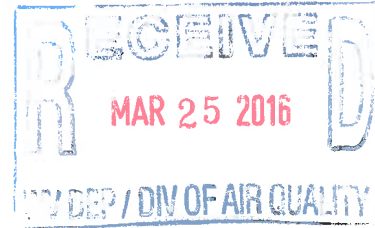




March 23, 2016

Mr. William F. Durham
Director
WVDEP, Division of Air Quality
601 – 57th Street SE
Charleston, West Virginia 25304



Re: Columbia Gas Transmission, Title V Renewal Application, R30-05100100-2012


Dear Mr. Durham,

SLR International Corporation and Columbia Pipeline Group (CPG) have worked to prepare the attached 45CSR30 Title V Renewal Application for the Adaline Compressor Station located in Marshall County, West Virginia (Facility ID 051-00100). The facility is currently operating under Title V operating permit number R30-05100100-2012.

In preparation for this renewal the existing terms and conditions of the permit were reviewed thoroughly for accuracy and clarity. As a result, a few areas have been identified where CPG compliance measures could be streamlined to enhance compliance clarity and move away from the old General Permit format. These suggested changes are being submitted for consideration as a proposed draft permit accompanying this application. The proposed predraft permit has also been supplied within the electronic submittal for the reviewing Engineer's convenience.

SLR would be more than happy to discuss the details of the proposed predraft or the Title V Renewal Application at your convenience. If any additional information is needed, please feel free to contact me by telephone at (304) 545-8563 or by e-mail at jhanshaw@slrconsulting.com

Sincerely,
SLR International Corporation


Jesse Hanshaw
Principal Engineer

Cc: Ms. Kelly Taylor, CPG Environmental Manager



Columbia Gas Transmission, LLC
Adaline Compressor Station
Facility ID No. 051-00100
Cameron, West Virginia
Title V Operating Permit Renewal Application
SLR Ref: 116.01272.00007

March 2016





Title V Operating Permit Renewal Application

Prepared for:

Columbia Gas Transmission, LLC
1700 MacCorkle Avenue, SE
Charleston, West Virginia 25314

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.

A handwritten signature in blue ink, reading "Chris Boggess", written over a horizontal line.

Chris Boggess
Associate Engineer

A handwritten signature in blue ink, reading "Jesse Hanshaw", written over a horizontal line.

Jesse Hanshaw, P.E.
Principal Engineer

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Notes:

ATTACHMENT F – N/A – Source is in compliance with all facility wide requirements

ATTACHMENT H – N/A – No CAM plan requirements at the facility

APPLICATION FOR PERMIT

Title V Operating Permit Renewal Application

**Adaline Compressor Station, Facility ID No. 051-00100
Cameron, West Virginia**

Columbia Gas Transmission, LLC
1700 MacCorkle Avenue, SE
Charleston, West Virginia

March 2016



**WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL
PROTECTION**

DIVISION OF AIR QUALITY

601 57th Street SE

Charleston, WV 25304

Phone: (304) 926-0475

www.dep.wv.gov/daq

INITIAL/RENEWAL TITLE V PERMIT APPLICATION - GENERAL FORMS

Section 1: General Information

1. Name of Applicant (As registered with the WV Secretary of State's Office): Columbia Gas Transmission, LLC	2. Facility Name or Location: Adaline Compressor Station
3. DAQ Plant ID No.: 051-00100	4. Federal Employer ID No. (FEIN): 31-0802435-30
5. Permit Application Type: <input type="checkbox"/> Initial Permit <input checked="" type="checkbox"/> Permit Renewal <input type="checkbox"/> Update to Initial/Renewal Permit Application When did operations commence? 1954 What is the expiration date of the existing permit? 10/31/2017	
6. Type of Business Entity: <input type="checkbox"/> Corporation <input type="checkbox"/> Governmental Agency <input checked="" type="checkbox"/> LLC <input type="checkbox"/> Partnership <input type="checkbox"/> Limited Partnership	7. Is the Applicant the: <input type="checkbox"/> Owner <input type="checkbox"/> Operator <input checked="" type="checkbox"/> Both If the Applicant is not both the owner and operator, please provide the name and address of the other party. _____ _____ _____
8. Number of onsite employees: Less than ten (10) employees	
9. Governmental Code: <input checked="" type="checkbox"/> Privately owned and operated; 0 <input type="checkbox"/> County government owned and operated; 3 <input type="checkbox"/> Federally owned and operated; 1 <input type="checkbox"/> Municipality government owned and operated; 4 <input type="checkbox"/> State government owned and operated; 2 <input type="checkbox"/> District government owned and operated; 5	
10. Business Confidentiality Claims Does this application include confidential information (per 45CSR31)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, identify each segment of information on each page that is submitted as confidential, and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's "PRECAUTIONARY NOTICE-CLAIMS OF CONFIDENTIALITY" guidance.	

11. Mailing Address		
Street or P.O. Box: 1700 MacCorkle Avenue, SE		
City: Charleston	State: WV	Zip: 25314
Telephone Number: (304) 357-2047	Fax Number: (304) 357-2770	

12. Facility Location			
Street: Cameron Ridge Rd.	City: Cameron	County: Marshall	
UTM Easting: 530.456 km	UTM Northing: 4,401.860 km	Zone: <input checked="" type="checkbox"/> 17 or <input type="checkbox"/> 18	
Directions: Located in Liberty District, Marshall County and South of Cameron, which is 25 miles South of Wheeling on US Rt. 250. From intersection in Cameron, travel West a short distance to a “Y” intersection . Go left, cross bridge, then up hill on a brick road. Proceed South along this road (Cameron Ridge Rd.) for approximately 7 miles to station that is on left side of the road and partially visible.			
Portable Source? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Is facility located within a nonattainment area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		If yes, for what air pollutants?	
Is facility located within 50 miles of another state? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		If yes, name the affected state(s). Ohio Pennsylvania	
Is facility located within 100 km of a Class I Area¹? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If no, do emissions impact a Class I Area¹? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		If yes, name the area(s). !! FORMTEXT	
¹ Class I areas include Dolly Sods and Otter Creek Wilderness Areas in West Virginia, and Shenandoah National Park and James River Face Wilderness Area in Virginia.			

13. Contact Information		
Responsible Official: Glenn Fyola		Title: Manager of Operations
Street or P.O. Box: 1700 MacCorkle Avenue, SE		
City: Charleston	State: WV	Zip: 25314
Telephone Number: (304) 223-2450	Fax Number: (304) 357-2770	
E-mail address: gfyola@cpg.com		
Environmental Contact: Kelly Taylor		Title: Environmental Coordinator
Street or P.O. Box: 1700 MacCorkle Avenue, SE		
City: Charleston	State: WV	Zip: 25314
Telephone Number: (304) 357-2047	Fax Number: (304) 357-2770	
E-mail address: kellytaylor@cpg.com		
Application Preparer: Jesse Hanshaw		Title: Principal Engineer
Company: SLR International Corporation		
Street or P.O. Box: 8 Capitol St., Suite 300		
City: Charleston	State: WV	Zip: 25301
Telephone Number: (681) 205-8949	Fax Number: (681) 205-8969	
E-mail address: jhanshaw@slrconsulting.com		

14. Facility Description

List all processes, products, NAICS and SIC codes for normal operation, in order of priority. Also list any process, products, NAICS and SIC codes associated with any alternative operating scenarios if different from those listed for normal operation.

Process	Products	NAICS	SIC
Natural Gas Transmission	Natural Gas	48621	4922

Provide a general description of operations.

Adaline Compressor Station is a natural gas transmission facility covered by Standard Industrial Classification (SIC) Code 4922. The station has the potential to operate twenty-four (24) hours per day, seven (7) days per week, fifty-two (52) weeks per year. The station consists of three (3) 880 Hp two stroke lean burn reciprocating engines, two (2) 2,000 Hp two stroke lean burn reciprocating engines, one (1) 440 Hp emergency four stroke lean burn reciprocating engine, one (1) 1080 Hp Solar Turbine, one (1) 1.0 MMBtu/hr natural gas line heater, three (3) 0.55 MMBtu/hr reboiler heaters, three (3) DEG dehydration units rated at 117 MMscf/d each, and one (1) 3.84 MMBtu/hr heating system boiler.

15. Provide an **Area Map** showing plant location as **ATTACHMENT A**.

16. Provide a **Plot Plan(s)**, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is located as **ATTACHMENT B**. For instructions, refer to "Plot Plan - Guidelines."

17. Provide a detailed **Process Flow Diagram(s)** showing each process or emissions unit as **ATTACHMENT C**. Process Flow Diagrams should show all emission units, control equipment, emission points, and their relationships.

Section 2: Applicable Requirements

18. Applicable Requirements Summary	
Instructions: Mark all applicable requirements.	
<input checked="" type="checkbox"/> SIP	<input type="checkbox"/> FIP
<input checked="" type="checkbox"/> Minor source NSR (45CSR13)	<input type="checkbox"/> PSD (45CSR14)
<input checked="" type="checkbox"/> NESHAP (45CSR34)	<input type="checkbox"/> Nonattainment NSR (45CSR19)
<input type="checkbox"/> Section 111 NSPS	<input checked="" type="checkbox"/> Section 112(d) MACT standards
<input type="checkbox"/> Section 112(g) Case-by-case MACT	<input type="checkbox"/> 112(r) RMP
<input type="checkbox"/> Section 112(i) Early reduction of HAP	<input type="checkbox"/> Consumer/commercial prod. reqts., section 183(e)
<input type="checkbox"/> Section 129 Standards/Reqts.	<input type="checkbox"/> Stratospheric ozone (Title VI)
<input type="checkbox"/> Tank vessel reqt., section 183(f)	<input type="checkbox"/> Emissions cap 45CSR§30-2.6.1
<input type="checkbox"/> NAAQS, increments or visibility (temp. sources)	<input type="checkbox"/> 45CSR27 State enforceable only rule
<input checked="" type="checkbox"/> 45CSR4 State enforceable only rule	<input type="checkbox"/> Acid Rain (Title IV, 45CSR33)
<input type="checkbox"/> Emissions Trading and Banking (45CSR28)	<input type="checkbox"/> Compliance Assurance Monitoring (40CFR64)
<input type="checkbox"/> CAIR NO _x Annual Trading Program (45CSR39)	<input type="checkbox"/> CAIR NO _x Ozone Season Trading Program (45CSR40)
<input type="checkbox"/> CAIR SO ₂ Trading Program (45CSR41)	

19. Non Applicability Determinations
<p>List all requirements which the source has determined not applicable and for which a permit shield is requested. The listing shall also include the rule citation and the reason why the shield applies.</p> <p>45CSR4 – <i>To Prevent and Control the Discharge of Air Pollutants into the Open Air Which Causes or Contributes to an Objectionable Odor or Odors</i>: According to 45CSR§4-7.1, this rule shall not apply to the following sources of objectionable odor until such time as feasible control methods are developed: Internal Combustion Engines</p> <p>45CSR10 – <i>To Prevent and Control Air Pollution from the Emission of Sulfur Oxides</i>: 45CSR10 is not applicable to the facility's boiler and heater because their maximum design heat input (DHI) is less than 10 MMBtu/hr</p> <p>45CSR21 – <i>To Prevent and Control Air Pollution from the Emission of Volatile Organic Compounds</i>: All storage tanks at the station, which are listed as insignificant sources, are below 40,000 gallons in capacity which exempts the facility from 45CSR§21-28. The compressor station is not engaged in the extraction or fractionation of natural gas which exempts the facility from 45CSR§21-29</p> <p>45CSR27 – <i>To Prevent and Control the Emissions of Toxic Air Pollutants</i>: Natural gas is included as a petroleum product and contains less than 5% benzene by weight. 45CSR§27-2.4 exempts equipment "used in the production and distribution of petroleum products providing that such equipment does not produce or contact materials containing more than 5% benzene by weight."</p> <p><input checked="" type="checkbox"/> Permit Shield</p>

19. Non Applicability Determinations (Continued) - Attach additional pages as necessary.

List all requirements which the source has determined not applicable and for which a permit shield is requested. The listing shall also include the rule citation and the reason why the shield applies.

40 CFR 60 Subpart Dc – *Standards of Performance for Steam Generating Units*: The heating system boiler and line heater at this facility are both less than 10 mmBtu/hr; Hence Subpart Dc is not applicable in accordance with 60.40c(a)

40 CFR 60 Subpart GG – *Standards of Performance for Stationary Gas Turbines*: The Solar Turbine was installed in 1966 which predates this NSPS's applicability trigger date of October 3, 1977 as defined in §60.330(b).

40 CFR 60 Subparts K,Ka – *Standards of Performance for Storage Vessels for Petroleum Liquids*: All tanks at the facility are below 40,000 gallons in capacity as specified in 60.110a(a)

40 CFR 60 Subpart Kb – *Standards of Performance for Volatile Organic Liquid Storage Vessels*: All tanks at the facility are below 75m³ (19,813 gallons) in capacity as specified in 60.110b(a)

40 CFR 60 Subpart KKK – *Standards of Performance for Equipment Leaks of VOC From Onshore Natural Gas Processing Plant*: This compressor station is not engaged in the extraction or fractionation of natural gas liquids from field gas, the fractionation of mixed natural gas liquids to natural gas products, or both.

40 CFR 60 Subpart IIII – *Standards of Performance for Stationary compression Ignition Internal Combustion Engines*: There are no compression ignition engines at this facility.

40 CFR 60 Subpart JJJJ – *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*: All engines at the facility were constructed, reconstructed, or modified prior to the June 12, 2006 applicability date listed in 60.4230(a)(4).

40 CFR 60 Subpart OOOO – *Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution*: This subpart does not apply to the facility since the facility is a transmission facility. So it is exempt from the requirements for gas wells, centrifugal compressors, reciprocating compressors, and/or pneumatic controllers. Although this applies to storage vessels located at transmission facilities, there have been no storage vessels constructed, modified, or reconstructed after August 23, 2011 in accordance with 60.5365(e).

