use extra pages if necessary.

Truck Loadout Collection Efficiencies

The following applicable capture efficiencies of a truck loadout are allowed:

- For tanker trucks passing the MACT level annual leak test – 99.2%
- For tanker trucks passing the NSPS level annual leak test – 98.7%
- For tanker trucks not passing one of the annual leak tests listed above – 70%

Compliance with this requirement shall be demonstrated by keeping records of the applicable MACT or NSPS Annual Leak Test certification for ***every*** truck and railcar loaded/unloaded. This requirement can be satisfied if the trucking company provided certification that its entire fleet was compliant. This certification must be submitted in writing to the Director of the DAQ. These additional requirements must be noted in the Registration Application and will be noted on the issued G35-D Registration.

Emission Unit ID#: L01	Emission Point ID#: L01	Year Installed/Modified: N/A
Emission Unit Description: Liquid loading of waste fluids		
Loading Area Data		
Number of Pumps: 3	Number of Liquids Loaded: 1	Max number of trucks loading at one (1) time: 1
Are tanker trucks pressure tested for leaks at this or any other location? ☐ Yes ☒ No ☒ Not Required If Yes, Please describe:		
Provide description of closed vent system and any bypasses. N/A		
Are any of the following truck loadout systems utilized? ☐ Closed System to tanker truck passing a MACT level annual leak test? ☐ Closed System to tanker truck passing a NSPS level annual leak test? ☐ Closed System to tanker truck not passing an annual leak test and has vapor return?		

Projected Maximum Operating Schedule (for rack or transfer point as a whole)

Time	Jan – Mar	Apr - Jun	Jul – Sept	Oct - Dec
Hours/day	2	2	2	2
Days/week	5	5	5	5

Bulk Liquid Data (use extra pages as necessary)

Liquid Name	Waste Fluids		
Max. Daily Throughput (1000 gal/day)	0.8		
Max. Annual Throughput (1000 gal/yr)	308		
Loading Method[1]	SP		
Max. Fill Rate (gal/min)	~427		
Average Fill Time (min/loading)	~60		
Max. Bulk Liquid Temperature (°F)	52.14		
True Vapor Pressure[2]	0.3240		
Cargo Vessel Condition[3]	U		
Control Equipment or Method[4]	None		

Max. Collection Efficiency (%)		0		
Max. Control Efficiency (%)		0		
Max.VOC Emission Rate	Loading (lb/hr)	0.05		
	Annual (ton/yr)	<0.01		
Max.HAP Emission Rate	Loading (lb/hr)	<0.01		
	Annual (ton/yr)	0.01		
Estimation Method[5]		EPA		

1 BF Bottom Fill SP Splash Fill SUB Submerged Fill
2 At maximum bulk liquid temperature
3 B Ballasted Vessel C Cleaned U Uncleaned (dedicated service)
O Other (describe)
4 List as many as apply (complete and submit appropriate Air Pollution Control Device Sheets)
CA Carbon Adsorption VB Dedicated Vapor Balance (closed system)
ECD Enclosed Combustion Device F Flare
TO Thermal Oxidization or Incineration
5 EPA EPA Emission Factor in AP-42 MB Material Balance
TM Test Measurement based upon test data submittal O Other (describe)

ATTACHMENT O

Glycol Dehydration Unit Data Sheet(s)

ATTACHMENT O – GLYCOL DEHYDRATION UNIT DATA SHEET

Complete this data sheet for each Glycol Dehydration Unit, Reboiler, Flash Tank and/or Regenerator at the facility. Include gas sample analysis and GRI- GLYCalc™ input and aggregate report. Use extra pages if necessary.

Manufacturer: Source Designation: TEG-1 & TEG-2	Model: 140 MMSCFD
Max. Dry Gas Flow Rate: 140 MMSCFD (each)	Reboiler Design Heat Input: 1.5 MMBTU/hr (each)
Design Type: ☒ TEG ☐ DEG ☐ EG	Source Status[1]: Existing & New
Date Installed/Modified/Removed[2]: 2014 & TBD	Regenerator Still Vent APCD/ERD[3]: None
Control Device/ERD ID#[3]: REB-1 & REB-2	Fuel HV (BTU/scf): ~1,031
H_2S Content (gr/100 scf): neg.	H_2S Content (gr/100 scf): neg.
Pump Rate (scfm): 15 gpm glycol (each)	
Water Content (wt %) in: Dry Gas: Wet Gas: Saturated	Dry Gas: 7.0 lbs/MMscf

Is the glycol dehydration unit exempt from 40CFR63 Section 764(d)?
☒ Yes ☐ No: If Yes, answer the following:

The actual annual average flowrate of natural gas to the glycol dehydration unit is less than 85 thousand standard cubic meters per day, as determined by the procedures specified in §63.772(b)(1) of this subpart.
☐ Yes ☒ No

The actual average emissions of benzene from the glycol dehydration unit process vent to the atmosphere are less than 0.90 megagram per year (1 ton per year), as determined by the procedures specified in §63.772(b)(2) of this subpart.
☒ Yes ☐ No

Is the glycol dehydration unit located within an Urbanized Area (UA) or Urban Cluster (UC)?
☐ Yes ☒ No

Is a lean glycol pump optimization plan being utilized?
☐ Yes ☒ No

Recycling the glycol dehydration unit back to the flame zone of the reboiler.
☒ Yes ☐ No

If yes:
Is the reboiler configured to accept flash drum vapors (straight from the glycol dehydrator)? ☒ Yes ☐ No
Is the reboiler configured to accept still vent vapors (after a condenser)? ☐ Yes ☒ No
Is the reboiler configured to accept both in the same operation? ☐ Yes ☐ No n/a

Recycling the glycol dehydration unit back to the flame zone of the reboiler and mixed with fuel.
☐ Yes ☒ No

What happens when temperature controller shuts off fuel to the reboiler?
☐ Still vent emissions to the atmosphere.
☐ Still vent emissions stopped with valve.
☐ Still vent emissions to glow plug.
n/a – still vent uncontrolled

Please indicate if the following equipment is present.
☒ Flash Tank
☐ Burner management system that continuously burns condenser or flash tank vapors

Control Device Technical Data

Pollutants Controlled	Manufacturer's Guaranteed Control Efficiency (%)

The dehydration units utilize a flash tank, which recovers the gas entrained in the rich glycol for use as fuel in the reboiler burner. The still column vapors are vented to atmosphere.

Emissions Data					
Emission Unit ID / Emission Point ID[4]	**Description**	**Calculation Methodology[5]**	**PTE[6]**	**Controlled Maximum Hourly Emissions (lb/hr)**	**Controlled Maximum Annual Emissions (tpy)**
REB-1 & REB-2	Reboiler Vents	AP	NO_x	0.15	0.64
		AP	CO	0.12	0.54
		AP	VOC	0.01	0.04
		AP	SO_2	8.7E-04	3.8E-03
		AP	PM_{10}	0.01	0.05
		40 CFR 98	GHG (CO_2e)	175.68	769.47
TEG-1 & TEG-2	Glycol Regenerator Still Vent	GRI-GlyCalc™	VOC	0.12	0.51
		GRI-GlyCalc™	Benzene	<0.01	<0.01
		GRI-GlyCalc™	Toluene	<0.01	<0.01
		GRI-GlyCalc™	Ethylbenzene	<0.01	<0.01
		GRI-GlyCalc™	Xylenes	<0.01	<0.01
		GRI-GlyCalc™	n-Hexane	<0.01	<0.01
TEG-1 & TEG-2	Glycol Flash Tank	GRI-GlyCalc™	VOC	1.06	4.64
		GRI-GlyCalc™	Benzene	<0.01	<0.01
		GRI-GlyCalc™	Toluene	<0.01	<0.01
		GRI-GlyCalc™	Ethylbenzene	<0.01	<0.01
		GRI-GlyCalc™	Xylenes	<0.01	<0.01
		GRI-GlyCalc™	n-Hexane	<0.01	<0.01

***emissions are on a per-unit basis**

1 Enter the Source Status using the following codes:
NS Construction of New Source ES Existing Source
MS Modification of Existing Source

2 Enter the date (or anticipated date) of the glycol dehydration unit's installation (construction of source), modification or removal.

3 Enter the Air Pollution Control Device (APCD)/Emission Reduction Device (ERD) type designation using the following codes and the device ID number:
NA None CD Condenser FL Flare
CC Condenser/Combustion Combination TO Thermal Oxidizer O Other (please list)

4 Enter the appropriate Emission Unit ID Numbers and Emission Point ID Numbers for the glycol dehydration unit reboiler vent and glycol regenerator still vent. The glycol dehydration unit reboiler vent and glycol regenerator still vent should be designated RBV-1 and RSV-1, respectively. If the compressor station incorporates multiple glycol dehydration units, a Glycol Dehydration Emission Unit Data Sheet shall be completed for each, using Source Identification RBV-2 and RSV-2, RBV-3 and RSV-3, etc.

5 Enter the Potential Emissions Data Reference designation using the following codes:
MD Manufacturer's Data AP AP-42
GR GRI-GLYCalc™ OT Other (please list)

6 Enter the Reboiler Vent and Glycol Regenerator Still Vent Potential to Emit (PTE) for the listed regulated pollutants in lbs per hour and tons per year. The Glycol Regenerator Still Vent potential emissions may be determined using the most recent version of the thermodynamic software model GRI-GLYCalc™ (Radian International LLC & Gas Research Institute). **Attach all referenced Potential Emissions Data (or calculations) and the GRI-GLYCalc™ Aggregate Calculations Report (shall include emissions reports, equipment reports, and stream reports) to this Glycol Dehydration Emission Unit Data Sheet(s). Backup pumps do not have to be considered as operating for purposes of PTE.** This PTE data shall be incorporated in the Emissions Summary Sheet.

ATTACHMENT P

Pneumatic Controller Data Sheet(s)

ATTACHMENT P – PNEUMATIC CONTROLLERS DATA SHEET

Are there any continuous bleed natural gas driven pneumatic controllers at this facility that commenced construction, modification or reconstruction after August 23, 2011, and on or before September 18, 2015?

☐ Yes ☒ No

Please list approximate number.

Are there any continuous bleed natural gas driven pneumatic controllers at this facility that commenced construction, modification or reconstruction after September 18, 2015?

☐ Yes ☒ No

Please list approximate number.

