global environmental solutions

CONE Midstream Partners LP

Philippi Station

Philippi, West Virginia

General G35-D Permit Modification Application

SLR Ref: 116.00894.00064

May 2017

Philippi Station General G35-D Permit Modification Application

Prepared for:

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

This document has been prepared by SLR International Corporation. The material and data in this permit application were prepared under the supervision and direction of the undersigned.

Chris Boggess
Associate Engineer

Jesse Hanshaw, P.E.
Principal Engineer

CONTENTS

ATTACHMENTS

Notes:
ATTACHMENT B – N/A – No dwellings or businesses located within 300’ of the facility.
ATTACHMENT T – N/A – No individual APCD or ERD utilized at this facility. Catalysts are included on engines but information for those control devices is included in Attachment M.

APPLICATION FOR PERMIT

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

May 2017

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): CONE Midstream Partners LP

Federal Employer ID No. (FEIN): 45-3344658

Applicant's Mailing Address: 1000 Consol Energy Drive

City: Canonsburg	State: PA	ZIP Code: 15317

Facility Name: Philippi Station

Operating Site Physical Address: Taylors Drain Rd (County Route 6/5)
If none available, list road, city or town and zip of facility.

City: Philippi	Zip Code: 26416	County: Barbour

Latitude & Longitude Coordinates (NAD83, Decimal Degrees to 5 digits):
Latitude: 39.19162
Longitude: -80.01851

SIC Code: 4922 NAICS Code: 486210	DAQ Facility ID No. (For existing facilities) 001-00128

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: Joseph Fink
Name and Title: Joseph Fink – Chief Operating Officer — Phone: 724 485 3424 — Fax:
Email: joefink@consolenergy.com — Date: 5-25-2017

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

If applicable:
Environmental Contact
Name and Title: Patrick Flynn – Air Quality Engineer — Phone: 724 485 3152 — Fax:
Email: patrickflynn@consolenergy.com — Date:

OPERATING SITE INFORMATION
Briefly describe the proposed new operation and/or any change(s) to the facility: This permit modification will address the removal of two gas processing units and two produced water tanks from the facility as well as modifying emission estimates from the engines, dehydration units, storage tanks, and truck loading.
Directions to the facility: From Philippi, take US Route 119 / 250 N for 4.5 miles and turn right onto County Route 6 (Arden Rd.). Go 0.9 miles and turn right onto CR 6/5 (Taylors Drain Rd.). Take this road for approximately 1 mile and turn left onto access road to the station. Station is located at the end of the access road approximately 1 mile from the start.

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 applicable) – Attachment L	
☒ Internal Combustion Engine Data Sheet(s) (include manufacturer 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	
☒ Reciprocating Compressor Data Sheet – Attachment R	
☒ Blowdown and Pigging Operations Data Sheet – Attachment S	
☐ 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	

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

ATTACHMENT A

SINGLE SOURCE DETERMIATION FORM

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

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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 B

SITING CRITERIA WAIVER

NOT APPLICABLE – No dwellings or businesses located within 300’ of the facility

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

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ATTACHMENT C

BUSINESS CERTIFICATE

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

May 2017

State of West Virginia

Certificate

I, Natalie E. Tennant, Secretary of State of the State of West Virginia, hereby certify that

CONE MIDSTREAM DEVCO II LP

Control Number: 9A6SL

has filed its application for "Certificate of Registration" in my office according to the provisions of the West Virginia Code. I hereby declare the organization to be registered as a foreign limited partnership from its effective date of August 12, 2014 until a certificate of cancellation has been filed with Secretary of State.

Therefore, I hereby issue this

CERTIFICATE OF REGISTRATION

Given under my hand and the Great Seal of the State of West Virginia on this day of August 12, 2014

Natalie E Tennant

Secretary of State

FILED

AUG 1 2 2014

IN THE OFFICE OF
WV SECRETARY OF STATE

Natalie E. Tennant
Secretary of State
1900 Kanawha Blvd E
Bldg 1, Suite 157-K
Charleston, WV 25305

Penney Barker, Manager
Corporations Division
Tel: (304)558-8000
Fax: (304)558-8381
Website: www.wvsos.com
E-mail: business@wvsos.com

Office Hrs: Monday – Friday
8:30 a.m. – 5:00 p.m. ET

FILE ONE ORIGINAL
(Two if you want a filed stamped copy returned to you)
FEE: $150.00

WEST VIRGINIA STATEMENT OF REGISTRATION OF FOREIGN LIMITED PARTNERSHIP

Control # 94165L

We, the undersigned, hereby register a foreign Limited Partnership to do business in West Virginia:

1. The **name of the limited partnership** in its home State is: CONE Midstream DevCo II LP

☒ **CHECK HERE to indicate you have obtained and submitted with this application a CERTIFICATE OF EXISTENCE (GOOD STANDING), dated during the current tax year, from your home state of original organization as required to process your application. The certificate may be obtained by contacting the Secretary of State's Office in the home state of original organization.**

2. The **name** of the limited partnership to be used in WV (if different) is:

3. The limited partnership was formed under the laws of: State of: Delaware Date: July 11, 2014

4. The **address of office** required to be maintained in its home State, or, if not required, the **address of its principal office:** 1000 CONSOL Energy Drive, Cannonsburg, PA 15317

5. The **name and mailing address** to whom **notice for service of process** is to be sent, if any, is: CT Corporation System, 5400D Big Tyler Road, Charleston, WV 25313

6. The general character of the business in which the partnership engages is: Any lawful business or activity under the law of this state.

7. **The name and the business address** of each general partner is: (information is required for each general partner) Attach additional pages if necessary.

Name	Mailing Address
CONE Midstream DevCo II GP LLC	1000 CONSOL Energy Drive, Canonsburg, PA 15317

RECEIVED
AUG 1 2 2014

[...*continued*] The **name and the business address** of each general partner is: (information is required for each general partner) Attach additional pages if necessary.

Name	Mailing Address
CONE Midstream DevCo II GP LLC	1000 Consol Energy Drive, Canonsburg, PA 15317

8. The **address** of the office at which is kept a list of names and addresses of the limited partners and their capital contributions is: 1000 CONSOL Energy Drive, Canonsburg, PA 15317

9. **Business E-mail address** where correspondence can be received: MichaelBaker@consolenergy.com

10. **Contact and Signature Information:** (To be signed by one or more partners)

I, the undersigned, a general partner acting on behalf of the limited partnership, do hereby affirm that the partnership has determined to register as a foreign limited partnership under the provisions of West Virginia Code Chapter 47, Article 9, and that the information contained in this application is true, to the best of my knowledge.

Date	Name of Partner (Type or Print)	Signature*
8/6/2014	Joseph M. Fink, Authorized Representative of CONE Midstream DevCo II GP LLC	

Contact person to reach in case there is a problem with filing: CT Corporate Legal Services

Contact Phone #: (713) 332-3777

******Important Legal Notice Regarding Signature:* Per **West Virginia Code §31D-1-129. Penalty for signing false document.** Any person who signs a document he or she knows is false in any material respect and knows that the document is to be delivered to the secretary of State for filing is guilty of a misdemeanor and, upon conviction thereof, shall be fined not more than one thousand dollars or confined in the county or regional jail not more than one year, or both.

Delaware

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "CONE MIDSTREAM DEVCO II LP" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE SIXTH DAY OF AUGUST, A.D. 2014.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE NOT BEEN ASSESSED TO DATE.

Jeffrey W. Bullock, Secretary of State

5567260 8300

AUTHENTICATION: 1600351

141043382

DATE: 08-06-14

You may verify this certificate online at corp.delaware.gov/authver.shtml

ATTACHMENT D

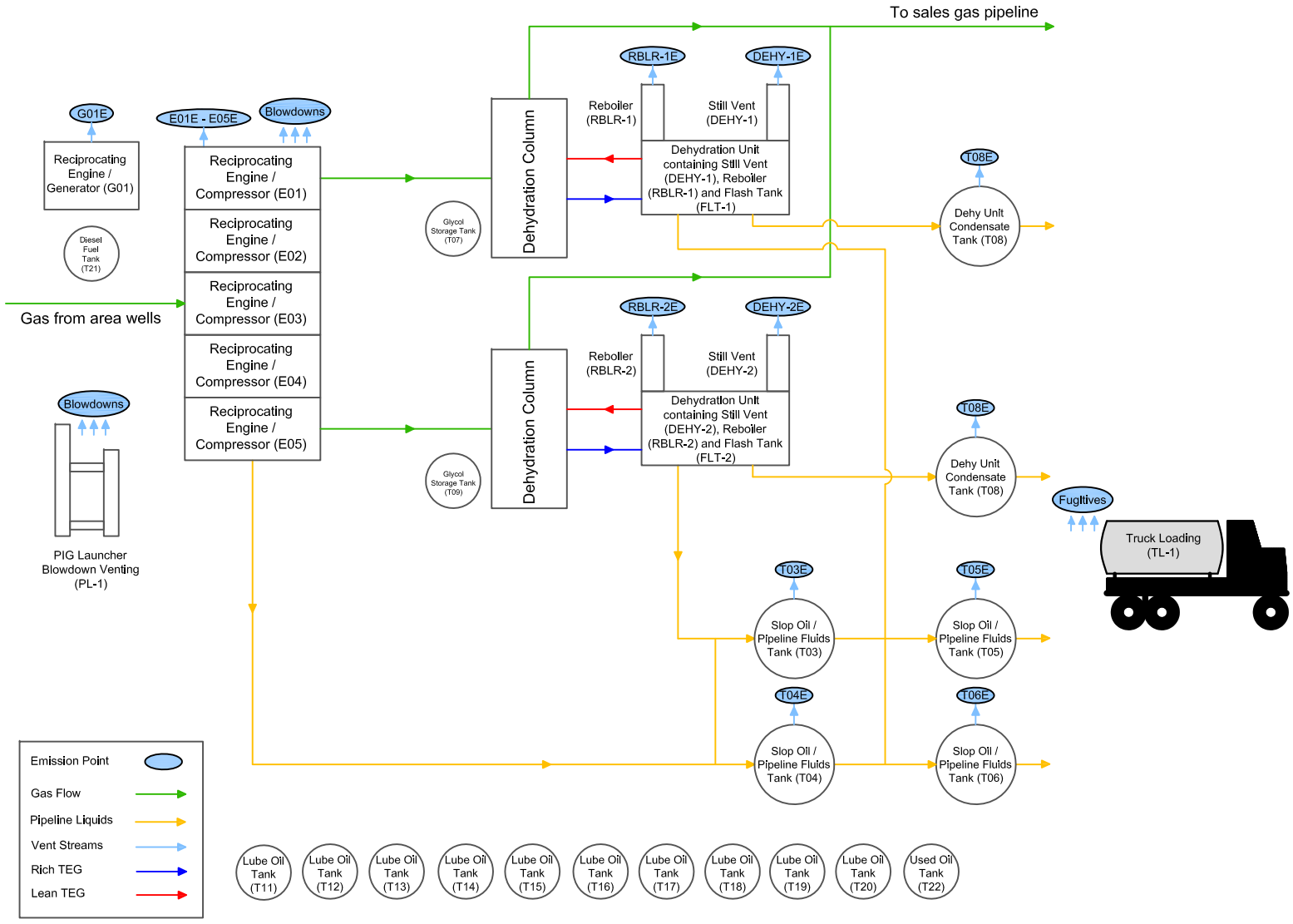
PROCESS FLOW DIAGRAM

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

May 2017



SLR

CONE Midstream Partners LP

Attachment D - Process Flow Diagram

Philippi Station | April 2017

ATTACHMENT E

PROCESS DESCRIPTION

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

May 2017

PROCESS DESCRIPTION

CONE Midstream Partners LP is applying for a permit modification to their existing General Permit G35-A075A for the operation of Philippi Station. This modification will consist of the following;

- Removal of two (2) gas processing units (GPUs) and two (2) produced water tanks from the existing permit.
- Modifying emissions associated with dehydration units to be based on recent wet gas analysis concentrations
- Update emissions from the storage tanks and truck loading by estimating emissions using ProMax modeling simulation software.
- Modifying emission estimates associated with engines E01 – E05 to reflect the NSPS testing requirements for NOx, CO, and VOC emissions.
- Recognized the E05 engine's installation date as to be determined since the demand for extra capacity at the station has not yet been recognized.

The station collects gas from area wells and provides compression and dehydration services. The compressors are driven by five Caterpillar G3516BLE 4SLB engines rated for 1380 hp. As a result, these units will be controlled by an oxidation catalyst to meet NSPS requirements under subpart JJJJ. The dehydration units at Philippi consist of a TEG Dehydration Column and a reboiler. The liquids removed from the compression process will be stored in a four 100 barrel (bbl) storage vessels. The liquids removed from the dehydration still vent are collected in two 23.8 (bbl) dehy water/condensate tanks. Due to these tanks removing mostly water they are vented to the atmosphere. Additionally, each dehydration unit flash tank is controlled by the reboiler's fuel gas collection system, modeled at 50% control.

In accordance with DAQ guidance emission potentials were evaluated and reported for truck loading, fugitive equipment leaks, pig launcher blowdown venting, and compressor blowdowns. The emission calculations summarized within this application show the facility's potential to emit to be no more than 68.71 tpy NOx, 95.05 tpy CO, and 61.07 tpy VOC, with HAP totals of Formaldehyde to be no more than 7.04 tpy from the engine and facility wide HAPs not exceeding 24.45 tpy.

ATTACHMENT F

PLOT PLAN

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

May 2017

N

DRAWING LEGEND

- OH Electric Line
- Utility Pole
- Piping (above ground)
- Piping (under ground)
- Valve
- Plug
- Tree/Brush line
- Storage Tank
- Secondary Containment Area
- Direction of Surface Runoff
- Well Head
- Meter
- Separator

Site Notes:

1.) The site is level and approximately 350' x 450' in size.
2.) The entire surface of the site is stoned and/or graveled.
3.) Surface runoff is to the southeast towards the Tygart Valley River.

Retention Pond with Synthetic Liner

Wire Fence

Power Room

T22 T21

Office Trailer

Level Gravel Area

Compressor Engine No. 1

Compressor Engine No. 2

Compressor Engine No. 3

Steps

T17 T18 T19 T20

T11 T12 T13 T14

T15 T16

Glycol Heater

Glycol

T10 T09

T07 T08

Steps

Steel Walled Containment Structure with Synthetic Liner

Steel Containment Area (2 Feet in Depth)

Concrete Pad

Inlet Filter

Bollard (typ.)

Grasses Slope

Top of Slope

Grass Slope

Ditch

Toe of Slope

Edge of Gravel

Drain Line

Steel Containment Area (3 Feet in Depth)

Steel Walled Containment Structure with Synthetic Liner

Riser Pipe

T05 T06 T03 T04

Truck Load Out

Gravel Access Road

Direction of Access Road

300 Feet ± Tygart Valley River

Edge of Gravel / Toe of Slope

GPS Coordinates of Site:
Lat: 39.19097° N, Long: -80.01819° W

SLR
#8 Capitol Street, Suite 300
Charleston, West Virginia 25301
Tel: 681-205-8949, Fax: 681-205-8969

CNX Gas Company LLC
One Energy Drive
Jane Lew, West Virginia

Project: Phillippi Station

Drawing: Site Layout

Drawn By: DWS

Date: November 12, 2014

Note: Drawing not to scale.

Project #: 116.0024.00037 Task 0003

Fig. No. 2

DWG File Name: Phillippi Station.dwg 11/12/2014 6:47 PM

ATTACHMENT G

AREA MAP

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

May 2017

Attachment G - Area Map

CONE Midstream Partners LP
Philippi Station - Facility ID 001-00128

UTM Coordinates of Site:
Northing: 4,338.500 km, Easting: 584.760 km, Zone: 17

ATTACHMENT H

G35-D SECTION APPLICABILITY FORM

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

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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

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
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Canonsburg, PA 15317

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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. De minimis 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]
E01	E01E	Reciprocating Engine/Compressor – Caterpillar G3516BLE; 4SLB	2014	5/10/13	1,380 hp	Modification	OC	NA
E02	E02E	Reciprocating Engine/Compressor – Caterpillar G3516BLE; 4SLB	2014	11/16/12	1,380 hp	Modification	OC	NA
E03	E03E	Reciprocating Engine/Compressor – Caterpillar G3516BLE; 4SLB	2014	10/28/11	1,380 hp	Modification	OC	NA
E04	E04E	Reciprocating Engine/Compressor – Caterpillar G3516BLE; 4SLB	2014	11/15/13	1,380 hp	Modification	OC	NA
E05	E05E	Reciprocating Engine/Compressor – Caterpillar G3516BLE; 4SLB	TBD	TBD	1,380 hp	Modification	OC	NA
G01	G01E	Reciprocating Engine/Generator – Cummins; Model QSL; Diesel	2013	8/07/13	464 hp	Existing	None	NA
RBLR-1	RBLR-1E	Exterran Reboiler; Model # SB36-16	2013	-	1.50 mmBtu/hr	Existing	None	NA
DEHY-1	DEHY-1E	Exterran Dehydration Unit Still Vent	2013	-	80.0 mmscf/d	Modification	None	NA
RBLR-2	RBLR-2E	Exterran Reboiler; Model # SB36-16	TBD	-	1.50 mmBtu/hr	Existing	None	NA
DEHY-2	DEHY-2E	Exterran Dehydration Unit Still Vent	TBD	-	80.0 mmscf/d	Modification	None	NA
T03	T03E	"Slop" Tank (Oils, Condensate, Pipeline Fluids, Storm Water Runoff Mixture)	2011	-	4,200 gallons	Modification	None	NA
T04	T04E	"Slop" Tank (Oils, Condensate, Pipeline Fluids, Storm Water Runoff Mixture)	2014	-	4,200 gallons	Modification	None	NA
T05	T05E	"Slop" Tank (Oils, Condensate, Pipeline Fluids, Storm Water Runoff Mixture)	TBD	-	4,200 gallons	Modification	None	NA
T06	T06E	"Slop" Tank (Oils, Condensate, Pipeline Fluids, Storm Water Runoff Mixture)	TBD	-	4,200 gallons	Modification	None	NA
T08	T08E	Dehy Unit Water/Condensate Storage	2011	-	1,000 gallons	Modification	None	NA
T10	T10E	Dehy Unit Water/Condensate Storage	TBD	-	1,000 gallons	Modification	None	NA

[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)

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

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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: Fugitives

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? Commenced construction prior to applicability date of 09/18/15

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	2	--	☐ Gas ☐ Liquid ☐ Both	--	--	--
Valves	☐ Yes ☒ No	71	*1995 EPA Protocol for Equipment Leak Emission Estimates* - Table 2-4, Oil & Gas Production Operations Average Emission Factors (kg/hr/source) (4.5E-03)	☒ Gas ☐ Liquid ☐ Both	0.06	--	1.47
Safety Relief Valves	☐ Yes ☒ No	3	*1995 EPA Protocol for Equipment Leak Emission Estimates* - Table 2-4, Oil & Gas Production Operations Average Emission Factors (kg/hr/source) (8.8E-03)	☒ Gas ☐ Liquid ☐ Both	0.01	--	0.12
Open Ended Lines	☐ Yes ☒ No	5	*1995 EPA Protocol for Equipment Leak Emission Estimates* - Table 2-4, Oil & Gas Production Operations Average Emission Factors (kg/hr/source) (2.0E-04)	☒ Gas ☐ Liquid ☐ Both	< 0.01	--	0.05
Sampling Connections	☐ Yes ☐ No	--	--	☐ Gas ☐ Liquid ☐ Both	--	--	--
Connections (Not sampling)	☐ Yes ☒ No	301	*1995 EPA Protocol for Equipment Leak Emission Estimates* - Table 2-4, Oil & Gas Production Operations Average Emission Factors (kg/hr/source) (3.9E-04)	☒ Gas ☐ Liquid ☐ Both	0.02	--	0.54
Compressors	☐ Yes ☒ No	1	--	☒ Gas ☐ Liquid ☐ Both	--	--	--
Flanges[2]	☐ Yes ☒ No	See Notes Below (2)	See Notes Below (2)	☐ Gas ☐ Liquid ☐ Both	--	--	--
Other[1]	☐ Yes ☐ No	--	--	☐ Gas ☐ Liquid ☐ Both	--	--	--

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

[2] Assumption made that flange connections are included in connections (not sampling) count

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 VESSELS DATA SHEET(S)

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

May 2017

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 Philippi Station	2. Tank Name Slop – Pipeline Fluids
3. Emission Unit ID number T03	4. Emission Point ID number T03E
5. Date Installed , Modified or Relocated *(for existing tanks)* 2011 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)* Increase Throughput through storage tank	
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 ProMax model simulation report ran (See calculations) ***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. 100 bbl / 4,200 gallons	
9A. Tank Internal Diameter (ft.) 8.5	9B. Tank Internal Height (ft.) 10
10A. Maximum Liquid Height (ft.) 10	10B. Average Liquid Height (ft.) 5
11A. Maximum Vapor Space Height (ft.) 10	11B. Average Vapor Space Height (ft.) 5
12. Nominal Capacity *(specify barrels or gallons).* This is also known as "working volume". 100 bbl / 4,200 gallons	
13A. Maximum annual throughput (gal/yr) 239,921	13B. Maximum daily throughput (gal/day) 657.32
14. Number of tank turnovers per year 57.12	15. Maximum tank fill rate (gal/min) 0.46
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]
-0.03 Vacuum Setting 0.03 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		Working/Breathing Loss		Total Emissions Loss		Estimation Method[1]
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	
VOCs	<0.001	0.001	<0.001	0.002	0.001	0.003	Promax

[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.

TANK CONSTRUCTION AND OPERATION INFORMATION

21. Tank Shell Construction:
☐ Riveted ☐ Gunite lined ☐ Epoxy-coated rivets ☒ Other (describe) Welded Seams

21A. Shell Color: Silver/Grey	21B. Roof Color: Silver/Grey	21C. Year Last Painted: 2014

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:	22C. If yes, how is heat provided to tank?

23. Operating Pressure Range (psig):
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): 4.25	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			
29. Provide the city and state on which the data in this section are based: Elkins, WV			
30. Daily Avg. Ambient Temperature (°F): 49.06		31. Annual Avg. Maximum Temperature (°F): 61.15	
32. Annual Avg. Minimum Temperature (°F): 36.97		33. Avg. Wind Speed (mph): 6.17	
34. Annual Avg. Solar Insulation Factor (BTU/ft^2-day): 1193.89		35. Atmospheric Pressure (psia): 13.73	
LIQUID INFORMATION			
36. Avg. daily temperature range of bulk liquid (°F): 70.02	36A. Minimum (°F): 36.97	36B. Maximum (°F): 61.15	
37. Avg. operating pressure range of tank (psig): 0.0	37A. Minimum (psig): -0.03	37B. Maximum (psig): 0.03	
38A. Minimum liquid surface temperature (°F): 57.17		38B. Corresponding vapor pressure (psia): 11.69	
39A. Avg. liquid surface temperature (°F): 67.21		39B. Corresponding vapor pressure (psia): 12.70	
40A. Maximum liquid surface temperature (°F): 77.25		40B. Corresponding vapor pressure (psia): 13.73	
41. Provide the following for each liquid or gas to be stored in the tank. Add additional pages if necessary. SEE PROMAX MODEL IN CALCULATIONS			
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.			