40 CFR 60 Subpart KKKK – *Standards of Performance for Stationary Combustion Turbines* – The Solar Turbine was installed in 1966, which predates this NSPS's applicability date of February 18, 2005 as specified in §60.4305(a).

40 CFR 63 Subpart YYYY – *Turbine MACT*: The Solar Turbine which was installed in 1966 was constructed prior to this Regulations January 14, 2003 and is therefore considered an exempt existing source in accordance with §63.6090(b)(4).

40 CFR 64 – *Compliance Assurance Monitoring (CAM)*: There are no add-on controls at this facility, which the exception of the DEG dehyds, which are subject to 40 CFR 63, Subpart HHH; therefore, in accordance with 40CFR§64.2(a), CAM is not applicable to this facility.

☒ Permit Shield

20. Facility-Wide Applicable Requirements

List all facility-wide applicable requirements. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements).

T5 – 3.1.1 – 45 CSR 6-3.1 – Open burning prohibited
T5 – 3.1.2 – 45 CSR 6-3.2 – Open burning exemption stipulations
T5 – 3.1.3 – 40 CFR Part 61 and 45 CSR 34 – Asbestos inspection and removal
T5 – 3.1.4 – 45 CSR 4 – No objectionable odors
T5 – 3.1.5 – 45 CSR 11-5.2 – Standby plans for emergency episodes
T5 – 3.1.6 – WV Code 22-5-4 (a) (14) – The annual emission inventory reporting
T5 – 3.1.7 – 40 CFR Part 82 Subpart F – Ozone depleting substances
T5 – 3.1.8 – 40 CFR Part 68 – Risk Management Plan
T5 – 3.1.9 – 45 CSR 30-12.7 – Odor Control for Mercaptan
T5 – 3.1.10 – 45 CSR 30-12.7 – Emergency Operating Conditions / unit replacement
T5 – 3.3.1 – 45 CSR 22-5-4(a)(14-15) & 45CSR13 - Stack Testing - Conduct stack testing as required
T5 – 3.4.1 – 45 CSR 30-5.1 - Monitoring information – general monitoring requirements
T5 – 3.4.2 – 45 CSR 30-5.1 - Retention of records - Maintain records for a period of 5 years
T5 – 3.4.3 – 45 CSR 30-5.1 - Odors - Maintain records of odor complaints and corrective actions
T5 – 3.4.4 – 45 CSR 17.3 – Fugitive PM shall not cause statutory Air Pollution
T5 – 3.5.1 – 45 CSR 30-4.4. and 5.1.c.3.D – All documents required by permit shall be certified by a Responsible Official
T5 – 3.5.2 – 45 CSR 30-5.1.c.3.E. - A permittee may request confidential treatment
T5 – 3.5.3 – 45 CSR 30-5 - Communication required or permitted to be made to the DEP and/or USEPA
T5 – 3.5.4 – 45 CSR 30-8 - Certified emissions statement – Operator will Submit a certified emissions statement and pay fees on an annual basis
T5 – 3.5.5 – 45 CSR 30-5.3.e. - Compliance certification. The permittee shall certify compliance with the conditions of this permit on the forms provided by the DAQ
T5 – 3.5.6 – 45 SR§30-5.1.c.3.A - Semi-annual monitoring reports.
T5 – 3.5.7 – 45 CSR 30-5.7.a through e. - Emergencies
T5 – 3.5.8 – 45 CSR 30-5.1.c.3.B. and C. - Deviations
T5 – 3.5.9 – 45 CSR 30-4.3.h.1.B. New applicable requirements. If any requirement is promulgated, the permittee will meet such requirements on a timely basis
T5 – 3.5.10 – 45 CSR 30-5.1.c.3.C. Natural Gas Use certification during Compliance Certification

☒ Permit Shield

For all facility-wide applicable requirements listed above, provide monitoring/testing / recordkeeping / reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number and/or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

T5 – 3.1.3 – 40 CFR Part 61 and 45 CSR 34 – Prior to demolition/construction buildings will be inspected for asbestos and documented accordingly

T5 – 3.1.4 – 45 CSR 4 – Permittee shall maintain records of all odor complaints received

T5 – 3.1.5 – 45 CSR 11 – Upon request by the Secretary, the permittee shall prepare a standby plan

T5 – 3.1.6 – WV 22-5-4 – The permittee shall submit annual emission inventory reports

T5 – 3.1.7 – 40 CFR Part 82 Subpart F – The permittee will prohibit maintenance, service, or repair of appliances containing ozone depleting substances without persons certified pursuant to 40 CFR 82.161

T5 – 3.1.8 – 40 CFR Part 68 – Should the permittee become subject to 40 CFR Part 68, a RMP shall be submitted

T5 – 3.1.10 – 45CSR§30-12.7 For emergency situations which interrupt the critical supply of natural gas to the public, and which pose a life threatening circumstance to the customer, the permittee is allowed to temporarily replace failed engine(s). Proper notice will be provided to the WVDAQ

T5 – 3.3.1 – 45 CSR 22-5-4 Stack Testing – All protocols and reports will be submitted to the WVDAQ

T5 – 3.4.1 & 3.4.2 – 45 CSR 30-5.1 Retention of Records - Maintain records of all information required by permit for 5 yrs.

T5 – 3.4.3 – 45 CSR 30-5.1 Odors - Maintain records of all odor complaints and responses.

T5 – 3.5.1 – 45 CSR 30-4.4 and 5.1 Responsible Official - Reports, certifications, etc. shall contain a certification by the responsible official.

T5 – 3.5.4 – 45 CSR 30-8 Certified emissions statement – Operator will Submit a certified emissions statement and pay fees on an annual basis

T5 – 3.5.5 – 45 SR§30-5.3.e Compliance Certification - Prepare and submit an emission inventory as requested

T5 – 3.5.6 – 45 CSR§30-5.1.c.3.A. Semi-annual monitoring reports.

T5 – 3.5.7 – 45 CSR30-5.7.a through e. - For reporting emergency situations, refer to Section 2.17 of this permit

T5 – 3.5.8 – 45 CSR 30-5.1.c.3.B. and C. – Deviations, In addition to required monitoring reports, the permittee shall promptly submit supplemental reports and notices of deviations / include upset conditions, cause of deviation(s) and corrective actions.

T5 – 3.5.9 – 45 CSR 30-4.3.h.1.B. New applicable requirements. If any requirement is promulgated, the permittee will meet such requirements on a timely basis

T5 – 3.5.10 – 45 CSR 30-5.1.c.3.C. During compliance certification, the facility shall certify that the facility burns natural gas in all stationary equipment except, when applicable, for emergency equipment.

Are you in compliance with all facility-wide applicable requirements? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

21. Active Permits/Consent Orders

[illegible]

22. Inactive Permits/Obsolete Permit Conditions

[illegible]

Section 3: Facility-Wide Emissions

23. Facility-Wide Emissions Summary [Tons per Year]	
Criteria Pollutants	Potential Emissions
Carbon Monoxide (CO)	137.11
Nitrogen Oxides (NO _x)	851.76
Lead (Pb)	-
Particulate Matter (PM _{2.5}) ¹	10.07
Particulate Matter (PM ₁₀) ¹	10.07
Total Particulate Matter (TSP)	10.07
Sulfur Dioxide (SO ₂)	0.27
Volatile Organic Compounds (VOC)	42.42
Hazardous Air Pollutants ²	Potential Emissions
Benzene	1.26
Toluene	0.84
Ethylbenzene	0.38
Xylene	0.47
n-Hexane	0.21
Formaldehyde	15.06
Acetaldehyde	2.13
Total HAPs	20.33
Regulated Pollutants other than Criteria and HAP	Potential Emissions
CO _{2e}	45,180.2
¹ PM _{2.5} and PM ₁₀ are components of TSP. ² For HAPs that are also considered PM or VOCs, emissions should be included in both the HAPs section and the Criteria Pollutants section.	

Section 4: Insignificant Activities

24. Insignificant Activities (Check all that apply)	
<input checked="" type="checkbox"/>	1. Air compressors and pneumatically operated equipment, including hand tools.
<input type="checkbox"/>	2. Air contaminant detectors or recorders, combustion controllers or shutoffs.
<input checked="" type="checkbox"/>	3. Any consumer product used in the same manner as in normal consumer use, provided the use results in a duration and frequency of exposure which are not greater than those experienced by consumer, and which may include, but not be limited to, personal use items; janitorial cleaning supplies, office supplies and supplies to maintain copying equipment.
<input checked="" type="checkbox"/>	4. Bathroom/toilet vent emissions.
<input checked="" type="checkbox"/>	5. Batteries and battery charging stations, except at battery manufacturing plants.
<input type="checkbox"/>	6. Bench-scale laboratory equipment used for physical or chemical analysis, but not lab fume hoods or vents. Many lab fume hoods or vents might qualify for treatment as insignificant (depending on the applicable SIP) or be grouped together for purposes of description.
<input type="checkbox"/>	7. Blacksmith forges.
<input type="checkbox"/>	8. Boiler water treatment operations, not including cooling towers.
<input checked="" type="checkbox"/>	9. Brazing, soldering or welding equipment used as an auxiliary to the principal equipment at the source.
<input type="checkbox"/>	10. CO ₂ lasers, used only on metals and other materials which do not emit HAP in the process.
<input checked="" type="checkbox"/>	11. Combustion emissions from propulsion of mobile sources, except for vessel emissions from Outer Continental Shelf sources.
<input checked="" type="checkbox"/>	12. Combustion units designed and used exclusively for comfort heating that use liquid petroleum gas or natural gas as fuel.
<input checked="" type="checkbox"/>	13. Comfort air conditioning or ventilation systems not used to remove air contaminants generated by or released from specific units of equipment.
<input type="checkbox"/>	14. Demineralized water tanks and demineralizer vents.
<input type="checkbox"/>	15. Drop hammers or hydraulic presses for forging or metalworking.
<input type="checkbox"/>	16. Electric or steam-heated drying ovens and autoclaves, but not the emissions from the articles or substances being processed in the ovens or autoclaves or the boilers delivering the steam.
<input type="checkbox"/>	17. Emergency (backup) electrical generators at residential locations.
<input type="checkbox"/>	18. Emergency road flares.

24. Insignificant Activities (Check all that apply)

- ☒ 19. Emission units which do not have any applicable requirements and which emit criteria pollutants (CO, NO_x, SO₂, VOC and PM) into the atmosphere at a rate of less than 1 pound per hour and less than 10,000 pounds per year aggregate total for each criteria pollutant from all emission units.

Please specify all emission units for which this exemption applies along with the quantity of criteria pollutants emitted on an hourly and annual basis:

<i>Emission Point</i>	<i>VOC Emissions (lb/hr)</i>	<i>VOC Emissions (lb/yr)</i>
A01	0.000	0.06
A02	0.000	0.11
A03	0.007	59.05
A05	0.014	118.66
A06	0.000	1.39
A07	0.018	157.55
A08	0.049	430.07
A09	0.049	430.07
A10	0.049	430.07
A11	0.105	915.42
A12	0.105	915.42
A14	0.000	0.17
A16	0.000	0.51
A17	0.002	14.75
A18	0.002	14.75
B02	0.000	0.00
B06	0.000	0.03
B09	0.000	0.14
B10	0.000	0.14
C07	0.070	609.52
C08	0.000	1.37
Totals	0.47	4,099.25

- ☐ 20. Emission units which do not have any applicable requirements and which emit hazardous air pollutants into the atmosphere at a rate of less than 0.1 pounds per hour and less than 1,000 pounds per year aggregate total for all HAPs from all emission sources. This limitation cannot be used for any source which emits dioxin/furans nor for toxic air pollutants as per 45CSR27.

Please specify all emission units for which this exemption applies along with the quantity of hazardous air pollutants emitted on an hourly and annual basis:

- ☐ 21. Environmental chambers not using hazardous air pollutant (HAP) gases.
- ☒ 22. Equipment on the premises of industrial and manufacturing operations used solely for the purpose of preparing food for human consumption.
- ☐ 23. Equipment used exclusively to slaughter animals, but not including other equipment at slaughterhouses, such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment.
- ☒ 24. Equipment used for quality control/assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis.
- ☐ 25. Equipment used for surface coating, painting, dipping or spray operations, except those that will emit

24. Insignificant Activities (Check all that apply)	
	VOC or HAP.
<input checked="" type="checkbox"/>	26. Fire suppression systems.
<input checked="" type="checkbox"/>	27. Firefighting equipment and the equipment used to train firefighters.
<input checked="" type="checkbox"/>	28. Flares used solely to indicate danger to the public.
<input checked="" type="checkbox"/>	29. Fugitive emission related to movement of passenger vehicle provided the emissions are not counted for applicability purposes and any required fugitive dust control plan or its equivalent is submitted.
<input type="checkbox"/>	30. Hand-held applicator equipment for hot melt adhesives with no VOC in the adhesive formulation.
<input checked="" type="checkbox"/>	31. Hand-held equipment for buffing, polishing, cutting, drilling, sawing, grinding, turning or machining wood, metal or plastic.
<input type="checkbox"/>	32. Humidity chambers.
<input type="checkbox"/>	33. Hydraulic and hydrostatic testing equipment.
<input checked="" type="checkbox"/>	34. Indoor or outdoor kerosene heaters.
<input checked="" type="checkbox"/>	35. Internal combustion engines used for landscaping purposes.
<input type="checkbox"/>	36. Laser trimmers using dust collection to prevent fugitive emissions.
<input type="checkbox"/>	37. Laundry activities, except for dry-cleaning and steam boilers.
<input checked="" type="checkbox"/>	38. Natural gas pressure regulator vents, excluding venting at oil and gas production facilities.
<input type="checkbox"/>	39. Oxygen scavenging (de-aeration) of water.
<input type="checkbox"/>	40. Ozone generators.
<input checked="" type="checkbox"/>	41. Plant maintenance and upkeep activities (e.g., grounds-keeping, general repairs, cleaning, painting, welding, plumbing, re-tarring roofs, installing insulation, and paving parking lots) provided these activities are not conducted as part of a manufacturing process, are not related to the source's primary business activity, and not otherwise triggering a permit modification. (Cleaning and painting activities qualify if they are not subject to VOC or HAP control requirements. Asphalt batch plant owners/operators must still get a permit if otherwise requested.)
<input checked="" type="checkbox"/>	42. Portable electrical generators that can be moved by hand from one location to another. "Moved by Hand" means that it can be moved without the assistance of any motorized or non-motorized vehicle, conveyance, or device.
<input type="checkbox"/>	43. Process water filtration systems and demineralizers.
<input checked="" type="checkbox"/>	44. Repair or maintenance shop activities not related to the source's primary business activity, not including emissions from surface coating or de-greasing (solvent metal cleaning) activities, and not otherwise triggering a permit modification.
<input type="checkbox"/>	45. Repairs or maintenance where no structural repairs are made and where no new air pollutant emitting facilities are installed or modified.
<input type="checkbox"/>	46. Routing calibration and maintenance of laboratory equipment or other analytical instruments.
<input type="checkbox"/>	47. Salt baths using nonvolatile salts that do not result in emissions of any regulated air pollutants. Shock chambers.
<input type="checkbox"/>	48. Shock chambers.
<input type="checkbox"/>	49. Solar simulators.
<input checked="" type="checkbox"/>	50. Space heaters operating by direct heat transfer.
<input type="checkbox"/>	51. Steam cleaning operations.
<input type="checkbox"/>	52. Steam leaks.
<input type="checkbox"/>	53. Steam sterilizers.
<input checked="" type="checkbox"/>	54. Steam vents and safety relief valves.