Are there any continuous bleed natural gas driven pneumatic controllers at this facility with a bleed rate greater than 6 standard cubic feet per hour that are required based on functional needs, including but not limited to response time, safety and positive actuation that commenced construction, modification or reconstruction after August 23, 2011, and on or before September 18, 2015?

☐ Yes ☒ No

Please list approximate number.

Are there any continuous bleed natural gas driven pneumatic controllers at this facility with a bleed rate greater than 6 standard cubic feet per hour that are required based on functional needs, including but not limited to response time, safety and positive actuation that commenced construction, modification or reconstruction after September 18, 2015?

☐ Yes ☒ No

Please list approximate number.

Centrifugal Compressor Data Sheet(s)

ATTACHMENT Q – CENTRIFUGAL COMPRESSOR DATA SHEET

Are there any centrifugal compressors at this facility that commenced construction, modification or reconstruction after August 23, 2011, and on or before September 18, 2015?

☐ Yes ☒ No

Please list:

Emission Unit ID#	Compressor Description

Are there any centrifugal compressors at this facility that commenced construction, modification or reconstruction after September 18, 2015?

☐ Yes ☒ No

Please list:

Emission Unit ID#	Compressor Description

ATTACHMENT R

Reciprocating Compressor Data Sheet(s)

ATTACHMENT R – RECIPROCATING COMPRESSOR DATA SHEET

Are there any reciprocating compressors at this facility that commenced construction, modification or reconstruction after August 23, 2011, and on or before September 18, 2015?

☐ Yes ☒ No

Please list:

Emission Unit ID#	Compressor Description

Are there any reciprocating compressors at this facility that commenced construction, modification or reconstruction after September 18, 2015?

☐ Yes ☒ No

Please list:

Emission Unit ID#	Compressor Description

Blowdown and Pigging Operation Data Sheet(s)

ATTACHMENT S – BLOWDOWN AND PIGGING OPERATIONS DATA SHEET

Will there be any blowdown and pigging operations that occur at this facility?

☒ Yes ☐ No

Please list:

Type of Event	# of Events (event/yr)	Amount Vented per event (scf/event)	MW of vented gas (lb/lb-mol)	Total Emissions (ton/yr)	VOC weight fraction	VOC emissions (ton/yr)
Compressor Blowdown	---	---	---	---	---	---
Compressor Startup	---	---	---	---	---	---
Plant Shutdown	1	500,000	16.56	10.92	0.0043	0.05
Low Pressure Pig Venting	52	1,000	16.56	1.14	0.0043	4.8E-03
High Pressure Pig Venting	52	1,000	16.56	1.14	0.0043	4.8E-03

Type of Event	# of Events (event/yr)	Amount Vented per event (scf/event)	MW of vented gas (lb/lb-mol)	Total Emissions (ton/yr)	HAP weight fraction	HAP emissions (ton/yr)
Compressor Blowdown	---	---	---	---	---	---
Compressor Startup	---	---	---	---	---	---
Plant Shutdown	1	500,000	16.56	10.92	<0.0001	<0.01
Low Pressure Pig Venting	52	1,000	16.56	1.14	<0.0001	<0.01
High Pressure Pig Venting	52	1,000	16.56	1.14	<0.0001	<0.01

Air Pollution Control Device Data Sheet(s)

ATTACHMENT T – AIR POLLUTION CONTROL DEVICE / EMISSION REDUCTION DEVICE SHEETS – NOT APPLICABLE	
Complete the applicable air pollution control device sheets for each flare, vapor combustor, thermal oxidizer, condenser, adsorption system, vapor recovery unit, BTEX Eliminator, Reboiler with and without Glow Plug, etc. at the facility. Use extra pages if necessary. Emissions calculations must be performed using the most conservative control device efficiency.	
The following five (5) rows are only to be completed if registering an alternative air pollution control device.	
Emission Unit ID: N/A	Make/Model:
Primary Control Device ID:	Make/Model:
Control Efficiency (%):	APCD/ERD Data Sheet Completed: ☐ Yes ☐ No
Secondary Control Device ID:	Make/Model:
Control Efficiency (%):	APCD/ERD Data Sheet Completed: ☐ Yes ☐ No

VAPOR COMBUSTION
(Including Enclosed Combustors)

General Information

Control Device ID#: N/A	Installation Date: ☐ New ☐ Modified ☐ Relocated	
Maximum Rated Total Flow Capacity scfh scfd	Maximum Design Heat Input (from mfg. spec sheet) MMBTU/hr	Design Heat Content BTU/scf

Control Device Information

Type of Vapor Combustion Control?

☐ Enclosed Combustion Device ☐ Elevated Flare ☐ Ground Flare
☐ Thermal Oxidizer

Manufacturer: Model:	Hours of operation per year?

List the emission units whose emissions are controlled by this vapor control device (Emission Point ID#)

Emission Unit ID#	Emission Source Description	Emission Unit ID#	Emission Source Description

If this vapor combustor controls emissions from more than six (6) emission units, please attach additional pages.

Assist Type (Flares only)	Flare Height	Tip Diameter	Was the design per §60.18?
☐ Steam ☐ Air ☐ Pressure ☐ Non	feet	feet	☐ Yes ☐ No Provide determination.

Waste Gas Information

Maximum Waste Gas Flow Rate (scfm)	Heat Value of Waste Gas Stream BTU/ft^3	Exit Velocity of the Emissions Stream (ft/s)

Provide an attachment with the characteristics of the waste gas stream to be burned.

Pilot Gas Information

Number of Pilot Lights	Fuel Flow Rate to Pilot Flame per Pilot scfh	Heat Input per Pilot BTU/hr	Will automatic re-ignition be used? ☐ Yes ☐ No

If automatic re-ignition is used, please describe the method.

Is pilot flame equipped with a monitor to detect the presence of the flame? ☐ Yes ☐ No	If Yes, what type? ☐ Thermocouple ☐ Infrared ☐ Ultraviolet ☐ Camera ☐ Other:

Describe all operating ranges and maintenance procedures required by the manufacturer to maintain the warranty. *(If unavailable, please indicate).*

Additional information attached? ☐ Yes ☐ No
Please attach copies of manufacturer's data sheets, drawings, flame demonstration per §60.18 or §63.11(b) and performance testing.

CONDENSER		
General Information		
Control Device ID#: N/A	Installation Date: ☐ New ☐ Modified ☐ Relocated	
Manufacturer:	Model:	Control Device Name:
Control Efficiency (%):		
Manufacturer's required temperature range for control efficiency. °F		
Describe the warning and/or alarm system that protects against operation when unit is not meeting the design requirements:		
Describe all operating ranges and maintenance procedures required by the manufacturer to maintain the warranty.		
Additional information attached? ☐ Yes ☐ No Please attach copies of manufacturer's data sheets.		
Is condenser routed to a secondary APCD or ERD? ☐ Yes ☐ No		

ADSORPTION SYSTEM

General Information

Control Device ID#: N/A	Installation Date: ☐ New ☐ Modified ☐ Relocated	
Manufacturer:	Model:	Control Device Name:
Design Inlet Volume: scfm	Adsorbent charge per adsorber vessel and number of adsorber vessels:	
Length of Mass Transfer Zone supplied by the manufacturer:	Adsorber diameter: ft Adsorber area: ft^2	
Adsorbent type and physical properties:	Overall Control Efficiency (%):	
Working Capacity of Adsorbent (%):		

Operating Parameters

Inlet volume: scfm @ °F	
Adsorption time per adsorption bed (life expectancy):	Breakthrough Capacity (lbs of VOC/100 lbs of adsorbent):
Temperature range of carbon bed adsorber. °F - °F	

Control Device Technical Data

Pollutants Controlled	Manufacturer's Guaranteed Control Efficiency (%)

Describe the warning and/or alarm system that protects against operation when unit is not meeting the design requirements:
Has the control device been tested by the manufacturer and certified?
Describe all operating ranges and maintenance procedures required by the manufacturer to maintain the warranty.
Additional information attached? ☐ Yes ☐ No Please attach copies of manufacturer's data sheets, drawings, and performance testing.

VAPOR RECOVERY UNIT

General Information

Emission Unit ID#: N/A	Installation Date: ☐ New ☐ Modified ☐ Relocated

Device Information

Manufacturer:
Model:

List the emission units whose emissions are controlled by this vapor recovery unit (Emission Point ID#)

Emission Unit ID#	Emission Source Description	Emission Unit ID#	Emission Source Description

If this vapor recovery unit controls emissions from more than six (6) emission units, please attach additional pages.

Additional information attached? ☐ Yes ☐ No
Please attach copies of manufacturer's data sheets, drawings, and performance testing.

The registrant may claim a capture and control efficiency of 95 % (which accounts for 5% downtime) for the vapor recovery unit.

The registrant may claim a capture and control efficiency of 98% if the VRU has a backup flare that meet the requirements of Section 8.1.2 of this general permit.

The registrant may claim a capture and control efficiency of 98% if the VRU has a backup VRU.