GENERAL INFORMATION

1. Bulk Storage Area Name Philippi Station	2. Tank Name Slop – Pipeline Fluids
3. Emission Unit ID number T04	4. Emission Point ID number T04E
5. Date Installed , Modified or Relocated *(for existing tanks)* 2014 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)* Increase Throughput through storage tank	
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 ProMax model simulation report ran (See calculations) ***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. 100 bbl / 4,200 gallons	
9A. Tank Internal Diameter (ft.) 8.5	9B. Tank Internal Height (ft.) 10
10A. Maximum Liquid Height (ft.) 10	10B. Average Liquid Height (ft.) 5
11A. Maximum Vapor Space Height (ft.) 10	11B. Average Vapor Space Height (ft.) 5
12. Nominal Capacity *(specify barrels or gallons).* This is also known as "working volume". 100 bbl / 4,200 gallons	
13A. Maximum annual throughput (gal/yr) 239,921	13B. Maximum daily throughput (gal/day) 657.32
14. Number of tank turnovers per year 57.12	15. Maximum tank fill rate (gal/min) 0.46
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]

-0.03 Vacuum Setting 0.03 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**		**Working/Breathing Loss**		**Total Emissions Loss**		**Estimation Method[1]**
	lb/hr	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	
VOCs	<0.001	0.001	<0.001	0.002	0.001	0.003	Promax

[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.

TANK CONSTRUCTION AND OPERATION INFORMATION		
21. Tank Shell Construction: ☐ Riveted ☐ Gunite lined ☐ Epoxy-coated rivets ☒ Other (describe) Welded Seams		
21A. Shell Color: Silver/Grey	21B. Roof Color: Silver/Grey	21C. Year Last Painted: 2014
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:	22C. If yes, how is heat provided to tank?
23. Operating Pressure Range (psig): **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): 4.25	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		
29. Provide the city and state on which the data in this section are based: Elkins, WV		
30. Daily Avg. Ambient Temperature (°F): 49.06	31. Annual Avg. Maximum Temperature (°F): 61.15	
32. Annual Avg. Minimum Temperature (°F): 36.97	33. Avg. Wind Speed (mph): 6.17	
34. Annual Avg. Solar Insulation Factor (BTU/ft^2-day): 1193.89	35. Atmospheric Pressure (psia): 13.73	
LIQUID INFORMATION		
36. Avg. daily temperature range of bulk liquid (°F): 70.02	36A. Minimum (°F): 36.97	36B. Maximum (°F): 61.15
37. Avg. operating pressure range of tank (psig): 0.0	37A. Minimum (psig): -0.03	37B. Maximum (psig): 0.03
38A. Minimum liquid surface temperature (°F): 57.17	38B. Corresponding vapor pressure (psia): 11.69	
39A. Avg. liquid surface temperature (°F): 67.21	39B. Corresponding vapor pressure (psia): 12.70	
40A. Maximum liquid surface temperature (°F): 77.25	40B. Corresponding vapor pressure (psia): 13.73	
41. Provide the following for each liquid or gas to be stored in the tank. Add additional pages if necessary. SEE PROMAX MODEL IN CALCULATIONS		
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.			

GENERAL INFORMATION

1. Bulk Storage Area Name Philippi Station	2. Tank Name Slop – Pipeline Fluids
3. Emission Unit ID number T05	4. Emission Point ID number T05E
5. Date Installed , Modified or Relocated *(for existing tanks)* 2014 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)* Increase Throughput through storage tank	
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 ProMax model simulation report ran (See calculations) ***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. 100 bbl / 4,200 gallons	
9A. Tank Internal Diameter (ft.) 8.5	9B. Tank Internal Height (ft.) 10
10A. Maximum Liquid Height (ft.) 10	10B. Average Liquid Height (ft.) 5
11A. Maximum Vapor Space Height (ft.) 10	11B. Average Vapor Space Height (ft.) 5
12. Nominal Capacity *(specify barrels or gallons).* This is also known as "working volume". 100 bbl / 4,200 gallons	
13A. Maximum annual throughput (gal/yr) 239,921	13B. Maximum daily throughput (gal/day) 657.32
14. Number of tank turnovers per year 57.12	15. Maximum tank fill rate (gal/min) 0.46
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]

-0.03 Vacuum Setting 0.03 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		Working/Breathing Loss		Total Emissions Loss		Estimation Method[1]
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	
VOCs	<0.001	0.001	<0.001	0.002	0.001	0.003	Promax

[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.

TANK CONSTRUCTION AND OPERATION INFORMATION

21. Tank Shell Construction:
☐ Riveted ☐ Gunite lined ☐ Epoxy-coated rivets ☒ Other (describe) Welded Seams

21A. Shell Color: Silver/Grey	21B. Roof Color: Silver/Grey	21C. Year Last Painted: 2014

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:	22C. If yes, how is heat provided to tank?

23. Operating Pressure Range (psig):
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): 4.25	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

29. Provide the city and state on which the data in this section are based: Elkins, WV

30. Daily Avg. Ambient Temperature (°F): 49.06	31. Annual Avg. Maximum Temperature (°F): 61.15
32. Annual Avg. Minimum Temperature (°F): 36.97	33. Avg. Wind Speed (mph): 6.17
34. Annual Avg. Solar Insulation Factor (BTU/ft^2-day): 1193.89	35. Atmospheric Pressure (psia): 13.73

LIQUID INFORMATION

36. Avg. daily temperature range of bulk liquid (°F): 70.02	36A. Minimum (°F): 36.97	36B. Maximum (°F): 61.15
37. Avg. operating pressure range of tank (psig): 0.0	37A. Minimum (psig): -0.03	37B. Maximum (psig): 0.03

38A. Minimum liquid surface temperature (°F): 57.17	38B. Corresponding vapor pressure (psia): 11.69
39A. Avg. liquid surface temperature (°F): 67.21	39B. Corresponding vapor pressure (psia): 12.70
40A. Maximum liquid surface temperature (°F): 77.25	40B. Corresponding vapor pressure (psia): 13.73

41. Provide the following for each liquid or gas to be stored in the tank. Add additional pages if necessary. SEE PROMAX MODEL IN CALCULATIONS

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.			

GENERAL INFORMATION

1. Bulk Storage Area Name Philippi Station	2. Tank Name Slop – Pipeline Fluids
3. Emission Unit ID number T06	4. Emission Point ID number T06E
5. Date Installed , Modified or Relocated *(for existing tanks)* 2014 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)* Increase Throughput through storage tank	
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 ProMax model simulation report ran (See calculations) ***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. 100 bbl / 4,200 gallons	
9A. Tank Internal Diameter (ft.) 8.5	9B. Tank Internal Height (ft.) 10
10A. Maximum Liquid Height (ft.) 10	10B. Average Liquid Height (ft.) 5
11A. Maximum Vapor Space Height (ft.) 10	11B. Average Vapor Space Height (ft.) 5
12. Nominal Capacity *(specify barrels or gallons).* This is also known as "working volume". 100 bbl / 4,200 gallons	
13A. Maximum annual throughput (gal/yr) 239,921	13B. Maximum daily throughput (gal/day) 657.32
14. Number of tank turnovers per year 57.12	15. Maximum tank fill rate (gal/min) 0.46
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]

-0.03 Vacuum Setting 0.03 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**		**Working/Breathing Loss**		**Total Emissions Loss**		**Estimation Method[1]**
	lb/hr	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	
VOCs	<0.001	0.001	<0.001	0.002	0.001	0.003	Promax

[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.

TANK CONSTRUCTION AND OPERATION INFORMATION		
21. Tank Shell Construction: ☐ Riveted ☐ Gunite lined ☐ Epoxy-coated rivets ☒ Other (describe) Welded Seams		
21A. Shell Color: Silver/Grey	21B. Roof Color: Silver/Grey	21C. Year Last Painted: 2014
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:	22C. If yes, how is heat provided to tank?
23. Operating Pressure Range (psig): **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): 4.25	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		
29. Provide the city and state on which the data in this section are based: Elkins, WV		
30. Daily Avg. Ambient Temperature (°F): 49.06	31. Annual Avg. Maximum Temperature (°F): 61.15	
32. Annual Avg. Minimum Temperature (°F): 36.97	33. Avg. Wind Speed (mph): 6.17	
34. Annual Avg. Solar Insulation Factor (BTU/ft^2-day): 1193.89	35. Atmospheric Pressure (psia): 13.73	
LIQUID INFORMATION		
36. Avg. daily temperature range of bulk liquid (°F): 70.02	36A. Minimum (°F): 36.97	36B. Maximum (°F): 61.15
37. Avg. operating pressure range of tank (psig): 0.0	37A. Minimum (psig): -0.03	37B. Maximum (psig): 0.03
38A. Minimum liquid surface temperature (°F): 57.17	38B. Corresponding vapor pressure (psia): 11.69	
39A. Avg. liquid surface temperature (°F): 67.21	39B. Corresponding vapor pressure (psia): 12.70	
40A. Maximum liquid surface temperature (°F): 77.25	40B. Corresponding vapor pressure (psia): 13.73	
41. Provide the following for each liquid or gas to be stored in the tank. Add additional pages if necessary. SEE PROMAX MODEL IN CALCULATIONS		
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.			

GENERAL INFORMATION

1. Bulk Storage Area Name Philippi Station	2. Tank Name Dehy Water / Condensate
3. Emission Unit ID number T08	4. Emission Point ID number T08E
5. Date Installed , Modified or Relocated *(for existing tanks)* 2011 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)* Increase Throughput through storage tank	
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 ProMax model simulation report ran (See calculations) ***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. 1,000 gallons	
9A. Tank Internal Diameter (ft.) 5.25	9B. Tank Internal Height (ft.) 6.25
10A. Maximum Liquid Height (ft.) 6.25	10B. Average Liquid Height (ft.) 3
11A. Maximum Vapor Space Height (ft.) 6.25	11B. Average Vapor Space Height (ft.) 3
12. Nominal Capacity *(specify barrels or gallons).* This is also known as "working volume". 1,000 gallons	
13A. Maximum annual throughput (gal/yr) 148,004	13B. Maximum daily throughput (gal/day) 405.49
14. Number of tank turnovers per year 35.24	15. Maximum tank fill rate (gal/min) 0.20
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]

-0.03 Vacuum Setting 0.03 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		Working/Breathing Loss		Total Emissions Loss		Estimation Method[1]
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	
VOCs	0.00	0.00	<0.001	0.006	<0.001	0.006	Promax

[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.

TANK CONSTRUCTION AND OPERATION INFORMATION

21. Tank Shell Construction:
☐ Riveted ☐ Gunite lined ☐ Epoxy-coated rivets ☒ Other (describe) Welded Seams

21A. Shell Color: Silver/Grey	21B. Roof Color: Silver/Grey	21C. Year Last Painted: 2014

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:	22C. If yes, how is heat provided to tank?

23. Operating Pressure Range (psig):
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): 2.625	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

29. Provide the city and state on which the data in this section are based: Elkins, WV

30. Daily Avg. Ambient Temperature (°F): 49.06	31. Annual Avg. Maximum Temperature (°F): 61.15
32. Annual Avg. Minimum Temperature (°F): 36.97	33. Avg. Wind Speed (mph): 6.17
34. Annual Avg. Solar Insulation Factor (BTU/ft^2-day): 1193.89	35. Atmospheric Pressure (psia): 13.73

LIQUID INFORMATION

36. Avg. daily temperature range of bulk liquid (°F): 145.88	36A. Minimum (°F): 135.84	36B. Maximum (°F): 155.92
37. Avg. operating pressure range of tank (psig): 0.0	37A. Minimum (psig): -0.03	37B. Maximum (psig): 0.03

38A. Minimum liquid surface temperature (°F): 135.84	38B. Corresponding vapor pressure (psia): 2.82
39A. Avg. liquid surface temperature (°F): 145.88	39B. Corresponding vapor pressure (psia): 3.59
40A. Maximum liquid surface temperature (°F): 155.92	40B. Corresponding vapor pressure (psia): 4.55

41. Provide the following for each liquid or gas to be stored in the tank. Add additional pages if necessary. SEE PROMAX MODEL IN CALCULATIONS

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.			

GENERAL INFORMATION

1. Bulk Storage Area Name Philippi Station	2. Tank Name Dehy Water / Condensate
3. Emission Unit ID number T10	4. Emission Point ID number T10E
5. Date Installed , Modified or Relocated *(for existing tanks)* 2014 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)* Increase Throughput through storage tank	
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 ProMax model simulation report ran (See calculations) ***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. 1,000 gallons	
9A. Tank Internal Diameter (ft.) 5.25	9B. Tank Internal Height (ft.) 6.25
10A. Maximum Liquid Height (ft.) 6.25	10B. Average Liquid Height (ft.) 3
11A. Maximum Vapor Space Height (ft.) 6.25	11B. Average Vapor Space Height (ft.) 3
12. Nominal Capacity *(specify barrels or gallons).* This is also known as "working volume". 1,000 gallons	
13A. Maximum annual throughput (gal/yr) 148,004	13B. Maximum daily throughput (gal/day) 405.49
14. Number of tank turnovers per year 35.24	15. Maximum tank fill rate (gal/min) 0.20
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]

-0.03 Vacuum Setting 0.03 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**		**Working/Breathing Loss**		**Total Emissions Loss**		**Estimation Method[1]**
	lb/hr	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	
VOCs	0.00	0.00	<0.001	0.006	<0.001	0.006	Promax

[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.

TANK CONSTRUCTION AND OPERATION INFORMATION		
21. Tank Shell Construction: ☐ Riveted ☐ Gunite lined ☐ Epoxy-coated rivets ☒ Other (describe) Welded Seams		
21A. Shell Color: Silver/Grey	21B. Roof Color: Silver/Grey	21C. Year Last Painted: 2014
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:	22C. If yes, how is heat provided to tank?
23. Operating Pressure Range (psig): **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): 2.625	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		
29. Provide the city and state on which the data in this section are based: Elkins, WV		
30. Daily Avg. Ambient Temperature (°F): 49.06	31. Annual Avg. Maximum Temperature (°F): 61.15	
32. Annual Avg. Minimum Temperature (°F): 36.97	33. Avg. Wind Speed (mph): 6.17	
34. Annual Avg. Solar Insulation Factor (BTU/ft^2-day): 1193.89	35. Atmospheric Pressure (psia): 13.73	
LIQUID INFORMATION		
36. Avg. daily temperature range of bulk liquid (°F): 145.88	36A. Minimum (°F): 135.84	36B. Maximum (°F): 155.92
37. Avg. operating pressure range of tank (psig): 0.0	37A. Minimum (psig): -0.03	37B. Maximum (psig): 0.03
38A. Minimum liquid surface temperature (°F): 135.84	38B. Corresponding vapor pressure (psia): 2.82	
39A. Avg. liquid surface temperature (°F): 145.88	39B. Corresponding vapor pressure (psia): 3.59	
40A. Maximum liquid surface temperature (°F): 155.92	40B. Corresponding vapor pressure (psia): 4.55	
41. Provide the following for each liquid or gas to be stored in the tank. Add additional pages if necessary. SEE PROMAX MODEL IN CALCULATIONS		
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 de minimis storage tanks (i.e. lube oil, glycol, diesel etc.)

Source ID #[1]	Status[2]	Content[3]	Volume[4]
T11	EXIST	Lube Oil	500
T12	EXIST	Lube Oil	500
T13	EXIST	Lube Oil	500
T14	EXIST	Lube Oil	500
T15	EXIST	Lube Oil	500
T16	EXIST	Lube Oil	500
T17	EXIST	Lube Oil	500
T18	EXIST	Lube Oil	500
T19	EXIST	Lube Oil	500
T20	EXIST	Lube Oil	500
T21	EXIST	Diesel	720
T22	NEW	Used Oil	520

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.

ATTACHMENT L

NATURAL GAS FIRED FUEL BURNING UNIT DATA SHEET(S)

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

May 2017

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]
RBLR-1	RBLR-1E	Exterran Dehydration Unit Reboiler; SB36-16	2013	Existing	1.50	1,000
RBLR-2	RBLR-2E	Exterran Dehydration Unit Reboiler SB36-16	TBD	Existing	1.50	1,000

[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.

ATTACHMENT M

INTERNAL COMBUSTION ENGINE DATA SHEET(S)

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

May 2017

ATTACHMENT M – INTERNAL COMBUSTION ENGINE DATA SHEET

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]	E01	E02	E03
Engine Manufacturer/Model	Caterpillar G3516BLE	Caterpillar G3516BLE	Caterpillar G3516BLE
Manufacturers Rated bhp/rpm	1,380 / 1,400	1,380 / 1,400	1,380 / 1,400
Source Status[2]	MS	MS	MS
Date Installed/ Modified/Removed/Relocated[3]	01/02/2014	01/02/2014	01/02/2014
Engine Manufactured /Reconstruction Date[4]	05/10/2013	11/16/2012	10/28/2011
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
Engine Type[6]	4SLB	4SLB	4SLB
APCD Type[7]	OC	OC	OC
Fuel Type[8]	PQ	PQ	PQ
H_2S (gr/100 scf)	0.25	0.25	0.25
Operating bhp/rpm	1,380 / 1,400	1,380 / 1,400	1,380 / 1,400
BSFC (BTU/bhp-hr)	8,265	8,265	8,265
Hourly Fuel Throughput	11,406 ft^3/hr gal/hr	11,406 ft^3/hr gal/hr	11,406 ft^3/hr gal/hr
Annual Fuel Throughput (Must use 8,760 hrs/yr unless emergency generator)	99.91 $MMft^3$/yr gal/yr	99.91 $MMft^3$/yr gal/yr	99.91 $MMft^3$/yr gal/yr
Fuel Usage or Hours of Operation Metered	Yes ☒ No ☐	Yes ☒ No ☐	Yes ☐ No ☐

Calculation Methodology[9]	**Pollutant**[10]	**Hourly PTE (lb/hr)**[11]	**Annual PTE (tons/year)**[11]	**Hourly PTE (lb/hr)**[11]	**Annual PTE (tons/year)**[11]	**Hourly PTE (lb/hr)**[11]	**Annual PTE (tons/year)**[11]
MD	NO_x	3.04	13.33	3.04	13.33	3.04	13.33
MD	CO	4.26	18.66	4.26	18.66	4.26	18.66
MD	VOC	2.13	9.33	2.13	9.33	2.13	9.33
AP	SO_2	0.01	0.04	0.01	0.04	0.01	0.04
AP	PM_{10}	0.11	0.50	0.11	0.50	0.11	0.50
MD	Formaldehyde	0.32	1.41	0.32	1.41	0.32	1.41
AP	Total HAPs	0.56	2.46	0.56	2.46	0.56	2.46
AP	GHG (CO_2e)	1,334.6	5,845.5	1,334.6	5,845.5	1,334.6	5,845.5

ATTACHMENT M – INTERNAL COMBUSTION ENGINE DATA SHEET

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]	E04	E05	G01
Engine Manufacturer/Model	Caterpillar G3516BLE	Caterpillar G3516BLE	Cummins Model QSL
Manufacturers Rated bhp/rpm	1,380 / 1,400	1,380 / 1,400	464
Source Status[2]	MS	MS	ES
Date Installed/ Modified/Removed/Relocated[3]	11/13/2014	TBD	12/01/2013
Engine Manufactured /Reconstruction Date[4]	11/15/2013	TBD	08/07/2013
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
Engine Type[6]	4SLB	4SLB	NA
APCD Type[7]	OC	OC	None
Fuel Type[8]	PQ	PQ	Diesel
H_2S (gr/100 scf)	0.25	0.25	NA
Operating bhp/rpm	1,380 / 1,400	1,380 / 1,400	464
BSFC (BTU/bhp-hr)	8,265	8,265	7,000
Hourly Fuel Throughput	11,406 ft^3/hr gal/hr	11,406 ft^3/hr gal/hr	3,248 ft^3/hr gal/hr
Annual Fuel Throughput (Must use 8,760 hrs/yr unless emergency generator)	99.91 $MMft^3$/yr gal/yr	99.91 $MMft^3$/yr gal/yr	1.62 $MMft^3$/yr gal/yr
Fuel Usage or Hours of Operation Metered	Yes ☒ No ☐	Yes ☒ No ☐	Yes ☒ No ☐

Calculation Methodology[9]	**Pollutant[10]**	**Hourly PTE (lb/hr)[11]**	**Annual PTE (tons/year)[11]**	**Hourly PTE (lb/hr)[11]**	**Annual PTE (tons/year)[11]**	**Hourly PTE (lb/hr)[11]**	**Annual PTE (tons/year)[11]**
MD	NO_x	3.04	13.33	3.04	13.33	3.07	0.77
MD	CO	4.26	18.66	4.26	18.66	2.66	0.66
MD / AP	VOC	2.13	9.33	2.13	9.33	1.14	0.28
AP	SO_2	0.01	0.04	0.01	0.04	0.94	0.24
AP / MD	PM_{10}	0.11	0.50	0.11	0.50	0.15	0.04
MD / AP	Formaldehyde	0.32	1.41	0.32	1.41	< 0.01	< 0.01
AP	Total HAPs	0.56	2.46	0.56	2.46	0.01	< 0.01
AP	GHG (CO_2e)	1,334.6	5,845.5	1,334.6	5,845.5	380.05	95.01

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# E01 – E03, 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:

Manufacturer: EMIT	Model #: ELX-4200Z-1616F-30CEE-361
Design Operating Temperature: 90 °F	Design gas volume: 3,456 scfm
Service life of catalyst:	Provide manufacturer data? ☒Yes ☐ No
Volume of gas handled: 9126 acfm at 992 °F	Operating temperature range for NSCR/Ox Cat: From °F to °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,

Engine Air Pollution Control Device
(Emission Unit ID# E04, 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:

Manufacturer: DCL	Model #: DC64-A
Design Operating Temperature: 90 °F	Design gas volume: 3450 scfm
Service life of catalyst: 8000 hours	Provide manufacturer data? ☒Yes ☐ No
Volume of gas handled: 9109 acfm at 992 °F	Operating temperature range for NSCR/Ox Cat: From °F to °F
Reducing agent used, if any:	Ammonia slip (ppm):

Pressure drop against catalyst bed (delta P): 3.4 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)?
8000

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,

ATTACHMENT N

TANKER TRUCK LOADING DATA SHEET(S)

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

May 2017

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-C Registration.