24. Insignificant Activities (Check all that apply)	
<input type="checkbox"/>	55. Storage tanks, reservoirs, and pumping and handling equipment of any size containing soaps, vegetable oil, grease, animal fat, and nonvolatile aqueous salt solutions, provided appropriate lids and covers are utilized.
<input type="checkbox"/>	56. Storage tanks, vessels, and containers holding or storing liquid substances that will not emit any VOC or HAP. Exemptions for storage tanks containing petroleum liquids or other volatile organic liquids should be based on size limits such as storage tank capacity and vapor pressure of liquids stored and are not appropriate for this list.
<input type="checkbox"/>	57. Such other sources or activities as the Director may determine.
<input checked="" type="checkbox"/>	58. Tobacco smoking rooms and areas.
<input checked="" type="checkbox"/>	59. Vents from continuous emissions monitors and other analyzers.

Section 5: Emission Units, Control Devices, and Emission Points

25. Equipment Table
Fill out the Title V Equipment Table and provide it as ATTACHMENT D .
26. Emission Units
For each emission unit listed in the Title V Equipment Table , fill out and provide an Emission Unit Form as ATTACHMENT E .
For each emission unit not in compliance with an applicable requirement, fill out a Schedule of Compliance Form as ATTACHMENT F .
27. Control Devices
For each control device listed in the Title V Equipment Table , fill out and provide an Air Pollution Control Device Form as ATTACHMENT G .
For any control device that is required on an emission unit in order to meet a standard or limitation for which the potential pre-control device emissions of an applicable regulated air pollutant is greater than or equal to the Title V Major Source Threshold Level, refer to the Compliance Assurance Monitoring (CAM) Form(s) for CAM applicability. Fill out and provide these forms, if applicable, for each Pollutant Specific Emission Unit (PSEU) as ATTACHMENT H .

Section 6: Certification of Information**28. Certification of Truth, Accuracy and Completeness and Certification of Compliance**

*Note: This Certification must be signed by a responsible official. The **original**, signed in **blue ink**, must be submitted with the application. Applications without an **original** signed certification will be considered as incomplete.*

a. Certification of Truth, Accuracy and Completeness

I certify that I am a responsible official (as defined at 45CSR§30-2.38) and am accordingly authorized to make this submission on behalf of the owners or operators of the source described in this document and its attachments. I certify under penalty of law that I have personally examined and am familiar with the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine and/or imprisonment.

b. Compliance Certification

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

Responsible official (type or print)

Name: Glenn Fyola

Title: Manager of Operations

Responsible official's signature:Signature: Signature Date: 3/18/16

(Must be signed and dated in blue ink)

Note: Please check all applicable attachments included with this permit application:

- | | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | ATTACHMENT A: Area Map |
| <input checked="" type="checkbox"/> | ATTACHMENT B: Plot Plan(s) |
| <input checked="" type="checkbox"/> | ATTACHMENT C: Process Flow Diagram(s) |
| <input checked="" type="checkbox"/> | ATTACHMENT D: Equipment Table |
| <input checked="" type="checkbox"/> | ATTACHMENT E: Emission Unit Form(s) |
| <input type="checkbox"/> | ATTACHMENT F: Schedule of Compliance Form(s) |
| <input checked="" type="checkbox"/> | ATTACHMENT G: Air Pollution Control Device Form(s) |
| <input type="checkbox"/> | ATTACHMENT H: Compliance Assurance Monitoring (CAM) Form(s) |

All of the required forms and additional information can be found and downloaded from, the DEP website at www.dep.wv.gov/daq, requested by phone (304) 926-0475, and/or obtained through the mail.

ATTACHMENT A

AREA MAP

Title V Operating Permit Renewal Application

**Adaline Compressor Station, Facility ID No. 051-00100
Cameron, West Virginia**

Columbia Gas Transmission, LLC
1700 MacCorkle Avenue, SE
Charleston, West Virginia

March 2016



GPS Coordinates of Site:
 Lat: 39.76612, Long: -80.64442

UTM Coordinates of Site:
 Easting: 530.456 km, Northing: 4,401.860 km, Zone: 17

Columbia Gas Transmission, LLC
 1700 MacCorkle Avenue, SE
 Charleston, WV 25314

Report

Title V Operating Permit Renewal Application
 Adaline Compressor Station (ID No. 051-00100)

Drawing

Attachment A - Area Map

Date: February 2016

Drawn By: CLB

Project: 116.01272.00007 Task: 0001

03/23/2016

ATTACHMENT B

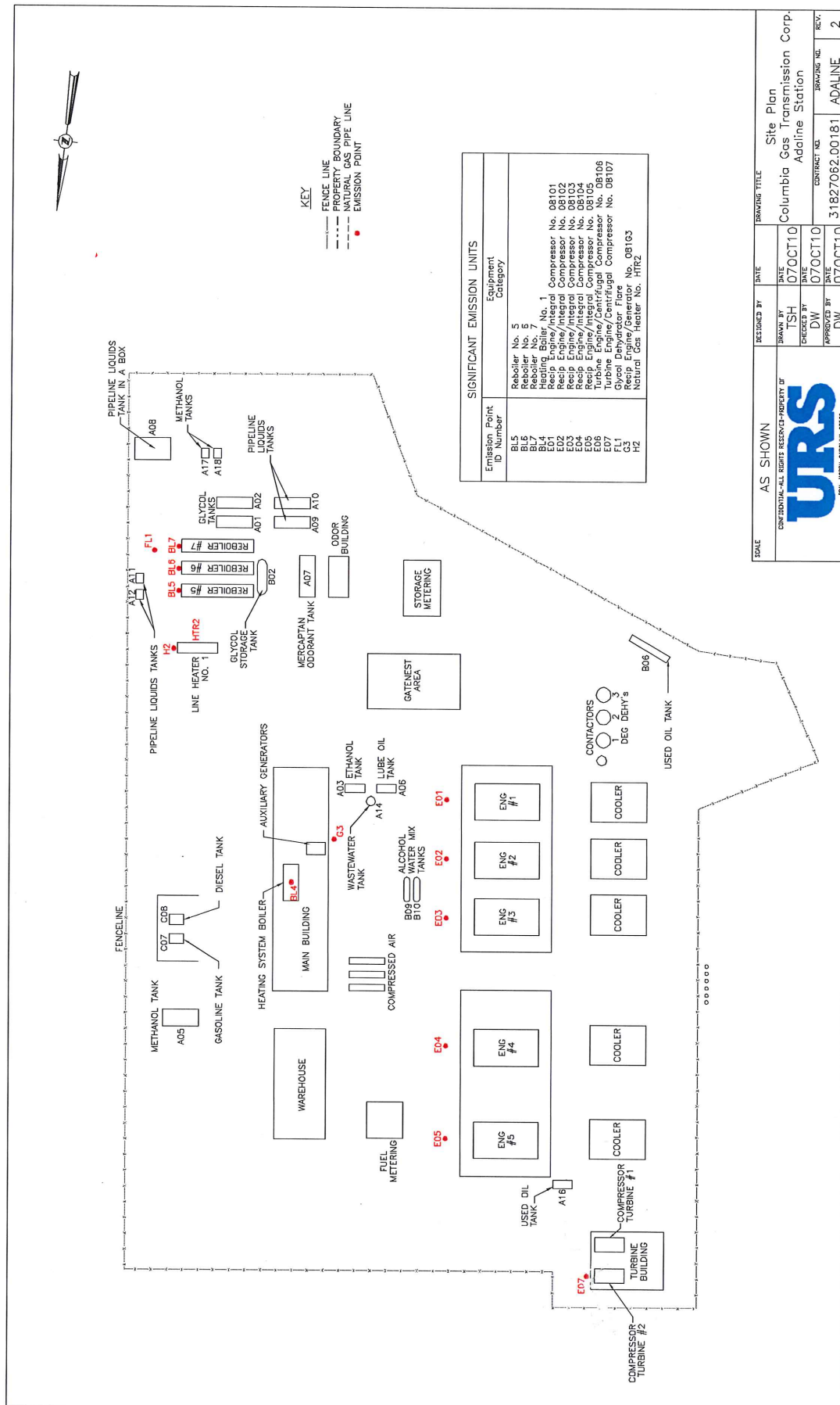
PLOT PLAN

Title V Operating Permit Renewal Application

**Adaline Compressor Station, Facility ID No. 051-00100
Cameron, West Virginia**

Columbia Gas Transmission, LLC
1700 MacCorkle Avenue, SE
Charleston, West Virginia

March 2016



SIGNIFICANT EMISSION UNITS	
Emission Point ID Number	Equipment Category
BL5	Reboiler No. 5
BL6	Reboiler No. 6
BL7	Reboiler No. 7
BL8	Reboiler No. 8
BL9	Reboiler No. 9
BL10	Reboiler No. 10
BL11	Reboiler No. 11
BL12	Reboiler No. 12
BL13	Reboiler No. 13
BL14	Reboiler No. 14
BL15	Reboiler No. 15
BL16	Reboiler No. 16
BL17	Reboiler No. 17
BL18	Reboiler No. 18
BL19	Reboiler No. 19
BL20	Reboiler No. 20
BL21	Reboiler No. 21
BL22	Reboiler No. 22
BL23	Reboiler No. 23
BL24	Reboiler No. 24
BL25	Reboiler No. 25
BL26	Reboiler No. 26
BL27	Reboiler No. 27
BL28	Reboiler No. 28
BL29	Reboiler No. 29
BL30	Reboiler No. 30
BL31	Reboiler No. 31
BL32	Reboiler No. 32
BL33	Reboiler No. 33
BL34	Reboiler No. 34
BL35	Reboiler No. 35
BL36	Reboiler No. 36
BL37	Reboiler No. 37
BL38	Reboiler No. 38
BL39	Reboiler No. 39
BL40	Reboiler No. 40
BL41	Reboiler No. 41
BL42	Reboiler No. 42
BL43	Reboiler No. 43
BL44	Reboiler No. 44
BL45	Reboiler No. 45
BL46	Reboiler No. 46
BL47	Reboiler No. 47
BL48	Reboiler No. 48
BL49	Reboiler No. 49
BL50	Reboiler No. 50
BL51	Reboiler No. 51
BL52	Reboiler No. 52
BL53	Reboiler No. 53
BL54	Reboiler No. 54
BL55	Reboiler No. 55
BL56	Reboiler No. 56
BL57	Reboiler No. 57
BL58	Reboiler No. 58
BL59	Reboiler No. 59
BL60	Reboiler No. 60
BL61	Reboiler No. 61
BL62	Reboiler No. 62
BL63	Reboiler No. 63
BL64	Reboiler No. 64
BL65	Reboiler No. 65
BL66	Reboiler No. 66
BL67	Reboiler No. 67
BL68	Reboiler No. 68
BL69	Reboiler No. 69
BL70	Reboiler No. 70
BL71	Reboiler No. 71
BL72	Reboiler No. 72
BL73	Reboiler No. 73
BL74	Reboiler No. 74
BL75	Reboiler No. 75
BL76	Reboiler No. 76
BL77	Reboiler No. 77
BL78	Reboiler No. 78
BL79	Reboiler No. 79
BL80	Reboiler No. 80
BL81	Reboiler No. 81
BL82	Reboiler No. 82
BL83	Reboiler No. 83
BL84	Reboiler No. 84
BL85	Reboiler No. 85
BL86	Reboiler No. 86
BL87	Reboiler No. 87
BL88	Reboiler No. 88
BL89	Reboiler No. 89
BL90	Reboiler No. 90
BL91	Reboiler No. 91
BL92	Reboiler No. 92
BL93	Reboiler No. 93
BL94	Reboiler No. 94
BL95	Reboiler No. 95
BL96	Reboiler No. 96
BL97	Reboiler No. 97
BL98	Reboiler No. 98
BL99	Reboiler No. 99
BL100	Reboiler No. 100