ATTACHMENT U

Emission Calculations

Company Name: DTE Appalachia Gathering, LLC
Facility Name: Coopers Run Dehydration Facility
Project Description: G35-D Application

Facility-Wide Emission Summary - Controlled

Storage Tanks:	2	per site
Line Heaters:	0	per site
TEGs:	0	per site
Dehy Reboilers:	2	per site
Glycol Dehydrators:	2	per site
Dehy Drip Tanks:	0	per site
Dehy Combustors:	0	per site
Compressors:	0	per site
High Pressure Separators:	2	per site
Length of lease road:	7,300	feet

Carbon equivalent emissions (CO_2e) are based on the following Global Warming Potentials (GWP) from 40 CFR Part 98, Table A-1:

CH_4	25
N_2O	298

Emission Point ID #	Emission Source ID#s	Emission Source Description	NO_X		CO		VOC		SO_2		PM_{10}		$PM_{2.5}$		CH_4		CO_2e	
			lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
TEG-1	TEG-1	Dehydration Unit #1	---	---	---	---	1.17	5.15	---	---	---	---	---	---	181.85	796.52	4,546.36	19,913.06
TEG-2	TEG-2	Dehydration Unit #2	---	---	---	---	1.17	5.15	---	---	---	---	---	---	181.85	796.52	4,546.36	19,913.06
REB-1	REB-1	Reboiler #1	0.15	0.64	0.12	0.54	0.01	0.04	8.7E-04	3.8E-03	0.01	0.05	0.01	0.05	3.3E-03	0.01	175.68	769.47
REB-2	REB-2	Reboiler #2	0.15	0.64	0.12	0.54	0.01	0.04	8.7E-04	3.8E-03	0.01	0.05	0.01	0.05	3.3E-03	0.01	175.68	769.47
T03	T03	Waste Fluids Tank	---	---	---	---	0.05	0.23	---	---	---	---	---	---	1.4E-03	0.01	<0.01	<0.01
T04	T04	Waste Fluids Tank	---	---	---	---	0.05	0.23	---	---	---	---	---	---	1.4E-03	0.01	0.03	0.15
T01 and T02	T01 and T02	De minimis storage tanks	---	---	---	---	1.4E-05	6.0E-05	---	---	---	---	---	---	---	---	---	---
L01	L01	Liquid Loading	---	---	---	---	0.05	0.01	---	---	---	---	---	---	---	---	---	---
---	---	Fugitives	---	---	---	---	---	0.89	---	---	---	---	---	---	---	18.52	---	463.03
---	---	Haul Roads	---	---	---	---	---	---	---	---	---	0.22	---	0.02	---	---	---	---
Facility Total			0.29	1.27	0.24	1.07	2.52	11.72	1.7E-03	0.01	0.02	0.32	0.02	0.12	363.72	1,611.61	9,444.11	41,828.22
Facility Total (excluding fugitive emissions)			0.29	1.27	0.24	1.07	2.52	10.83	1.7E-03	0.01	0.02	0.10	0.02	0.10	363.72	1,593.09	9,444.11	41,365.19

Emission Point ID #	Emission Source ID#s	Emission Source Description	Formaldehyde		Benzene		Toluene		Ethylbenzene		Xylenes		n-Hexane		Total BTEX		Total HAP	
			lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
TEG-1	TEG-1	Dehydration Unit #1	---	---	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
TEG-2	TEG-2	Dehydration Unit #2	---	---	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
REB-1	REB-1	Reboiler #1	1.1E-04	4.8E-04	3.1E-06	1.3E-05	4.9E-06	2.2E-05	---	---	---	---	2.6E-03	0.01	8.0E-06	3.5E-05	2.7E-03	0.01
REB-2	REB-2	Reboiler #2	1.1E-04	4.8E-04	3.1E-06	1.3E-05	4.9E-06	2.2E-05	---	---	---	---	2.6E-03	0.01	8.0E-06	3.5E-05	2.7E-03	0.01
T03	T03	Waste Fluids Tank	---	---	4.6E-04	2.0E-03	2.3E-04	1.0E-03	<0.01	<0.01	<0.01	<0.01	3.0E-03	0.01	6.8E-04	3.0E-03	4.6E-03	0.02
T04	T04	Waste Fluids Tank	---	---	4.6E-04	2.0E-03	2.3E-04	1.0E-03	<0.01	<0.01	<0.01	<0.01	3.0E-03	0.01	6.8E-04	3.0E-03	4.6E-03	0.02
T01 and T02	T01 and T02	De minimis storage tanks	---	---	---	---	---	---	---	---	---	---	---	---	---	---	6.8E-06	3.0E-05
L01	L01	Liquid Loading	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.01	1.4E-03
---	---	Fugitives	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
---	---	Haul Roads	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Facility Total			2.2E-04	9.6E-04	9.2E-04	4.0E-03	4.7E-04	2.0E-03	<0.01	<0.01	<0.01	<0.01	0.01	0.05	1.4E-03	0.01	0.02	0.07
Facility Total (excluding fugitive emissions)			2.2E-04	9.6E-04	9.2E-04	4.0E-03	4.7E-04	2.0E-03	<0.01	<0.01	<0.01	<0.01	0.01	0.05	1.4E-03	0.01	0.02	0.07

Company Name: DTE Appalachia Gathering, LLC
Facility Name: Coopers Run Dehydration Facility
Project Description: G35-D Application

Glycol Dehydrator

Source Designation:	**TEG-1**
Throughput Rating (MMSCFD):	140
Tower Temperature (deg F):	100
Tower Pressure (psig):	900-1,250
Glycol Pump Rate (gpm):	15.0
Flash Tank Temperature (deg F):	100
Flash Tank Pressure (psig):	40
Potential Annual Hours of Operation (hr/yr):	8,760

GRI-GLYCalc Version 4.0 - EMISSIONS SUMMARY [1]
Uncontrolled Regenerator Emissions

Pollutant	**(lbs/hr)**	**(lbs/day)**	**(tons/yr)**
Methane	1.5589	37.414	6.8280
Ethane	0.3531	8.474	1.5464
Propane	0.0728	1.748	0.3191
Isobutane	0.0047	0.113	0.0207
n-Butane	0.0191	0.457	0.0835
Total Emissions	2.0086	48.206	8.7977
Total Hydrocarbon Emissions	2.0086	48.206	8.7977
Total VOC Emissions	0.0966	2.319	0.4232
Total HAP Emissions	0.0000	0.000	0.0000

GRI-GLYCalc Version 4.0 - EMISSIONS SUMMARY [1]
Flash Gas Emissions

Pollutant	**(lbs/hr)**	**(lbs/day)**	**(tons/yr)**
Methane	149.9864	3599.674	656.9405
Ethane	8.9723	215.335	39.2987
Propane	0.7610	18.263	3.3330
Isobutane	0.0305	0.732	0.1337
n-Butane	0.0909	2.181	0.3981
Total Emissions	159.8411	3,836.186	700.1040
Total Hydrocarbon Emissions	159.8411	3,836.186	700.1040
Total VOC Emissions	0.8824	21.177	3.8648
Total HAP Emissions	0.0000	0.000	0.0000

Total Emission Rate [2]
Regenerator + Flash Tank

Pollutant	**(lbs/hr)**	**(lbs/day)**	**(tons/yr)**
Methane	181.8544	4364.506	796.5222
Ethane	11.1905	268.571	49.0141
Propane	1.0006	24.013	4.3825
Isobutane	0.0422	1.014	0.1853
n-Butane	0.1320	3.166	0.5779
Total Emissions	194.2196	4,661.270	850.6820
Total Hydrocarbon Emissions	194.2196	4,661.270	850.6820
Total VOC Emissions	1.1748	28.195	5.1456
Total HAP Emissions	0.0000	0.000	0.0000

* HAPs

1. Based on GRI-GLYCalc 4.0 run at maximum operating conditions and glycol pump rates.
2. Totals conservatively include a 20% compliance margin to account for minor variations in inlet gas composition that may occur periodically.

Company Name: DTE Appalachia Gathering, LLC
Facility Name: Coopers Run Dehydration Facility
Project Description: G35-D Application

Glycol Dehydrator

Source Designation:	**TEG-2**
Throughput Rating (MMSCFD):	140
Tower Temperature (deg F):	100
Tower Pressure (psig):	900-1,250
Glycol Pump Rate (gpm):	15.0
Flash Tank Temperature (deg F):	100
Flash Tank Pressure (psig):	40
Potential Annual Hours of Operation (hr/yr):	8,760

GRI-GLYCalc Version 4.0 - EMISSIONS SUMMARY [1]
Uncontrolled Regenerator Emissions

Pollutant	**(lbs/hr)**	**(lbs/day)**	**(tons/yr)**
Methane	1.5589	37.414	6.8280
Ethane	0.3531	8.474	1.5464
Propane	0.0728	1.748	0.3191
Isobutane	0.0047	0.113	0.0207
n-Butane	0.0191	0.457	0.0835
Total Emissions	2.0086	48.206	8.7977
Total Hydrocarbon Emissions	2.0086	48.206	8.7977
Total VOC Emissions	0.0966	2.319	0.4232
Total HAP Emissions	0.0000	0.000	0.0000

GRI-GLYCalc Version 4.0 - EMISSIONS SUMMARY [1]
Flash Gas Emissions

Pollutant	**(lbs/hr)**	**(lbs/day)**	**(tons/yr)**
Methane	149.9864	3599.674	656.9405
Ethane	8.9723	215.335	39.2987
Propane	0.7610	18.263	3.3330
Isobutane	0.0305	0.732	0.1337
n-Butane	0.0909	2.181	0.3981
Total Emissions	159.8411	3,836.186	700.1040
Total Hydrocarbon Emissions	159.8411	3,836.186	700.1040
Total VOC Emissions	0.8824	21.177	3.8648
Total HAP Emissions	0.0000	0.000	0.0000

Total Emission Rate [2]
Regenerator + Flash Tank

Pollutant	**(lbs/hr)**	**(lbs/day)**	**(tons/yr)**
Methane	181.8544	4364.506	796.5222
Ethane	11.1905	268.571	49.0141
Propane	1.0006	24.013	4.3825
Isobutane	0.0422	1.014	0.1853
n-Butane	0.1320	3.166	0.5779
Total Emissions	194.2196	4,661.270	850.6820
Total Hydrocarbon Emissions	194.2196	4,661.270	850.6820
Total VOC Emissions	1.1748	28.195	5.1456
Total HAP Emissions	0.0000	0.000	0.0000

* HAPs

1. Based on GRI-GLYCalc 4.0 run at maximum operating conditions and glycol pump rates.
2. Totals conservatively include a 20% compliance margin to account for minor variations in inlet gas composition that may occur periodically.