Emission Unit ID#: TL-1	Emission Point ID#: TL-1E	Year Installed/Modified: 2017
Emission Unit Description: Emissions from Truck Loading are vented to Atmosphere		
Loading Area Data		
Number of Pumps: 1 / On Truck	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.		
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	24	24	24	24
Days/week	7	7	7	7

Bulk Liquid Data (use extra pages as necessary)

Liquid Name	Pipeline Liquids		
Max. Daily Throughput (1000 gal/day)	3.44		
Max. Annual Throughput (1000 gal/yr)	1,255.69		
Loading Method[1]	SUB		
Max. Fill Rate (gal/min)	2.39		
Average Fill Time (min/loading)	60		
Max. Bulk Liquid Temperature (^{o}F)	70.02		
True Vapor Pressure[2]	13.73		

Cargo Vessel Condition[3]		C		
Control Equipment or Method[4]		None		
Max. Collection Efficiency (%)		0		
Max. Control Efficiency (%)		0		
Max.VOC Emission Rate	Loading (lb/hr)	0.003		
	Annual (ton/yr)	0.012		
Max.HAP Emission Rate	Loading (lb/hr)	0.00		
	Annual (ton/yr)	0.00		
Estimation Method[5]		TM		

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)

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

May 2017

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: Exterran	Model: UK
Max. Dry Gas Flow Rate: 80.0 mmscf/day	Reboiler Design Heat Input: 1.5 MMBTU/hr
Design Type: ☒ TEG ☐ DEG ☐ EG	Source Status[1]: ES
Date Installed/Modified/Removed[2]: 2013	Regenerator Still Vent APCD/ERD[3]: NA
Control Device/ERD ID#[3]: NA	Fuel HV (BTU/scf): 1,000
H_2S Content (gr/100 scf): 0.25	Operation (hours/year): 8,760
Pump Rate (scfm): 7.5 gpm TEG	
Water Content (wt %) in: Wet Gas: Saturated	Dry Gas: 7.0 lbs H2O / 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

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.

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 (%)

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)
RBLR-1	Reboiler Vent	AP	NO_x	0.15	0.66
		AP	CO	0.13	0.55
		AP	VOC	0.01	0.04

		AP	SO_2	0.01	0.01
		AP	PM_{10}	0.01	0.05
		AP	GHG (CO_2e)	175.51	768.76
DEHY-1	Glycol Regenerator Still Vent	GRI-GlyCalc™	VOC	1.35	5.93
		GRI-GlyCalc™	Benzene	0.16	0.70
		GRI-GlyCalc™	Toluene	0.24	1.07
		GRI-GlyCalc™	Ethylbenzene	0.38	1.66
		GRI-GlyCalc™	Xylenes	0.53	2.32
		GRI-GlyCalc™	n-Hexane	< 0.01	0.01
FLT-1	Glycol Flash Tank	GRI-GlyCalc™	VOC	0.48	2.10
		GRI-GlyCalc™	Benzene	0.03	0.14
		GRI-GlyCalc™	Toluene	0.03	0.15
		GRI-GlyCalc™	Ethylbenzene	0.03	0.14
		GRI-GlyCalc™	Xylenes	0.03	0.14
		GRI-GlyCalc™	n-Hexane	0.01	0.04

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 all 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 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: Exterran	Model: UK
Max. Dry Gas Flow Rate: 80.0 mmscf/day	Reboiler Design Heat Input: 1.5 MMBTU/hr
Design Type: ☒ TEG ☐ DEG ☐ EG	Source Status[1]: ES
Date Installed/Modified/Removed[2]: TBD	Regenerator Still Vent APCD/ERD[3]: NA
Control Device/ERD ID#[3]: NA	Fuel HV (BTU/scf): 1,000
H_2S Content (gr/100 scf): 0.25	Operation (hours/year): 8,760
Pump Rate (scfm): 7.5 gpm TEG	
Water Content (wt %) in: Wet Gas: Saturated	Dry Gas: 7.0 lbs H2O / 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

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.

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 (%)

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)
RBLR-2	Reboiler Vent	AP	NO_x	0.15	0.66
		AP	CO	0.13	0.55
		AP	VOC	0.01	0.04

		AP	SO_2	0.01	0.01
		AP	PM_{10}	0.01	0.05
		AP	GHG (CO_2e)	175.51	768.76
DEHY-2	Glycol Regenerator Still Vent	GRI-GlyCalc™	VOC	1.35	5.93
		GRI-GlyCalc™	Benzene	0.16	0.70
		GRI-GlyCalc™	Toluene	0.24	1.07
		GRI-GlyCalc™	Ethylbenzene	0.38	1.66
		GRI-GlyCalc™	Xylenes	0.53	2.32
		GRI-GlyCalc™	n-Hexane	< 0.01	0.01
FLT-2	Glycol Flash Tank	GRI-GlyCalc™	VOC	0.48	2.10
		GRI-GlyCalc™	Benzene	0.03	0.14
		GRI-GlyCalc™	Toluene	0.03	0.15
		GRI-GlyCalc™	Ethylbenzene	0.03	0.14
		GRI-GlyCalc™	Xylenes	0.03	0.14
		GRI-GlyCalc™	n-Hexane	0.01	0.04

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 all 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 CONTROLLERS DATA SHEET(S)

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

May 2017

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.

ATTACHMENT Q

CENTRIFUGAL COMPRESSOR DATA SHEET(S)

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

May 2017

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)

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

May 2017

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
E01	4SLB – Caterpillar G3516BLE
E02	4SLB – Caterpillar G3516BLE
E03	4SLB – Caterpillar G3516BLE
E04	4SLB – Caterpillar G3516BLE

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
E05	4SLB – Caterpillar G3516BLE

ATTACHMENT S

BLOWDOWN AND PIGGING OPERATIONS DATA SHEET(S)

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

May 2017

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	300	4,628	16.46	29.68	1.80	0.53
Compressor Startup						
Plant Shutdown						
Low Pressure Pig Venting	60	596.44	16.46	0.76	1.80	0.01
High Pressure Pig Venting						

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	300	4,628	16.46	29.68	0.00	0.00
Compressor Startup						
Plant Shutdown						
Low Pressure Pig Venting	60	596.44	16.46	0.76	0.00	0.00
High Pressure Pig Venting						

ATTACHMENT T

AIR POLLUTION CONTROL DEVICE / EMISSION REDUCTION DEVICE SHEET(S)

NOT APPLICABLE: No APCD or ERD utilized at this facility. Catalysts are included on engines but information for those control devices is included in Attachment M.

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

May 2017

ATTACHMENT U

EMISSION CALCULATIONS

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

May 2017

Table 1. Annual Potential To Emit (PTE) Summary
CONE Midstream Partners LP - Philippi Station

Criteria Pollutants

Proposed PTE - Criteria Pollutants

Source	PM	PM10	PM2.5	SO2	NOx	CO	VOC	CO2e
Engines (ton/yr)	2.531	2.531	2.531	0.414	67.394	93.943	46.923	29322.312
Dehydration Units (ton/yr)	-	-	-	-	-	-	13.946	12537.440
Heaters/Boilers/Reboilers (ton/yr)	0.100	0.100	0.100	0.009	1.314	1.104	0.072	1537.510
Storage Tanks (ton/yr)	-	-	-	-	-	-	0.026	-
Truck Loading (ton/yr)	-	-	-	-	-	-	0.012	-
Fugitives (ton/yr)	-	-	-	-	-	-	0.091	2.170
Blowdown Venting (ton/yr)	-	-	-	-	-	-	0.547	724.993
Total Emissions (ton/yr)	2.631	2.631	2.631	0.423	68.708	95.046	61.071	43399.433
Total Emissions (lb/hr)	0.601	0.601	0.601	0.097	15.687	21.700	13.943	9908.546

Hazardous Air Pollutants (HAPs)

Proposed PTE - HAPs

Source	Acetaldehyde	Benzene	Toluene	Ethylbenzene	Xylene	n-Hexane	Formaldehyde	Total HAPs
Engines (ton/yr)	2.0888	0.1107	0.1022	0.0099	0.0462	0.2773	7.037	12.293
Dehydration Units (ton/yr)	-	1.5466	2.2860	3.4634	4.7654	0.0610	-	12.136
Heaters/Boilers/Reboilers (ton/yr)	-	0.0000	0.0000	-	-	0.0237	0.001	0.025
Storage Tanks (ton/yr)	-	-	-	-	-	-	-	0.000
Truck Loading (ton/yr)	-	-	-	-	-	-	-	-
Fugitives (ton/yr)	-	-	-	-	-	-	-	0.000
Blowdown Venting (ton/yr)	-	-	-	-	-	-	-	-
Total Emissions (ton/yr)	2.089	1.657	2.388	3.473	4.812	0.362	7.038	24.454
Total Emissions (lb/hr)	0.477	0.378	0.545	0.793	1.099	0.083	1.607	5.583

Table 2. Reciprocating Engine / Integral Compressor Emissions (E01 - E05)
Caterpillar G3516BLE; 4SLB
CONE Midstream Partners LP - Philippi Station

Pollutant	Maximum Hourly Emissions				Annual Emissions			
	Emission Factor		PTE per Engine (lb/hr)		Emission Factor		PTE per Engine (tons/yr)	
Criteria Pollutants								
PM/PM10/PM2.5**	9.98E-03 lb/MMBtu	(1)	0.11	(a)	9.98E-03 lb/MMBtu	(1)	0.50	(c)
SO_2	0.25 grains S / 100 ft^3	(2)	0.01	(e)	0.25 grains S / 100 ft^3	(2)	0.04	(f)
NOx	1.00E+00 g/hp-hr	(3)	3.04	(b)	1.00E+00 g/hp-hr	(3)	13.33	(d)
CO	1.40E+00 g/hp-hr	(3)	4.26	(b)	1.40E+00 g/hp-hr	(3)	18.66	(d)
VOC	7.00E-01 g/hp-hr	(3)	2.13	(b)	7.00E-01 g/hp-hr	(3)	9.33	(d)
Hazardous Air Pollutants								
1,1,2,2-Tetrachloroethane	4.00E-05 lb/MMBtu	(1)	0.000	(a)	4.00E-05 lb/MMBtu	(1)	0.002	(c)
1,1,2-Trichloroethane	3.18E-05 lb/MMBtu	(1)	0.000	(a)	3.18E-05 lb/MMBtu	(1)	0.002	(c)
1,3-Butadiene	2.67E-04 lb/MMBtu	(1)	0.003	(a)	2.67E-04 lb/MMBtu	(1)	0.013	(c)
1,3-Dichloropropene	2.64E-05 lb/MMBtu	(1)	0.000	(a)	2.64E-05 lb/MMBtu	(1)	0.001	(c)
2-Methylnapthalene	3.32E-05 lb/MMBtu	(1)	0.000	(a)	3.32E-05 lb/MMBtu	(1)	0.002	(c)
2,2,4-Trimethylpentane	2.50E-05 lb/MMBtu	(1)	0.000	(a)	2.50E-05 lb/MMBtu	(1)	0.001	(c)
Acetaldehyde	8.36E-03 lb/MMBtu	(1)	0.095	(a)	8.36E-03 lb/MMBtu	(1)	0.418	(c)
Acrolein	5.14E-03 lb/MMBtu	(1)	0.059	(a)	5.14E-03 lb/MMBtu	(1)	0.257	(c)
Benzene	4.40E-04 lb/MMBtu	(1)	0.005	(a)	4.40E-04 lb/MMBtu	(1)	0.022	(c)
Biphenyl	2.12E-03 lb/MMBtu	(1)	0.024	(a)	2.12E-03 lb/MMBtu	(1)	0.106	(c)
Carbon Tetrachloride	3.67E-05 lb/MMBtu	(1)	0.000	(a)	3.67E-05 lb/MMBtu	(1)	0.002	(c)
Chlorobenzene	3.04E-05 lb/MMBtu	(1)	0.000	(a)	3.04E-05 lb/MMBtu	(1)	0.002	(c)
Chloroform	2.85E-05 lb/MMBtu	(1)	0.000	(a)	2.85E-05 lb/MMBtu	(1)	0.001	(c)
Ethylbenzene	3.97E-05 lb/MMBtu	(1)	0.000	(a)	3.97E-05 lb/MMBtu	(1)	0.002	(c)
Ethylene Dibromide	4.43E-05 lb/MMBtu	(1)	0.001	(a)	4.43E-05 lb/MMBtu	(1)	0.002	(c)
Formaldehyde	1.06E-01 g/hp-hr	(3)	0.321	(b)	1.06E-01 g/hp-hr	(1)	1.407	(d)
Methanol	2.50E-03 lb/MMBtu	(1)	0.029	(a)	2.50E-03 lb/MMBtu	(1)	0.125	(c)
Methylene Chloride	2.00E-05 lb/MMBtu	(1)	0.000	(a)	2.00E-05 lb/MMBtu	(1)	0.001	(c)
n-Hexane	1.11E-03 lb/MMBtu	(1)	0.013	(a)	1.11E-03 lb/MMBtu	(1)	0.055	(c)
Naphthalene	7.44E-05 lb/MMBtu	(1)	0.001	(a)	7.44E-05 lb/MMBtu	(1)	0.004	(c)
PAH (POM)	2.69E-05 lb/MMBtu	(1)	0.000	(a)	2.69E-05 lb/MMBtu	(1)	0.001	(c)
Phenol	1.04E-05 lb/MMBtu	(1)	0.000	(a)	1.04E-05 lb/MMBtu	(1)	0.001	(c)
Styrene	2.36E-05 lb/MMBtu	(1)	0.000	(a)	2.36E-05 lb/MMBtu	(1)	0.001	(c)
Toluene	4.08E-04 lb/MMBtu	(1)	0.005	(a)	4.08E-04 lb/MMBtu	(1)	0.020	(c)
Vinyl Chloride	1.49E-05 lb/MMBtu	(1)	0.000	(a)	1.49E-05 lb/MMBtu	(1)	0.001	(c)
Xylenes	1.84E-04 lb/MMBtu	(1)	0.002	(a)	1.84E-04 lb/MMBtu	(1)	0.009	(c)
Total HAP			**0.561**				**2.458**	
Greenhouse Gas Emissions								
CO_2	116.89 lb/MMBtu	(4)	1333.20	(a)	116.89 lb/MMBtu	(4)	5839.42	(c)
CH_4	2.2E-03 lb/MMBtu	(4)	0.03	(a)	2.2E-03 lb/MMBtu	(4)	0.11	(c)
N_2O	2.2E-04 lb/MMBtu	(4)	0.00	(a)	2.2E-04 lb/MMBtu	(4)	0.01	(c)
$CO_2e^{(g)}$	-	-	1334.58				5845.46	

** Pm emission factor includes condensables and filterables

Calculations:

Hourly Emissions - If emission factor note 1 or 4 is used, use calculation (a). If emission factor note 3 is used, use calculation (b).

(a) Hourly Emissions (lb/hr) = Emission factor (lb/MMBtu) * (1MMBtu/1000000 Btu) * Engine Power Output (hp) * Average BSFC (Btu/hp-hr)

(b) Hourly Emissions (lb/hr) = Emission factor (g/hp-hr) * Engine Power Output (hp) * (lb / 453.6 g)

Annual Emissions - If emission factor note 1 or 4 is used, use calculation (c). If emission factor note 3 is used, use calculation (d).

(c) Annual emissions (tons/yr) = Emission factor (lb/MMBtu) * (1MMBtu/1000000Btu) * Engine Power Output (hp) * Average BSFC (Btu/hp-hr) * Annual Hours of operation (hr/yr) * (1ton/2000lbs)

(d) Annual emissions (tons/yr) = Emission factor (g/hp-hr) * Engine Power Output (hp) * Annual Hours of operation (hr/yr) * (1ton/2000lbs) * (lb / 453.6 g)

SO_2 Emissions - If emission factor note 2 is used, use calculations (e) and (f) for hourly and annual emissions, respectively.

(e) Hourly Emissions SO2 Caclulation (lb/hr) = (0.25 grain S/100ft3) * Fuel throughput (ft3/hr) * (1lb/7000 grains) * (lbmol S/32.06 lb S) * (lbmol SO2/ lbmol S) *(64.07 lb SO2/lbmol SO2)

(f) Annual Emissions SO2 Caclulation (ton/yr) = (0.25 grain S/100ft3) * Fuel throughput (ft3/hr) * (1lb/7000 grains) * (lbmol S/32.06 lb S) * (lbmol SO2/ lbmol S) *(64.07 lb SO2/lbmol SO2) * Annual hours of operation (hr/yr) * (1ton/2000lbs)

MAXIMUM HOURLY EMISSION INPUTS		
Engine Power Output (kW) =	1029	
Engine Power Output (hp) =	1,380	
Number of Engines =	5	
Average BSFC (BTU/HP-hr) =	8,265	(5)
Heat Content Natural Gas(Btu/scf) =	1,000.0	(6)
Fuel Throughput (ft3/hr) =	11,405.7	(7)
PTE Hours of Operation =	8,760	

(g) CO_2 equivalent = [(CO_2 emissions)*(GWP_{CO2})]+[(CH_4 emissions)*(GWP_{CH4})]+[(N_2O emissions)*(GWP_{N2O})]
Global Warming Potential (GWP)

CO_2	1	(8)
CH_4	25	(8)
N_2O	298	(8)

Notes:

(1) AP-42, Chapter 3.2, Table 3.2-2. *Natural Gas-fired Reciprocating Engines* (7/00). Uncontrolled Emission Factors for 4-Stroke Lean-Burn Engines.

(2) AP-42, Chapter 5.3, Section 5.3.1

(3) Emission factors supplied from manufacturer's specification sheets

(4) Emission factors are from 40 CFR 98, Subpart C, Table C-1 and C-2.

(5) Fuel consumption from manufacturer's specification sheet.

(6) Value obtained from AP-42, Chapter 3.2, Table 3.2-1, footnote b

(7) Fuel throughput = BSFC (BTU/HP-hr) x Power (HP) / Heat Content (BTU/scf)

(8) Global Warming Potentials obtained from 40 CFR 98, Subpart A, Table A-1

Table 3. Compression Ignition Engine (Diesel) Emissions (G01)
Cummins, Model # QSL
CONE Midstream Partners LP - Philippi Station

Pollutant	Emission Factor			PTE (lb/hr)		PTE (ton/yr)	
Criteria Pollutants							
PM/PM10/PM2.5	1.50E-01	g/hp-hr	(1)	0.15	(a)	0.04	(c)
SO_2	2.90E-01	lb/MMBtu	(2)	0.94	(b)	0.24	(d)
NOx	3.00E+00	g/hp-hr	(1)	3.07	(a)	0.77	(c)
CO	2.60E+00	g/hp-hr	(1)	2.66	(a)	0.66	(c)
VOC	3.50E-01	lb/MMBtu	(2)	1.14	(b)	0.28	(d)
Hazardous Air Pollutants							
1,3-Butadiene	3.91E-05	lb/MMBtu	(3)	0.000	(b)	0.000	(d)
Acetaldehyde	7.67E-04	lb/MMBtu	(3)	0.002	(b)	0.001	(d)
Acrolein	9.25E-05	lb/MMBtu	(3)	0.000	(b)	0.000	(d)
Benzene	9.33E-04	lb/MMBtu	(3)	0.003	(b)	0.001	(d)
Formaldehyde	1.18E-03	lb/MMBtu	(3)	0.004	(b)	0.001	(d)
Naphthalene	9.71E-05	lb/MMBtu	(3)	0.000	(b)	0.000	(d)
Toluene	4.09E-04	lb/MMBtu	(3)	0.001	(b)	0.000	(d)
Xylenes	2.85E-04	lb/MMBtu	(3)	0.001	(b)	0.000	(d)
Total HAPs				**0.012**		**0.003**	
Greenhouse Gas Emissions							
CO_2	116.89	lb/MMBtu	(4)	379.66	(b)	94.91	(d)
CH_4	2.2E-03	lb/MMBtu	(4)	0.01	(b)	0.00	(d)
N_2O	2.2E-04	lb/MMBtu	(4)	0.00	(b)	0.00	(d)
$CO_2e^{(c)}$	-	-		380.05		95.01	

Calculations:

(a) Hourly Emissions (lb/hr) = Emission factor (g/hp-hr) * (lbs/453.6 g) * Engine Power Output (hp)

(b) Hourly Emissions (lb/hr) = Emission factor (lb/MMBtu) * (1MMBtu/1000000 Btu) * Engine Power Output (hp) * Average BSFC (Btu/hp-hr)

(c) Annual emissions (tons/yr) = Emission factor (g/hp-hr) * (lbs/453.6 g) * Engine Power Output (hp) * Annual Hours of operation (hr/yr) * (1ton/2000lbs)

(d) Annual emissions (tons/yr) = Emission factor (lb/MMBtu) * (1MMBtu/1000000Btu) * Engine Power Output (hp) * Average BSFC (Btu/hp-hr) * Annual Hours of operation (hr/yr) * (1ton/2000lbs)

EMISSION INPUTS TABLE		
Engine Power Output (kW) =	346	
Engine Power Output (hp) =	464	
Number of Engines =	1	
Average BSFC (BTU/HP-hr) =	7,000	(5)
Heat Content Natural Gas(Btu/scf) =	1,000.0	(6)
Fuel Throughput (ft3/hr) =	3,248.0	(7)
PTE Hours of Operation =	500	

(c) CO_2 equivalent = [(CO_2 emissions)*(GWP_{CO2})]+[(CH_4 emissions)*(GWP_{CH4})]+[(N_2O emissions)*(GWP_{N2O})]

Global Warming Potential (GWP)

CO_2	1	(8)
CH_4	25	(8)
N_2O	298	(8)

Notes:

(1) Emissions factors supplied from manufacturer's specifications sheets demonstrating unit is in compliance with 40 CFR 60 Subpart IIII

(2) AP-42, Chapter 3.3, Table 3.3-1. - *Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines* (10/96)

(3) AP-42, Chapter 3.3, Table 3.3-2. - *Speciated Organic Compoind Emission Factors for Uncontrolled Diesel Engines* (10/96)

(4) Emission factors are from 40 CFR 98, Subpart C, Table C-1 and C-2.