SCALE		AS SHOWN		DESIGNED BY		DATE		DRAWING TITLE	
CONFIDENTIAL - ALL RIGHTS RESERVED - PROPERTY OF URS		TSH		07OCT10		Columbia Gas Transmission Corp.		Site Plan	
DW		07OCT10		DW		Adaline Station		Contract No.	
DW		07OCT10		DW		31827062.00181		ADALINE	
								REV	
								2	

ATTACHMENT C

PROCESS FLOW DIAGRAM

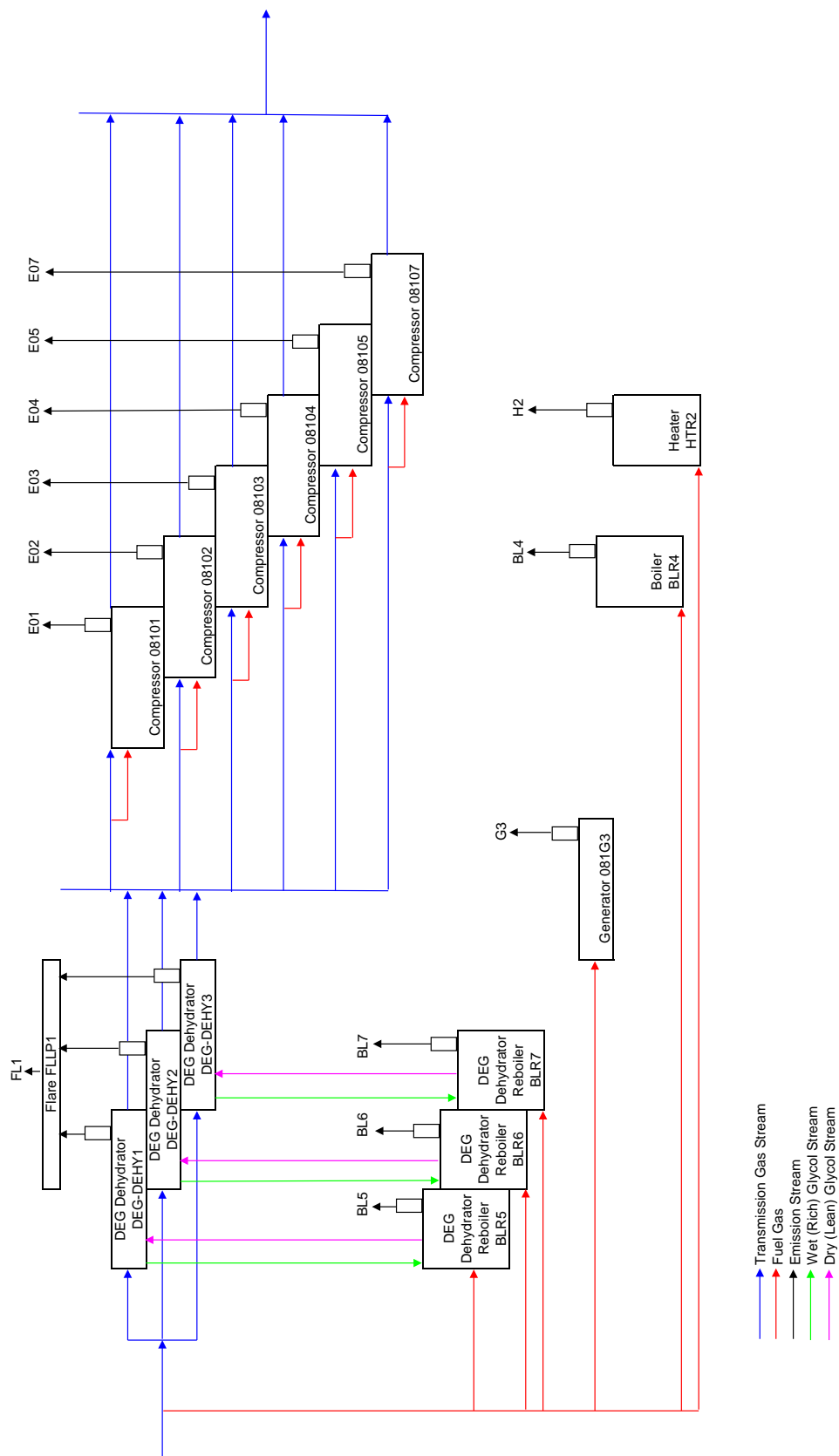
Title V Operating Permit Renewal Application

Adaline Compressor Station, Facility ID No. 051-00100
Cameron, West Virginia

Columbia Gas Transmission, LLC
1700 MacCorkle Avenue, SE
Charleston, West Virginia

March 2016

ATTACHMENT C ADALINE COMPRESSOR STATION PROCESS FLOW DIAGRAM



ATTACHMENT D

EQUIPMENT TABLE

Title V Operating Permit Renewal Application

Adaline Compressor Station, Facility ID No. 051-00100
Cameron, West Virginia

Columbia Gas Transmission, LLC
1700 MacCorkle Avenue, SE
Charleston, West Virginia

March 2016

ATTACHMENT D - Title V Equipment Table
(includes all emission units at the facility except those designated as
insignificant activities in Section 4, Item 24 of the General Forms)

Emission Point ID ¹	Control Device ¹	Emission Unit ID ¹	Emission Unit Description	Design Capacity	Year Installed/Modified
BL5	N/A	BLR5*	DEG Dehydrator Reboiler; NATCO; Model # GREG-550-CE	0.55 MMBtu/hr	2010
BL6	N/A	BLR6*	DEG Dehydrator Reboiler; NATCO; Model # GREG-550-CE	0.55 MMBtu/hr	2010
BL7	N/A	BLR7*	DEG Dehydrator Reboiler; NATCO; Model # GREG-550-CE	0.55 MMBtu/hr	2010
BL4	N/A	BLR4*	Heating System Boiler; American Standard; Model # 1-B-J-3	3.48 MMBtu/hr	1961
H2	N/A	HTR2*	Natural Gas Line Heater; BS&B; Model # 70S-2	1.0 MMBtu/hr	1956
E01	N/A	08101*	Reciprocating Engine/Integral Compressor; Clark HRA-8; 2 Cycle, Lean Burn	880 Hp	1954
E02	N/A	08102*	Reciprocating Engine/Integral Compressor; Clark HRA-8; 2 Cycle, Lean Burn	880 Hp	1954
E03	N/A	08103*	Reciprocating Engine/Integral Compressor; Clark HRA-8; 2 Cycle, Lean Burn	880 Hp	1956
E04	N/A	08104*	Reciprocating Engine/Integral Compressor; Clark TLA-6; 2 Cycle, Lean Burn	2,000 Hp	1961
E05	N/A	08105*	Reciprocating Engine/Integral Compressor; Clark TLA-6; 2 Cycle, Lean Burn	2,000 Hp	1961
E07	N/A	08107*	Turbine Engine/Centrifugal Compressor; Solar Saturn T-1001 Turbine	1,080 Hp	1966
G3	N/A	081G3*	Reciprocating Engine/Generator; Waukesha VGF18GL; 4 Cycle, Lean Burn	440 Hp	1998
FL1	FLLP1	DEG-DEHY1*	DEG Dehydrator; BS&B Contact Tower; 6 Bubble Trays	117 MMscf/d	1987
FL1	FLLP1	DEG-DEHY2*	DEG Dehydrator; BS&B Contact Tower; 6 Bubble Trays	117 MMscf/d	1984
FL1	FLLP1	DEG-DEHY3*	DEG Dehydrator; BS&B Contact Tower; 6 Bubble Trays	117 MMscf/d	1984
FL1	N/A	FLLP1*	Dehydrator Flare; NATCO; Model # SHV-4.0	2.5 MMBtu/hr	1998
A07	N/A	A07	Mercaptan Odorant, Double Wall, Horiz. Above Ground Storage Tank	2,000 gal	1966

¹For 45CSR13 permitted sources, the numbering system used for the emission points, control devices, and emission units should be consistent with the numbering system used in the 45CSR13 permit. For grandfathered sources, the numbering system should be consistent with registrations or emissions inventory previously submitted to DAQ. For emission points, control devices, and emissions units which have not been previously labeled, use the following 45CSR13 numbering system: 1S, 2S, 3S,... or other appropriate description for emission units; 1C, 2C, 3C,... or other appropriate designation for control devices; 1E, 2E, 3E, ... or other appropriate designation for emission points.

*This equipment burns pipeline quality natural gas only.

ATTACHMENT E

EMISSION UNIT FORM(S)

Title V Operating Permit Renewal Application

Adaline Compressor Station, Facility ID No. 051-00100
Cameron, West Virginia

Columbia Gas Transmission, LLC
1700 MacCorkle Avenue, SE
Charleston, West Virginia

March 2016

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: BLR5	Emission unit name: DEG Dehydrator Reboiler #1	List any control devices associated with this emission unit: NA
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):

Reboiler/regenerator

Manufacturer: NATCO	Model number: GREG-550-CE	Serial number: NA
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Construction date: NA	Installation date: 2010	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 0.55 mmBtu/hr

Maximum Hourly Throughput: NA	Maximum Annual Throughput: NA	Maximum Operating Schedule: 8,760
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***Fuel Usage Data* (fill out all applicable fields)**

Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, is it? <input checked="" type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired
--	---

Maximum design heat input and/or maximum horsepower rating: 0.55 mmBtu/hr	Type and Btu/hr rating of burners: 0.55 mmBtu/hr
---	--

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas
537 scf/hr
4,700,000 scf/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	Pipeline Quality		1,020 Btu/scf

Emissions Data

Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	See Appendix A	
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})		
Particulate Matter (PM ₁₀)		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	See Appendix A	
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

See Appendix A

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

45 CSR§2-3.1 – Opacity Limit; shall not exceed ten (10) percent opacity
40 CFR 63.7500(a)(1) – Table 3, Item 1 – Tune Up every five (5) years
40 CFR 63.7500(a)(1) – Table 3, Item 4 – One time energy audit
40 CFR 63.7500(e) – Five (5) year tune up cycle

45 C.S.R 13, Permit R13-2149C

Condition 6.1.3 – Heat Input Requirements; Maximum design heat input shall not exceed 0.55 MMBtu/hr

Condition 6.1.4 – Emission Limitations; Maximum emissions shall not exceed the following listed in the table below;

<i>Pollutant</i>	<i>Maximum Hourly Emissions (lb/hr)</i>	<i>Maximum Annual Emissions (ton/yr)</i>
Nitrogen Oxides	0.07	0.29
Carbon Monoxide	0.06	0.24

☒ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

45 CSR§2-3.2 – Compliance shall be determined using Method 9
40 CFR 63.7510(e) – Initial Compliance – Tune up by January 31, 2016 according to 63.7540(a)(10)(i)-(iv)
40 CFR 63.7510(e) – Continuous Compliance – Energy assessment by January 31, 2016 according to Table 3, Item 4
40 CFR 63.7515(d) – Subsequent tune ups according to 63.7540(a)(12)
40 CFR 63.7545(e) – Initial Reporting – Notification of compliance status report shall be submitted by March 31, 2016 and shall include information specified by (e)(1) and (e)(8)
40 CFR 63.7550 (b)(5) – Ongoing reporting – Submit tune up report every five (5) years with T5 semi-annual reports. Report shall contain information specified in (63.7550(c)(1)

45 C.S.R 13, Permit R13-2149C

At the Director's request, hours of operation will be documented and used to show compliance with emission limits based on maximum design heat input.

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: BLR6	Emission unit name: DEG Dehydrator Reboiler #2	List any control devices associated with this emission unit: NA
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):

Reboiler/regenerator

Manufacturer: NATCO	Model number: GREG-550-CE	Serial number: NA
-------------------------------	-------------------------------------	-----------------------------

Construction date: NA	Installation date: 2010	Modification date(s): NA
---------------------------------	-----------------------------------	------------------------------------

Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 0.55 mmBtu/hr

Maximum Hourly Throughput: NA	Maximum Annual Throughput: NA	Maximum Operating Schedule: 8,760
---	---	---

Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, is it? <input checked="" type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired
--	---

Maximum design heat input and/or maximum horsepower rating: 0.55 mmBtu/hr	Type and Btu/hr rating of burners: 0.55 mmBtu/hr
---	--

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas
537 scf/hr
4,700,000 scf/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	Pipeline Quality		1,020 Btu/scf

Emissions Data

Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	See Appendix A	
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})		
Particulate Matter (PM ₁₀)		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	See Appendix A	
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

See Appendix A

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

45 CSR§2-3.1 – Opacity Limit; shall not exceed ten (10) percent opacity
40 CFR 63.7500(a)(1) – Table 3, Item 1 – Tune Up every five (5) years
40 CFR 63.7500(a)(1) – Table 3, Item 4 – One time energy audit
40 CFR 63.7500(e) – Five (5) year tune up cycle

45 C.S.R 13, Permit R13-2149C

Condition 6.1.3 – Heat Input Requirements; Maximum design heat input shall not exceed 0.55 MMBtu/hr

Condition 6.1.4 – Emission Limitations; Maximum emissions shall not exceed the following listed in the table below;

<i>Pollutant</i>	<i>Maximum Hourly Emissions (lb/hr)</i>	<i>Maximum Annual Emissions (ton/yr)</i>
Nitrogen Oxides	0.07	0.29
Carbon Monoxide	0.06	0.24

☒ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

45 CSR§2-3.2 – Compliance shall be determined using Method 9
40 CFR 63.7510(e) – Initial Compliance – Tune up by January 31, 2016 according to 63.7540(a)(10)(i)-(iv)
40 CFR 63.7510(e) – Continuous Compliance – Energy assessment by January 31, 2016 according to Table 3, Item 4
40 CFR 63.7515(d) – Subsequent tune ups according to 63.7540(a)(12)
40 CFR 63.7545(e) – Initial Reporting – Notification of compliance status report shall be submitted by March 31, 2016 and shall include information specified by (e)(1) and (e)(8)
40 CFR 63.7550 (b)(5) – Ongoing reporting – Submit tune up report every five (5) years with T5 semi-annual reports. Report shall contain information specified in (63.7550(c)(1)

45 C.S.R 13, Permit R13-2149C

At the Director's request, hours of operation will be documented and used to show compliance with emission limits based on maximum design heat input.