Company Name: DTE Appalachia Gathering, LLC
Facility Name: Coopers Run Dehydration Facility
Project Description: G35-D Application

Reboilers

Source Designation:	**REB-1 (existing) and REB-2 (new)**
Fuel Used:	Natural Gas
Higher Heating Value (HHV) (Btu/scf):	1,031
Heat Input (MMBtu/hr):	1.50
Fuel Consumption (MMscf/hr):	1.45E-03
Potential Annual Hours of Operation (hr/yr):	8,760

Criteria and Manufacturer Specific Pollutant Emission Rates:

Pollutant	**Emission Factor (lb/MMscf)[1]**	**Potential Emissions (lb/hr)[2]**	**Potential Emissions (tons/yr)[3]**
NO_x	100	0.15	0.64
CO	84	0.12	0.54
VOC	5.5	8.0E-03	0.04
SO_2	0.6	8.7E-04	3.8E-03
PM Total	7.6	0.01	0.05
PM Condensable	5.7	8.3E-03	0.04
PM_{10} (Filterable)	1.9	2.8E-03	0.01
$PM_{2.5}$ (Filterable)	1.9	2.8E-03	0.01
Lead	5.00E-04	7.3E-07	3.2E-06
CO_2[4]	117.0	175.50	768.67
CH_4[4]	2.21E-03	3.3E-03	1.4E-02
N_2O[4]	2.21E-04	3.3E-04	1.4E-03

Company Name: DTE Appalachia Gathering, LLC
Facility Name: Coopers Run Dehydration Facility
Project Description: G35-D Application

Reboilers

Hazardous Air Pollutant (HAP) Potential Emissions:

Pollutant	Emission Factor (lb/MMscf)[1]	Potential Emissions (lb/hr)[2]	Potential Emissions (tons/yr)[3]
HAPs:			
Methylnaphthalene (2-)	2.4E-05	3.5E-08	1.5E-07
3-Methylchloranthrene	1.8E-06	2.6E-09	1.1E-08
7,12-Dimethylbenz(a)anthracene	1.6E-05	2.3E-08	1.0E-07
Acenaphthene	1.8E-06	2.6E-09	1.1E-08
Acenaphthylene	1.8E-06	2.6E-09	1.1E-08
Anthracene	2.4E-06	3.5E-09	1.5E-08
Benz(a)anthracene	1.8E-06	2.6E-09	1.1E-08
Benzene	2.1E-03	3.1E-06	1.3E-05
Benzo(a)pyrene	1.2E-06	1.7E-09	7.6E-09
Benzo(b)fluoranthene	1.8E-06	2.6E-09	1.1E-08
Benzo(g,h,i)perylene	1.2E-06	1.7E-09	7.6E-09
Benzo(k)fluoranthene	1.8E-06	2.6E-09	1.1E-08
Chrysene	1.8E-06	2.6E-09	1.1E-08
Dibenzo(a,h) anthracene	1.2E-06	1.7E-09	7.6E-09
Dichlorobenzene	1.2E-03	1.7E-06	7.6E-06
Fluoranthene	3.0E-06	4.4E-09	1.9E-08
Fluorene	2.8E-06	4.1E-09	1.8E-08
Formaldehyde	7.5E-02	1.1E-04	4.8E-04
Hexane	1.8E+00	2.6E-03	1.1E-02
Indo(1,2,3-cd)pyrene	1.8E-06	2.6E-09	1.1E-08
Naphthalene	6.1E-04	8.9E-07	3.9E-06
Phenanthrene	1.7E-05	2.5E-08	1.1E-07
Pyrene	5.0E-06	7.3E-09	3.2E-08
Toluene	3.4E-03	4.9E-06	2.2E-05
Arsenic	2.0E-04	2.9E-07	1.3E-06
Beryllium	1.2E-05	1.7E-08	7.6E-08
Cadmium	1.1E-03	1.6E-06	7.0E-06
Chromium	1.4E-03	2.0E-06	8.9E-06
Cobalt	8.4E-05	1.2E-07	5.4E-07
Manganese	3.8E-04	5.5E-07	2.4E-06
Mercury	2.6E-04	3.8E-07	1.7E-06
Nickel	2.1E-03	3.1E-06	1.3E-05
Selenium	2.4E-05	3.5E-08	1.5E-07
Total HAP		**2.7E-03**	**1.2E-02**

[1] Emission factors from AP-42 Section 1.4 "Natural Gas Combustion" Tables 1.4-1, 1.4-2, & 1.4-3

[2] Emission Rate (lb/hr) = Rated Capacity (MMscf/hr) × Emission Factor (lb/MMscf).

[3] Annual Emissions $(tons/yr)_{Potential}$ = $(lb/hr)_{Emissions}$ × (Maximum Allowable Operating Hours, 8760 hr/yr) × (1 ton/2000 lb).

[4] GHG Emission factors from Tables C-1 and C-2, 40 CFR 98, Subpart C.

Company Name: DTE Appalachia Gathering, LLC
Facility Name: Coopers Run Dehydration Facility
Project Description: G35-D Application

Storage Vessels

Operational Hours 8,760 hrs/yr

Storage Tanks - Uncontrolled [1,2,3]

Source Designation:	T01 and T02		T03		T04	
Contents:	Triethylene Glycol		Waste Fluids		Waste Fluids	
Number:	2 tank(s)		1 tank(s)		1 tank(s)	
Capacity:	500 gal (each)		16,800 gal (each)		8,820 gal (each)	
Throughput:	6,000 gal (each)		201,600 gal (each)		105,840 gal (each)	
Condensate Throughput:	---		0.1 bbl/day (each		0.1 bbl/day (each	
Emissions (per tank)	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**
VOC	6.8E-06	3.0E-05	0.052	0.229	0.052	0.229
HAP	6.8E-06	3.0E-05	0.005	0.020	0.005	0.020
Benzene	---	---	4.6E-04	0.002	4.6E-04	0.002
Toluene	---	---	2.3E-04	0.001	2.3E-04	0.001
Ethylbenzene	---	---	<0.001	<0.001	<0.001	<0.001
Xylene	---	---	<0.001	<0.001	<0.001	<0.001
n-Hexane	---	---	0.003	0.013	0.003	0.013
Methane	---	---	0.001	0.006	0.001	0.006

[1] Uncontrolled emissions calculation using E&P TANK v2.0 for tanks with flashing; emissions include working, breathing and flashing losses. Conservatively assumes 1% condensate in waste fluids.

[2] Uncontrolled emissions calculation using EPA Tanks 4.0.9d for tanks without flashing; emissions include working and breathing losses.
[2] Conservatively assumes one turnover per month, per tank.

Company Name: DTE Appalachia Gathering, LLC
Facility Name: Coopers Run Dehydration Facility
Project Description: G35-D Application

Liquid Loading

Throughput 307,440 gal/yr
Capture Efficiency 0% non-tested tanker trucks
Control Efficiency 0% Combustor destruction efficiency

Liquid Loading Emissions

Source ID:	L01

Uncontrolled Loading Losses: L_L (lb/10^3 gal) = 12.46 (SPM)/T
Controlled Loading Losses: L_L (lb/10^3 gal) = 12.46 (SPM)/T * (1 - Capture Efficiency * Control Efficiency)

Parameter	Value	Description
S	0.60	Saturation factor for "Submerged Loading: dedicated normal service" (AP-42 Table 5.2-1)
Capture Efficiency	0%	Capture Efficiency
Control Efficiency	0%	Control Efficiency
P	0.3240	true vapor pressure of liquid loaded (psia) - from EPA TANKS run
M	19.3610	molecular weight of vapors (lb/lb-mol) - from EPA TANKS run
T	511.81	bulk liquid temperature of liquids loaded (deg R) - from EPA TANKS run

Description	Uncontrolled Loading Losses (lb/10^3 gal)	Maximum Throughput [1] (gal/yr)	VOC Emissions (tpy)	VOC Emissions (lb/hr)[2]	HAP Emissions (tpy)	HAP Emissions (lb/hr)[2]
Truck Loading of Produced Fluids	0.09	307,440	0.01	0.05	0.00	0.01

[1] Total estimated maximum annual throughput for the waste fluid tanks.
[1] Lb/hr values assume two (2) hours of loading per day, five (5) days per week.

Company Name: DTE Appalachia Gathering, LLC
Facility Name: Coopers Run Dehydration Facility
Project Description: G35-D Application

Fugitive Emissions

Fugitive Emissions from Component Leaks

Facility Equipment Type[1]	Valves	Connectors	Open-Ended Lines	Pressure Relief Devices
Wellhead	8	38	0.5	0
Separators	1	6	0	0
Meters/Piping	12	45	0	0
Compressors	12	57	0	0
In-line heaters	14	65	2	1
Dehydrators	24	90	2	2

[1] Table W-1B to Subpart W of Part 98 —Default Average Component Counts for Major Onshore Natural Gas Production

Fugitive VOC/Total Emissions from Component Leaks

Equipment Type	Service	Emission Factors[1] (kg/hr/source)	Facility Equipment Count[2] (units)	TOC Annual Fugitive Emissions (tpy)	Weight Fraction VOC	Weight Fraction HAP	VOC Emissions[3] (tpy)	HAP Emissions[3] (tpy)
Pumps	Light Liquid	0.01990	3	0.58	1.00	0.0E+00	0.58	0.0E+00
Compressor	Gas	0.22800	0	0.0E+00	0.00	0.0E+00	0.0E+00	0.0E+00
Valves	Gas	0.00597	93	5.36	0.00	0.0E+00	0.02	0.0E+00
Pressure Relief Valves	Gas	0.10400	10	10.04	0.00	0.0E+00	0.04	0.0E+00
Open-Ended Lines	All	0.00170	6	0.10	0.00	0.0E+00	4.2E-04	0.0E+00
Connectors	All	0.00183	356	6.28	0.00	0.0E+00	0.03	0.0E+00
Intermittent Pneumatic Devices[4]	Gas	13.5	15	---	---	---	0.16	0.0E+00
			Emission Totals:	**22.36**	**---**	**---**	**0.83**	**0.0E+00**

[1] U.S. EPA. Office of Air Quality Planning and Standards. *Protocol for Equipment Leak Emission Estimates.* Table 2-1. (Research Triangle Park, NC: U.S. EPA EPA-453/R-95-017, 1995). SOCMI factors were used as it was representative of natural gas extraction. The pneumatic controller value is from 40 CFR 98 Subpart W, Table W-1A (units of scf/hr-component).

[2] Assumes one pump for each tank and one meter. Pressure relief valves count includes two for each storage tank. A 50% compliance margin is added to the component counts based on Subpart W counts.