(5) Average BSFC supplied from AP-42, Chapter 3.3, Table 3.3-1. footnote C

(6) Value obtained from AP-42, Chapter 3.2, Table 3.2-3, footnote b

(7) Fuel throughput = BSFC (BTU/HP-hr) x Power (HP) / Heat Content (BTU/scf)

(8) Global Warming Potentials obtained from 40 CFR 98, Subpart A, Table A-1

Table 4. Dehydration Unit Still Vent Emissions (DEHY-1 & DEHY-2)
Exterran; Model # Unknown
CONE Midstream Partners LP - Philippi Station

Source	PTE per unit (lb/hr)	PTE per unit (lb/day)	PTE[(1)] per unit (tons/yr)
Criteria Pollutants			
VOC	1.592	38.208	6.973
Hazardous Air Pollutants			
Benzene	0.177	4.237	0.773
Toluene	0.261	6.263	1.143
Ethylbenzene	0.395	9.489	1.732
Xylenes	0.544	13.056	2.383
n-Hexane	0.007	0.167	0.031
Total HAP	1.385	33.249	**6.068**
Greenhouse Gas Emissions			
CO_2			-
CH_4	57.249	1373.966	250.749
N_2O	-	-	-
$CO_2e^{(a)}$	1431.21	34349.15	6268.72

Calculations:

EMISSION INPUTS	
Dehy Rating (MMscf/d) =	80.0
Number of Units =	2
Hours of Operation =	8760

(a) CO_2 equivalent = [(CO_2 emissions)*(GWP_{CO2})]+[(CH_4 emissions)*(GWP_{CH4})]+[(N_2O emissions)*(GWP_{N2O})]

Global Warming Potential (GWP)

CO_2	1	(2)
CH_4	25	(2)
N_2O	298	(2)

Notes:

(1) Emissions Calculated utilizing GRI-GLYCalc and reflect the combined regenerator vent/flash gas emissions

(2) Global Warming Potentials obtained from 40 CFR 98, Subpart A, Table A-1

Table 5. Dehydration Unit Reboiler Emissions (RBLR-1 & RBLR-2)
Exterran; Model # UK
CONE Midstream Partners LP - Philippi Station

Pollutant	Emission Factor		PTE (lb/hr)		PTE (ton/yr)	
Criteria Pollutants						
PM/PM10/PM2.5	7.6 lb/MMcf	(1)	0.01	(a)	0.05	(b)
SO_2	0.25 grains S / 100ft^3	(5)	0.00	(e)	0.00	(f)
NOx	100 lb/MMcf	(2)	0.15	(a)	0.66	(b)
CO	84 lb/MMcf	(2)	0.13	(a)	0.55	(b)
VOC	5.5 lb/MMcf	(1)	0.01	(a)	0.04	(b)
Hazardous Air Pollutants						
Arsenic	2.00E-04 lb/MMcf	(3)	0.00	(a)	0.000	(b)
Benzene	2.10E-03 lb/MMcf	(4)	0.00	(a)	0.000	(b)
Beryllium	1.20E-05 lb/MMcf	(3)	0.00	(a)	0.000	(b)
Cadmium	1.10E-03 lb/MMcf	(3)	0.00	(a)	0.000	(b)
Chromium	1.40E-03 lb/MMcf	(3)	0.00	(a)	0.000	(b)
Cobalt	8.40E-05 lb/MMcf	(3)	0.00	(a)	0.000	(b)
Dichlorobenzene	1.20E-03 lb/MMcf	(4)	0.00	(a)	0.000	(b)
Formaldehyde	7.50E-02 lb/MMcf	(4)	0.00	(a)	0.000	(b)
Hexane	1.80E+00 lb/MMcf	(4)	0.00	(a)	0.012	(b)
Lead	5.00E-04 lb/MMcf	(3)	0.00	(a)	0.000	(b)
Manganese	3.80E-04 lb/MMcf	(3)	0.00	(a)	0.000	(b)
Mercury	2.60E-04 lb/MMcf	(3)	0.00	(a)	0.000	(b)
Naphthalene	6.10E-04 lb/MMcf	(4)	0.00	(a)	0.000	(b)
Nickel	2.10E-03 lb/MMcf	(3)	0.00	(a)	0.000	(b)
PAH/POM	1.29E-03 lb/MMcf	(4)	0.00	(a)	0.000	(b)
Selenium	2.40E-05 lb/MMcf	(3)	0.00	(a)	0.000	(b)
Toluene	3.40E-03 lb/MMcf	(4)	0.00	(a)	0.000	(b)
Total HAP			**0.00**		**0.012**	
Greenhouse Gas Emissions						
CO_2	116.89 lb/MMBtu	(6)	175.33	(c)	767.96	(d)
CH_4	2.2E-03 lb/MMBtu	(6)	0.00	(c)	0.01	(d)
N_2O	2.2E-04 lb/MMBtu	(6)	0.00	(c)	0.00	(d)
CO_2e[(g)]	-	-	175.51		768.76	

Calculations:

LB/MMCF

(a) Hourly emissions (lb/hr) = Emission Factor (lb/MMcf) * Fuel Use (MMCF/yr) / Annual hours of operation (hr/yr)

(b) Annual emissions (ton/yr) = Emission Factor (lb/MMcf) * Fuel Use (MMcf/yr) * (1ton/2000lbs)

LB/MMBTU

(c) Hourly Emissions (lb/hr) = Emission Factor (lb/MMBtu) * Fuel Use (MMBtu/hr)

(d) Annual Emissions (ton/yr) = Emission Factor (lb/MMBtu) * Fuel Use (MMBtu/hr) * Hours of operation (hr/yr) * (1ton/2000lbs)

SO_2

(e) Hourly Emissions SO2 Caclulation (lb/hr) = (0.25 grain S/100ft3) * Fuel throughput (MMft3/yr) * (1000000ft3/1MMft3) / annual hours of operation (hr/yr) * (1lb/7000 grains) * (lbmol S/32.06 lb S) * (lbmol SO2/ lbmol S) *(64.07 lb SO2/lbmol SO2)

(f) Annual Emissions SO2 Caclulation (ton/yr) = (0.25 grain S/100ft3) * Fuel throughput (MMft3/yr) * (1000000ft3/1MMft3) * (1lb/7000 grains) * (lbmol S/32.06 lb S) * (lbmol SO2/ lbmol S) *(64.07 lb SO2/lbmol SO2) * (1ton/2000lbs)

EMISSION INPUTS TABLE	
Fuel Use (MMBtu/hr) =	1.5
Number of Units =	2
Hours of Operation (hr/yr)=	8760
MMBtu/MMcf=	1000
PTE Fuel Use (MMft3/yr) =	13.14

(g) CO_2 equivalent = [(CO_2 emissions)*(GWP_{CO2})]+[(CH_4 emissions)*(GWP_{CH4})]+[(N_2O emissions)*(GWP_{N2O})]

Global Warming Potential (GWP)

CO_2	1	(7)
CH_4	25	(7)
N_2O	298	(7)

Notes:

(1) AP-42, Chapter 1.4, Table 1.4-2. Emission Factors For Criteria Pollutants and Greenhouse Gases From Natural Gas Combustion, July 1998.

(2) AP-42, Chapter 1.4, Table 1.4-1. Emission Factors For Nitrogen Oxides (Nox) and Carbon Monoxide(CO) From Natural Gas Combustion, July 1998.

(3) AP-42, Chapter 1.4, Table 1.4-4. Emission Factors For Metals From Natural Gas Combustion, July 1998.

(4) AP-42, Chapter 1.4, Table 1.4-3. Emission Factors for Speciated Organic Compounds from Natural Gas Combustion, July 1998.

(5) AP-42, Chapter 5.3, Section 5.3.1

(6) Emission factors are from 40 CFR 98, Subpart C, Table C-1 and C-2.

(7) Global Warming Potentials obtained from 40 CFR 98, Subpart A, Table A-1

Table 6. Tank Emissions
CONE Midstream Partners LP - Philippi Station

Emission Point	Tank Capacity (gal)	Tank Contents	Control Devices	Tank Throughput (bbls/day)	VOC Emission Factor (lbs/bbls)		VOC Emissions (lbs/yr)[(a)]	VOC Emissions (lb/hr)[(b)]	VOC Emissions (tons/yr)[(c)]
T03	4200	Pipeline Fluids	None	15.65	1.02E-03	(1)	5.84	0.001	0.003
T04	4200	Pipeline Fluids	None	15.65	1.02E-03	(1)	5.84	0.001	0.003
T05	4200	Pipeline Fluids	None	15.65	1.02E-03	(1)	5.84	0.001	0.003
T06	4200	Pipeline Fluids	None	15.65	1.02E-03	(1)	5.84	0.001	0.003
T07	500	Glycol	None	0.65	8.40E-05	(2)	0.02	0.000	0.000
T08	1000	Pipeline Fluids	None	9.65	3.39E-03	(1)	11.95	0.001	0.006
T09	500	Glycol	None	0.65	8.40E-05	(2)	0.02	0.000	0.000
T10	1000	Pipeline Fluids	None	9.65	3.39E-03	(1)	11.95	0.001	0.006
T11	500	Lube Oil	None	0.98	1.12E-03	(2)	0.40	0.000	0.000
T12	500	Lube Oil	None	0.98	1.12E-03	(2)	0.40	0.000	0.000
T13	500	Lube Oil	None	0.98	1.12E-03	(2)	0.40	0.000	0.000
T14	500	Lube Oil	None	0.98	1.12E-03	(2)	0.40	0.000	0.000
T15	500	Lube Oil	None	0.98	1.12E-03	(2)	0.40	0.000	0.000
T16	500	Lube Oil	None	0.98	1.12E-03	(2)	0.40	0.000	0.000
T17	500	Lube Oil	None	0.98	1.12E-03	(2)	0.40	0.000	0.000
T18	500	Lube Oil	None	0.98	1.12E-03	(2)	0.40	0.000	0.000
T19	500	Lube Oil	None	0.98	1.12E-03	(2)	0.40	0.000	0.000
T20	500	Lube Oil	None	0.98	1.12E-03	(2)	0.40	0.000	0.000
T21	720	Diesel	None	1.30	1.11E-03	(2)	0.53	0.000	0.000
T22	520	Used Oil	None	0.98	1.15E-03	(2)	0.41	0.000	0.000
Totals							**52.25**	**0.01**	**0.03**

Calculations:

(a) VOC Emissions (lb/day) = Tank Throughput (bbls/day) * VOC Emission Factor (lbs/bbls)

(b) VOC Emissions (lb/hr) = VOC Emissions (lbs/yr) * (yr/8760hr)

(c) VOC Emissions (ton/yr) = VOC Emissions (lbs/yr) * (1ton/2000lbs)

Notes:

(1) VOC emission factor includes Flashing/Working/Breathing losses as calculated from the Promax Model Simulation report

(2) VOC emission factor includes Working/Breathing losses as calculated from TANKS 4.0.9.d

Table 7. Truck Loading (TL-1) VOC Emissions
CONE Midstream Partners LP - Philippi Station

Contents	Volume Transferred [3]	PTE VOC Emissions (lb/hr)	PTE VOC Emissions (ton/yr) [(a)]
Pipeline Fluids	1,255,694 gal/yr	2.78E-03	1.22E-02
Total		**2.78E-03**	**1.22E-02**

Calculations:

(a) PTE VOC Emissions (ton/yr) given as calculated in the Promax Model simulation report

	Pipeline liquids	
Saturation factor	0.60	Note [(1)]
Pvap (psia)	13.73	Note [(2)]
Bulk Liquid Tempurature (F)	70.02	Note [(2)]

Notes:

(1) AP-42 Section 5.2, Table 5.2-1 Saturation Factors for Calculating Petroleum Liquid Loading Losses, Submerged loading - dedicated normal service

(2) Input parameters as defined by the Promax Model simulation report

(3) Annual rates based on maximum throughput of 29,897 bbls/yr

Table 8. Fugitive Leak Emissions
CONE Midstream Partners LP - Philippi Station

Pollutant	Emission Factor			PTE[(a)] Gas Service (tons/yr)	PTE[(b)] VOC emissions (ton/yr)	PTE[(c)] CO_2e emissions (ton/yr)
Valves	9.9E-03	lb/hr/source	(1)	3.08	0.06	1.47
Pressure Relief Valves	1.9E-02	lb/hr/source	(1)	0.25	0.01	0.12
Connectors (2)	8.6E-04	lb/hr/source	(1)	1.13	0.02	0.54
Open Ended Lines	4.4E-03	lb/hr/source	(1)	0.10	0.00	0.05
Total	-	-		4.57	0.09	2.17

Calculations:

(a) Annual emissions (tons/yr) = [Emission Factor (lb/hr/source)] x [Number of Sources] x [Hours of Operation per Year] x [ton/2000lb]

(b) Gas sample for station assumed to be worst case at 2 wt % VOC[(3)]

(c) Gas sample for station assumed to be at worst case at 95.07 wt% CH_4

Number of Components in Gas Service

Valves =	71	(4)
Pressure Relief Valves =	3	(4)
Connectors =	301	(4)
Open Ended Lines =	5	(4)

Maximum Hour of Operation = 8,760

Global Warming Potential (GWP)

CO_2	1	(5)
CH_4	25	(5)
N_2O	298	(5)

(1) Emission factors from 1995 EPA Protocol for Equipment Leak Emission Estimates, Table 2-4 Oil and Gas Production

(2) Connectors is assumed to include flange connections in the total count

(3) Worst case VOC wt % assumption for station based on gas sample analysis from facility

(4) *Default Average Component Counts for Major Onshore Natural Gas Production Equipment* from 40 CFR 98, Subpart W, Table W-1B

(5) Global Warming Potentials obtained from 40 CFR 98, Subpart A, Table A-1

Table 9. Pig Launcher Blowdown Venting Emissions (PL-1)
CONE Midstream Partners LP - Philippi Station

Receiver Tube:	Diameter (ft)	Length (ft)	**Volume (ft^3)**
	1.33	27.92	**38.784**

Blowdown:	Standard Pressure (psi)	Standard Temp (^oF)	Pressure (psi)	Temperature (^oF)	**Volume (ft^3)**
	14.70	68.00	225.00	100.00	**596.44**

Pollutant:	Volume (ft^3/event)	Moles (lb_{mol})	Molecular Weight of Gas (lbs/lb_{mol})	Wt % VOC	lbs VOC/event	Events/yr	**Emissions (lbs/hr)**	**Emissions (ton/yr)**
VOC	596.44	1.55	16.46	1.80%	0.46	60	**0.46**	**0.01**
CO_2e	-	-	-	**-**	**-**	60	**4.16**	**18.22**

Table 10. Reciprocating Engine Blowdown Venting Emissions
CONE Midstream Partners LP - Philippi Station

Pollutant:	Volume (ft^3/event)	Moles (lb_{mol})	Molecular Weight of Gas (lbs/lb_{mol})	Wt % VOC	lbs VOC/event	Events/yr	Emissions per unit (lbs/hr)	Emissions per unit (ton/yr)
VOC	4628.00	12.02	16.46	1.80%	3.56	60	**3.56**	**0.11**
CO_2e	-	-	-	**-**	**-**	60	**32.27**	**141.36**

Total Number of Engines: 5

USA COMPRESSION

USA Compression Unit 2139 Caterpillar G3516BLE Engine Emissions

Date of Manufacture	5/10/2013	Engine Serial Number	JEF02292	Date Modified/Reconstructed	N/A
Driver Rated HP	1380	Rated Speed in RPM	1400	Combustion Type	Spark Ignited 4 Stroke
Number of Cylinders	16	Compression Ratio	8:1	Combustion Setting	Ultra Lean Burn
Total Displacement (in^3)	4211	Fuel Delivery Method	Carburetor	Combustion Air Treatment	T.C./Aftercooled

Raw Engine Emissions with Customer Supplied Fuel Gas

Fuel Consumption *7442 LHV BTU/bhp-hr or 8265 HHV BTU/bhp-hr*
Altitude *1200 ft*
Maximum Air Inlet Temp *90 F*

	g/bhp-hr [1]	lb/MMBTU [2]	lb/hr	TPY
Nitrogen Oxides (NOx)	1.0		3.04	13.33
Carbon Monoxide (CO)	2.43		7.39	32.38
Volatile Organic Compounds (VOC or NMNEHC)	0.7		2.13	9.33
Formaldehyde (CH2O)	0.44		1.34	5.86
Particulate Matter (PM) Filterable+Condensable		9.99E-03	1.14E-01	4.99E-01
Sulfur Dioxide (SO2)		5.88E-04	6.71E-03	2.94E-02

	g/bhp-hr [1]	lb/hr	Metric Tonne/yr
Carbon Dioxide (CO2)	474	1442	5729
Methane (CH4)	4.05	12.32	48.95

[1] g/bhp-hr are based on Caterpillar Specifications (GERP) with Customer supplied fuel gas, 1200 ft elevation, and 90 F Max Air Inlet Temperature. Note that g/bhp-hr values are based on 100% Load Operation. For Air Permitting, it is recommended to add a safety margin to CO, VOC, and Formaldehyde to account for variations in fuel gas composition and load.

[2] Emission Factor obtained from EPA's AP-42, Fifth Edition, Volume I, Chapter 3: Stationary Internal Combution Sources (Section 3.2 Natural Gas-Fired Reciprocating Engines, Table 3.2-2).

Catalytic Converter Emissions

Catalytic Converter Make amd Model: *EMIT ELX-4200Z-1616F-31CEO-36P*
Element Type: *EMIT RE-3615Z*
Number of Elements in Housing: *1.5*
Air/Fuel Ratio Control *Caterpillar ADEM3, NOx Feedback*

	% Reduction	**lb/hr**	**TPY**
Nitrogen Oxides (NOx)	0	**3.04**	**13.33**
Carbon Monoxide (CO)	42	**4.26**	**18.66**
Volatile Organic Compounds (VOC or NMNEHC)	0	**2.13**	**9.33**
Formaldehyde (CH2O)	76	**0.32**	**1.41**
Particulate Matter (PM)	0	**1.14E-01**	**4.99E-01**
Sulfur Dioxide (SO2)	0	**6.71E-03**	**2.94E-02**

	% Reduction	**lb/hr**	**Metric Tonne/yr**
Carbon Dioxide (CO2)	0	**1442**	**5729**
Methane (CH4)	0	**12.32**	**48.95**

USA COMPRESSION

USA Compression Unit 2204 Caterpillar G3516BLE Engine Emissions

Date of Manufacture	10/28/2011	Engine Serial Number	JEF01399	Date Modified/Reconstructed	N/A
Driver Rated HP	1380	Rated Speed in RPM	1400	Combustion Type	Spark Ignited 4 Stroke
Number of Cylinders	16	Compression Ratio	8:1	Combustion Setting	Ultra Lean Burn
Total Displacement (in^3)	4211	Fuel Delivery Method	Carburetor	Combustion Air Treatment	T.C./Aftercooled

Raw Engine Emissions with Customer Supplied Fuel Gas

Fuel Consumption *7442 LHV BTU/bhp-hr or 8265 HHV BTU/bhp-hr*
Altitude *1200 ft*
Maximum Air Inlet Temp *90 F*

	g/bhp-hr [1]	lb/MMBTU [2]	lb/hr	TPY
Nitrogen Oxides (NOx)	1		3.04	13.33
Carbon Monoxide (CO)	2.43		7.39	32.38
Volatile Organic Compounds (VOC or NMNEHC)	0.7		2.13	9.33
Formaldehyde (CH2O)	0.44		1.34	5.86
Particulate Matter (PM) Filterable+Condensable		9.99E-03	1.14E-01	4.99E-01
Sulfur Dioxide (SO2)		5.88E-04	6.71E-03	2.94E-02

	g/bhp-hr [1]	lb/hr	Metric Tonne/yr
Carbon Dioxide (CO2)	474	1442	5729
Methane (CH4)	4.05	12.32	48.95

[1] g/bhp-hr are based on Caterpillar Specifications (GERP) with Customer supplied fuel gas, 1200 ft elevation, and 90 F Max Air Inlet Temperature. Note that g/bhp-hr values are based on 100% Load Operation. For Air Permitting, it is recommended to add a safety margin to CO, VOC, and Formaldehyde to account for variations in fuel gas composition and load.

[2] Emission Factor obtained from EPA's AP-42, Fifth Edition, Volume I, Chapter 3: Stationary Internal Combution Sources (Section 3.2 Natural Gas-Fired Reciprocating Engines, Table 3.2-2).

Catalytic Converter Emissions

Catalytic Converter Make amd Model: *EMIT ELX-4200Z-1616F-31CEO-36P*
Element Type: *EMIT RE-3615Z*
Number of Elements in Housing: *1.5*
Air/Fuel Ratio Control *Caterpillar ADEM3, NOx Feedback*

	% Reduction	**lb/hr**	**TPY**
Nitrogen Oxides (NOx)	0	**3.04**	**13.33**
Carbon Monoxide (CO)	42	**4.26**	**18.66**
Volatile Organic Compounds (VOC or NMNEHC)	0	**2.13**	**9.33**
Formaldehyde (CH2O)	76	**0.32**	**1.41**
Particulate Matter (PM)	0	**1.14E-01**	**4.99E-01**
Sulfur Dioxide (SO2)	0	**6.71E-03**	**2.94E-02**

	% Reduction	**lb/hr**	**Metric Tonne/yr**
Carbon Dioxide (CO2)	0	**1442**	**5729**
Methane (CH4)	0	**12.32**	**48.95**

USA COMPRESSION

USA Compression Unit 2411 Caterpillar G3516BLE Engine Emissions

Date of Manufacture	11/16/2012	Engine Serial Number	JEF02002	Date Modified/Reconstructed	N/A
Driver Rated HP	1380	Rated Speed in RPM	1400	Combustion Type	Spark Ignited 4 Stroke
Number of Cylinders	16	Compression Ratio	8:1	Combustion Setting	Ultra Lean Burn
Total Displacement (in^3)	4211	Fuel Delivery Method	Carburetor	Combustion Air Treatment	T.C./Aftercooled

Raw Engine Emissions with Customer Supplied Fuel Gas

Fuel Consumption *7442 LHV BTU/bhp-hr or 8265 HHV BTU/bhp-hr*
Altitude *1200 ft*
Maximum Air Inlet Temp *90 F*

	g/bhp-hr [1]	lb/MMBTU [2]	lb/hr	TPY
Nitrogen Oxides (NOx)	1.0		3.04	13.33
Carbon Monoxide (CO)	2.43		7.39	32.38
Volatile Organic Compounds (VOC or NMNEHC)	0.7		2.13	9.33
Formaldehyde (CH2O)	0.44		1.34	5.86
Particulate Matter (PM) Filterable+Condensable		9.99E-03	1.14E-01	4.99E-01
Sulfur Dioxide (SO2)		5.88E-04	6.71E-03	2.94E-02

	g/bhp-hr [1]	lb/hr	Metric Tonne/yr
Carbon Dioxide (CO2)	474	1442	5729
Methane (CH4)	4.05	12.32	48.95

[1] g/bhp-hr are based on Caterpillar Specifications (GERP) with Customer supplied fuel gas, 1200 ft elevation, and 90 F Max Air Inlet Temperature. Note that g/bhp-hr values are based on 100% Load Operation. For Air Permitting, it is recommended to add a safety margin to CO, VOC, and Formaldehyde to account for variations in fuel gas composition and load.