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: BLR7	Emission unit name: DEG Dehydrator Reboiler #3	List any control devices associated with this emission unit: NA
---	--	---

Provide a description of the emission unit (type, method of operation, design parameters, etc.):

Reboiler/regenerator

Manufacturer: NATCO	Model number: GREG-550-CE	Serial number: NA
-------------------------------	-------------------------------------	-----------------------------

Construction date: NA	Installation date: 2010	Modification date(s): NA
---------------------------------	-----------------------------------	------------------------------------

Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 0.55 mmBtu/hr

Maximum Hourly Throughput: NA	Maximum Annual Throughput: NA	Maximum Operating Schedule: 8,760
---	---	---

Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, is it? <input checked="" type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired
--	---

Maximum design heat input and/or maximum horsepower rating: 0.55 mmBtu/hr	Type and Btu/hr rating of burners: 0.55 mmBtu/hr
---	--

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas
 537 scf/hr
 4,700,000 scf/yrs

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	Pipeline Quality		1,020 Btu/scf

Emissions Data

Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	See Appendix A	
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})		
Particulate Matter (PM ₁₀)		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	See Appendix A	
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

See Appendix A

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

45 CSR§2-3.1. – Opacity Limit; shall not exceed ten (10) percent opacity
40 CFR 63.7500(a)(1) – Table 3, Item 1 – Tune Up every five (5) years
40 CFR 63.7500(a)(1) – Table 3, Item 4 – One time energy audit
40 CFR 63.7500(e) – Five (5) year tune up cycle

45 C.S.R 13, Permit R13-2149C

Condition 6.1.3 – Heat Input Requirements; Maximum design heat input shall not exceed 0.55 MMBtu/hr

Condition 6.1.4 – Emission Limitations; Maximum emissions shall not exceed the following listed in the table below;

<i>Pollutant</i>	<i>Maximum Hourly Emissions (lb/hr)</i>	<i>Maximum Annual Emissions (ton/yr)</i>
Nitrogen Oxides	0.07	0.29
Carbon Monoxide	0.06	0.24

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

45 CSR§2-3.2 – Compliance shall be determined using Method 9
40 CFR 63.7510(e) – Initial Compliance – Tune up by January 31, 2016 according to 63.7540(a)(10)(i)-(iv)
40 CFR 63.7510(e) – Continuous Compliance – Energy assessment by January 31, 2016 according to Table 3, Item 4
40 CFR 63.7515(d) – Subsequent tune ups according to 63.7540(a)(12)
40 CFR 63.7545(e) – Initial Reporting – Notification of compliance status report shall be submitted by March 31, 2016 and shall include information specified by (e)(1) and (e)(8)
40 CFR 63.7550 (b)(5) – Ongoing reporting – Submit tune up report every five (5) years with T5 semi-annual reports. Report shall contain information specified in (63.7550(c)(1)

45 C.S.R 13, Permit R13-2149C

At the Director's request, hours of operation will be documented and used to show compliance with emission limits based on maximum design heat input.

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: BLR4	Emission unit name: Heating System Boiler	List any control devices associated with this emission unit: NA
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):

Heating System Boiler

Manufacturer: American Standard	Model number: 1-B-J-3	Serial number: NA
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Construction date: NA	Installation date: 1961	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 3.48 mmBtu/hr

Maximum Hourly Throughput: NA	Maximum Annual Throughput: NA	Maximum Operating Schedule: 8,760
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, is it? <input checked="" type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired
--	---

Maximum design heat input and/or maximum horsepower rating: 3.48 mmBtu/hr	Type and Btu/hr rating of burners: 3.48 mmBtu/hr
---	--

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas
3,413 scf/hr
29,900,000 scf/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	Pipeline Quality		1,020 Btu/scf

Emissions Data

Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	See Appendix A	
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})		
Particulate Matter (PM ₁₀)		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	See Appendix A	
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). See Appendix A		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

45 CSR§2-3.1. – Opacity Limit; shall not exceed ten (10) percent opacity
40 CFR 63.7500(a)(1) – Table 3, Item 1 – Tune Up every five (5) years
40 CFR 63.7500(a)(1) – Table 3, Item 4 – One time energy audit
40 CFR 63.7500(e) – Five (5) year tune up cycle

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

45 CSR§2-3.2 – Compliance shall be determined using Method 9
40 CFR 63.7510(e) – Initial Compliance – Tune up by January 31, 2016 according to 63.7540(a)(10)(i)-(iv)
40 CFR 63.7510(e) – Continuous Compliance – Energy assessment by January 31, 2016 according to Table 3, Item 4
40 CFR 63.7515(d) – Subsequent tune ups according to 63.7540(a)(12)
40 CFR 63.7545(e) – Initial Reporting – Notification of compliance status report shall be submitted by March 31, 2016 and shall include information specified by (e)(1) and (e)(8)
40 CFR 63.7550 (b)(5) – Ongoing reporting – Submit tune up report every five (5) years with T5 semi-annual reports. Report shall contain information specified in (63.7550(c)(1)

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: HTR2	Emission unit name: Natural Gas Heater	List any control devices associated with this emission unit: NA
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):

Line heater

Manufacturer: BS&B	Model number: 70S-2	Serial number: NA
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Construction date: NA	Installation date: 1956	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 1.0 mmBtu/hr

Maximum Hourly Throughput: NA	Maximum Annual Throughput: NA	Maximum Operating Schedule: 8,760
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, is it? <input checked="" type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired
--	---

Maximum design heat input and/or maximum horsepower rating: 1.0 mmBtu/hr	Type and Btu/hr rating of burners: 1.0 mmBtu/hr
--	---

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas
982 scf/hr
8,600,000 scf/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	Pipeline Quality		1,020 Btu/scf

Emissions Data

Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	See Appendix A	
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})		
Particulate Matter (PM ₁₀)		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	See Appendix A	
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). See Appendix A		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

45 CSR§2-3.1. – Opacity Limit; shall not exceed ten (10) percent opacity
40 CFR 63.7500(a)(1) – Table 3, Item 1 – Tune Up every five (5) years
40 CFR 63.7500(a)(1) – Table 3, Item 4 – One time energy audit
40 CFR 63.7500(e) – Five (5) year tune up cycle

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

45 CSR§2-3.2 – Compliance shall be determined using Method 9
40 CFR 63.7510(e) – Initial Compliance – Tune up by January 31, 2016 according to 63.7540(a)(10)(i)-(iv)
40 CFR 63.7510(e) – Continuous Compliance – Energy assessment by January 31, 2016 according to Table 3, Item 4
40 CFR 63.7515(d) – Subsequent tune ups according to 63.7540(a)(12)
40 CFR 63.7545(e) – Initial Reporting – Notification of compliance status report shall be submitted by March 31, 2016 and shall include information specified by (e)(1) and (e)(8)
40 CFR 63.7550 (b)(5) – Ongoing reporting – Submit tune up report every five (5) years with T5 semi-annual reports. Report shall contain information specified in (63.7550(c)(1)

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 08101	Emission unit name: Reciprocating Engine/Integral Compressor	List any control devices associated with this emission unit: NA
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 2-cycle, lean burn.

Manufacturer: Clark	Model number: HRA-8	Serial number: NA
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Construction date: NA	Installation date: 1954	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 Hourly – 968 hp
 Annually – 880 hp

Maximum Hourly Throughput: NA	Maximum Annual Throughput: NA	Maximum Operating Schedule: 8,760
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, is it? <input type="checkbox"/> Indirect Fired <input checked="" type="checkbox"/> Direct Fired
--	---

Maximum design heat input and/or maximum horsepower rating: Hourly – 968 hp Annually – 880 hp	Type and Btu/hr rating of burners: 9,500 Btu/hp-hr
--	--

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas
 Hourly – 9,016 scf/hr /
 Annually – 8,196 scf/hr / 71,797,000 scf/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	Pipeline Quality		1,020 Btu/scf

Emissions Data

Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	See Appendix A	
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})		
Particulate Matter (PM ₁₀)		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	See Appendix A	
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). See Appendix A		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

According to 40 CFR 63.6590(b)(3)(i) and 40 CFR 63.6600(c), this existing, non-emergency, SI 2SLB engine > 500 hp located at a major source of HAPs does not have any requirements under 40 CFR Part 63 Subpart ZZZZ because it was constructed prior to December 12, 2002.

Therefore, there are no specific applicable requirements for this emission unit other than those to submit a certified emission statement in accordance with Title V permit condition 3.5.4 and an annual emission inventory according to Title V permit condition 3.1.6.

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

The emission unit shall track fuel usage and hours of operation in order to quantify annual emissions from this unit.

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 08102	Emission unit name: Reciprocating Engine/Integral Compressor	List any control devices associated with this emission unit: NA
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 2-cycle, lean burn.

Manufacturer: Clark	Model number: HRA-8	Serial number: NA
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Construction date: NA	Installation date: 1954	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 Hourly – 968 hp
 Annually – 880 hp

Maximum Hourly Throughput: NA	Maximum Annual Throughput: NA	Maximum Operating Schedule: 8,760
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, is it? <input type="checkbox"/> Indirect Fired <input checked="" type="checkbox"/> Direct Fired
--	---

Maximum design heat input and/or maximum horsepower rating: Hourly – 968 hp Annually – 880 hp	Type and Btu/hr rating of burners: 9,500 Btu/hp-hr
--	--

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas
 Hourly – 9,016 scf/hr
 Annually – 8,196 scf/hr / 71,797,000 scf/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	Pipeline Quality		1,020 Btu/scf

Emissions Data

Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	See Appendix A	
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})		
Particulate Matter (PM ₁₀)		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	See Appendix A	
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

See Appendix A

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

According to 40 CFR 63.6590(b)(3)(i) and 40 CFR 63.6600(c), this existing, non-emergency, SI 2SLB engine > 500 hp located at a major source of HAPs does not have any requirements under 40 CFR Part 63 Subpart ZZZZ because it was constructed prior to December 12, 2002.

Therefore, there are no specific applicable requirements for this engine (Emission Unit ID #08102)

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

The emission unit shall track fuel usage and hours of operation in order to quantify annual emissions from this unit.

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 08103	Emission unit name: Reciprocating Engine/Integral Compressor	List any control devices associated with this emission unit: NA
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 2-cycle, lean burn.

Manufacturer: Clark	Model number: HRA-8	Serial number: NA
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Construction date: NA	Installation date: 1956	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 Hourly – 968 hp
 Annually – 880 hp

Maximum Hourly Throughput: NA	Maximum Annual Throughput: NA	Maximum Operating Schedule: 8,760
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, is it? <input type="checkbox"/> Indirect Fired <input checked="" type="checkbox"/> Direct Fired
--	---

Maximum design heat input and/or maximum horsepower rating: Hourly – 968 hp Annually – 880 hp	Type and Btu/hr rating of burners: 9,500 Btu/hp-hr
--	--

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas
 Hourly – 9,016 scf/hr
 Annually – 8,196 scf/hr / 71,797,000 scf/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	Pipeline Quality		1,020 Btu/scf

Emissions Data

Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	See Appendix A	
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})		
Particulate Matter (PM ₁₀)		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	See Appendix A	
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). See Appendix A		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

According to 40 CFR 63.6590(b)(3)(i) and 40 CFR 63.6600(c), this existing, non-emergency, SI 2SLB engine > 500 hp located at a major source of HAPs does not have any requirements under 40 CFR Part 63 Subpart ZZZZ because it was constructed prior to December 12, 2002.

Therefore, there are no specific applicable requirements for this emission unit other than those to submit a certified emission statement in accordance with Title V permit condition 3.5.4 and an annual emission inventory according to Title V permit condition 3.1.6.

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

The emission unit shall track fuel usage and hours of operation in order to quantify annual emissions from this unit.

Are you in compliance with all applicable requirements for this emission unit? X Yes ___ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 08104	Emission unit name: Reciprocating Engine/Integral Compressor	List any control devices associated with this emission unit: NA
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 2-cycle, lean burn.

Manufacturer: Clark	Model number: TLA-6	Serial number: NA
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Construction date: NA	Installation date: 1961	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 Hourly – 2,572 hp
 Annually – 2,000 hp

Maximum Hourly Throughput: NA	Maximum Annual Throughput: NA	Maximum Operating Schedule: 8,760
---	---	---

Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, is it? <input type="checkbox"/> Indirect Fired <input checked="" type="checkbox"/> Direct Fired
--	---

Maximum design heat input and/or maximum horsepower rating: Hourly – 2,572 hp Annually – 2,000 hp	Type and Btu/hr rating of burners: 8,400 Btu/hp-hr
--	--

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas
 Hourly – 21,181 scf/hr
 Annually – 16,471 scf/hr / 144,286,000 scf/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	Pipeline Quality		1,020 Btu/scf

Emissions Data

Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	See Appendix A	
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})		
Particulate Matter (PM ₁₀)		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	See Appendix A	
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

See Appendix A

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

According to 40 CFR 63.6590(b)(3)(i) and 40 CFR 63.6600(c), this existing, non-emergency, SI 2SLB engine > 500 hp located at a major source of HAPs does not have any requirements under 40 CFR Part 63 Subpart ZZZZ because it was constructed prior to December 12, 2002.

Therefore, there are no specific applicable requirements for this emission unit other than those to submit a certified emission statement in accordance with Title V permit condition 3.5.4 and an annual emission inventory according to Title V permit condition 3.1.6.

X Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

The emission unit shall track fuel usage and hours of operation in order to quantify annual emissions from this unit.