[3] Potential emissions VOC/HAP (tpy) = Emission factor (kg/hr/source) * Number of Sources * Weight % VOC/HAP x 2.2046 (lb/kg) x 8,760 (hr/yr) ÷ 2,000 (lb/ton)

[4] Potential emissions VOC/HAP (tpy) = Gas volume vented (scf/yr) * Molar weight of natural gas (lb/lb-mol) * Weight % VOC/HAP ÷ 100 ÷ 379 (scf/lb-mol) ÷ 2,000 (lb/ton)

Company Name: DTE Appalachia Gathering, LLC
Facility Name: Coopers Run Dehydration Facility
Project Description: G35-D Application

Fugitive Emissions

Fugitive Specific HAP Emissions from Component Leaks

Equipment Type	Service	Emission Factors[1] (kg/hr/source)	Facility Equipment Count[2] (units)	TOC Annual Fugitive Emissions (tpy)	Benzene Emissions[3] (tpy)	Toluene Emissions[3] (tpy)	Ethylbenzene Emissions[3] (tpy)	Xylene Emissions[3] (tpy)	n-Hexane Emissions[4] (tpy)
Pumps	Light Liquid	0.01990	3	0.58	<0.01	<0.01	<0.01	<0.01	<0.01
Compressor	Gas	0.22800	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Valves	Gas	0.00597	93	5.36	<0.01	<0.01	<0.01	<0.01	<0.01
Pressure Relief Valves	Gas	0.10400	10	10.04	<0.01	<0.01	<0.01	<0.01	<0.01
Open-Ended Lines	All	0.00170	6	0.10	<0.01	<0.01	<0.01	<0.01	<0.01
Connectors	All	0.00183	356	6.28	<0.01	<0.01	<0.01	<0.01	<0.01
Intermittent Pneumatic Devices[4]	Gas	13.5	15	---	<0.01	<0.01	<0.01	<0.01	<0.01
			Emission Totals:	**22.36**	**<0.01**	**<0.01**	**<0.01**	**<0.01**	**<0.01**

[1] U.S. EPA. Office of Air Quality Planning and Standards. *Protocol for Equipment Leak Emission Estimates.* Table 2-1. (Research Triangle Park, NC: U.S. EPA EPA-453/R-95-017, 1995). SOCMI factors were used as it was representative of natural gas liquids extraction. Pneumatic controllers operate on air (no gas emissions).

[2] Assumes one pump for each tank. Pressure relief valves count includes one Emergency Pressure Relief valve and one lock-down hatch for each storage tank. A 50% compliance margin is added to the component counts based on Subpart W counts.

[3] Potential emissions HAP (tpy) = Emission factor (kg/hr/source) * Number of Sources * Weight % HAP x 2.2046 (lb/kg) x 8,760 (hr/yr) ÷ 2,000 (lb/ton)

[4] Potential emissions HAP (tpy) = Gas volume vented (scf/yr) * Molar weight of natural gas (lb/lb-mol) * Weight % HAP ÷ 100 ÷ 379 (scf/lb-mol) ÷ 2,000 (lb/ton)

GHG Fugitive Emissions from Component Leaks

Component	Component Count	GHG Emission Factor[1] scf/hr/componen	CH_4 Emissions[2,3] (tpy)	CO_2 Emissions[2,3] (tpy)	CO_2e Emissions[4] (tpy)
Pumps	3	0.01	0.01	3.8E-05	0.13
Compressor	0	4.17	0.0E+00	0.0E+00	0.0E+00
Valves	93	0.027	0.45	3.2E-03	11.26
Pressure Relief Devices	10	0.04	0.07	5.1E-04	1.79
Open-Ended Lines	6	0.061	0.07	4.7E-04	1.64
Connectors	356	0.003	0.19	1.4E-03	4.78
Intermittent Pneumatic Devices	15	6	5.38	0.04	134.49
Total			**6.16**	**0.04**	**154.10**

[1] Population emission factors for gas service in the Eastern U.S. from *Table W-1A of Subpart W - Default Whole Gas Emission Factors for Onshore Production* , 40 CFR 98, Subpart W (table W-6 for compressor).

[2] Calculated in accordance with Equations W-32a, W-35 and W-36 in Subpart W of 40 CFR 98. See footnote 4 above for sample calculation.

[3] Potential emissions VOC/HAP (tpy) = Gas volume vented (scf/yr) * Molar weight of natural gas (lb/lb-mol) * Weight % VOC/HAP ÷ 100 ÷ 379 (scf/lb-mol) ÷ 2,000 (lb/ton)
Mole fractions of CH_4 and CO_2 based on gas analysis:
CH_4: 97% CO_2: 0.25%

[4] Carbon equivalent emissions (CO_2e) 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

Company Name: DTE Appalachia Gathering, LLC
Facility Name: Coopers Run Dehydration Facility
Project Description: G35-D Application

Fugitive Emissions

Fugitive Emissions from Venting

Source	Number of Events (events per yr)	Gas Vented Per Event (scf/event)	Total Volume Vented (scf/yr)	Total Emissions (ton/yr)	VOC Emissions (tpy)	Benzene Emissions (tpy)	Toluene Emissions (tpy)	Ethylbenzene Emissions (tpy)	Xylene Emissions (tpy)	n-Hexane Emissions (tpy)	HAP Emissions (tpy)	CH_4 Emissions (tpy)	CO_2 Emissions (tpy)	CO_2e Emissions (tpy)
Rod Packing Venting	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Compressor Blowdown	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Compressor Startup	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Plant Shutdown	1	500,000	500,000	10.92	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	10.23	0.07	256
Low Pressure Pig Venting	52	1,000	52,000	1.14	4.8E-03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1.06	0.01	26.61
High Pressure Pig Venting	52	1,000	52,000	1.14	4.8E-03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1.06	0.01	26.61
Total		**---**	604,000	13.19	**0.06**	**<0.01**	**<0.01**	**<0.01**	**<0.01**	**<0.01**	**<0.01**	**12.36**	**0.09**	**309.06**

[1] VOC and HAP emissions are based on sum of the fractions of the pollutants in the site-specific gas analysis in those classifications, and are calculated in accordance with standard conversion methodology and factors.
[2] CH_4 and CO_2 emissions are based on fractions of these pollutants in the site-specific gas analysis, and are calculated in accordance with Equations W-35 and W-36 in Subpart W of 40 CFR 98.
[3] GHG (CO_2e) is carbon dioxide equivalent, which is the summation of CO_2 (GWP = 1) + CH_4 (GWP = 25) + N_2O (GWP = 298).
[4] Total gas volume emitted (and thus subsequent emissions values) is estimated based on engineering judgement and is conservative.
[5] Total gas volume emitted includes blowdowns and other venting activities, such as pigging.
[6] Potential emissions VOC/HAP (tpy) = Gas volume vented (scf/yr) * Molar weight of natural gas (lb/lb-mol) * Weight % VOC/HAP ÷ 100 ÷ 379 (scf/lb-mol) ÷ 2,000 (lb/ton)
[7] Potential emissions CH_4/CO_2 (tpy) = Gas volume vented (scf/yr) * Mole % CH_4/CO_2 ÷ 100 * Density CH_4/CO_2 (kg/scf) * 1,000 (g/kg) ÷ 453.6 (g/lb) ÷ 2,000 (lb/ton)

Company Name: DTE Appalachia Gathering, LLC
Facility Name: Coopers Run Dehydration Facility
Project Description: G35-D Application

Haul Roads

Estimated Potential Road Fugitive Emissions

Unpaved Road Emissions

Unpaved Roads: $E\ (lb/VMT) = k(s/12)^a(W/3)^b)*[(365-p)/365]$

	PM		PM_{10}	$PM_{2.5}$	
k Factor (lb/VMT)	4.9		1.5	0.15	AP-42 Table 13.2.2-2 (Final, 11/06)
Silt content, s	4.8	%			AP-42 Table 13.2.2-1 (11/06), for Sand and Gravel Processing
Number of Rain Days, p	150				AP-42 Figure 13.2.1-2
a	0.7		0.9	0.9	AP-42 Table 13.2.2-2 (Final, 11/06)
b	0.45		0.45	0.45	AP-42 Table 13.2.2-2 (Final, 11/06)

Description	Weight of Empty Truck (tons)	Weight of Truck w/ Max Load (tons)	Mean Vehicle Weight (tons)	Length of Unpaved Road Traveled (mile)	Trips Per Year	Mileage Per Year	Control (%)	Emissions (tpy) PM	PM_{10}	$PM_{2.5}$
Liquids Hauling	20	40	30	1.38	77	213	0	0.46	0.12	0.01
Employee Vehicles	3	3	3	1.38	200	553	0	0.42	0.11	0.01
Total Potential Emissions								**0.88**	**0.22**	**0.02**

Company Name: DTE Appalachia Gathering, LLC
Facility Name: Coopers Run Dehydration Facility
Project Description: G35-D Application

Gas Analysis

Sample Location: Coopers Run Dehydration Facility
Sample Date: 3/1/2017
HHV (Btu/scf): 1,031

Constituent	Natural Gas Stream Speciation (Mole %)	Molecular Weight	Molar Weight	Average Weight Fraction	Natural Gas Stream Speciation (Wt. %)
Carbon Dioxide	0.252	44.01	0.11	0.01	0.670
Nitrogen	0.289	28.01	0.08	0.00	0.489
Methane	96.696	16.04	15.51	0.94	93.679
Ethane	2.608	30.07	0.78	0.05	4.737
Propane	0.140	44.10	0.06	0.00	0.373
Isobutane	0.004	58.12	0.00	0.00	0.014
n-Butane	0.011	58.12	0.01	0.00	0.039
Isopentane	<0.001	72.15	0.00	0.00	0.000
n-Pentane	<0.001	72.15	0.00	0.00	0.000
Cyclopentane	<0.001	70.10	0.00	0.00	0.000
n-Hexane	<0.001	86.18	0.00	0.00	0.000
Cyclohexane	<0.001	84.16	0.00	0.00	0.000
Other Hexanes	<0.001	86.18	0.00	0.00	0.000
Heptanes	<0.001	100.21	0.00	0.00	0.000
Methylcyclohexane	<0.001	98.19	0.00	0.00	0.000
2,2,4-Trimethylpentane	<0.001	114.23	0.00	0.00	0.000
Benzene*	<0.001	78.11	0.00	0.00	0.000
Toluene*	<0.001	92.14	0.00	0.00	0.000
Ethylbenzene*	<0.001	106.17	0.00	0.00	0.000
Xylenes*	<0.001	106.16	0.00	0.00	0.000
C8 + Heavies	<0.001	130.80	0.00	0.00	0.000
Totals	100.000		16.56	1.00	100

TOC (Total)	99.46	98.84
VOC (Total)	0.16	0.43
HAP (Total)	0.00	0.00

GRI-GLYCalc VERSION 4.0 - AGGREGATE CALCULATIONS REPORT

Case Name: Coopers Run Dehy Facility - TEG-1 & TEG-2
File Name: Z:\Client\DTE\West Virginia\Coopers Run\Projects\173901.0XXX Dehy Site Modification\04 Draft\2017-1005 Initial G35D Application\Attach U - Emission Calcs\04 GLYCalc\2017-1012 DTE CoopersRun_Dehys v2.0.ddf
Date: October 12, 2017

DESCRIPTION:

Description: Potential-to-emit calculations. Gas sample from 03/01/2017.