[2] Emission Factor obtained from EPA's AP-42, Fifth Edition, Volume I, Chapter 3: Stationary Internal Combution Sources (Section 3.2 Natural Gas-Fired Reciprocating Engines, Table 3.2-2).

Catalytic Converter Emissions

Catalytic Converter Make amd Model: *EMIT ELX-5000Z-1616F-31CEO-36P*
Element Type: *EMIT RE-3615Z*
Number of Elements in Housing: *1.5*
Air/Fuel Ratio Control *Caterpillar ADEM3, NOx Feedback*

	% Reduction		lb/hr	TPY
Nitrogen Oxides (NOx)	0	or 1.0 g/bhp-hr	**3.04**	**13.33**
Carbon Monoxide (CO)	42		**4.26**	**18.66**
Volatile Organic Compounds (VOC or NMNEHC)	0		**2.13**	**9.33**
Formaldehyde (CH2O)	76		**0.32**	**1.41**
Particulate Matter (PM)	0		**1.14E-01**	**4.99E-01**
Sulfur Dioxide (SO2)	0		**6.71E-03**	**2.94E-02**

	% Reduction	lb/hr	Metric Tonne/yr
Carbon Dioxide (CO2)	0	**1442**	**5729**
Methane (CH4)	0	**12.32**	**48.95**

USA Compression Unit 2498 Caterpillar G3516BLE Engine Emissions

Date of Manufacture	11/15/2013	Engine Serial Number	JEF02478	Date Modified/Reconstructed	N/A
Driver Rated HP	1380	Rated Speed in RPM	1400	Combustion Type	Spark Ignited 4 Stroke
Number of Cylinders	16	Compression Ratio	8:1	Combustion Setting	Ultra Lean Burn
Total Displacement (in^3)	4211	Fuel Delivery Method	Carburetor	Combustion Air Treatment	T.C./Aftercooled

Raw Engine Emissions with Customer Supplied Fuel Gas

Fuel Consumption *7442 LHV BTU/bhp-hr or 8265 HHV BTU/bhp-hr*
Altitude *1200 ft*
Maximum Air Inlet Temp *90 F*

	g/bhp-hr [1]	lb/MMBTU [2]	lb/hr	TPY
Nitrogen Oxides (NOx)	1.0		3.04	13.33
Carbon Monoxide (CO)	2.43		7.39	32.38
Volatile Organic Compounds (VOC or NMNEHC)	0.7		2.13	9.33
Formaldehyde (CH2O)	0.44		1.34	5.86
Particulate Matter (PM) Filterable+Condensable		9.99E-03	1.14E-01	4.99E-01
Sulfur Dioxide (SO2)		5.88E-04	6.71E-03	2.94E-02

	g/bhp-hr [1]	lb/hr	Metric Tonne/yr
Carbon Dioxide (CO2)	474	1442	5729
Methane (CH4)	4.05	12.32	48.95

[1] g/bhp-hr are based on Caterpillar Specifications (GERP) with Customer supplied fuel gas, 1200 ft elevation, and 90 F Max Air Inlet Temperature. Note that g/bhp-hr values are based on 100% Load Operation. For Air Permitting, it is recommended to add a safety margin to CO, VOC, and Formaldehyde to account for variations in fuel gas composition and load.

[2] Emission Factor obtained from EPA's AP-42, Fifth Edition, Volume I, Chapter 3: Stationary Internal Combution Sources (Section 3.2 Natural Gas-Fired Reciprocating Engines, Table 3.2-2).

Catalytic Converter Emissions

Catalytic Converter Make amd Model: *DCL, DC64L2*
Element Type: *DC64, A Coat Oxidation Element*
Number of Elements in Housing: *2*
Air/Fuel Ratio Control *Caterpillar ADEM3, NOx Feedback*

	% Reduction	**lb/hr**	**TPY**
Nitrogen Oxides (NOx)	0	**3.04**	**13.33**
Carbon Monoxide (CO)	42	**4.26**	**18.66**
Volatile Organic Compounds (VOC or NMNEHC)	0	**2.13**	**9.33**
Formaldehyde (CH2O)	76	**0.32**	**1.41**
Particulate Matter (PM)	0	**1.14E-01**	**4.99E-01**
Sulfur Dioxide (SO2)	0	**6.71E-03**	**2.94E-02**

	% Reduction	**lb/hr**	**Metric Tonne/yr**
Carbon Dioxide (CO2)	0	**1442**	**5729**
Methane (CH4)	0	**12.32**	**48.95**

GRI-GLYCalc VERSION 4.0 - SUMMARY OF INPUT VALUES

Case Name: CONE Midstream - Philippi Station
File Name: N:\West Virginia\CONE Midstream\2017\Air Permitting\Philippi Station\GlyCalc\GLYCalc_Philippi_PTE_2017_MH.ddf
Date: May 05, 2017

DESCRIPTION:

Description: Maximum Potential to Emit (PTE) for Philippi Station Dehydration Units
Exterran - 80 mmscf/d
Gas Sample taken 11/8/2016

Annual Hours of Operation: 8760.0 hours/yr

WET GAS:

Temperature: 70.00 deg. F
Pressure: 900.00 psig
Wet Gas Water Content: Saturated

Component	Conc. (vol %)
Carbon Dioxide	0.4450
Nitrogen	0.2570
Methane	97.5240
Ethane	1.7140
Propane	0.0510
Isobutane	0.0010
n-Butane	0.0080
Isopentane	0.0001
n-Pentane	0.0001
Cyclopentane	0.0001
n-Hexane	0.0005
Cyclohexane	0.0001
Other Hexanes	0.0001
Heptanes	0.0001
Methylcyclohexane	0.0001
2,2,4-Trimethylpentane	0.0001
Benzene	0.0003
Toluene	0.0002
Ethylbenzene	0.0002
Xylenes	0.0002
C8+ Heavies	0.0001

DRY GAS:

Flow Rate: 80.0 MMSCF/day
Water Content: 7.0 lbs. H2O/MMSCF

LEAN GLYCOL:

Glycol Type: TEG
Water Content: 1.5 wt% H2O
Flow Rate: 7.5 gpm

PUMP:

Glycol Pump Type: Gas Injection
Gas Injection Pump Volume Ratio: 0.080 acfm gas/gpm glycol

FLASH TANK:

Flash Control: Combustion device
Flash Control Efficiency: 50.00 %
Temperature: 150.0 deg. F
Pressure: 35.0 psig

GRI-GLYCalc VERSION 4.0 - AGGREGATE CALCULATIONS REPORT

Case Name: CONE Midstream - Philippi Station
File Name: N:\West Virginia\CONE Midstream\2017\Air Permitting\Philippi Station\GlyCalc\GLYCalc_Philippi_PTE_2017_MH.ddf
Date: May 05, 2017

DESCRIPTION:

Description: Maximum Potential to Emit (PTE) for Philippi
Station Dehydration Units
Exterran - 80 mmscf/d
Gas Sample taken 11/8/2016

Annual Hours of Operation: 8760.0 hours/yr

EMISSIONS REPORTS:

UNCONTROLLED REGENERATOR EMISSIONS

Component	lbs/hr	lbs/day	tons/yr
Methane	0.7198	17.275	3.1527
Ethane	0.0976	2.342	0.4274
Propane	0.0104	0.250	0.0457
Isobutane	0.0005	0.011	0.0020
n-Butane	0.0054	0.130	0.0237
Isopentane	0.0001	0.002	0.0004
n-Pentane	0.0001	0.003	0.0006
Cyclopentane	0.0013	0.030	0.0055
n-Hexane	0.0019	0.046	0.0084
Cyclohexane	0.0037	0.089	0.0162
Other Hexanes	0.0002	0.006	0.0011
Heptanes	0.0013	0.031	0.0057
Methylcyclohexane	0.0054	0.130	0.0237
2,2,4-Trimethylpentane	0.0004	0.010	0.0018
Benzene	0.1601	3.842	0.7011
Toluene	0.2441	5.858	1.0692
Ethylbenzene	0.3796	9.111	1.6627
Xylenes	0.5285	12.685	2.3150
C8+ Heavies	0.0097	0.233	0.0426
Total Emissions	2.1702	52.085	9.5054
Total Hydrocarbon Emissions	2.1702	52.085	9.5054
Total VOC Emissions	1.3528	32.467	5.9253
Total HAP Emissions	1.3146	31.551	5.7581
Total BTEX Emissions	1.3123	31.496	5.7480

FLASH GAS EMISSIONS

Component	lbs/hr	lbs/day	tons/yr
Methane	56.5288	1356.691	247.5961
Ethane	2.3211	55.707	10.1665
Propane	0.1190	2.855	0.5210
Isobutane	0.0036	0.086	0.0158
n-Butane	0.0333	0.799	0.1458
Isopentane	0.0005	0.012	0.0023

n-Pentane	0.0006	0.015	0.0027
Cyclopentane	0.0015	0.035	0.0064
n-Hexane	0.0051	0.121	0.0221
Cyclohexane	0.0025	0.061	0.0111
Other Hexanes	0.0008	0.020	0.0037
Heptanes	0.0017	0.042	0.0076
Methylcyclohexane	0.0030	0.071	0.0130
2,2,4-Trimethylpentane	0.0011	0.026	0.0048
Benzene	0.0165	0.396	0.0722
Toluene	0.0169	0.405	0.0739
Ethylbenzene	0.0158	0.378	0.0691
Xylenes	0.0155	0.371	0.0677
C8+ Heavies	0.0019	0.047	0.0085
Total Emissions	59.0891	1418.138	258.8102
Total Hydrocarbon Emissions	59.0891	1418.138	258.8102
Total VOC Emissions	0.2392	5.740	1.0476
Total HAP Emissions	0.0707	1.698	0.3098
Total BTEX Emissions	0.0646	1.550	0.2828

FLASH TANK OFF GAS

Component	lbs/hr	lbs/day	tons/yr
Methane	113.0576	2713.382	495.1922
Ethane	4.6422	111.414	20.3330
Propane	0.2379	5.710	1.0421
Isobutane	0.0072	0.173	0.0315
n-Butane	0.0666	1.598	0.2916
Isopentane	0.0010	0.025	0.0045
n-Pentane	0.0012	0.029	0.0053
Cyclopentane	0.0029	0.071	0.0129
n-Hexane	0.0101	0.243	0.0443
Cyclohexane	0.0051	0.121	0.0221
Other Hexanes	0.0017	0.041	0.0074
Heptanes	0.0035	0.083	0.0152
Methylcyclohexane	0.0059	0.142	0.0259
2,2,4-Trimethylpentane	0.0022	0.053	0.0096
Benzene	0.0330	0.791	0.1444
Toluene	0.0337	0.810	0.1478
Ethylbenzene	0.0315	0.757	0.1381
Xylenes	0.0309	0.742	0.1354
C8+ Heavies	0.0039	0.093	0.0170
Total Emissions	118.1782	2836.276	517.6205
Total Hydrocarbon Emissions	118.1782	2836.276	517.6205
Total VOC Emissions	0.4784	11.481	2.0952
Total HAP Emissions	0.1415	3.395	0.6196
Total BTEX Emissions	0.1292	3.100	0.5657

COMBINED REGENERATOR VENT/FLASH GAS EMISSIONS

Component	lbs/hr	lbs/day	tons/yr
Methane	57.2486	1373.966	250.7488
Ethane	2.4187	58.049	10.5939
Propane	0.1294	3.105	0.5667
Isobutane	0.0041	0.097	0.0178
n-Butane	0.0387	0.929	0.1695

Isopentane	0.0006	0.015	0.0027
n-Pentane	0.0007	0.018	0.0033
Cyclopentane	0.0027	0.066	0.0120
n-Hexane	0.0070	0.167	0.0305
Cyclohexane	0.0062	0.150	0.0273
Other Hexanes	0.0011	0.026	0.0048
Heptanes	0.0030	0.073	0.0133
Methylcyclohexane	0.0084	0.201	0.0366
2,2,4-Trimethylpentane	0.0015	0.036	0.0066
Benzene	0.1766	4.237	0.7733
Toluene	0.2610	6.263	1.1430
Ethylbenzene	0.3954	9.489	1.7317
Xylenes	0.5440	13.056	2.3827
C8+ Heavies	0.0117	0.280	0.0511
Total Emissions	61.2593	1470.223	268.3157
Total Hydrocarbon Emissions	61.2593	1470.223	268.3157
Total VOC Emissions	1.5920	38.208	6.9729
Total HAP Emissions	1.3854	33.249	6.0679
Total BTEX Emissions	1.3769	33.045	6.0308

COMBINED REGENERATOR VENT/FLASH GAS EMISSION CONTROL REPORT:

Component	Uncontrolled tons/yr	Controlled tons/yr	% Reduction
Methane	498.3449	250.7488	49.68
Ethane	20.7604	10.5939	48.97
Propane	1.0878	0.5667	47.90
Isobutane	0.0335	0.0178	47.01
n-Butane	0.3153	0.1695	46.24
Isopentane	0.0049	0.0027	45.96
n-Pentane	0.0059	0.0033	45.10
Cyclopentane	0.0184	0.0120	34.95
n-Hexane	0.0527	0.0305	42.05
Cyclohexane	0.0384	0.0273	28.84
Other Hexanes	0.0085	0.0048	43.77
Heptanes	0.0209	0.0133	36.44
Methylcyclohexane	0.0496	0.0366	26.13
2,2,4-Trimethylpentane	0.0114	0.0066	42.17
Benzene	0.8455	0.7733	8.54
Toluene	1.2169	1.1430	6.07
Ethylbenzene	1.8008	1.7317	3.84
Xylenes	2.4504	2.3827	2.76
C8+ Heavies	0.0596	0.0511	14.26
Total Emissions	527.1259	268.3157	49.10
Total Hydrocarbon Emissions	527.1259	268.3157	49.10
Total VOC Emissions	8.0205	6.9729	13.06
Total HAP Emissions	6.3777	6.0679	4.86
Total BTEX Emissions	6.3136	6.0308	4.48

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:	1.18 lbs. H2O/MMSCF
Temperature:	70.0 deg. F
Pressure:	900.0 psig
Dry Gas Flow Rate:	80.0000 MMSCF/day
Glycol Losses with Dry Gas:	0.2245 lb/hr
Wet Gas Water Content:	Saturated
Calculated Wet Gas Water Content:	24.97 lbs. H2O/MMSCF
Calculated Lean Glycol Recirc. Ratio:	5.68 gal/lb H2O

Component	Remaining in Dry Gas	Absorbed in Glycol
Water	4.74%	95.26%
Carbon Dioxide	99.85%	0.15%
Nitrogen	99.99%	0.01%
Methane	99.99%	0.01%
Ethane	99.97%	0.03%
Propane	99.95%	0.05%
Isobutane	99.92%	0.08%
n-Butane	99.90%	0.10%
Isopentane	99.90%	0.10%
n-Pentane	99.86%	0.14%
Cyclopentane	99.39%	0.61%
n-Hexane	99.76%	0.24%
Cyclohexane	98.89%	1.11%
Other Hexanes	99.82%	0.18%
Heptanes	99.53%	0.47%
Methylcyclohexane	98.76%	1.24%
2,2,4-Trimethylpentane	99.81%	0.19%
Benzene	88.82%	11.18%
Toluene	82.91%	17.09%
Ethylbenzene	78.03%	21.97%
Xylenes	70.08%	29.92%
C8+ Heavies	99.16%	0.84%

FLASH TANK

Flash Control:	Combustion device
Flash Control Efficiency:	50.00 %
Flash Temperature:	150.0 deg. F
Flash Pressure:	35.0 psig

Component	Left in Glycol	Removed in Flash Gas
Water	99.44%	0.56%
Carbon Dioxide	6.11%	93.89%
Nitrogen	0.61%	99.39%
Methane	0.63%	99.37%
Ethane	2.06%	97.94%

Propane	4.20%	95.80%
Isobutane	5.98%	94.02%
n-Butane	7.53%	92.47%
Isopentane	8.36%	91.64%
n-Pentane	10.09%	89.91%
Cyclopentane	30.41%	69.59%
n-Hexane	16.21%	83.79%
Cyclohexane	44.05%	55.95%
Other Hexanes	13.08%	86.92%
Heptanes	27.43%	72.57%
Methylcyclohexane	49.72%	50.28%
2,2,4-Trimethylpentane	16.57%	83.43%
Benzene	83.77%	16.23%
Toluene	88.81%	11.19%
Ethylbenzene	93.13%	6.87%
Xylenes	95.19%	4.81%
C8+ Heavies	74.68%	25.32%

REGENERATOR

No Stripping Gas used in regenerator.

Component	Remaining in Glycol	Distilled Overhead
Water	44.63%	55.37%
Carbon Dioxide	0.00%	100.00%
Nitrogen	0.00%	100.00%
Methane	0.00%	100.00%
Ethane	0.00%	100.00%
Propane	0.00%	100.00%
Isobutane	0.00%	100.00%
n-Butane	0.00%	100.00%
Isopentane	3.51%	96.49%
n-Pentane	3.25%	96.75%
Cyclopentane	1.47%	98.53%
n-Hexane	2.37%	97.63%
Cyclohexane	6.83%	93.17%
Other Hexanes	5.45%	94.55%
Heptanes	1.57%	98.43%
Methylcyclohexane	7.61%	92.39%
2,2,4-Trimethylpentane	6.50%	93.50%
Benzene	5.93%	94.07%
Toluene	8.86%	91.14%
Ethylbenzene	11.15%	88.85%
Xylenes	13.55%	86.45%
C8+ Heavies	14.97%	85.03%

STREAM REPORTS:

WET GAS STREAM

Temperature: 70.00 deg. F
Pressure: 914.70 psia

Flow Rate: 3.34e+006 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	5.26e-002	8.33e+001
Carbon Dioxide	4.45e-001	1.72e+003
Nitrogen	2.57e-001	6.32e+002
Methane	9.75e+001	1.37e+005
Ethane	1.71e+000	4.53e+003
Propane	5.10e-002	1.98e+002
Isobutane	9.99e-004	5.11e+000
n-Butane	8.00e-003	4.08e+001
Isopentane	9.99e-005	6.34e-001
n-Pentane	9.99e-005	6.34e-001
Cyclopentane	9.99e-005	6.16e-001
n-Hexane	5.00e-004	3.79e+000
Cyclohexane	9.99e-005	7.39e-001
Other Hexanes	9.99e-005	7.57e-001
Heptanes	9.99e-005	8.80e-001
Methylcyclohexane	9.99e-005	8.63e-001
2,2,4-Trimethylpentane	9.99e-005	1.00e+000
Benzene	2.50e-004	1.72e+000
Toluene	2.00e-004	1.62e+000
Ethylbenzene	2.00e-004	1.87e+000
Xylenes	2.00e-004	1.87e+000
C8+ Heavies	9.99e-005	1.50e+000
Total Components	100.00	1.45e+005

DRY GAS STREAM

Temperature: 70.00 deg. F
Pressure: 914.70 psia
Flow Rate: 3.33e+006 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	2.49e-003	3.94e+000
Carbon Dioxide	4.44e-001	1.72e+003
Nitrogen	2.57e-001	6.32e+002
Methane	9.75e+001	1.37e+005
Ethane	1.71e+000	4.53e+003
Propane	5.10e-002	1.97e+002
Isobutane	9.99e-004	5.10e+000
n-Butane	7.99e-003	4.08e+001
Isopentane	9.99e-005	6.33e-001
n-Pentane	9.99e-005	6.33e-001
Cyclopentane	9.94e-005	6.12e-001
n-Hexane	4.99e-004	3.78e+000
Cyclohexane	9.89e-005	7.31e-001
Other Hexanes	9.98e-005	7.56e-001
Heptanes	9.95e-005	8.76e-001
Methylcyclohexane	9.88e-005	8.52e-001
2,2,4-Trimethylpentane	9.98e-005	1.00e+000
Benzene	2.22e-004	1.52e+000
Toluene	1.66e-004	1.34e+000
Ethylbenzene	1.56e-004	1.46e+000
Xylenes	1.40e-004	1.31e+000

Component	Conc. (wt%)	Loading (lb/hr)
C8+ Heavies	9.92e-005	1.48e+000
Total Components	100.00	1.45e+005

LEAN GLYCOL STREAM

Temperature: 70.00 deg. F
Flow Rate: 7.50e+000 gpm

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.85e+001	4.16e+003
Water	1.50e+000	6.33e+001
Carbon Dioxide	6.19e-012	2.61e-010
Nitrogen	1.51e-013	6.38e-012
Methane	9.76e-018	4.12e-016
Ethane	1.56e-008	6.58e-007
Propane	9.87e-011	4.17e-009
Isobutane	2.76e-012	1.16e-010
n-Butane	2.46e-011	1.04e-009
Isopentane	7.86e-008	3.32e-006
n-Pentane	1.05e-007	4.45e-006
Cyclopentane	4.46e-007	1.88e-005
n-Hexane	1.10e-006	4.64e-005
Cyclohexane	6.43e-006	2.72e-004
Other Hexanes	3.29e-007	1.39e-005
Heptanes	4.90e-007	2.07e-005
Methylcyclohexane	1.05e-005	4.45e-004
2,2,4-Trimethylpentane	6.70e-007	2.83e-005
Benzene	2.39e-004	1.01e-002
Toluene	5.62e-004	2.37e-002
Ethylbenzene	1.13e-003	4.76e-002
Xylenes	1.96e-003	8.28e-002
C8+ Heavies	4.06e-005	1.71e-003
Total Components	100.00	4.22e+003

RICH GLYCOL AND PUMP GAS STREAM

Temperature: 70.00 deg. F
Pressure: 914.70 psia
Flow Rate: 7.93e+000 gpm
NOTE: Stream has more than one phase.