Are you in compliance with all applicable requirements for this emission unit? X Yes ___ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 08105	Emission unit name: Reciprocating Engine/Integral Compressor	List any control devices associated with this emission unit: NA
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 2-cycle, lean burn.

Manufacturer: Clark	Model number: TLA-6	Serial number: NA
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Construction date: NA	Installation date: 1961	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 Hourly – 2,572 hp
 Annually – 2,000 hp

Maximum Hourly Throughput: NA	Maximum Annual Throughput: NA	Maximum Operating Schedule: 8,760
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, is it? <input type="checkbox"/> Indirect Fired <input checked="" type="checkbox"/> Direct Fired
--	---

Maximum design heat input and/or maximum horsepower rating: Hourly – 2,572 hp Annually – 2,000 hp	Type and Btu/hr rating of burners: 8,400 Btu/hp-hr
--	--

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas
 Hourly – 21,181 scf/hr
 Annually – 16,471 scf/hr / 144,286,000 scf/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	Pipeline Quality		1,020 Btu/scf

Emissions Data

Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	See Appendix A	
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})		
Particulate Matter (PM ₁₀)		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	See Appendix A	
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). See Appendix A		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

According to 40 CFR 63.6590(b)(3)(i) and 40 CFR 63.6600(c), this existing, non-emergency, SI 2SLB engine > 500 hp located at a major source of HAPs does not have any requirements under 40 CFR Part 63 Subpart ZZZZ because it was constructed prior to December 12, 2002.

Therefore, there are no specific applicable requirements for this emission unit other than those to submit a certified emission statement in accordance with Title V permit condition 3.5.4 and an annual emission inventory according to Title V permit condition 3.1.6.

X Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

The emission unit shall track fuel usage and hours of operation in order to quantify annual emissions from this unit.

Are you in compliance with all applicable requirements for this emission unit? X Yes ___ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 08107	Emission unit name: Turbine Engine/Centrifugal Compressor	List any control devices associated with this emission unit: NA
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 Turbine engine.

Manufacturer: Solar	Model number: Saturn T-1000	Serial number: NA
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Construction date: NA	Installation date: 1966	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 Hourly – 1,242 hp
 Annually – 1,080 hp

Maximum Hourly Throughput: NA	Maximum Annual Throughput: NA	Maximum Operating Schedule: 8,760
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, is it? ___ Indirect Fired <input checked="" type="checkbox"/> Direct Fired
--	--

Maximum design heat input and/or maximum horsepower rating: Hourly – 1,242 hp Annually – 1,080 hp	Type and Btu/hr rating of burners: 16,000 Btu/hp-hr
--	---

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas
 Hourly – 19,482 scf/hr
 Annually – 16,941 scf/hr / 148,404,000 scf/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	Pipeline Quality		1,020 Btu/scf

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	See Appendix A	
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})		
Particulate Matter (PM ₁₀)		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	See Appendix A	
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). See Appendix A		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

There are no specific applicable requirements for this emission unit other than those to submit a certified emission statement in accordance with Title V permit condition 3.5.4 and an annual emission inventory according to Title V permit condition 3.1.6.

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

The emission unit shall track fuel usage and hours of operation in order to quantify annual emissions from this unit.

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 081G3	Emission unit name: Reciprocating Engine/Generator	List any control devices associated with this emission unit: NA
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 4-cycle, lean burn

Manufacturer: Waukesha	Model number: VGF18GL	Serial number: NA
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Construction date: NA	Installation date: 1998	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 440 hp

Maximum Hourly Throughput: NA	Maximum Annual Throughput: NA	Maximum Operating Schedule: 8,760
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, is it? <input type="checkbox"/> Indirect Fired <input checked="" type="checkbox"/> Direct Fired
--	---

Maximum design heat input and/or maximum horsepower rating: 440 hp	Type and Btu/hr rating of burners: 8,000 Btu/hp-hr
--	--

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas
 3,451 scf/hr / 30,231,000 scf/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	Pipeline Quality		1,020 Btu/scf

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	See Appendix A	
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})		
Particulate Matter (PM ₁₀)		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	See Appendix A	
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). See Appendix A		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

40 C.F.R. § 63.6602 and Table 2c (Line 6) – Maintenance Requirements
40 C.F.R. § 63.6605 - Operating Requirements
40 C.F.R. § 63.6625 (e)(2), (f), (h), and (j) – Monitoring Requirements
40 C.F.R. § 63.6640 and Table 6 (Line 9) – Continuous compliance requirements
40 C.F.R. § 63.6665 - General requirements/provisions

45 C.S.R. 13, Permit R13-2149C

Condition 5.1.1 – Fuel Usage Requirements; Quantity of Natural Gas consumed shall not exceed 3,972 scf/hr or 34.79×10^6 scf/yr

Condition 5.1.2 – Emission Limitations; Maximum emissions shall not exceed the following listed in the table below;

<i>Pollutant</i>	<i>Maximum Hourly Emissions (lb/hr)</i>	<i>Maximum Annual Emissions (ton/yr)</i>
Nitrogen Oxides	2.52	11.05
Carbon Monoxide	1.70	7.44
Volatile Organic Compounds	0.73	3.19

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

40 C.F.R. § 63.6602 and Table 2c (Line 6) – Change oil and filter every 500 hours of operation, or annually whichever comes first; inspect spark plugs every 1000 hours of operation, or annually, whichever occurs first; inspect hoses every 500 hours of operation, or annually, whichever occurs first and replace as necessary

40 C.F.R. §§ 63.6605 & 63.6640 and Table 6 (Line 9) – Work or Management Practices: Operate and Maintain the RICE according to the manufacturer's instructions OR develop and follow your own maintenance plan

40 C.F.R. § 63.6625 (e) (2) – Operate and maintain the RICE according to the manufacturer's instructions OR develop and follow your own maintenance plan

40 C.F.R. § 63.6625 (f) – Install and monitor hours of operation

40 C.F.R. § 63.6625 (h) – Minimize Idle Time during Startup to not exceed 30 Minutes

40 C.F.R. § 63.6625 (j) – Oil Analysis Program in lieu of Oil change requirement in Table 2c

40 C.F.R. § 63.6655 (except b & c) – Keep records of maintenance conducted and operating schedule on the RICE

45 C.S.R. 13, Permit R13-2149C

Condition 5.1.4 – Maintain records of quantity of natural gas consumed and hours of operation. Records shall be maintained on site or at a readily accessible off-site location for a period of five (5) years and shall be readily available to the Director upon request

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: DEG-DEHY1	Emission unit name: DEG Dehydrator	List any control devices associated with this emission unit: Dehydrator Flare - FLLP1
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 Contact Tower, 6 bubble trays

Manufacturer: BS&B	Model number: NA	Serial number: NA
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Construction date: NA	Installation date: 1987	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 117 MMscf/day

Maximum Hourly Throughput: 4.875 mmscf/hr	Maximum Annual Throughput: 42,705 mmscf/yr	Maximum Operating Schedule: 8,760
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ____ Yes <u> X </u> No	If yes, is it? ____ Indirect Fired ____ Direct Fired
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Maximum design heat input and/or maximum horsepower rating: NA	Type and Btu/hr rating of burners: NA
--	---

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data

Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	See Appendix A	
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})		
Particulate Matter (PM ₁₀)		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	See Appendix A	
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). See Appendix A		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

40 C.F.R. § 63.1274 (a), (b), (c), (g), and (h) – General Requirements
40 C.F.R. § 63.1275 (b)(1)(ii), (b)(2), and (c)(3)(ii) – Control Requirements
40 C.F.R. § 63.1281 (a), (c), (d)(1)(iii), (d)(3), and (d)(4)(i) – Control Equipment Requirements
40 C.F.R. § 63.1282 (a)(2), (b), (d)(1)(i), and (d)(2) – Compliance Procedures

45 C.S.R. 13, Permit R13-2149C

Condition 7.1.1 – Maximum Throughput Limitation; The maximum wet natural gas throughput shall not exceed 4.875 mmscf/hr or 117 MMscf/d.

☒ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

40 C.F.R. § 63.1283 (a), (c), (d)(1), (d)(3)(i)(C), (d)(6), and (d)(7) – Inspection and Monitoring Requirements
40 C.F.R. § 63.1284 (a), (b)(1-3), (b)(4)(i), (b)(4)(ii)(A), (b)(4)(iii-iv), (b)(5-8), (c), (e) and (f) – Recordkeeping Requirements
40 C.F.R. § 63.1285 (a), (b)(5), (b)(6), (d)(2)(i-iii), (d)(7), (d)(9), (e), (f), and (g) – Reporting Requirements

45 C.S.R. 13, Permit R13-2149C

Condition 7.1.1 – Maximum Throughput Limitation; Compliance shall be determined using a twelve month rolling total.

Condition 7.2.2 – Throughput of wet natural gas to dehydration system shall be monitored on a monthly basis.

Condition 7.4.5 – Maintain records of wet natural gas throughput

Condition 7.4.6 – Maintain records for a period of five years on site or a readily accessible off-site location

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: DEG-DEHY2	Emission unit name: DEG Dehydrator	List any control devices associated with this emission unit: Dehydrator Flare - FLLP1
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 Contact Tower, 6 bubble trays

Manufacturer: BS&B	Model number: NA	Serial number: NA
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Construction date: NA	Installation date: 1984	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 117 MMscf/day

Maximum Hourly Throughput: 4.875 mmscf/hr	Maximum Annual Throughput: 42,705 mmscf/yr	Maximum Operating Schedule: 8,760
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ____ Yes <u> X </u> No	If yes, is it? ____ Indirect Fired ____ Direct Fired
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Maximum design heat input and/or maximum horsepower rating: NA	Type and Btu/hr rating of burners: NA
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data

Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	See Appendix A	
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})		
Particulate Matter (PM ₁₀)		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	See Appendix A	
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

See Appendix A

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

40 C.F.R. § 63.1274 (a), (b), (c), (g), and (h) – General Requirements
40 C.F.R. § 63.1275 (b)(1)(ii), (b)(2), and (c)(3)(ii) – Control Requirements
40 C.F.R. § 63.1281 (a), (c), (d)(1)(iii), (d)(3), and (d)(4)(i) – Control Equipment Requirements
40 C.F.R. § 63.1282 (a)(2), (b), (d)(1)(i), and (d)(2) – Compliance Procedures

45 C.S.R. 13, Permit R13-2149C

Condition 7.1.1 – Maximum Throughput Limitation; The maximum wet natural gas throughput shall not exceed 4.875 mmscf/hr or 117 MMscf/d.

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

40 C.F.R. § 63.1283 (a), (c), (d)(1), (d)(3)(i)(C), (d)(6), and (d)(7) – Inspection and Monitoring Requirements
40 C.F.R. § 63.1284 (a), (b)(1-3), (b)(4)(i), (b)(4)(ii)(A), (b)(4)(iii-iv), (b)(5-8), (c), (e) and (f) – Recordkeeping Requirements
40 C.F.R. § 63.1285 (a), (b)(5), (b)(6), (d)(2)(i-iii), (d)(7), (d)(9), (e), (f), and (g) – Reporting Requirements

45 C.S.R. 13, Permit R13-2149C

Condition 7.1.1 – Maximum Throughput Limitation; Compliance shall be determined using a twelve month rolling total.

Condition 7.2.2 – Throughput of wet natural gas to dehydration system shall be monitored on a monthly basis.

Condition 7.4.5 – Maintain records of wet natural gas throughput

Condition 7.4.6 – Maintain records for a period of five years on site or a readily accessible off-site location

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: DEG-DEHY3	Emission unit name: DEG Dehydrator	List any control devices associated with this emission unit: Dehydrator Flare - FLLP1
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 Contact Tower, 6 bubble trays

Manufacturer: BS&B	Model number: NA	Serial number: NA
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Construction date: NA	Installation date: 1984	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 117 MMscf/day

Maximum Hourly Throughput: 4.875 mmscf/hr	Maximum Annual Throughput: 42,705 mmscf/yr	Maximum Operating Schedule: 8,760
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ____ Yes <u> X </u> No	If yes, is it? ____ Indirect Fired ____ Direct Fired
---	---

Maximum design heat input and/or maximum horsepower rating: NA	Type and Btu/hr rating of burners: NA
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data

Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	See Appendix A	
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})		
Particulate Matter (PM ₁₀)		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	See Appendix A	
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). See Appendix A		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

40 C.F.R. § 63.1274 (a), (b), (c), (g), and (h) – General Requirements

40 C.F.R. § 63.1275 (b)(1)(ii), (b)(2), and (c)(3)(ii) – Control Requirements

40 C.F.R. § 63.1281 (a), (c), (d)(1)(iii), (d)(3), and (d)(4)(i) – Control Equipment Requirements

40 C.F.R. § 63.1282 (a)(2), (b), (d)(1)(i), and (d)(2) – Compliance Procedures

45 C.S.R. 13, Permit R13-2149C

Condition 7.1.1 – Maximum Throughput Limitation; The maximum wet natural gas throughput shall not exceed 4.875 MMscf/hr or 117 MMscf/d.

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

40 C.F.R. § 63.1283 (a), (c), (d)(1), (d)(3)(i)(C), (d)(6), and (d)(7) – Inspection and Monitoring Requirements

40 C.F.R. § 63.1284 (a), (b)(1-3), (b)(4)(i), (b)(4)(ii)(A), (b)(4)(iii-iv), (b)(5-8), (c), (e) and (f) – Recordkeeping Requirements

40 C.F.R. § 63.1285 (a), (b)(5), (b)(6), (d)(2)(i-iii), (d)(7), (d)(9), (e), (f), and (g) – Reporting Requirements

45 C.S.R. 13, Permit R13-2149C

Condition 7.1.1 – Maximum Throughput Limitation; Compliance shall be determined using a twelve month rolling total.

Condition 7.2.2 – Throughput of wet natural gas to dehydration system shall be monitored on a monthly basis.