Annual Hours of Operation: 8760.0 hours/yr

EMISSIONS REPORTS:

UNCONTROLLED REGENERATOR EMISSIONS

Component	lbs/hr	lbs/day	tons/yr
Methane	1.5589	37.414	6.8280
Ethane	0.3531	8.474	1.5464
Propane	0.0728	1.748	0.3191
Isobutane	0.0047	0.113	0.0207
n-Butane	0.0191	0.457	0.0835
Total Emissions	2.0086	48.206	8.7977
Total Hydrocarbon Emissions	2.0086	48.206	8.7977
Total VOC Emissions	0.0966	2.319	0.4232

FLASH GAS EMISSIONS

Component	lbs/hr	lbs/day	tons/yr
Methane	149.9864	3599.674	656.9405
Ethane	8.9723	215.335	39.2987
Propane	0.7610	18.263	3.3330
Isobutane	0.0305	0.732	0.1337
n-Butane	0.0909	2.181	0.3981
Total Emissions	159.8411	3836.186	700.1040
Total Hydrocarbon Emissions	159.8411	3836.186	700.1040
Total VOC Emissions	0.8824	21.177	3.8648

FLASH TANK OFF GAS

Component	lbs/hr	lbs/day	tons/yr
Methane	299.9728	7199.348	1313.8810
Ethane	17.9446	430.670	78.5973
Propane	1.5219	36.527	6.6661
Isobutane	0.0610	1.465	0.2673
n-Butane	0.1818	4.363	0.7962
Total Emissions	319.6822	7672.372	1400.2080
Total Hydrocarbon Emissions	319.6822	7672.372	1400.2080
Total VOC Emissions	1.7648	42.354	7.7296

EQUIPMENT REPORTS:

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:	3.41 lbs. H2O/MMSCF
Temperature:	100.0 deg. F
Pressure:	1250.0 psig
Dry Gas Flow Rate:	140.0000 MMSCF/day
Glycol Losses with Dry Gas:	3.0752 lb/hr
Wet Gas Water Content:	Saturated
Calculated Wet Gas Water Content:	49.70 lbs. H2O/MMSCF
Calculated Lean Glycol Recirc. Ratio:	3.33 gal/lb H2O

Component	Remaining in Dry Gas	Absorbed in Glycol
Water	6.84%	93.16%
Carbon Dioxide	99.82%	0.18%
Nitrogen	99.98%	0.02%
Methane	99.99%	0.01%
Ethane	99.96%	0.04%
Propane	99.95%	0.05%
Isobutane	99.93%	0.07%
n-Butane	99.91%	0.09%

FLASH TANK

Flash Control:	Combustion device
Flash Control Efficiency:	50.00 %
Flash Temperature:	100.0 deg. F
Flash Pressure:	40.0 psig

Component	Left in Glycol	Removed in Flash Gas
Water	99.84%	0.16%
Carbon Dioxide	7.23%	92.77%
Nitrogen	0.49%	99.51%
Methane	0.52%	99.48%
Ethane	1.93%	98.07%
Propane	4.57%	95.43%
Isobutane	7.19%	92.81%
n-Butane	9.49%	90.51%

REGENERATOR

No Stripping Gas used in regenerator.

Component	Remaining in Glycol	Distilled Overhead
Water	31.93%	68.07%
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%

STREAM REPORTS:

WET GAS STREAM

Temperature: 100.00 deg. F
Pressure: 1264.70 psia
Flow Rate: 5.84e+006 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	1.05e-001	2.90e+002
Carbon Dioxide	2.52e-001	1.71e+003
Nitrogen	2.89e-001	1.24e+003
Methane	9.66e+001	2.38e+005
Ethane	2.61e+000	1.21e+004
Propane	1.40e-001	9.49e+002
Isobutane	4.00e-003	3.57e+001
n-Butane	1.10e-002	9.83e+001
Total Components	100.00	2.55e+005

DRY GAS STREAM

Temperature: 100.00 deg. F
Pressure: 1264.70 psia
Flow Rate: 5.83e+006 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	7.17e-003	1.99e+001
Carbon Dioxide	2.52e-001	1.70e+003
Nitrogen	2.89e-001	1.24e+003
Methane	9.67e+001	2.38e+005
Ethane	2.61e+000	1.21e+004
Propane	1.40e-001	9.49e+002
Isobutane	4.00e-003	3.57e+001
n-Butane	1.10e-002	9.82e+001
Total Components	100.00	2.55e+005

LEAN GLYCOL STREAM

Temperature: 100.00 deg. F
Flow Rate: 1.50e+001 gpm

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.85e+001	8.32e+003
Water	1.50e+000	1.27e+002
Carbon Dioxide	3.54e-012	2.99e-010
Nitrogen	2.30e-013	1.95e-011
Methane	1.27e-017	1.07e-015
Ethane	2.61e-008	2.20e-006
Propane	2.51e-010	2.12e-008
Isobutane	9.01e-012	7.61e-010
n-Butane	2.64e-011	2.23e-009
Total Components	100.00	8.45e+003

RICH GLYCOL AND PUMP GAS STREAM

Temperature: 100.00 deg. F
Pressure: 1264.70 psia
Flow Rate: 1.63e+001 gpm
NOTE: Stream has more than one phase.

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.20e+001	8.32e+003
Water	4.40e+000	3.97e+002
Carbon Dioxide	5.44e-002	4.91e+000
Nitrogen	1.77e-002	1.60e+000
Methane	3.33e+000	3.02e+002
Ethane	2.02e-001	1.83e+001
Propane	1.76e-002	1.59e+000
Isobutane	7.27e-004	6.58e-002
n-Butane	2.22e-003	2.01e-001
Total Components	100.00	9.04e+003

FLASH TANK OFF GAS STREAM

Temperature: 100.00 deg. F
Pressure: 54.70 psia
Flow Rate: 7.41e+003 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	1.83e-001	6.45e-001
Carbon Dioxide	5.30e-001	4.56e+000
Nitrogen	2.91e-001	1.59e+000
Methane	9.57e+001	3.00e+002
Ethane	3.06e+000	1.79e+001
Propane	1.77e-001	1.52e+000
Isobutane	5.38e-003	6.10e-002
n-Butane	1.60e-002	1.82e-001
Total Components	100.00	3.26e+002

FLASH TANK GLYCOL STREAM

Temperature: 100.00 deg. F
Flow Rate: 1.55e+001 gpm

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.54e+001	8.32e+003
Water	4.55e+000	3.97e+002
Carbon Dioxide	4.07e-003	3.55e-001
Nitrogen	8.98e-005	7.83e-003
Methane	1.79e-002	1.56e+000
Ethane	4.05e-003	3.53e-001
Propane	8.36e-004	7.28e-002
Isobutane	5.42e-005	4.72e-003
n-Butane	2.19e-004	1.91e-002
Total Components	100.00	8.72e+003

FLASH GAS EMISSIONS

Flow Rate: 1.50e+004 scfh
Control Method: Combustion Device
Control Efficiency: 50.00

Component	Conc. (vol%)	Loading (lb/hr)
Water	4.98e+001	3.55e+002
Carbon Dioxide	2.56e+001	4.45e+002
Nitrogen	1.44e-001	1.59e+000
Methane	2.36e+001	1.50e+002
Ethane	7.54e-001	8.97e+000
Propane	4.36e-002	7.61e-001
Isobutane	1.33e-003	3.05e-002
n-Butane	3.95e-003	9.09e-002
Total Components	100.00	9.61e+002

REGENERATOR OVERHEADS STREAM

Temperature: 212.00 deg. F
Pressure: 14.70 psia
Flow Rate: 5.74e+003 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	9.92e+001	2.70e+002
Carbon Dioxide	5.34e-002	3.55e-001
Nitrogen	1.85e-003	7.83e-003
Methane	6.43e-001	1.56e+000
Ethane	7.77e-002	3.53e-001
Propane	1.09e-002	7.28e-002
Isobutane	5.38e-004	4.72e-003
n-Butane	2.17e-003	1.91e-002
Total Components	100.00	2.72e+002

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Cooper's Run Dehy Station (Glycol Tanks)
City:	
State:	West Virginia
Company:	
Type of Tank:	Horizontal Tank
Description:	Coolant Tanks

Tank Dimensions

Shell Length (ft):	6.00
Diameter (ft):	4.00
Volume (gallons):	500.00
Turnovers:	12.00
Net Throughput(gal/yr):	6,000.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Medium
Shell Condition	Good

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Elkins, West Virginia (Avg Atmospheric Pressure = 13.73 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Cooper's Run Dehy Station (Glycol Tanks) - Horizontal Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Propylene glycol	All	57.20	47.16	67.23	52.14	0.0008	0.0005	0.0014	76.1100			76.11	Option 2: A=8.2082, B=2085.9, C=203.54

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Cooper's Run Dehy Station (Glycol Tanks) - Horizontal Tank

Annual Emission Calcaulations	
Standing Losses (lb):	0.0142
Vapor Space Volume (cu ft):	48.0243
Vapor Density (lb/cu ft):	0.0000
Vapor Space Expansion Factor:	0.0734
Vented Vapor Saturation Factor:	0.9999
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	48.0243
Tank Diameter (ft):	4.0000
Effective Diameter (ft):	5.5293
Vapor Space Outage (ft):	2.0000
Tank Shell Length (ft):	6.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0000
Vapor Molecular Weight (lb/lb-mole):	76.1100
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0008
Daily Avg. Liquid Surface Temp. (deg. R):	516.8667
Daily Average Ambient Temp. (deg. F):	49.0583
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	511.8083
Tank Paint Solar Absorptance (Shell):	0.6800
Daily Total Solar Insulation Factor (Btu/sqft day):	1,193.8870
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0734
Daily Vapor Temperature Range (deg. R):	40.1436
Daily Vapor Pressure Range (psia):	0.0009
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0008
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0005
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0014
Daily Avg. Liquid Surface Temp. (deg R):	516.8667
Daily Min. Liquid Surface Temp. (deg R):	506.8308
Daily Max. Liquid Surface Temp. (deg R):	526.9026
Daily Ambient Temp. Range (deg. R):	24.1833
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9999
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	0.0008
Vapor Space Outage (ft):	2.0000
Working Losses (lb):	0.0088
Vapor Molecular Weight (lb/lb-mole):	76.1100
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0008
Annual Net Throughput (gal/yr.):	6,000.0000
Annual Turnovers:	12.0000
Turnover Factor:	1.0000
Tank Diameter (ft):	4.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	0.0230