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.40e+001	4.16e+003
Water	3.22e+000	1.43e+002
Carbon Dioxide	8.78e-002	3.88e+000
Nitrogen	1.20e-002	5.31e-001
Methane	2.57e+000	1.14e+002
Ethane	1.07e-001	4.74e+000
Propane	5.61e-003	2.48e-001
Isobutane	1.73e-004	7.65e-003
n-Butane	1.63e-003	7.20e-002
Isopentane	2.56e-005	1.13e-003
n-Pentane	3.07e-005	1.36e-003
Cyclopentane	9.54e-005	4.22e-003

n-Hexane	2.73e-004	1.21e-002
Cyclohexane	2.04e-004	9.03e-003
Other Hexanes	4.40e-005	1.95e-003
Heptanes	1.08e-004	4.79e-003
Methylcyclohexane	2.66e-004	1.18e-002
2,2,4-Trimethylpentane	5.94e-005	2.63e-003
Benzene	4.59e-003	2.03e-001
Toluene	6.81e-003	3.02e-001
Ethylbenzene	1.04e-002	4.59e-001
Xylenes	1.45e-002	6.42e-001
C8+ Heavies	3.46e-004	1.53e-002
Total Components	100.00	4.43e+003

FLASH TANK OFF GAS STREAM

Temperature: 150.00 deg. F
Pressure: 49.70 psia
Flow Rate: 2.79e+003 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	6.08e-001	8.05e-001
Carbon Dioxide	1.13e+000	3.65e+000
Nitrogen	2.56e-001	5.28e-001
Methane	9.58e+001	1.13e+002
Ethane	2.10e+000	4.64e+000
Propane	7.33e-002	2.38e-001
Isobutane	1.68e-003	7.19e-003
n-Butane	1.56e-002	6.66e-002
Isopentane	1.95e-004	1.04e-003
n-Pentane	2.30e-004	1.22e-003
Cyclopentane	5.70e-004	2.94e-003
n-Hexane	1.59e-003	1.01e-002
Cyclohexane	8.16e-004	5.05e-003
Other Hexanes	2.67e-004	1.69e-003
Heptanes	4.71e-004	3.47e-003
Methylcyclohexane	8.19e-004	5.92e-003
2,2,4-Trimethylpentane	2.61e-004	2.19e-003
Benzene	5.74e-003	3.30e-002
Toluene	4.98e-003	3.37e-002
Ethylbenzene	4.04e-003	3.15e-002
Xylenes	3.96e-003	3.09e-002
C8+ Heavies	3.10e-004	3.88e-003
Total Components	100.00	1.23e+002

FLASH TANK GLYCOL STREAM

Temperature: 150.00 deg. F
Flow Rate: 7.66e+000 gpm

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.66e+001	4.16e+003
Water	3.30e+000	1.42e+002
Carbon Dioxide	5.52e-003	2.37e-001
Nitrogen	7.56e-005	3.25e-003

Methane	1.67e-002	7.20e-001
Ethane	2.27e-003	9.76e-002
Propane	2.42e-004	1.04e-002
Isobutane	1.06e-005	4.57e-004
n-Butane	1.26e-004	5.42e-003
Isopentane	2.20e-006	9.46e-005
n-Pentane	3.18e-006	1.37e-004
Cyclopentane	2.98e-005	1.28e-003
n-Hexane	4.55e-005	1.96e-003
Cyclohexane	9.24e-005	3.98e-003
Other Hexanes	5.92e-006	2.55e-004
Heptanes	3.05e-005	1.31e-003
Methylcyclohexane	1.36e-004	5.85e-003
2,2,4-Trimethylpentane	1.01e-005	4.35e-004
Benzene	3.95e-003	1.70e-001
Toluene	6.22e-003	2.68e-001
Ethylbenzene	9.93e-003	4.27e-001
Xylenes	1.42e-002	6.11e-001
C8+ Heavies	2.66e-004	1.14e-002
Total Components	100.00	4.30e+003

FLASH GAS EMISSIONS

Flow Rate: 5.60e+003 scfh
Control Method: Combustion Device
Control Efficiency: 50.00

Component	Conc. (vol%)	Loading (lb/hr)
Water	4.98e+001	1.32e+002
Carbon Dioxide	2.56e+001	1.66e+002
Nitrogen	1.28e-001	5.28e-001
Methane	2.39e+001	5.65e+001
Ethane	5.23e-001	2.32e+000
Propane	1.83e-002	1.19e-001
Isobutane	4.20e-004	3.60e-003
n-Butane	3.88e-003	3.33e-002
Isopentane	4.88e-005	5.19e-004
n-Pentane	5.74e-005	6.10e-004
Cyclopentane	1.42e-004	1.47e-003
n-Hexane	3.98e-004	5.06e-003
Cyclohexane	2.04e-004	2.53e-003
Other Hexanes	6.66e-005	8.47e-004
Heptanes	1.18e-004	1.74e-003
Methylcyclohexane	2.04e-004	2.96e-003
2,2,4-Trimethylpentane	6.51e-005	1.10e-003
Benzene	1.43e-003	1.65e-002
Toluene	1.24e-003	1.69e-002
Ethylbenzene	1.01e-003	1.58e-002
Xylenes	9.87e-004	1.55e-002
C8+ Heavies	7.72e-005	1.94e-003
Total Components	100.00	3.58e+002

REGENERATOR OVERHEADS STREAM

Temperature: 212.00 deg. F
Pressure: 14.70 psia
Flow Rate: 1.68e+003 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	9.85e+001	7.86e+001
Carbon Dioxide	1.22e-001	2.37e-001
Nitrogen	2.62e-003	3.25e-003
Methane	1.01e+000	7.20e-001
Ethane	7.32e-002	9.76e-002
Propane	5.34e-003	1.04e-002
Isobutane	1.78e-004	4.57e-004
n-Butane	2.10e-003	5.42e-003
Isopentane	2.86e-005	9.13e-005
n-Pentane	4.14e-005	1.33e-004
Cyclopentane	4.07e-004	1.27e-003
n-Hexane	5.00e-004	1.91e-003
Cyclohexane	9.94e-004	3.71e-003
Other Hexanes	6.31e-005	2.41e-004
Heptanes	2.91e-004	1.29e-003
Methylcyclohexane	1.24e-003	5.41e-003
2,2,4-Trimethylpentane	8.04e-005	4.07e-004
Benzene	4.62e-002	1.60e-001
Toluene	5.98e-002	2.44e-001
Ethylbenzene	8.07e-002	3.80e-001
Xylenes	1.12e-001	5.29e-001
C8+ Heavies	1.29e-003	9.73e-003
Total Components	100.00	8.10e+001

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

Identification

User Identification:	Philippi - T07 & T09 - Glycol Storage Tank
City:	Philippi
State:	West Virginia
Company:	CONE Midstream Partners LP
Type of Tank:	Horizontal Tank
Description:	CONE - Philippi Station

Tank Dimensions

Shell Length (ft):	5.50
Diameter (ft):	4.00
Volume (gallons):	500.00
Turnovers:	0.00
Net Throughput(gal/yr):	10,000.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Light
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

Philippi - T07 & T09 - Glycol Storage Tank - Horizontal Tank
Philippi, West Virginia

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	55.41	46.54	64.27	51.30	0.0007	0.0004	0.0012	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)

Philippi - T07 & T09 - Glycol Storage Tank - Horizontal Tank
Philippi, West Virginia

Annual Emission Calcaulations	
Standing Losses (lb):	0.0104
Vapor Space Volume (cu ft):	44.0223
Vapor Density (lb/cu ft):	0.0000
Vapor Space Expansion Factor:	0.0645
Vented Vapor Saturation Factor:	0.9999
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	44.0223
Tank Diameter (ft):	4.0000
Effective Diameter (ft):	5.2939
Vapor Space Outage (ft):	2.0000
Tank Shell Length (ft):	5.5000
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):	0.0007
Daily Avg. Liquid Surface Temp. (deg. R):	515.0759
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):	510.9683
Tank Paint Solar Absorptance (Shell):	0.5400
Daily Total Solar Insulation Factor (Btu/sqft day):	1,193.8870
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0645
Daily Vapor Temperature Range (deg. R):	35.4636
Daily Vapor Pressure Range (psia):	0.0008
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0007
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0004
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0012
Daily Avg. Liquid Surface Temp. (deg R):	515.0759
Daily Min. Liquid Surface Temp. (deg R):	506.2100
Daily Max. Liquid Surface Temp. (deg R):	523.9417
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):	0.0007
Vapor Space Outage (ft):	2.0000
Working Losses (lb):	0.0132
Vapor Molecular Weight (lb/lb-mole):	76.1100
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0007
Annual Net Throughput (gal/yr.):	10,000.0000
Annual Turnovers:	0.0000
Turnover Factor:	1.0000
Tank Diameter (ft):	4.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	0.0236

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

Emissions Report for: Annual

Philippi - T07 & T09 - Glycol Storage Tank - Horizontal Tank
Philippi, West Virginia

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

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

Identification

User Identification:	Philippi - T11 : T20 - Lube Oil Tank
City:	Philippi
State:	West Virginia
Company:	CONE Midstream Partners LP
Type of Tank:	Horizontal Tank
Description:	CONE - Philippi Station

Tank Dimensions

Shell Length (ft):	5.50
Diameter (ft):	4.00
Volume (gallons):	500.00
Turnovers:	0.00
Net Throughput(gal/yr):	15,000.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Light
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

Philippi - T11 : T20 - Lube Oil Tank - Horizontal Tank
Philippi, West Virginia

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
Distillate fuel oil no. 2	All	55.41	46.54	64.27	51.30	0.0056	0.0040	0.0076	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0065

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

Philippi - T11 : T20 - Lube Oil Tank - Horizontal Tank
Philippi, West Virginia

Annual Emission Calcaulations	
Standing Losses (lb):	0.1365
Vapor Space Volume (cu ft):	44.0223
Vapor Density (lb/cu ft):	0.0001
Vapor Space Expansion Factor:	0.0647
Vented Vapor Saturation Factor:	0.9994
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	44.0223
Tank Diameter (ft):	4.0000
Effective Diameter (ft):	5.2939
Vapor Space Outage (ft):	2.0000
Tank Shell Length (ft):	5.5000
Vapor Density	
Vapor Density (lb/cu ft):	0.0001
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0056
Daily Avg. Liquid Surface Temp. (deg. R):	515.0759
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):	510.9683
Tank Paint Solar Absorptance (Shell):	0.5400
Daily Total Solar Insulation Factor (Btu/sqft day):	1,193.8870
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0647
Daily Vapor Temperature Range (deg. R):	35.4636
Daily Vapor Pressure Range (psia):	0.0036
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0056
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0040
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0076
Daily Avg. Liquid Surface Temp. (deg R):	515.0759
Daily Min. Liquid Surface Temp. (deg R):	506.2100
Daily Max. Liquid Surface Temp. (deg R):	523.9417
Daily Ambient Temp. Range (deg. R):	24.1833
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9994
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	0.0056
Vapor Space Outage (ft):	2.0000
Working Losses (lb):	0.2591
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0056
Annual Net Throughput (gal/yr.):	15,000.0000
Annual Turnovers:	0.0000
Turnover Factor:	1.0000
Tank Diameter (ft):	4.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	0.3956

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

Emissions Report for: Annual

Philippi - T11 : T20 - Lube Oil Tank - Horizontal Tank
Philippi, West Virginia

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	0.26	0.14	0.40

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

Identification

User Identification:	Philippi - T21 - Diesel Fuel Storage Tank
City:	Philippi
State:	West Virginia
Company:	CONE Midstream Partners LP
Type of Tank:	Horizontal Tank
Description:	CONE - Philippi Station

Tank Dimensions

Shell Length (ft):	6.00
Diameter (ft):	4.50
Volume (gallons):	720.00
Turnovers:	0.00
Net Throughput(gal/yr):	20,000.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Light
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

Philippi - T21 - Diesel Fuel Storage Tank - Horizontal Tank
Philippi, West Virginia

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
Distillate fuel oil no. 2	All	55.41	46.54	64.27	51.30	0.0056	0.0040	0.0076	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0065

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

Philippi - T21 - Diesel Fuel Storage Tank - Horizontal Tank
Philippi, West Virginia

Annual Emission Calcaulations	
Standing Losses (lb):	0.1884
Vapor Space Volume (cu ft):	60.7808
Vapor Density (lb/cu ft):	0.0001
Vapor Space Expansion Factor:	0.0647
Vented Vapor Saturation Factor:	0.9993
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	60.7808
Tank Diameter (ft):	4.5000
Effective Diameter (ft):	5.8647
Vapor Space Outage (ft):	2.2500
Tank Shell Length (ft):	6.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0001
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0056
Daily Avg. Liquid Surface Temp. (deg. R):	515.0759
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):	510.9683
Tank Paint Solar Absorptance (Shell):	0.5400
Daily Total Solar Insulation Factor (Btu/sqft day):	1,193.8870
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0647
Daily Vapor Temperature Range (deg. R):	35.4636
Daily Vapor Pressure Range (psia):	0.0036
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0056
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0040
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0076
Daily Avg. Liquid Surface Temp. (deg R):	515.0759
Daily Min. Liquid Surface Temp. (deg R):	506.2100
Daily Max. Liquid Surface Temp. (deg R):	523.9417
Daily Ambient Temp. Range (deg. R):	24.1833
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9993
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	0.0056
Vapor Space Outage (ft):	2.2500
Working Losses (lb):	0.3455
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0056
Annual Net Throughput (gal/yr.):	20,000.0000
Annual Turnovers:	0.0000
Turnover Factor:	1.0000
Tank Diameter (ft):	4.5000
Working Loss Product Factor:	1.0000
Total Losses (lb):	0.5339

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

Emissions Report for: Annual

Philippi - T21 - Diesel Fuel Storage Tank - Horizontal Tank
Philippi, West Virginia

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	0.35	0.19	0.53

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

Identification

User Identification:	Philippi - T22 - Used Oil Tank
City:	Philippi
State:	West Virginia
Company:	CONE Midstream Partners LP
Type of Tank:	Horizontal Tank
Description:	CONE - Philippi Station

Tank Dimensions

Shell Length (ft):	6.00
Diameter (ft):	4.00
Volume (gallons):	520.00
Turnovers:	0.00
Net Throughput(gal/yr):	15,000.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Light
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

Philippi - T22 - Used Oil Tank - Horizontal Tank
Philippi, West Virginia

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
Distillate fuel oil no. 2	All	55.41	46.54	64.27	51.30	0.0056	0.0040	0.0076	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0065

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

Philippi - T22 - Used Oil Tank - Horizontal Tank
Philippi, West Virginia

Annual Emission Calcaulations	
Standing Losses (lb):	0.1489
Vapor Space Volume (cu ft):	48.0243
Vapor Density (lb/cu ft):	0.0001
Vapor Space Expansion Factor:	0.0647
Vented Vapor Saturation Factor:	0.9994
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):	0.0001
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0056
Daily Avg. Liquid Surface Temp. (deg. R):	515.0759
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):	510.9683
Tank Paint Solar Absorptance (Shell):	0.5400
Daily Total Solar Insulation Factor (Btu/sqft day):	1,193.8870
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0647
Daily Vapor Temperature Range (deg. R):	35.4636
Daily Vapor Pressure Range (psia):	0.0036
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0056
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0040
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0076
Daily Avg. Liquid Surface Temp. (deg R):	515.0759
Daily Min. Liquid Surface Temp. (deg R):	506.2100
Daily Max. Liquid Surface Temp. (deg R):	523.9417
Daily Ambient Temp. Range (deg. R):	24.1833
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9994
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	0.0056
Vapor Space Outage (ft):	2.0000
Working Losses (lb):	0.2591
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0056
Annual Net Throughput (gal/yr.):	15,000.0000
Annual Turnovers:	0.0000
Turnover Factor:	1.0000
Tank Diameter (ft):	4.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	0.4080

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

Emissions Report for: Annual

Philippi - T22 - Used Oil Tank - Horizontal Tank
Philippi, West Virginia

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	0.26	0.15	0.41

Bryan Research & Engineering, Inc.

ProMax® 4.0

Simulation Report

Project: Philippi CS SlopTks_DehyTank_Emissions.JWH_Final 5-5-17.pmx

Licensed to SLR International Corporation and Affiliates

Client Name: CONE Midstream
Location: Philippi Station
Job: 2017 Modification Application

ProMax Filename: N:\West Virginia\CONE Midstream\2017\Air Permitting\Alton Station\ProMax Files\Philippi CS SlopTks_DehyTank_Emissions.JWH_Final 5-5-17.pmx
ProMax Version: 4.0.16308.0
Simulation Initiated: 5/5/2017 10:24:34 AM

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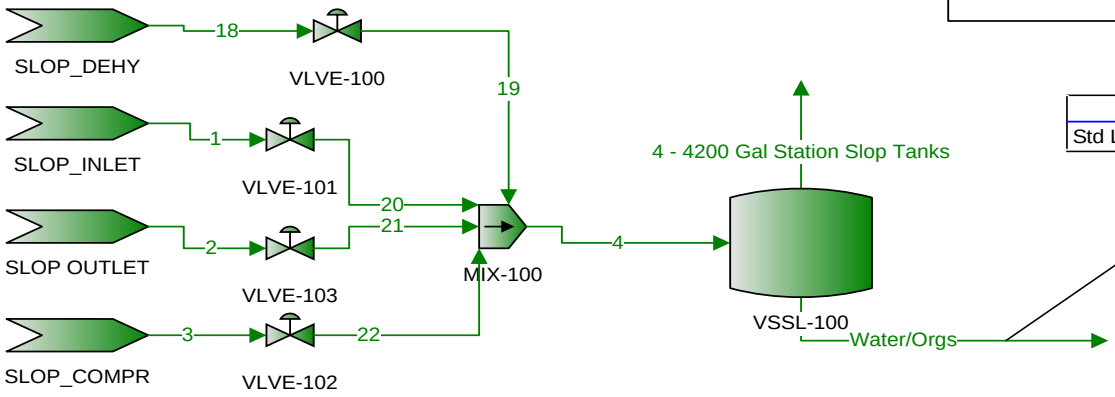
Report Navigator can be activated via the ProMax Navigator Toolbar.
An asterisk (*), throughout the report, denotes a user specified value.
A question mark (?) after a value, throughout the report, denotes an extrapolated or approximate value.

4 - 4,200 Gal Station Slop Tank Emissions

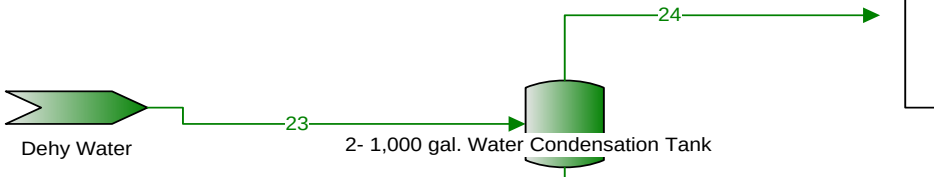
Annual tank loss calculations for "4".
Total working and breathing losses from the Vertical Cylinder are 0.008914 ton/yr.
Flashing losses are 0.002769 ton/yr.
Loading losses are 0.002025 ton/yr of loaded liquid.
* Only Non-Exempt VOCs are reported.
Vapor adjusted to ensure mass balance



Properties	Water/Orgs	
Std Liquid Volumetric Flow (Total)	63	bbl/d

2-1000 gal. Dehy Water/Cond Tank Emissions

Annual tank loss calculations for "23".
Total working and breathing losses from the Vertical Cylinder are 0.01195 ton/yr.
Flashing losses are 0 ton/yr.
Loading losses are 0.01014 ton/yr of loaded liquid.
* Only Non-Exempt VOCs are reported.
Vapor adjusted to ensure mass balance

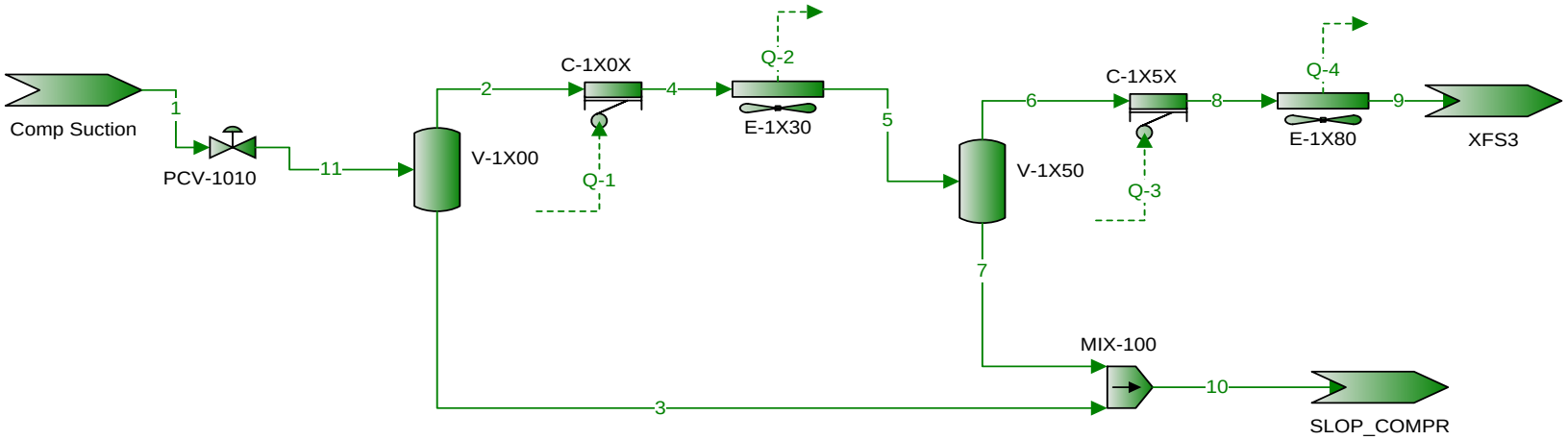


Properties	25	
Std Liquid Volumetric Flow (Total)	19	bbl/d

Process Streams		Water/Orgs	1	2	3	4	4 - 4200 Gal Station Slop Tanks	18	19	20	21	22	23	24	25
Properties	**Status:**	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: **Total**	**From Block:**	VSSL-100	SLOP_INLET	SLOP OUTLET	SLOP_COMPR	MIX-100	VSSL-100	SLOP_DEHY	VLVE-100	VLVE-101	VLVE-103	VLVE-102	Dehy Water	00 gal. Water Condensation	gal. Water Condensati
	To Block:	--	VLVE-101	VLVE-103	VLVE-102	VSSL-100	--	VLVE-100	MIX-100	MIX-100	MIX-100	MIX-100	gal. Water Condensat	--	--
Property	**Units**														
Temperature	°F	70.0638	59.8522		79.6322	70.0187	70.0638			59.9310		80.0869	210.5		210.5
Pressure	psig	0	52	885	200.548	20	0*	60		20*	20*	20*	-0.0959488	-0.0959488	-0.0959488
Molecular Weight	lb/lbmol	18.0157	18.0154		18.0156	18.0155	17.2016			18.0154		18.0156	18.0212	18.9295	18.0212
Mass Density	lb/ft^3	62.2797	62.3644		62.1721	56.7870	0.0445765			60.4037		53.4170	59.8929		59.8929
Mass Flow	lb/h	912.487	455.718	0	456.954	912.672	0.185508	0	0	455.718	0	456.954	276.698	0	276.698
Std Vapor Volumetric Flow	MMSCFD	0.461297	0.230386	0	0.231009	0.461395	9.82193E-05	0	0	0.230386	0	0.231009	0.139839	0	0.139839
Std Liquid Volumetric Flow	sgpm	1.82424	0.911252	0	0.914133	1.82539	0.00114994	0	0	0.911252	0	0.914133	0.553120	0	0.553120
API Gravity		10.0020	10.0133		10.0314								9.99079		9.99079
Net Ideal Gas Heating Value	Btu/ft^3	0.0261182	0.115533		0.310811	0.213304	879.349			0.115533		0.310811	0.177728	56.6771	0.177728