Condition 7.4.5 – Maintain records of wet natural gas throughput

Condition 7.4.6 – Maintain records for a period of five years on site or an readily accessible off-site location

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: FLLP1	Emission unit name: Dehydrator Flare	List any control devices associated with this emission unit: NA
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 Flare

Manufacturer: NATCO	Model number: SHV-4.0	Serial number: NA
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Construction date: NA	Installation date: 1998	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 2.5 mmBtu/hr

Maximum Hourly Throughput: 2,451 scf/hr 102 lb/hr	Maximum Annual Throughput: 21,471,000 scf/yr	Maximum Operating Schedule: 8,760
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, is it? <input type="checkbox"/> Indirect Fired <input checked="" type="checkbox"/> Direct Fired
--	---

Maximum design heat input and/or maximum horsepower rating: 2.5 mmBtu/hr	Type and Btu/hr rating of burners: 2.5 mmBtu/hr
--	---

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas
 2,451 scf/hr / 21,471,000 scf/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	Pipeline Quality		1,020 Btu/scf

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	See Appendix A	
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})		
Particulate Matter (PM ₁₀)		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	See Appendix A	
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.). See Appendix A		
<i>Applicable Requirements</i>		

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

45 C.S.R. 6-4.1 – Particulate Matter Emission Limitation; PM Limit was based on design capacity of FLLP1 and set at 0.2765 lb/hr

45 C.S.R. 6-4.3 – Opacity Limitations; No person shall cause or allow emission of smoke into atmosphere from FLLP1 which is 20% opacity or higher.

45 C.S.R. 13, Permit R13-2149C

Condition 7.1.2.a – Flare Requirements; Flare shall be steam-assisted, air-assisted, or non-assisted.

Condition 7.1.2.b – Flare Requirements; Flare shall be designed and operated with no visible emissions except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

Condition 7.1.2.c – Flare Requirements; Flare shall be operated with a flame present at all times except during SSM.

Condition 7.1.2.d,e,f,g,h – Flares shall be designed to meet the Btu and exit velocity requirements in accordance with 63.11.

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

45 C.S.R. 13, Permit R13-2149C

Condition 7.2.1 – To demonstrate compliance with 7.1.2.c, presence or absence of a flare pilot flame shall be monitored

Condition 7.3.1 – Method 22 Opacity testing shall be conducted within one year of permit issuance or initial startup, whichever is later

Condition 7.3.2 – The Director may require a flare compliance assessment be conducted to demonstrate compliance

Condition 7.4.1 – Maintain records of the times and duration of all periods in which the pilot flame was absent

Condition 7.4.2 – Maintain a record of the flare design evaluation

Condition 7.4.4 – Maintain records of the VE opacity testing conducted per Condition 7.3.1

Condition 7.4.6 – Maintain records for a period of five years on site or an readily accessible off-site location

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT F

SCHEDULE OF COMPLIANCE FORM (NOT APPLICABLE)

Title V Operating Permit Renewal Application

**Adaline Compressor Station, Facility ID No. 051-00100
Cameron, West Virginia**

Columbia Gas Transmission, LLC
1700 MacCorkle Avenue, SE
Charleston, West Virginia

March 2016

ATTACHMENT G

AIR POLLUTION CONTROL DEVICE FORM

Title V Operating Permit Renewal Application

**Adaline Compressor Station, Facility ID No. 051-00100
Cameron, West Virginia**

Columbia Gas Transmission, LLC
1700 MacCorkle Avenue, SE
Charleston, West Virginia

March 2016

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number:
FLLP1

List all emission units associated with this control device.
DEG-DEHY1, DEG-DEHY2, DEG-DEHY3

Manufacturer:
NATCO

Model number:
SHV-4.0

Installation date:
12/01/1998

Type of Air Pollution Control Device:

☐ Baghouse/Fabric Filter ☐ Venturi Scrubber ☐ Multiclone
☐ Carbon Bed Adsorber ☐ Packed Tower Scrubber ☐ Single Cyclone
☐ Carbon Drum(s) ☐ Other Wet Scrubber ☐ Cyclone Bank
☐ Catalytic Incinerator ☐ Condenser ☐ Settling Chamber
☐ Thermal Incinerator ☒ Flare ☐ Other (describe) _____
☐ Wet Plate Electrostatic Precipitator ☐ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Flare controls emissions from glycol dehydrators at 98%; See Appendix A for pollutants controlled.		
VOC	100%	98%
HAPs	100%	98%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

Design Capacity – 2.5 mmBtu/hr
Maximum Flow Rate – 2,451 scf/hr / 21,471,000 scf/yr

Is this device subject to the CAM requirements of 40 C.F.R. 64? ☐ Yes ☒ No

If Yes, **Complete ATTACHMENT H**

If No, **Provide justification.**

Exempt from CAM because of CAAA 112 applicability under MACT Standard 40CFR63, Subpart HHH

Describe the parameters monitored and/or methods used to indicate performance of this control device.

Flare Design Analysis to show compliance with 63.11(b) tip velocity and waste gas Btu values.

A thermocouple continuously monitors and records the presence of a pilot flame.

Opacity VE's are measured and recorded to comply with the no visible emission requirements exceeding 5 minutes in any 2 hour period in accordance with 63.11(b).

ATTACHMENT H

**COMPLIANCE ASSURANCE MONITORING FORM (NOT
APPLICABLE)**

Title V Operating Permit Renewal Application

**Adaline Compressor Station, Facility ID No. 051-00100
Cameron, West Virginia**

Columbia Gas Transmission, LLC
1700 MacCorkle Avenue, SE
Charleston, West Virginia

March 2016

APPENDIX A

SUPPORTING CALCULATIONS

Title V Operating Permit Renewal Application

Adaline Compressor Station, Facility ID No. 051-00100
Cameron, West Virginia

Columbia Gas Transmission, LLC
1700 MacCorkle Avenue, SE
Charleston, West Virginia

March 2016

Table 1. Annual Potential To Emit (PTE) Summary
Columbia Pipeline Group - Adaline Compressor Station

Criteria Pollutants

Proposed PTE - Criteria Pollutants

Source	PM	PM10	PM2.5	SO2	NOx	CO	VOC	CO2e
Engines (ton/yr)	10.014	10.014	10.014	0.244	848.376	130.845	36.419	40733.769
Heaters/Boilers/Reboilers (ton/yr)	0.050	0.050	0.050	0.019	2.632	2.211	0.145	3141.646
Dehydration Unit (ton/yr)	-	-	-	-	-	-	2.640	0.000
Flare (ton/yr)	-	-	-	0.008	0.745	4.051	0.153	1281.265
Storage Tanks (ton/yr)	-	-	-	-	-	-	2.050	-
Fugitives (ton/yr)	-	-	-	-	-	-	1.010	23.476
Total Emissions (ton/yr)	10.065	10.065	10.065	0.270	851.753	137.107	42.416	45180.156
Total Emissions (lb/hr)	2.298	2.298	2.298	0.062	194.464	31.303	9.684	10315.104

Hazardous Air Pollutants (HAPs)

Proposed PTE - HAPs

Source	Acetaldehyde	Benzene	Toluene	Ethylbenzene	Xylene	n-Hexane	Formaldehyde	Total HAPs
Engines (ton/yr)	2.1264	0.5063	0.2636	0.1060	0.0766	0.1315	15.055	18.266
Heaters/Boilers/Reboilers (ton/yr)	-	0.0001	0.0001	-	-	0.0474	0.002	0.050
Dehydration Unit (ton/yr)	-	0.7500	0.5700	0.2700	0.3900	0.0300	-	2.010
Flare (ton/yr)	-	-	-	-	-	-	-	0.000
Storage Tanks (ton/yr)	-	-	-	-	-	-	-	0.000
Fugitives (ton/yr)	-	-	-	-	-	-	-	0.000
Total Emissions (ton/yr)	2.126	1.256	0.834	0.376	0.467	0.209	15.057	20.325
Total Emissions (lb/hr)	0.485	0.287	0.190	0.086	0.107	0.048	3.438	4.640

Table 2. Reciprocating Engine / Integral Compressor Emissions (E01 - E03)
Clark HRA-8; 2SLB
Columbia Pipeline Group - Adalene Compressor 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	3.84E-02 lb/MMBtu (1)	0.35 (a)	3.84E-02 lb/MMBtu (1)	1.41 (c)
SO ₂	20 grains S / 100 ft ³ (2)	0.51 (e)	0.25 grains S / 100 ft ³ (2)	0.03 (f)
NO _x	5.95E-02 lb/hp-hr (3)	57.57 (b)	2.97E-02 lb/hp-hr (3)	114.48 (d)
CO	5.55E-03 lb/hp-hr (3)	5.37 (b)	2.78E-03 lb/hp-hr (3)	10.72 (d)
VOC	1.20E-01 lb/MMBtu (1)	1.10 (a)	1.20E-01 lb/MMBtu (1)	4.39 (c)
Hazardous Air Pollutants				
1,1,2,2-Tetrachloroethane	6.63E-05 lb/MMBtu (1)	0.001 (a)	6.63E-05 lb/MMBtu (1)	0.002 (c)
1,1,2-Trichloroethane	5.27E-05 lb/MMBtu (1)	0.000 (a)	5.27E-05 lb/MMBtu (1)	0.002 (c)
1,3-Butadiene	8.20E-04 lb/MMBtu (1)	0.008 (a)	8.20E-04 lb/MMBtu (1)	0.030 (c)
1,3-Dichloropropene	4.38E-05 lb/MMBtu (1)	0.000 (a)	4.38E-05 lb/MMBtu (1)	0.002 (c)
2-Methylnapthalene	2.14E-05 lb/MMBtu (1)	0.000 (a)	2.14E-05 lb/MMBtu (1)	0.001 (c)
2,2,4-Trimethylpentane	8.46E-04 lb/MMBtu (1)	0.008 (a)	8.46E-04 lb/MMBtu (1)	0.031 (c)
Acetaldehyde	7.76E-03 lb/MMBtu (1)	0.071 (a)	7.76E-03 lb/MMBtu (1)	0.284 (c)
Acrolein	7.78E-03 lb/MMBtu (1)	0.072 (a)	7.78E-03 lb/MMBtu (1)	0.285 (c)
Benzene	1.94E-03 lb/MMBtu (1)	0.018 (a)	1.94E-03 lb/MMBtu (1)	0.071 (c)
Biphenyl	3.95E-06 lb/MMBtu (1)	0.000 (a)	3.95E-06 lb/MMBtu (1)	0.000 (c)
Carbon Tetrachloride	6.07E-05 lb/MMBtu (1)	0.001 (a)	6.07E-05 lb/MMBtu (1)	0.002 (c)
Chlorobenzene	4.44E-05 lb/MMBtu (1)	0.000 (a)	4.44E-05 lb/MMBtu (1)	0.002 (c)
Chloroform	4.71E-05 lb/MMBtu (1)	0.000 (a)	4.71E-05 lb/MMBtu (1)	0.002 (c)
Ethylbenzene	1.08E-04 lb/MMBtu (1)	0.001 (a)	1.08E-04 lb/MMBtu (1)	0.004 (c)
Ethylene Dibromide	7.34E-05 lb/MMBtu (1)	0.001 (a)	7.34E-05 lb/MMBtu (1)	0.003 (c)
Formaldehyde	5.52E-02 lb/MMBtu (1)	0.508 (a)	5.52E-02 lb/MMBtu (1)	2.021 (c)
Methanol	2.48E-03 lb/MMBtu (1)	0.023 (a)	2.48E-03 lb/MMBtu (1)	0.091 (c)
Methylene Chloride	1.47E-04 lb/MMBtu (1)	0.001 (a)	1.47E-04 lb/MMBtu (1)	0.005 (c)
n-Hexane	4.45E-04 lb/MMBtu (1)	0.004 (a)	4.45E-04 lb/MMBtu (1)	0.016 (c)
Naphthalene	9.63E-05 lb/MMBtu (1)	0.001 (a)	9.63E-05 lb/MMBtu (1)	0.004 (c)
PAH (POM)	1.34E-04 lb/MMBtu (1)	0.001 (a)	1.34E-04 lb/MMBtu (1)	0.005 (c)
Phenol	4.21E-05 lb/MMBtu (1)	0.000 (a)	4.21E-05 lb/MMBtu (1)	0.002 (c)
Styrene	5.48E-05 lb/MMBtu (1)	0.001 (a)	5.48E-05 lb/MMBtu (1)	0.002 (c)
Toluene	9.63E-04 lb/MMBtu (1)	0.009 (a)	9.63E-04 lb/MMBtu (1)	0.035 (c)
Vinyl Chloride	2.47E-05 lb/MMBtu (1)	0.000 (a)	2.47E-05 lb/MMBtu (1)	0.001 (c)
Xylenes	2.68E-04 lb/MMBtu (1)	0.002 (a)	2.68E-04 lb/MMBtu (1)	0.010 (c)
Total HAP		0.731		2.912
Greenhouse Gas Emissions				
CO ₂	116.89 lb/MMBtu (4)	1074.91 (a)	116.89 lb/MMBtu (4)	4280.10 (c)
CH ₄	2.2E-03 lb/MMBtu (4)	0.02 (a)	2.2E-03 lb/MMBtu (4)	0.08 (c)
N ₂ O	2.2E-04 lb/MMBtu (4)	0.00 (a)	2.2E-04 lb/MMBtu (4)	0.01 (c)
CO ₂ e ^(g)	-	1076.02		4284.53

Calculations:

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

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

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 (lb/hp-hr) * Engine Power Output (hp) * Annual Hours of operation (hr/yr) * (1ton/2000lbs)

SO₂ Emissions - If emission factor note 2 is used, use calculations (e) and (f) for hourly and annual emissions, respectively.