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Cooper's Run Dehy Station (Glycol Tanks) - Horizontal Tank

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Propylene glycol	0.01	0.01	0.02

```
*******************************************************************************
******
*     Project Setup Information
    *
*******************************************************************************
******
Project File              : Z:\Client\DTE\West Virginia\Coopers
Run\Projects\173901.0170 Dehy Site Modification\04 Draft\2017-1024 Revised G35D
Application\Attach U - Emission Calcs\02 E&P
TANK\2017-1005_DTE_Cooper's_Run_Dehy_WasteTank.ept
Flowsheet Selection       : Oil Tank with Separator
Calculation Method        : RVP Distillation
Control Efficiency        : 100.0%
Known Separator Stream    : Geographical Region
Geographical Region       : All Regions in US
Entering Air Composition  : No

Filed Name                : Cooper's Run Dehydration Station
Well Name                 : Waste Fluid Tanks
Well ID                   : T03 & T04
Date                      : 2017.10.05


*******************************************************************************
******
*     Data Input
    *
*******************************************************************************
******

Separator Pressure        : 50.00[psig]
Separator Temperature     : 125.00[F]
Ambient Pressure          : 14.70[psia]
Ambient Temperature       : 125.00[F]
C10+ SG                   : 0.8420
C10+ MW                   : 287.00

-- Low Pressure Oil
-------------------------------------------------------------------------
   No.    Component             mol %
   1      H2S                    1.2800
   2      O2                     0.0000
   3      CO2                    0.0300
   4      N2                     0.0000
   5      C1                     1.2700
   6      C2                     2.0800
   7      C3                     4.5700
   8      i-C4                   1.8900
   9      n-C4                   6.4800
   10     i-C5                   3.8800
   11     n-C5                   7.0400
   12     C6                     3.0500
   13     C7                     6.8200
   14     C8                     7.7800
   15     C9                     7.2300
   16     C10+                  37.9300
   17     Benzene                0.8300
   18     Toluene                1.0200
   19     E-Benzene              0.0700
   20     Xylenes                0.6500
   21     n-C6                   6.1000
   22     224Trimethylp          0.0000
```

-- Sales Oil

Production Rate	: 0.1[bbl/day]
Days of Annual Operation	: 365 [days/year]
API Gravity	: 49.0
Reid Vapor Pressure	: 8.90[psia]

****
******
* Calculation Results *
****
******

-- Emission Summary

Item	Uncontrolled [ton/yr]	Uncontrolled [lb/hr]
Total HAPs	0.020	0.005
Total HC	0.254	0.058
VOCs, C2+	0.247	0.056
VOCs, C3+	0.229	0.052

Page 1 ---------- E&P TANK

Uncontrolled Recovery Info.

Vapor	10.6600 x1E-3	[MSCFD]
HC Vapor	9.9100 x1E-3	[MSCFD]
GOR	106.60	[SCF/bbl]

-- Emission Composition

No	Component	Uncontrolled [ton/yr]	Uncontrolled [lb/hr]
1	H2S	0.012	0.003
2	O2	0.000	0.000
3	CO2	0.000	0.000
4	N2	0.000	0.000
5	C1	0.006	0.001
6	C2	0.018	0.004
7	C3	0.049	0.011
8	i-C4	0.020	0.005
9	n-C4	0.059	0.013
10	i-C5	0.026	0.006
11	n-C5	0.039	0.009
12	C6	0.008	0.002
13	C7	0.008	0.002
14	C8	0.004	0.001
15	C9	0.002	0.000
16	C10+	0.000	0.000
17	Benzene	0.002	0.000
18	Toluene	0.001	0.000
19	E-Benzene	0.000	0.000
20	Xylenes	0.000	0.000
21	n-C6	0.013	0.003
22	224Trimethylp	0.000	0.000
	Total	0.267	0.061

-- Stream Data

2017-1005_DTE_Coopers_Run_Dehy_WasteTank

No.	Component	MW	LP Oil	Flash Oil	Sale Oil	Flash Gas	W&S Gas	Total Emissions
			mol %	mol %	mol %	mol %	mol %	mol %
1	H2S	34.80	1.2800	0.2130	0.2130	6.8990	0.0000	6.8990
2	O2	32.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	CO2	44.01	0.0300	0.0021	0.0021	0.1768	0.0000	0.1768
4	N2	28.01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	C1	16.04	1.2700	0.0369	0.0369	7.7635	0.0000	7.7635
6	C2	30.07	2.0800	0.2466	0.2466	11.7345	0.0000	11.7345
7	C3	44.10	4.5700	1.3445	1.3445	21.5554	0.0000	21.5554
8	i-C4	58.12	1.8900	0.9750	0.9750	6.7085	0.0000	6.7085
9	n-C4	58.12	6.4800	3.9279	3.9279	19.9192	0.0000	19.9192
10	i-C5	72.15	3.8800	3.2983	3.2983	6.9431	0.0000	6.9431
11	n-C5	72.15	7.0400	6.3906	6.3906	10.4595	0.0000	10.4595
12	C6	86.16	3.0500	3.2895	3.2895	1.7886	0.0000	1.7886
13	C7	100.20	6.8200	7.8112	7.8112	1.6004	0.0000	1.6004
14	C8	114.23	7.7800	9.1297	9.1297	0.6724	0.0000	0.6724
15	C9	128.28	7.2300	8.5561	8.5561	0.2466	0.0000	0.2466
16	C10+	166.00	37.9300	45.1329	45.1329	0.0000	0.0000	0.0000
17	Benzene	78.11	0.8300	0.9150	0.9150	0.3821	0.0000	0.3821
18	Toluene	92.13	1.0200	1.1834	1.1834	0.1596	0.0000	0.1596
19	E-Benzene	106.17	0.0700	0.0825	0.0825	0.0041	0.0000	0.0041
20	Xylenes	106.17	0.6500	0.7670	0.7670	0.0341	0.0000	0.0341
21	n-C6	86.18	6.1000	6.6977	6.6977	2.9524	0.0000	2.9524
22	224Trimethylp	114.24	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	MW		159.21	179.60	179.60	51.88	0.00	51.88
	Stream Mole Ratio		1.0000	0.8404	0.8404	0.1596	0.0000	0.1596
	Heating Value	[BTU/SCF]				2822.40	0.00	2822.40
	Gas Gravity	[Gas/Air]				1.79	0.00	1.79

Bubble Pt. @ 100F	[psia]	76.98	12.70	12.70
RVP @ 100F	[psia]	27.72	8.66	8.66

Spec. Gravity @ 100F	0.690	0.698	0.698

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Cooper's Run Dehy Station (Liquid Loading)
City:	
State:	West Virginia
Company:	
Type of Tank:	Vertical Fixed Roof Tank
Description:	Liquid loading parameter calculations for truck loading of produced fluids

Tank Dimensions

Shell Height (ft):	14.00
Diameter (ft):	10.00
Liquid Height (ft) :	14.00
Avg. Liquid Height (ft):	7.00
Volume (gallons):	8,820.00
Turnovers:	34.86
Net Throughput(gal/yr):	307,440.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Medium
Shell Condition	Good
Roof Color/Shade:	Gray/Medium
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.00

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Elkins, West Virginia (Avg Atmospheric Pressure = 13.73 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Cooper's Run Dehy Station (Liquid Loading) - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Produced Water	All	57.20	47.16	67.23	52.14	0.2365	0.1708	0.3240	19.3610			18.17	
Benzene						1.0800	0.8090	1.4225	78.1100	0.0001	0.0004	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane (-n)						0.4772	0.3937	0.5736	58.1200	0.0005	0.0009	58.12	Option 2: A=5.09536, B=935.86, C=238.73
Decane (-n)						0.0313	0.0249	0.0394	142.2900	0.0045	0.0006	142.29	Option 1: VP50 = .026411 VP60 = .033211
Ethylbenzene						0.0984	0.0684	0.1390	106.1700	0.0000	0.0000	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Heptane (-n)						0.5620	0.4123	0.7572	100.2000	0.0008	0.0017	100.20	Option 3: A=37358, B=8.2585
Hexane (-n)						1.7780	1.3561	2.3024	86.1700	0.0010	0.0071	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopentane						9.4118	7.3180	11.8312	72.1500	0.0003	0.0123	72.15	Option 1: VP50 = 7.889 VP60 = 10.005
Nonane (-n)						0.0614	0.0482	0.0782	128.2600	0.0009	0.0002	128.26	Option 1: VP50 = .051285 VP60 = .065278
Octane (-n)						0.1362	0.1051	0.1764	114.2300	0.0009	0.0005	114.23	Option 1: VP50 = .112388 VP60 = .145444
Pentane (-n)						6.4211	5.1036	8.0084	72.1500	0.0006	0.0163	72.15	Option 3: A=27691, B=7.558
Propane (-n)						103.5663	88.7398	120.2028	44.0956	0.0002	0.0657	44.10	Option 2: A=7.340862493, B=1104.2267744, C=291.70993941
Toluene						0.3024	0.2186	0.4120	92.1300	0.0001	0.0001	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Water						0.2277	0.1634	0.3135	18.0150	0.9900	0.8941	18.02	Option 1: VP50 = .178 VP60 = .247
Xylene (-m)						0.0818	0.0567	0.1160	106.1700	0.0001	0.0000	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Cooper's Run Dehy Station (Liquid Loading) - Vertical Fixed Roof Tank