Process Streams		Water/Orgs	1	2	3	4	4 - 4200 Gal Station Slop Tanks	18	19	20	21	22	23	24	25
Properties	**Status:**	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: **Vapor**	**From Block:**	VSSL-100	SLOP_INLET	SLOP OUTLET	SLOP_COMPR	MIX-100	VSSL-100	SLOP_DEHY	VLVE-100	VLVE-101	VLVE-103	VLVE-102	Dehy Water	00 gal. Water Condensation	gal. Water Condensati
	To Block:	--	VLVE-101	VLVE-103	VLVE-102	VSSL-100	--	VLVE-100	MIX-100	MIX-100	MIX-100	MIX-100	gal. Water Condensat	--	--
Property	**Units**														
Temperature	°F					70.0187	70.0638			59.9310		80.0869			
Pressure	psig					20	0			20		20			
Molecular Weight	lb/lbmol					16.7882	17.2016			16.5951		16.9759			
Mass Density	lb/ft^3					0.103048	0.0445765			0.103875		0.102224			
Mass Flow	lb/h					0.146279	0.185508			0.0247062		0.123433			
Std Vapor Volumetric Flow	MMSCFD					7.93567E-05	9.82193E-05			1.35591E-05		6.62220E-05			
Std Liquid Volumetric Flow	sgpm					0.000937249	0.00114994			0.000160402		0.000780038			
API Gravity															
Net Ideal Gas Heating Value	Btu/ft^3					902.952	879.349			910.960		893.661			

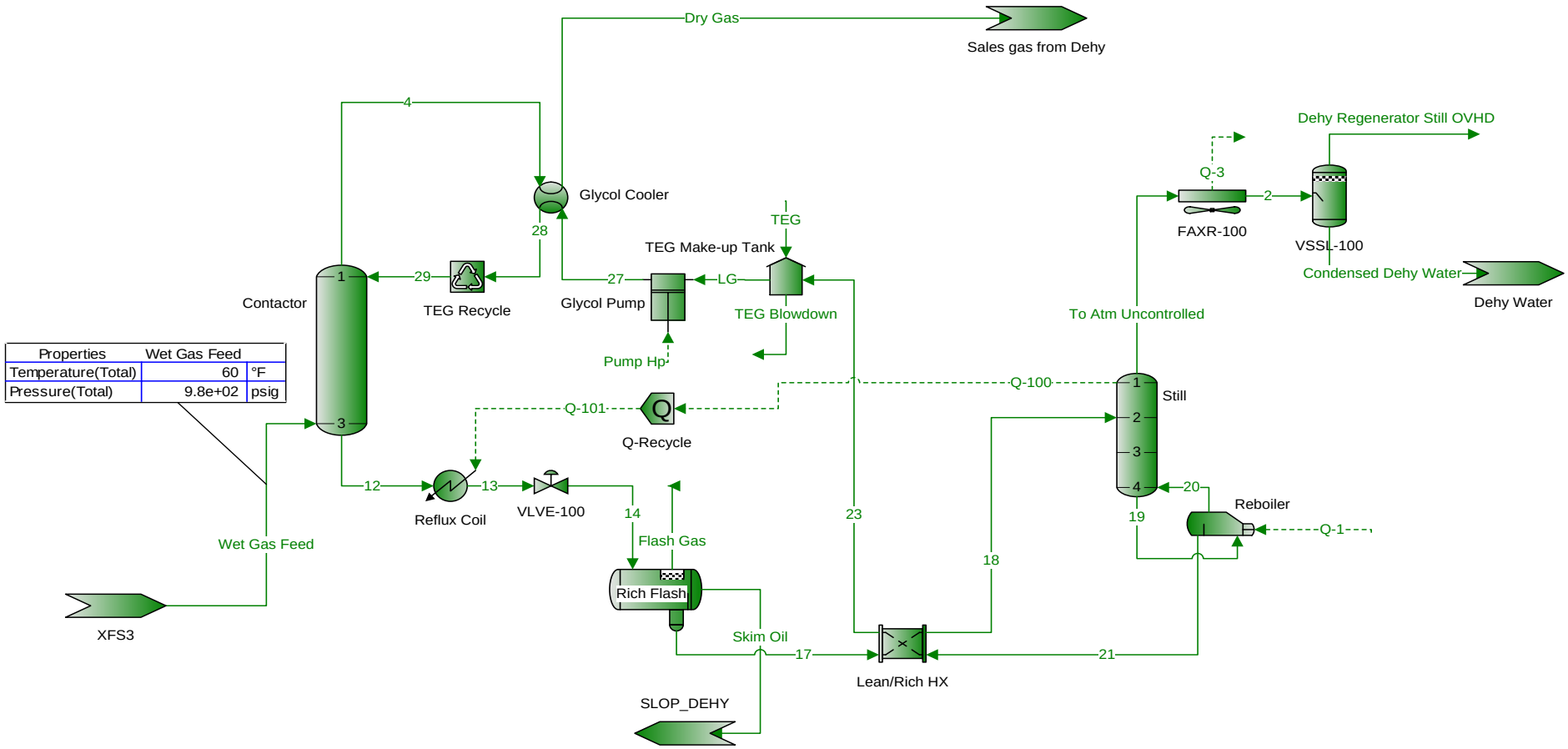
Process Streams		Water/Orgs	1	2	3	4	4 - 4200 Gal Station Slop Tanks	18	19	20	21	22	23	24	25
Properties	**Status:**	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: **Light Liquid**	**From Block:**	VSSL-100	SLOP_INLET	SLOP OUTLET	SLOP_COMPR	MIX-100	VSSL-100	SLOP_DEHY	VLVE-100	VLVE-101	VLVE-103	VLVE-102	Dehy Water	00 gal. Water Condensation	gal. Water Condensati
	To Block:	--	VLVE-101	VLVE-103	VLVE-102	VSSL-100	--	VLVE-100	MIX-100	MIX-100	MIX-100	MIX-100	gal. Water Condensat	--	--
Property	**Units**														
Temperature	°F	70.0638	59.8522		79.6322	70.0187				59.9310		80.0869	210.5		210.5
Pressure	psig	0	52		200.548	20				20		20	-0.0959488		-0.0959488
Molecular Weight	lb/lbmol	18.0157	18.0154		18.0156	18.0157				18.0155		18.0159	18.0212		18.0212
Mass Density	lb/ft^3	62.2797	62.3644		62.1721	62.2786				62.3666		62.1792	59.8929		59.8929
Mass Flow	lb/h	912.487	455.718		456.954	912.526				455.694		456.830	276.698		276.698
Std Vapor Volumetric Flow	MMSCFD	0.461297	0.230386		0.231009	0.461316				0.230373		0.230943	0.139839		0.139839
Std Liquid Volumetric Flow	sgpm	1.82424	0.911252		0.914133	1.82445				0.911092		0.913353	0.553120		0.553120
API Gravity		10.0020	10.0133		10.0314	10.0054				10.0068		10.0043	9.99079		9.99079
Net Ideal Gas Heating Value	Btu/ft^3	0.0261182	0.115533		0.310811	0.0580125				0.0619228		0.0546463	0.177728		0.177728


Comp Suction
1
PCV-1010
11
V-1X00
2
C-1X0X
Q-1
4
Q-2
E-1X30
5
V-1X50
6
C-1X5X
Q-3
8
Q-4
E-1X80
9
XFS3
7
MIX-100
10
SLOP_COMPR
3

Process Streams		1	2	3	4	5	6	7	8	9	10	11
Properties	**Status:**	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: Total	**From Block:**	Comp Suction	V-1X00	V-1X00	C-1X0X	E-1X30	V-1X50	V-1X50	C-1X5X	E-1X80	MIX-100	PCV-1010
	To Block:	PCV-1010	C-1X0X	MIX-100	E-1X30	V-1X50	C-1X5X	MIX-100	E-1X80	XFS3	SLOP_COMPR	V-1X00
Property	**Units**											
Temperature	°F	59.4998	58.4386		378.046	80*	79.6322	79.6322	400.950	60*	79.6322	58.7931
Pressure	psig	47	32	32	207.548	205.548	200.548	200.548	982	980*	200.548	37
Molecular Weight	lb/lbmol	16.4361	16.4361		16.4361	16.4361	16.4338	18.0156	16.4338	16.4338	18.0156	16.4361
Mass Density	lb/ft^3	0.183925	0.139146		0.407288	0.646535	0.630881	62.1721	1.77628	3.43902	62.1721	0.154068
Mass Flow	lb/h	289875	289875	0	289875	289875	289418	456.954	289418	289418	456.954	289875
Std Vapor Volumetric Flow	MMSCFD	160.627	160.627	0	160.627	160.627	160.396	0.231009	160.396	160.396	0.231009	160.627
Std Liquid Volumetric Flow	sgpm	1900.87	1900.87	0	1900.87	1900.87	1899.96	0.914133	1899.96	1899.96	0.914133	1900.87
API Gravity								10.0314			10.0314	
Net Ideal Gas Heating Value	Btu/ft^3	915.015	915.015		915.015	915.015	916.333	0.310811	916.333	916.333	0.310811	915.015

Process Streams		1	2	3	4	5	6	7	8	9	10	11
Properties	**Status:**	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: Vapor	**From Block:**	Comp Suction	V-1X00	V-1X00	C-1X0X	E-1X30	V-1X50	V-1X50	C-1X5X	E-1X80	MIX-100	PCV-1010
	To Block:	PCV-1010	C-1X0X	MIX-100	E-1X30	V-1X50	C-1X5X	MIX-100	E-1X80	XFS3	SLOP_COMPR	V-1X00
Property	**Units**											
Temperature	°F	59.4998	58.4386		378.046	80	79.6322		400.950	60		58.7931
Pressure	psig	47	32		207.548	205.548	200.548		982	980		37
Molecular Weight	lb/lbmol	16.4361	16.4361		16.4361	16.4337	16.4338		16.4338	16.4304		16.4361
Mass Density	lb/ft^3	0.183925	0.139146		0.407288	0.645510	0.630881		1.77628	3.43144		0.154068
Mass Flow	lb/h	289875	289875		289875	289410	289418		289418	288744		289875
Std Vapor Volumetric Flow	MMSCFD	160.627	160.627		160.627	160.392	160.396		160.396	160.055		160.627
Std Liquid Volumetric Flow	sgpm	1900.87	1900.87		1900.87	1899.94	1899.96		1899.96	1898.61		1900.87
API Gravity												
Net Ideal Gas Heating Value	Btu/ft^3	915.015	915.015		915.015	916.355	916.333		916.333	918.282		915.015

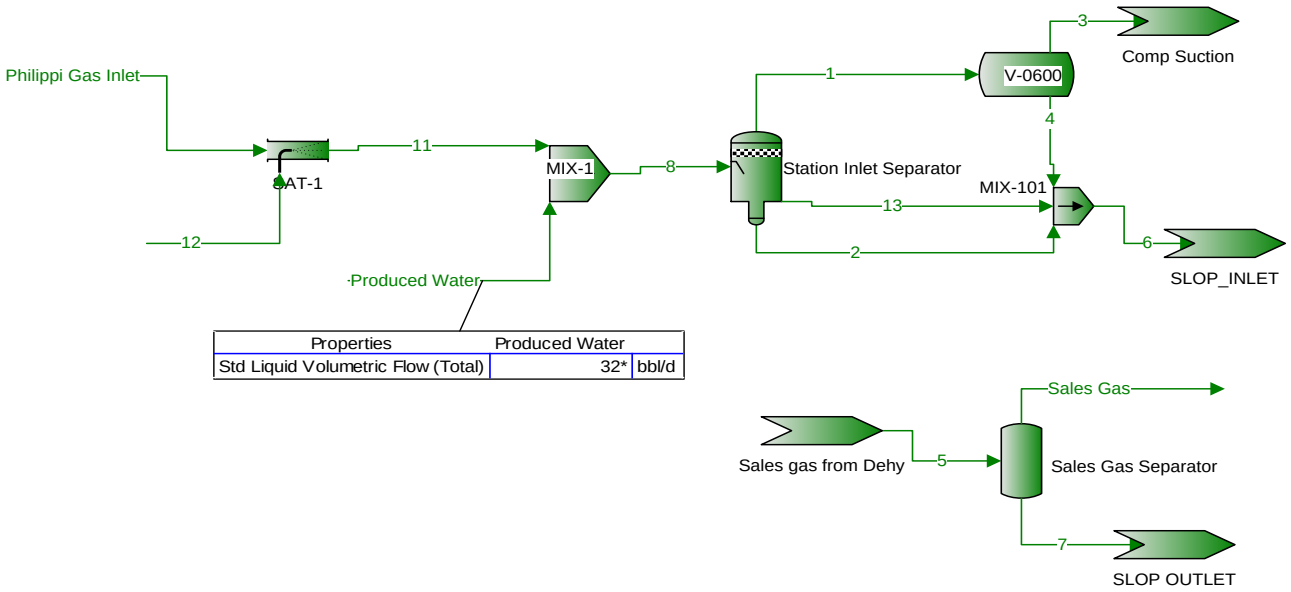
Process Streams		1	2	3	4	5	6	7	8	9	10	11
Properties	**Status:**	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: Light Liquid	**From Block:**	Comp Suction	V-1X00	V-1X00	C-1X0X	E-1X30	V-1X50	V-1X50	C-1X5X	E-1X80	MIX-100	PCV-1010
	To Block:	PCV-1010	C-1X0X	MIX-100	E-1X30	V-1X50	C-1X5X	MIX-100	E-1X80	XFS3	SLOP_COMPR	V-1X00
Property	**Units**											
Temperature	°F					80	79.6322		60	79.6322		
Pressure	psig					205.548	200.548		980	200.548		
Molecular Weight	lb/lbmol					18.0156	18.0156		18.0161	18.0156		
Mass Density	lb/ft^3					62.1680	62.1721		62.3112	62.1721		
Mass Flow	lb/h					464.531	456.954		674.462	456.954		
Std Vapor Volumetric Flow	MMSCFD					0.234840	0.231009		0.340958	0.231009		
Std Liquid Volumetric Flow	sgpm					0.929303	0.914133		1.35251	0.914133		
API Gravity						10.0320	10.0314		10.1312	10.0314		
Net Ideal Gas Heating Value	Btu/ft^3					0.316898	0.310811		1.35175	0.310811		


Dry Gas
Sales gas from Dehy
4
Glycol Cooler
28
TEG
TEG Make-up Tank
Dehy Regenerator Still OVHD
Q-3
FAXR-100
2
VSSL-100
Condensed Dehy Water
Dehy Water
Contactor
1
29
TEG Recycle
27
Glycol Pump
LG
TEG Blowdown
To Atm Uncontrolled
Pump Hp
Properties
Wet Gas Feed
Temperature(Total)
60
°F
Pressure(Total)
9.8e+02
psig
Q-100
Still
Q-101
Q
Q-Recycle
3
12
Reflux Coil
13
VLVE-100
14
Flash Gas
23
20
Reboiler
19
Q-1
Wet Gas Feed
18
Rich Flash
Skim Oil
17
Lean/Rich HX
21
XFS3
SLOP_DEHY

Process Streams		Condensed Dehy Water	Regenerator Still C	Dry Gas	Flash Gas	LG	To Atm Uncontrolled	Wet Gas Feed	2	19	20	27	28	29
Properties	**Status:**	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: **Total**	**From Block:**	VSSL-100	VSSL-100	Glycol Cooler	Rich Flash	TEG Make-up Tank	Still	XFS3	FAXR-100	Still	Reboiler	Glycol Pump	Glycol Cooler	TEG Recycle
	To Block:	Dehy Water	--	Sales gas from Dehy	--	Glycol Pump	FAXR-100	Contactor	VSSL-100	Reboiler	Still	Glycol Cooler	TEG Recycle	Contactor
Property	**Units**													
Temperature	°F	210.5	210.5	59.8199	92.6068	174.534	211.728	60	210.5*	278.214	400.000	176.590	66.5002	66.4790
Pressure	psig	-0.0959488	-0.0959488	890	60	-0.195949	0.00405122	980	-0.0959488	0.304051	0.304051	965.304*	960.304	960.304
Molecular Weight	lb/lbmol	18.0212	18.9295	16.4282	17.5706	140.935	18.6118	16.4338	18.6118	103.932	28.6672	140.935	140.935	140.935
Mass Density	lb/ft^3	59.8929	0.0387582	3.08329	0.223901	66.6493	0.0383004	3.43902	0.0585915	63.0771	0.0469338	66.6631	70.5786	70.5793
Mass Flow	lb/h	276.698	540.193	288557	44.5546	11046.5	816.891	289418	816.891	12151.0	1104.67	11046.5	11046.5	11046.5
Std Vapor Volumetric Flow	MMSCFD	0.139839	0.259905	159.973	0.0230946	0.713856	0.399743	160.396	0.399743	1.06480	0.350954	0.713856	0.713856	0.713856
Std Liquid Volumetric Flow	sgpm	0.553120	1.11213	1898.02	0.277756	19.5720*	1.66525	1899.96	1.66525	21.6734	2.10172	19.5720	19.5720	19.5720
API Gravity		9.99079				-6.72294				-5.74746		-6.85870	-6.85800	-6.85800
Net Ideal Gas Heating Value	Btu/ft^3	0.177728	56.6771	918.531	912.952	3507.44	36.9124	916.333	36.9124	2451.73	304.400	3507.44	3507.44	3507.44

Process Streams		Condensed Dehy Water	Regenerator Still C	Dry Gas	Flash Gas	LG	To Atm Uncontrolled	Wet Gas Feed	2	19	20	27	28	29
Properties	**Status:**	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: **Vapor**	**From Block:**	VSSL-100	VSSL-100	Glycol Cooler	Rich Flash	TEG Make-up Tank	Still	XFS3	FAXR-100	Still	Reboiler	Glycol Pump	Glycol Cooler	TEG Recycle
	To Block:	Dehy Water	--	Sales gas from Dehy	--	Glycol Pump	FAXR-100	Contactor	VSSL-100	Reboiler	Still	Glycol Cooler	TEG Recycle	Contactor
Property	**Units**													
Temperature	°F		210.5	59.8199	92.6068		211.728	60	210.5		400.000			
Pressure	psig		-0.0959488	890	60		0.00405122	980	-0.0959488		0.304051			
Molecular Weight	lb/lbmol		18.9295	16.4282	17.5706		18.6118	16.4304	18.9295		28.6672			
Mass Density	lb/ft^3		0.0387582	3.08329	0.223901		0.0383004	3.43144	0.0387582		0.0469338			
Mass Flow	lb/h		540.193	288557	44.5546		816.891	288744	540.193		1104.67			
Std Vapor Volumetric Flow	MMSCFD		0.259905	159.973	0.0230946		0.399743	160.055	0.259905		0.350954			
Std Liquid Volumetric Flow	sgpm		1.11213	1898.02	0.277756		1.66525	1898.61	1.11213		2.10172			
API Gravity														
Net Ideal Gas Heating Value	Btu/ft^3		56.6771	918.531	912.952		36.9124	918.282	56.6771		304.400			

Process Streams		Condensed Dehy Water	Regenerator Still C	Dry Gas	Flash Gas	LG	To Atm Uncontrolled	Wet Gas Feed	2	19	20	27	28	29
Properties	**Status:**	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: **Light Liquid**	**From Block:**	VSSL-100	VSSL-100	Glycol Cooler	Rich Flash	TEG Make-up Tank	Still	XFS3	FAXR-100	Still	Reboiler	Glycol Pump	Glycol Cooler	TEG Recycle
	To Block:	Dehy Water	--	Sales gas from Dehy	--	Glycol Pump	FAXR-100	Contactor	VSSL-100	Reboiler	Still	Glycol Cooler	TEG Recycle	Contactor
Property	**Units**													
Temperature	°F	210.5				174.534		60	210.5	278.214		176.590	66.5002	66.4790
Pressure	psig	-0.0959488				-0.195949		980	-0.0959488	0.304051		965.304	960.304	960.304
Molecular Weight	lb/lbmol	18.0212				140.935		18.0161	18.0212	103.932		140.935	140.935	140.935
Mass Density	lb/ft^3	59.8929				66.6493		62.3112	59.8929	63.0771		66.6631	70.5786	70.5793
Mass Flow	lb/h	276.698				11046.5		674.462	276.698	12151.0		11046.5	11046.5	11046.5
Std Vapor Volumetric Flow	MMSCFD	0.139839				0.713856		0.340958	0.139839	1.06480		0.713856	0.713856	0.713856
Std Liquid Volumetric Flow	sgpm	0.553120				19.5720		1.35251	0.553120	21.6734		19.5720	19.5720	19.5720
API Gravity		9.99079				-6.72294		10.1312	9.99079	-5.74746		-6.85870	-6.85800	-6.85800
Net Ideal Gas Heating Value	Btu/ft^3	0.177728				3507.44		1.35175	0.177728	2451.73		3507.44	3507.44	3507.44


Philippi Gas Inlet
SAT-1
11
12
MIX-1
8
Station Inlet Separator
1
V-0600
3
Comp Suction
4
MIX-101
13
2
6
SLOP_INLET
Produced Water
Properties
Produced Water
Std Liquid Volumetric Flow (Total)
32*
bbl/d
Sales Gas
Sales gas from Dehy
5
Sales Gas Separator
7
SLOP OUTLET

Process Streams		Philippi Gas In	roduced Wate	Sales Gas	1	2	3	4	5	6	7	8	11	12	13
Properties	**Status:**	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: **Total**	**From Block:**	--	--	Sales Gas Separato	itation Inlet Separat	on Inlet Sepa	V-0600	V-0600	les gas from De	MIX-101	les Gas Separa	MIX-1	SAT-1	--	tion Inlet Separ
	To Block:	SAT-1	MIX-1	--	V-0600	MIX-101	Comp Suction	MIX-101	les Gas Separa	SLOP_INLET	SLOP OUTLET	tion Inlet Separ	MIX-1	SAT-1	MIX-101
Property	**Units**														
Temperature	°F	60*	60*	59.5322	59.8522		59.4998		59.8199	59.8522		60.0019	60	300.760	59.8522
Pressure	psig	53*	53*	885	52	52	47	47	890	52	885	53	53	53	52
Molecular Weight	lb/lbmol	16.4299	18.0153	16.4282	16.4361		16.4361		16.4282	18.0154		16.4383	16.4360	18.0153	18.0154
Mass Density	lb/ft^3	0.201737	62.3723	3.06682	0.198860		0.183925		3.08329	62.3644		0.202139	0.201815	0.173673	62.3644
Mass Flow	lb/h	288635	466.883	288557	289875	0	289875	0	288557	455.718	0	290331	289864	1228.43	455.718
Std Vapor Volumetric Flow	MMSCFD	160*	0.236033	159.973	160.627	0	160.627	0	159.973	0.230386	0	160.857	160.621	0.621033	0.230386
Std Liquid Volumetric Flow	sgpm	1898.40	0.933333*	1898.02	1900.87	0	1900.87	0	1898.02	0.911252	0	1901.78	1900.85	2.45572	0.911252
API Gravity			9.99245							10.0133					10.0133
Net Ideal Gas Heating Value	Btu/ft^3	918.600	0	918.531	915.015		915.015		918.531	0.115533		913.705	915.048	0	0.115533