Annual Emission Calcaulations	
Standing Losses (lb):	12.8805
Vapor Space Volume (cu ft):	549.7787
Vapor Density (lb/cu ft):	0.0008
Vapor Space Expansion Factor:	0.0846
Vented Vapor Saturation Factor:	0.9193
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	549.7787
Tank Diameter (ft):	10.0000
Vapor Space Outage (ft):	7.0000
Tank Shell Height (ft):	14.0000
Average Liquid Height (ft):	7.0000
Roof Outage (ft):	0.0000
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.0000
Roof Height (ft):	0.0000
Roof Slope (ft/ft):	0.0000
Shell Radius (ft):	5.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0008
Vapor Molecular Weight (lb/lb-mole):	19.3610
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2365
Daily Avg. Liquid Surface Temp. (deg. R):	516.8667
Daily Average Ambient Temp. (deg. F):	49.0583
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	511.8083
Tank Paint Solar Absorptance (Shell):	0.6800
Tank Paint Solar Absorptance (Roof):	0.6800
Daily Total Solar Insulation Factor (Btu/sqft day):	1,193.8870
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0846
Daily Vapor Temperature Range (deg. R):	40.1436
Daily Vapor Pressure Range (psia):	0.1531
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2365
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.1708
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.3240
Daily Avg. Liquid Surface Temp. (deg R):	516.8667
Daily Min. Liquid Surface Temp. (deg R):	506.8308
Daily Max. Liquid Surface Temp. (deg R):	526.9026
Daily Ambient Temp. Range (deg. R):	24.1833
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9193
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	0.2365
Vapor Space Outage (ft):	7.0000
Working Losses (lb):	33.5192
Vapor Molecular Weight (lb/lb-mole):	19.3610
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2365
Annual Net Throughput (gal/yr.):	307,440.0000
Annual Turnovers:	34.8571
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	8,820.0000
Maximum Liquid Height (ft):	14.0000
Tank Diameter (ft):	10.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	46.3997

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Cooper's Run Dehy Station (Liquid Loading) - Vertical Fixed Roof Tank

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Produced Water	33.52	12.88	46.40
Decane (-n)	0.02	0.01	0.03
Nonane (-n)	0.01	0.00	0.01
Ethylbenzene	0.00	0.00	0.00
Octane (-n)	0.02	0.01	0.02
Toluene	0.00	0.00	0.01
Heptane (-n)	0.06	0.02	0.08
Benzene	0.01	0.00	0.02
Hexane (-n)	0.24	0.09	0.33
Isopentane	0.41	0.16	0.57
Pentane (-n)	0.55	0.21	0.76
Water	29.97	11.52	41.49
Propane (-n)	2.20	0.85	3.05
Butane (-n)	0.03	0.01	0.04
Xylene (-m)	0.00	0.00	0.00

DTE Energy

DTE Gas
Laboratory Services
Gas Analysis Report

17150 Allen Road
Melvindale, MI 48122
P: (313) 389-7354 F: (313) 389-7757

Customer:
DTE Link
742 Fairmont Rd, Suite E
Westover, WV, 26501
(681) 212-9631/gregory.feather@dteenergy.com

Date Analyzed:	3/6/2017
Test Report No.:	GQR_Coopers Run Dehy_030117

LOCATION:	Coopers Run Dehy	**DATE SAMPLED:**	3/1/2017
REQUESTOR:	Greg Feather	**DATE RECEIVED:**	3/6/2017
METER NO.:	A00009361	**GAS TEMP. (°F):**	57
FORMATION:	Marcellus	**GAS PRESSURE (psig):**	265
SAMPLE PT.:	Meter Run	**SAMPLED BY:**	G.F.

ANALYTICAL RESULTS

GAS ANALYSIS

	MOL %
Nitrogen	0.289
Methane	96.696
Carbon Dioxide	0.252
Ethane	2.608
Propane	0.140
I-Butane	0.004
N-Butane	0.011
I-Pentane	<0.001
N-Pentane	<0.001
Hexanes	<0.001
Heptanes	<0.001
Octanes	<0.001
Nonane	<0.001
TOTAL:	**100.000**

GROSS HEATING VALUE (BTU/SCF)

	14.73 DRY	14.73 SAT
Calculated (Real)	1031	1014

SPECIFIC GRAVITY

Calculated (Real)	0.5727

REMARKS:
Gas Sampling Method: GPA 2166 / API 14.1 Section 1
Gas Analysis Method: GPA 2286
Sampler is not a member of the ISO 17025 A2LA Accredited Laboratory

ANALYZED BY: L. Cao
AUTHOR : P. Urso
APPROVED BY: Marina Darling
Marina Darling, Supervisor, Laboratory Services

A2LA ACCREDITED
Testing Cert. No. 2811.01

ATTACHMENT V

Facility-Wide Emission Summary

ATTACHMENT V – FACILITY-WIDE CONTROLLED EMISSIONS SUMMARY SHEET

List all sources of emissions in this table. Use extra pages if necessary.

Emission Point ID#	NO_x		CO		VOC		SO_2		PM_{10}		$PM_{2.5}$		GHG (CO_2e)	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
TEG-1	---	---	---	---	1.17	5.15	---	---	---	---	---	---	4,546.36	19,913.06
TEG-2	---	---	---	---	1.17	5.15	---	---	---	---	---	---	4,546.36	19,913.06
REB-1	0.15	0.64	0.12	0.54	0.01	0.04	8.7E-04	3.8E-03	0.01	0.05	0.01	0.05	175.68	769.47
REB-2	0.15	0.64	0.12	0.54	0.01	0.04	8.7E-04	3.8E-03	0.01	0.05	0.01	0.05	175.68	769.47
T03	---	---	---	---	0.05	0.23	---	---	---	---	---	---	0.03	0.15
T04	---	---	---	---	0.05	0.23	---	---	---	---	---	---	0.03	0.15
T01 and T02	---	---	---	---	1.4E-05	6.0E-05	---	---	---	---	---	---	---	---
L01	---	---	---	---	0.02	4.8E-03	---	---	---	---	---	---	---	---
Fugitives	---	---	---	---	---	0.59	---	---	---	---	---	---	---	462.60
Haul Roads	---	---	---	---	---	---	---	---	---	0.15	---	0.01	---	---
FACILITY TOTAL	0.29	1.27	0.24	1.07	2.52	11.72	1.7E-03	0.01	0.02	0.24	0.02	0.11	9,444.11	41,828.22
FACILITY TOTAL (Excluding fugitives)	0.29	1.27	0.24	1.07	2.52	10.83	1.7E-03	0.01	0.02	0.10	0.02	0.10	9,444.11	41,365.19

Annual emissions shall be based on 8,760 hours per year of operation for all emission units except emergency generators.
According to 45CSR14 Section 2.43.e, fugitive emissions are not included in the major source determination because it is not listed as one of the source categories in Table 1. Therefore, fugitive emissions shall not be included in the PTE above.

ATTACHMENT V – FACILITY-WIDE HAP CONTROLLED EMISSIONS SUMMARY SHEET

List all sources of emissions in this table. Use extra pages if necessary.

Emission Point ID#	Formaldehyde		Benzene		Toluene		Ethylbenzene		Xylenes		Hexane		Total HAPs	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
TEG-1	---	---	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
TEG-2	---	---	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
REB-1	1.1E-04	4.8E-04	3.1E-06	1.3E-05	4.9E-06	2.2E-05	---	---	---	---	2.6E-03	0.01	2.7E-03	0.01
REB-2	1.1E-04	4.8E-04	3.1E-06	1.3E-05	4.9E-06	2.2E-05	---	---	---	---	2.6E-03	0.01	2.7E-03	0.01
T03	---	---	4.6E-04	2.0E-03	2.3E-04	1.0E-03	<0.01	<0.01	<0.01	<0.01	3.0E-03	0.01	4.6E-03	0.02
T03	---	---	4.6E-04	2.0E-03	2.3E-04	1.0E-03	<0.01	<0.01	<0.01	<0.01	3.0E-03	0.01	4.6E-03	0.02
T01 and T02	---	---	---	---	---	---	---	---	---	---	---	---	6.8E-06	3.0E-05
L01	---	---	---	---	---	---	---	---	---	---	---	---	1.8E-03	4.7E-04
Fugitives	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Haul Roads	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FACILITY TOTAL	2.2E-04	9.6E-04	9.2E-04	4.0E-03	4.7E-04	2.0E-03	<0.01	<0.01	<0.01	<0.01	0.01	0.05	0.02	0.07
FACILITY TOTAL (Excluding fugitives)	2.2E-04	9.6E-04	9.2E-04	4.0E-03	4.7E-04	2.0E-03	<0.01	<0.01	<0.01	<0.01	0.01	0.05	0.02	0.07

Annual emissions shall be based on 8,760 hours per year of operation for all emission units except emergency generators.
According to 45CSR14 Section 2.43.e, fugitive emissions are not included in the major source determination because it is not listed as one of the source categories in Table 1. Therefore, fugitive emissions shall not be included in the PTE above.

Class I Legal Advertisement

AIR QUALITY PERMIT NOTICE
Notice of Application

Notice is given that DTE Appalachia Gathering, LLC has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a G35D permit for an existing natural gas dehydration station (Coopers Run Dehydration Station) located off of Daybrook Road (Route 218) and 1.4 miles southeast of Blacksville, WV and is in Monongalia County, West Virginia. Site Latitude and Longitude Coordinates are: 39.70213, -80.19867.

The applicant estimates the potential to discharge the following Regulated Air Pollutants will be:

Pollutant	Facility Wide (tpy)	Facility Wide excluding Fugitive Emissions (tpy)
Nitrogen Oxides	1.27	1.27
Carbon Monoxide	1.07	1.07
Particulate Matter-10	0.24	0.10
Particulate Matter-2.5	0.11	0.10
Volatile Organic Compounds	11.72	10.83
Sulfur Dioxide	0.01	0.01
Formaldehyde	<0.01	<0.01
Benzene	<0.01	<0.01
Toluene	<0.01	<0.01
Ethylbenzene	<0.01	<0.01
Xylenes	<0.01	<0.01
Hexane	0.05	0.05
Total Hazardous Air Pollutants	0.07	0.07
Carbon Dioxide Equivalents (CO2e)	41,828.22	41,365.19

The facility is currently in operation and is seeking to add additional dehydration and ancillary equipment. 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 1250, during normal business hours.

Dated this the XX Day of November, 2017.

By: DTE Appalachia Gathering, LLC
Adam Snee, Gas Pipeline Engineer
333 Technology Drive, Suite 109
Canonsburg, PA 15317