Process Streams		Philippi Gas In	roduced Wate	Sales Gas	1	2	3	4	5	6	7	8	11	12	13
Properties	**Status:**	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: **Vapor**	**From Block:**	--	--	Sales Gas Separato	itation Inlet Separat	on Inlet Sepa	V-0600	V-0600	les gas from De	MIX-101	les Gas Separa	MIX-1	SAT-1	--	tion Inlet Separ
	To Block:	SAT-1	MIX-1	--	V-0600	MIX-101	Comp Suction	MIX-101	les Gas Separa	SLOP_INLET	SLOP OUTLET	tion Inlet Separ	MIX-1	SAT-1	MIX-101
Property	**Units**														
Temperature	°F	60		59.5322	59.8522		59.4998		59.8199			60.0019	60	300.760	
Pressure	psig	53		885	52		47		890			53	53	53	
Molecular Weight	lb/lbmol	16.4299		16.4282	16.4361		16.4361		16.4282			16.4360	16.4360	18.0153	
Mass Density	lb/ft^3	0.201737		3.06682	0.198860		0.183925		3.08329			0.201815	0.201815	0.153914	
Mass Flow	lb/h	288635		288557	289875		289875		288557			289863	289864	1088.29	
Std Vapor Volumetric Flow	MMSCFD	160		159.973	160.627		160.627		159.973			160.621	160.621	0.550186	
Std Liquid Volumetric Flow	sgpm	1898.40		1898.02	1900.87		1900.87		1898.02			1900.85	1900.85	2.17558	
API Gravity															
Net Ideal Gas Heating Value	Btu/ft^3	918.600		918.531	915.015		915.015		918.531			915.049	915.048	0	

Process Streams		Philippi Gas In	roduced Wate	Sales Gas	1	2	3	4	5	6	7	8	11	12	13
Properties	**Status:**	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: **Light Liquid**	**From Block:**	--	--	Sales Gas Separato	itation Inlet Separat	on Inlet Sepa	V-0600	V-0600	les gas from De	MIX-101	les Gas Separa	MIX-1	SAT-1	--	tion Inlet Separ
	To Block:	SAT-1	MIX-1	--	V-0600	MIX-101	Comp Suction	MIX-101	les Gas Separa	SLOP_INLET	SLOP OUTLET	tion Inlet Separ	MIX-1	SAT-1	MIX-101
Property	**Units**														
Temperature	°F		60							59.8522		60.0019		300.760	59.8522
Pressure	psig		53							52		53		53	52
Molecular Weight	lb/lbmol		18.0153							18.0154		18.0154		18.0153	18.0154
Mass Density	lb/ft^3		62.3723							62.3644		62.3631		57.3124	62.3644
Mass Flow	lb/h		466.883							455.718		467.209		140.137	455.718
Std Vapor Volumetric Flow	MMSCFD		0.236033							0.230386		0.236195		0.0708463	0.230386
Std Liquid Volumetric Flow	sgpm		0.933333							0.911252		0.934233		0.280144	0.911252
API Gravity			9.99245							10.0133		10.0135		9.99245	10.0133
Net Ideal Gas Heating Value	Btu/ft^3		0							0.115533		0.117092		0	0.115533

User Value Sets Report

Client Name:	2017 Modification Application	**Job:**	N:\West Virginia\CONE Midstream\2017
Location:	0		
Flowsheet:	Inlet Outlet		

2-1000 gal. Dehy Water/Cond Tank Emissions

User Value [BlockReady]

Parameter	1*		Upper Bour		
Lower Bound			Enforce Boı	FALSE	

User Value [ShellLength]

Parameter	75*	in	Upper Bour		in
Lower Bound		in	Enforce Boı	FALSE	

User Value [ShellDiam]

Parameter	5.25*	ft	Upper Bour		ft
Lower Bound		ft	Enforce Boı	FALSE	

User Value [BreatherVP]

Parameter	0.0300000*	psig	Upper Bour		psig
Lower Bound		psig	Enforce Boı	FALSE	

User Value [BreatherVacP]

Parameter	-0.0300000*	psig	Upper Bour		psig
Lower Bound		psig	Enforce Boı	FALSE	

User Value [DomeRadius]

Parameter	30*	in	Upper Bour		in
Lower Bound		in	Enforce Boı	FALSE	

User Value [OpPress]

Parameter	0*	psig	Upper Bour		psig
Lower Bound		psig	Enforce Boı	FALSE	

User Value [AvgPercentLiq]

Parameter	50*	%	Upper Bour		%
Lower Bound		%	Enforce Boı	FALSE	

User Value [MaxPercentLiq]

Parameter	90*	%	Upper Bour		%
Lower Bound		%	Enforce Boı	FALSE	

User Value [AnnNetTP]

Parameter	19.3091*	bbl/day	Upper Bour		bbl/day
Lower Bound		bbl/day	Enforce Boı	FALSE	

User Value [OREff]

Parameter	0*	%	Upper Bour		%
Lower Bound		%	Enforce Boı	FALSE	

User Value [MaxAvgT]

Parameter	61.15*	°F	Upper Bour		°F
Lower Bound		°F	Enforce Boı	FALSE	

User Value [MinAvgT]

Parameter	36.9667*	°F	Upper Bour		°F
Lower Bound		°F	Enforce Boı	FALSE	

User Value [BulkLiqT]					
Parameter	210.5*	°F	Upper Bour		°F
Lower Bound		°F	Enforce Boı	FALSE	

User Value [AvgP]					
Parameter	13.7315*	psia	Upper Bour		psia
Lower Bound		psia	Enforce Boı	FALSE	

User Value [Therml]					
Parameter	1193.89*	Btu/ft^2/day	Upper Bour		Btu/ft^2/day
Lower Bound		Btu/ft^2/day	Enforce Boı	FALSE	

User Value [AvgWindSpeed]					
Parameter	6.16667*	mi/h	Upper Bour		mi/h
Lower Bound		mi/h	Enforce Boı	FALSE	

User Value [MaxHourlyLoadingRate]					
Parameter	0.275947*	bbl/hr	Upper Bour		bbl/hr
Lower Bound		bbl/hr	Enforce Boı	FALSE	

User Value [EntrainedOilFrac]					
Parameter	1*	%	Upper Bour		%
Lower Bound		%	Enforce Boı	FALSE	

User Value [TurnoverRate]					
Parameter	162.467*		Upper Bour		
Lower Bound			Enforce Boı	FALSE	

User Value [LLossSatFactor]					
Parameter	0.5*		Upper Bour		
Lower Bound			Enforce Boı	FALSE	

User Value [AtmPressure]					
Parameter	13.7315*	psia	Upper Bour		psia
Lower Bound		psia	Enforce Boı	FALSE	

User Value [TVP]					
Parameter	3.59482*	psia	Upper Bour		psia
Lower Bound		psia	Enforce Boı	FALSE	

User Value [MaxVP]					
Parameter	4.55416*	psia	Upper Bour		psia
Lower Bound		psia	Enforce Boı	FALSE	

User Value [MinVP]					
Parameter	2.81735*	psia	Upper Bour		psia
Lower Bound		psia	Enforce Boı	FALSE	

User Value [AvgLiqSurfaceT]					
Parameter	145.879*	°F	Upper Bour		°F
Lower Bound		°F	Enforce Boı	FALSE	

User Value [MaxLiqSurfaceT]					
Parameter	155.915*	°F	Upper Bour		°F
Lower Bound		°F	Enforce Boı	FALSE	

User Value [TotalLosses]					
Parameter	0.0119541*	ton/yr	Upper Bour		ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE	

User Value [WorkingLosses]				
Parameter	0.00412036*	ton/yr	Upper Bour	ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE

User Value [StandingLosses]				
Parameter	0.00185669*	ton/yr	Upper Bour	ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE

User Value [RimSealLosses]				
Parameter	0*	ton/yr	Upper Bour	ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE

User Value [WithdrawalLoss]				
Parameter	0*	ton/yr	Upper Bour	ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE

User Value [LoadingLosses]				
Parameter	0.0101357*	ton/yr	Upper Bour	ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE

User Value [MaxHourlyLoadingLoss]				
Parameter	0.000793692*	lb/hr	Upper Bour	lb/hr
Lower Bound		lb/hr	Enforce Boı	FALSE

User Value [PStar]				
Parameter			Upper Bour	
Lower Bound			Enforce Boı	FALSE

User Value [AllCTotalLosses]				
Parameter	0.121689*	ton/yr	Upper Bour	ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE

User Value [AllCLoadingLosses]				
Parameter	0.103178*	ton/yr	Upper Bour	ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE

User Value [AllCMaxHLoadingLoss]				
Parameter	0.00807955*	lb/hr	Upper Bour	lb/hr
Lower Bound		lb/hr	Enforce Boı	FALSE

User Value [AllCFlashingLosses]				
Parameter	0*	ton/yr	Upper Bour	ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE

User Value [DeckFittingLosses]				
Parameter	0*	ton/yr	Upper Bour	ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE

User Value [DeckSeamLosses]				
Parameter	0*	ton/yr	Upper Bour	ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE

User Value [FlashingLosses]				
Parameter	0*	ton/yr	Upper Bour	ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE

User Value [TotalResidual]				
Parameter	1211.82*	ton/yr	Upper Bour	ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE

User Value [GasMoleWeight]

Parameter	0.0200074*	kg/mol	Upper Bour	kg/mol
Lower Bound		kg/mol	Enforce Bo	FALSE

User Value [VapReportableFrac]

Parameter	9.82347*	%	Upper Bour	%
Lower Bound		%	Enforce Bo	FALSE

User Value [LiqReportableFrac]

Parameter	0.0374573*	%	Upper Bour	%
Lower Bound		%	Enforce Bo	FALSE

User Value [FlashReportableFrac]

Parameter	0*	%	Upper Bour	%
Lower Bound		%	Enforce Bo	FALSE

Notes:
This User Value Set was programmatically generated. GUID={95743913-23B7-49DC-8AE9-75667ABF58C8}

4 - 4,200 Gal Station Slop Tank Emissions

User Value [BlockReady]

Parameter	1*		Upper Bour	
Lower Bound			Enforce Bo	FALSE

User Value [ShellLength]

Parameter	10*	ft	Upper Bour	ft
Lower Bound		ft	Enforce Bo	FALSE

User Value [ShellDiam]

Parameter	8.5*	ft	Upper Bour	ft
Lower Bound		ft	Enforce Bo	FALSE

User Value [BreatherVP]

Parameter	0.0300000*	psig	Upper Bour	psig
Lower Bound		psig	Enforce Bo	FALSE

User Value [BreatherVacP]

Parameter	-0.0300000*	psig	Upper Bour	psig
Lower Bound		psig	Enforce Bo	FALSE

User Value [DomeRadius]

Parameter	5*	ft	Upper Bour	ft
Lower Bound		ft	Enforce Bo	FALSE

User Value [OpPress]

Parameter	0*	psig	Upper Bour	psig
Lower Bound		psig	Enforce Bo	FALSE

User Value [AvgPercentLiq]

Parameter	50*	%	Upper Bour	%
Lower Bound		%	Enforce Bo	FALSE

User Value [MaxPercentLiq]

Parameter	90*	%	Upper Bour	%
Lower Bound		%	Enforce Bo	FALSE

User Value [AnnNetTP]

Parameter	62.6018*	bbl/day	Upper Bour	bbl/day
Lower Bound		bbl/day	Enforce Bo	FALSE

User Value [OREff]

Parameter	0*	%	Upper Bour	%

Lower Bound		%	Enforce Bou	FALSE

User Value [MaxAvgT]				
Parameter	61.15*	°F	Upper Bour	°F
Lower Bound		°F	Enforce Bou	FALSE

User Value [MinAvgT]				
Parameter	36.9667*	°F	Upper Bour	°F
Lower Bound		°F	Enforce Bou	FALSE

User Value [BulkLiqT]				
Parameter	70.0187*	°F	Upper Bour	°F
Lower Bound		°F	Enforce Bou	FALSE

User Value [AvgP]				
Parameter	13.7315*	psia	Upper Bour	psia
Lower Bound		psia	Enforce Bou	FALSE

User Value [Therml]				
Parameter	1193.89*	Btu/ft^2/day	Upper Bour	Btu/ft^2/day
Lower Bound		Btu/ft^2/day	Enforce Bou	FALSE

User Value [AvgWindSpeed]				
Parameter	6.16667*	mi/h	Upper Bour	mi/h
Lower Bound		mi/h	Enforce Bou	FALSE

User Value [MaxHourlyLoadingRate]				
Parameter	2.60841*	bbl/hr	Upper Bour	bbl/hr
Lower Bound		bbl/hr	Enforce Bou	FALSE

User Value [EntrainedOilFrac]				
Parameter	1*	%	Upper Bour	%
Lower Bound		%	Enforce Bou	FALSE

User Value [TurnoverRate]				
Parameter	62.7945*		Upper Bour	
Lower Bound			Enforce Bou	FALSE

User Value [LLossSatFactor]				
Parameter	0.5*		Upper Bour	
Lower Bound			Enforce Bou	FALSE

User Value [AtmPressure]				
Parameter	13.7315*	psia	Upper Bour	psia
Lower Bound		psia	Enforce Bou	FALSE

User Value [TVP]				
Parameter	12.7027*	psia	Upper Bour	psia
Lower Bound		psia	Enforce Bou	FALSE

User Value [MaxVP]				
Parameter	13.7315*	psia	Upper Bour	psia
Lower Bound		psia	Enforce Bou	FALSE

User Value [MinVP]				
Parameter	11.6926*	psia	Upper Bour	psia
Lower Bound		psia	Enforce Bou	FALSE

User Value [AvgLiqSurfaceT]				
Parameter	67.2097*	°F	Upper Bour	°F
Lower Bound		°F	Enforce Bou	FALSE

User Value [MaxLiqSurfaceT]					
Parameter	77.2456*	°F	Upper Bour		°F
Lower Bound		°F	Enforce Boı	FALSE	
User Value [TotalLosses]					
Parameter	0.00891381*	ton/yr	Upper Bour		ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE	
User Value [WorkingLosses]					
Parameter	0.000656934*	ton/yr	Upper Bour		ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE	
User Value [StandingLosses]					
Parameter	0.00157152*	ton/yr	Upper Bour		ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE	
User Value [RimSealLosses]					
Parameter	0*	ton/yr	Upper Bour		ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE	
User Value [WithdrawalLoss]					
Parameter	0*	ton/yr	Upper Bour		ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE	
User Value [LoadingLosses]					
Parameter	0.00202508*	ton/yr	Upper Bour		ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE	
User Value [MaxHourlyLoadingLoss]					
Parameter	0.000462347*	lb/hr	Upper Bour		lb/hr
Lower Bound		lb/hr	Enforce Boı	FALSE	
User Value [PStar]					
Parameter			Upper Bour		
Lower Bound			Enforce Boı	FALSE	
User Value [AllCTotalLosses]					
Parameter	0.327777*	ton/yr	Upper Bour		ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE	
User Value [AllCLoadingLosses]					
Parameter	0.0744658*	ton/yr	Upper Bour		ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE	
User Value [AllCMaxHLoadingLoss]					
Parameter	0.0170013*	lb/hr	Upper Bour		lb/hr
Lower Bound		lb/hr	Enforce Boı	FALSE	
User Value [AllCFlashingLosses]					
Parameter	0.839359*	ton/yr	Upper Bour		ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE	
User Value [DeckFittingLosses]					
Parameter	0*	ton/yr	Upper Bour		ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE	
User Value [DeckSeamLosses]					
Parameter	0*	ton/yr	Upper Bour		ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE	
User Value [FlashingLosses]					

Parameter	0.00276930*	ton/yr	Upper Bour		ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE	

User Value [TotalResidual]

Parameter	3996.34*	ton/yr	Upper Bour		ton/yr
Lower Bound		ton/yr	Enforce Boı	FALSE	

User Value [GasMoleWeight]

Parameter	0.0172366*	kg/mol	Upper Bour		kg/mol
Lower Bound		kg/mol	Enforce Boı	FALSE	

User Value [VapReportableFrac]

Parameter	2.71947*	%	Upper Bour		%
Lower Bound		%	Enforce Boı	FALSE	

User Value [LiqReportableFrac]

Parameter	0.000430142*	%	Upper Bour		%
Lower Bound		%	Enforce Boı	FALSE	

User Value [FlashReportableFrac]

Parameter	0.329930*	%	Upper Bour		%
Lower Bound		%	Enforce Boı	FALSE	

Notes:
This User Value Set was programmatically generated. GUID={DF2A5F02-C9B3-490F-83FA-EF04DF3C82F9}

ATTACHMENT V

FACILITY-WIDE EMISSION SUMMARY SHEET(S)

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

May 2017

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
E01E	3.04	13.33	4.26	18.66	2.13	9.33	0.01	0.04	0.11	0.50	0.11	0.50	1334.58	5845.46
E02E	3.04	13.33	4.26	18.66	2.13	9.33	0.01	0.04	0.11	0.50	0.11	0.50	1334.58	5845.46
E03E	3.04	13.33	4.26	18.66	2.13	9.33	0.01	0.04	0.11	0.50	0.11	0.50	1334.58	5845.46
E04E	3.04	13.33	4.26	18.66	2.13	9.33	0.01	0.04	0.11	0.50	0.11	0.50	1334.58	5845.46
E05E	3.04	13.33	4.26	18.66	2.13	9.33	0.01	0.04	0.11	0.50	0.11	0.50	1334.58	5845.46
G01E	3.07	0.77	2.66	0.66	1.14	0.28	0.94	0.24	0.15	0.04	0.15	0.04	380.05	95.01
DEHY-1E	--	--	--	--	1.59	6.97	--	--	--	--	--	--	1431.21	6268.72
RBLR-1E	0.15	0.66	0.13	0.55	0.01	0.04	0.00	0.00	0.01	0.05	0.01	0.05	175.51	768.76
DEHY-2E	--	--	--	--	1.59	6.97	--	--	--	--	--	--	1431.21	6268.72
RBLR-2E	0.15	0.66	0.13	0.55	0.01	0.04	0.00	0.00	0.01	0.05	0.01	0.05	175.51	768.76
T03E	--	--	--	--	0.00	0.00	--	--	--	--	--	--	--	--
T04E	--	--	--	--	0.00	0.00	--	--	--	--	--	--	--	--
T05E	--	--	--	--	0.00	0.00	--	--	--	--	--	--	--	--
T06E	--	--	--	--	0.00	0.00	--	--	--	--	--	--	--	--
T08E	--	--	--	--	0.00	0.01	--	--	--	--	--	--	--	--
T10E	--	--	--	--	0.00	0.01	--	--	--	--	--	--	--	--
TOTAL	18.58	68.71	24.21	95.05	14.99	60.96	0.98	0.42	0.75	2.63	0.75	2.63	10266.41	43397.26

Annual emissions shall be based on 8,760 hours per year of operation for all emission units except for 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 catergories 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
E01E	0.32	1.41	0.01	0.02	0.00	0.02	0.00	0.00	0.00	0.01	0.01	0.06	0.56	2.46
E02E	0.32	1.41	0.01	0.02	0.00	0.02	0.00	0.00	0.00	0.01	0.01	0.06	0.56	2.46
E03E	0.32	1.41	0.01	0.02	0.00	0.02	0.00	0.00	0.00	0.01	0.01	0.06	0.56	2.46
E04E	0.32	1.41	0.01	0.02	0.00	0.02	0.00	0.00	0.00	0.01	0.01	0.06	0.56	2.46
E05E	0.32	1.41	0.01	0.02	0.00	0.02	0.00	0.00	0.00	0.01	0.01	0.06	0.56	2.46
G01E	0.00	0.00	0.00	0.00	0.00	0.00	--	--	0.00	0.00	--	--	0.01	0.00
DEHY-1E	--	--	0.18	0.77	0.26	1.14	0.40	1.73	0.54	2.38	0.01	0.03	1.39	6.07
RBLR-1E	0.00	0.00	0.00	0.00	0.00	0.00	--	--	--	--	0.00	0.01	0.00	0.01
DEHY-2E	--	--	0.18	0.77	0.26	1.14	0.40	1.73	0.54	2.38	0.01	0.03	1.39	6.07
RBLR-2E	0.00	0.00	0.00	0.00	0.00	0.00	--	--	--	--	0.00	0.01	0.00	0.01
T03E	--	--	--	--	--	--	--	--	--	--	--	--	--	--
T04E	--	--	--	--	--	--	--	--	--	--	--	--	--	--
T05E	--	--	--	--	--	--	--	--	--	--	--	--	--	--
T06E	--	--	--	--	--	--	--	--	--	--	--	--	--	--
T08E	--	--	--	--	--	--	--	--	--	--	--	--	--	--
T10E	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	1.61	7.04	0.38	1.66	0.55	2.39	0.79	3.47	1.10	4.81	0.08	0.36	5.59	24.45

Annual emissions shall be based on 8,760 hours per year of operation for all emission units except for 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 catergories in Table 1. Therefore fugitive

ATTACHMENT W

CLASS 1 LEGAL ADVERTISEMENT

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

May 2017

AIR QUALITY PERMIT NOTICE
Notice of Application

Notice is given that CONE Midstream Partners LP has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a G35-D General Permit Modification, for a natural gas compressor and dehydration station located off Taylors Drain Rd. near Philippi, in Barbour County, West Virginia. The latitude and longitude coordinates are 39.19162 and -80.01851.

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

Pollutant	Tons/yr
$PM/PM_{10}/PM_{2.5}$	2.63
SO_2	0.42
NO_X	68.71
CO	95.05
VOCs	61.07
Formaldehyde	7.04
Total HAPs	24.45

Modification of operations are after the fact and as a result of removal of 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 May, 2017.

By: CONE Midstream Partners LP
Joseph Fink
Chief Operating Officer
1000 Consol Energy Drive
Canonsburg, PA 15317

PERMIT MODIFICATION APPLICATION FEE

General G35-D Permit Modification Application

Philippi Station
Philippi, West Virginia

CONE Midstream Partners LP
1000 Consol Energy Drive
Canonsburg, PA 15317

May 2017