(e) Maximum Hourly Emissions SO₂ Calculation (lb/hr) = (20 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 Calculation (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) =	722
Engine Power Output (hp) =	968
Number of Engines =	3
Average BSFC (BTU/HP-hr) =	9,500 (5)
Heat Content Natural Gas(Btu/scf) =	1,020.0 (6)
Fuel Throughput (ft ³ /hr) =	9,015.7 (7)
PTE Hours of Operation =	1

ANNUAL EMISSION INPUTS	
Engine Power Output (kW) =	656
Engine Power Output (hp) =	880
Number of Engines =	3
Average BSFC (BTU/HP-hr) =	9,500 (5)
Heat Content Natural Gas(Btu/scf) =	1,020.0 (6)
Fuel Throughput (ft ³ /hr) =	8,196.1 (7)
PTE Hours of Operation =	8,760

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

CO ₂	1	(8)
CH ₄	25	(8)
N ₂ O	298	(8)

Notes:

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

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

(3) Emission Factors supplied from Stack Test Data

(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. Reciprocating Engine / Integral Compressor Emissions (E04 - E05)
Clark TLA-6; 2SLB
Columbia Pipeline Group - Adalene Compressor 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	3.84E-02 lb/MMBtu (1)	0.83 (a)	3.84E-02 lb/MMBtu (1)	2.83 (c)
SO ₂	20 grains S / 100 ft ³ (2)	1.21 (e)	0.25 grains S / 100 ft ³ (2)	0.05 (f)
NO _x	5.46E-02 lb/hp-hr (3)	140.43 (b)	2.73E-02 lb/hp-hr (3)	239.15 (d)
CO	9.36E-03 lb/hp-hr (3)	24.07 (b)	4.67E-03 lb/hp-hr (3)	40.91 (d)
VOC	1.20E-01 lb/MMBtu (1)	2.59 (a)	1.20E-01 lb/MMBtu (1)	8.83 (c)
Hazardous Air Pollutants				
1,1,2,2-Tetrachloroethane	6.63E-05 lb/MMBtu (1)	0.001 (a)	6.63E-05 lb/MMBtu (1)	0.005 (c)
1,1,2-Trichloroethane	5.27E-05 lb/MMBtu (1)	0.001 (a)	5.27E-05 lb/MMBtu (1)	0.004 (c)
1,3-Butadiene	8.20E-04 lb/MMBtu (1)	0.018 (a)	8.20E-04 lb/MMBtu (1)	0.060 (c)
1,3-Dichloropropene	4.38E-05 lb/MMBtu (1)	0.001 (a)	4.38E-05 lb/MMBtu (1)	0.003 (c)
2-Methylnaphthalene	2.14E-05 lb/MMBtu (1)	0.000 (a)	2.14E-05 lb/MMBtu (1)	0.002 (c)
2,2,4-Trimethylpentane	8.46E-04 lb/MMBtu (1)	0.018 (a)	8.46E-04 lb/MMBtu (1)	0.062 (c)
Acetaldehyde	7.76E-03 lb/MMBtu (1)	0.168 (a)	7.76E-03 lb/MMBtu (1)	0.571 (c)
Acrolein	7.78E-03 lb/MMBtu (1)	0.168 (a)	7.78E-03 lb/MMBtu (1)	0.572 (c)
Benzene	1.94E-03 lb/MMBtu (1)	0.042 (a)	1.94E-03 lb/MMBtu (1)	0.143 (c)
Biphenyl	3.95E-06 lb/MMBtu (1)	0.000 (a)	3.95E-06 lb/MMBtu (1)	0.000 (c)
Carbon Tetrachloride	6.07E-05 lb/MMBtu (1)	0.001 (a)	6.07E-05 lb/MMBtu (1)	0.004 (c)
Chlorobenzene	4.44E-05 lb/MMBtu (1)	0.001 (a)	4.44E-05 lb/MMBtu (1)	0.003 (c)
Chloroform	4.71E-05 lb/MMBtu (1)	0.001 (a)	4.71E-05 lb/MMBtu (1)	0.003 (c)
Ethylbenzene	1.08E-04 lb/MMBtu (1)	0.002 (a)	1.08E-04 lb/MMBtu (1)	0.008 (c)
Ethylene Dibromide	7.34E-05 lb/MMBtu (1)	0.002 (a)	7.34E-05 lb/MMBtu (1)	0.005 (c)
Formaldehyde	5.52E-02 lb/MMBtu (1)	1.193 (a)	5.52E-02 lb/MMBtu (1)	4.062 (c)
Methanol	2.48E-03 lb/MMBtu (1)	0.054 (a)	2.48E-03 lb/MMBtu (1)	0.182 (c)
Methylene Chloride	1.47E-04 lb/MMBtu (1)	0.003 (a)	1.47E-04 lb/MMBtu (1)	0.011 (c)
n-Hexane	4.45E-04 lb/MMBtu (1)	0.010 (a)	4.45E-04 lb/MMBtu (1)	0.033 (c)
Naphthalene	9.63E-05 lb/MMBtu (1)	0.002 (a)	9.63E-05 lb/MMBtu (1)	0.007 (c)
PAH (POM)	1.34E-04 lb/MMBtu (1)	0.003 (a)	1.34E-04 lb/MMBtu (1)	0.010 (c)
Phenol	4.21E-05 lb/MMBtu (1)	0.001 (a)	4.21E-05 lb/MMBtu (1)	0.003 (c)
Styrene	5.48E-05 lb/MMBtu (1)	0.001 (a)	5.48E-05 lb/MMBtu (1)	0.004 (c)
Toluene	9.63E-04 lb/MMBtu (1)	0.021 (a)	9.63E-04 lb/MMBtu (1)	0.071 (c)
Vinyl Chloride	2.47E-05 lb/MMBtu (1)	0.001 (a)	2.47E-05 lb/MMBtu (1)	0.002 (c)
Xylenes	2.68E-04 lb/MMBtu (1)	0.006 (a)	2.68E-04 lb/MMBtu (1)	0.020 (c)
Total HAP		1.718		5.852
Greenhouse Gas Emissions				
CO ₂	116.89 lb/MMBtu (4)	2525.37 (a)	116.89 lb/MMBtu (4)	8601.17 (c)
CH ₄	2.2E-03 lb/MMBtu (4)	0.05 (a)	2.2E-03 lb/MMBtu (4)	0.16 (c)
N ₂ O	2.2E-04 lb/MMBtu (4)	0.00 (a)	2.2E-04 lb/MMBtu (4)	0.02 (c)
CO ₂ e ^(g)	-	2527.98		8610.06

Calculations:

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

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

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 (lb/hp-hr) * Engine Power Output (hp) * Annual Hours of operation (hr/yr) * (1ton/2000lbs)

SO₂ Emissions - If emission factor note 2 is used, use calculations (e) and (f) for hourly and annual emissions, respectively.

(e) Maximum Hourly Emissions SO₂ Calculation (lb/hr) = (20 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 Calculation (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) =	1918
Engine Power Output (hp) =	2,572
Number of Engines =	2
Average BSFC (BTU/HP-hr) =	8,400 (5)
Heat Content Natural Gas(Btu/scf) =	1,020.0 (6)
Fuel Throughput (ft ³ /hr) =	21,181.2 (7)
PTE Hours of Operation =	1

ANNUAL EMISSION INPUTS	
Engine Power Output (kW) =	1491
Engine Power Output (hp) =	2,000
Number of Engines =	2
Average BSFC (BTU/HP-hr) =	8,400 (5)
Heat Content Natural Gas(Btu/scf) =	1,020.0 (6)
Fuel Throughput (ft ³ /hr) =	16,470.6 (7)
PTE Hours of Operation =	8,760

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

CO ₂	1	(8)
CH ₄	25	(8)
N ₂ O	298	(8)

Notes:

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

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

(3) Emission Factors supplied from Stack Test Data

(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 4. Turbine Engine / Centrifugal Compressor Emissions (E07)
Solar Saturn T-1001 Turbine
Columbia Pipeline Group - Adaline Compressor 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	1.90E-03 lb/MMBtu	(1)	0.04	(a)	1.90E-03 lb/MMBtu	(1)	0.14	(c)
SO ₂	20 grains S / 100 ft ³	(2)	1.11	(e)	0.25 grains S / 100 ft ³	(2)	0.05	(f)
NOx	3.85E-03 lb/hp-hr	(3)	4.78	(b)	3.30E-03 lb/hp-hr	(3)	15.61	(d)
CO	5.95E-03 lb/hp-hr	(3)	7.39	(b)	2.00E-03 lb/hp-hr	(3)	9.46	(d)
VOC	2.64E-03 lb/hp-hr	(3)	3.28	(b)	5.07E-04 lb/hp-hr	(3)	2.40	(d)
Hazardous Air Pollutants								
1,3-Butadiene	4.30E-07 lb/MMBtu	(4)	0.000	(a)	4.30E-07 lb/MMBtu	(4)	0.000	(c)
Acetaldehyde	4.00E-05 lb/MMBtu	(4)	0.001	(a)	4.00E-05 lb/MMBtu	(4)	0.003	(c)
Acrolein	6.40E-06 lb/MMBtu	(4)	0.000	(a)	6.40E-06 lb/MMBtu	(4)	0.000	(c)
Benzene	1.20E-05 lb/MMBtu	(4)	0.000	(a)	1.20E-05 lb/MMBtu	(4)	0.001	(c)
Ethylbenzene	3.20E-05 lb/MMBtu	(4)	0.001	(a)	3.20E-05 lb/MMBtu	(4)	0.002	(c)
Formaldehyde	7.10E-04 lb/MMBtu	(4)	0.014	(a)	7.10E-04 lb/MMBtu	(4)	0.054	(c)
Naphthalene	1.30E-06 lb/MMBtu	(4)	0.000	(a)	1.30E-06 lb/MMBtu	(4)	0.000	(c)
PAH (POM)	2.20E-06 lb/MMBtu	(4)	0.000	(a)	2.20E-06 lb/MMBtu	(4)	0.000	(c)
Phenol	2.90E-05 lb/MMBtu	(4)	0.001	(a)	2.90E-05 lb/MMBtu	(4)	0.002	(c)
Toluene	1.30E-04 lb/MMBtu	(4)	0.003	(a)	1.30E-04 lb/MMBtu	(4)	0.010	(c)
Xylenes	6.40E-05 lb/MMBtu	(4)	0.001	(a)	6.40E-05 lb/MMBtu	(4)	0.005	(c)
Total HAP	0.020				0.078			
Greenhouse Gas Emissions								
CO ₂	116.89 lb/MMBtu	(5)	2322.82	(a)	116.89 lb/MMBtu	(5)	8846.91	(c)
CH ₄	2.2E-03 lb/MMBtu	(5)	0.04	(a)	2.2E-03 lb/MMBtu	(5)	0.17	(c)
N ₂ O	2.2E-04 lb/MMBtu	(5)	0.00	(a)	2.2E-04 lb/MMBtu	(5)	0.02	(c)
CO ₂ e ^(g)	-	-	2325.22				8856.06	

Calculations:

Maximum Hourly Emissions - If emission factor note 1, 4 or 5 is used, use calculation (a). If emission factor note 3 is used, use calculation (b).

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

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

Annual Emissions - If emission factor note 1, 4 or 5 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 (lb/hp-hr) * Engine Power Output (hp) * Annual Hours of operation (hr/yr) * (1ton/2000lbs)

SO₂ Emissions - If emission factor note 2 is used, use calculations (e) and (f) for hourly and annual emissions, respectively.

(e) Maximum Hourly Emissions SO₂ Calculation (lb/hr) = (20 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 Calculation (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) =	926	
Engine Power Output (hp) =	1,242	
Number of Engines =	1	
Average BSFC (BTU/HP-hr) =	16,000	(6)
Heat Content Natural Gas(Btu/scf) =	1,020.0	(7)
Fuel Throughput (ft3/hr) =	19,482.4	(8)
PTE Hours of Operation =	1	

ANNUAL EMISSION INPUTS		
Engine Power Output (kW) =	805	
Engine Power Output (hp) =	1,080	
Number of Engines =	1	
Average BSFC (BTU/HP-hr) =	16,000	(6)
Heat Content Natural Gas(Btu/scf) =	1,020.0	(7)
Fuel Throughput (ft3/hr) =	16,941.2	(8)
PTE Hours of Operation =	8,760	

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

CO ₂	1	(9)
CH ₄	25	(9)
N ₂ O	298	(9)

Notes:

- (1) AP-42, Chapter 3.1, Table 3.1-2a - *Emission Factors for Criteria Pollutants and Greenhouse Gases from Stationary Gas Turbines* (4/00)
- (2) AP-42, Chapter 5.3, Section 5.3.1
- (3) Emission factors supplied from manufacturer's specification sheets
- (4) AP-42, Chapter 3.1, Table 3.1-3 - *Emission Factors for Hazardous Air Pollutants from Natural Gas-Fired Stationary Gas Turbines* (4/00)
- (5) Emission factors are from 40 CFR 98, Subpart C, Table C-1 and C-2.
- (6) Fuel consumption from manufacturer's specification sheet.
- (7) Value obtained from AP-42, Chapter 3.1, Table 3.1-2a, footnote c
- (8) Fuel throughput = BSFC (BTU/HP-hr) x Power (HP) / Heat Content (BTU/scf)
- (9) Global Warming Potentials obtained from 40 CFR 98, Subpart A, Table A-1

Table 5. Reciprocating Engine / Generator Emissions (G3)
Waukesha VGF18GL; 4SLB
Columbia Pipeline Group - Adaline Compressor Station

Pollutant	Emission Factor	PTE (lb/hr)	PTE (ton/yr)
Criteria Pollutants			
PM/PM10/PM2.5	7.71E-05 lb/MMBtu (1)	0.000 (a)	0.001 (b)
SO ₂ (Hourly)	20 grains S / 100 ft ³ (2)	0.20 (e)	
SO ₂ (Annual)	0.25 grains S / 100 ft ³ (2)	-	0.01 (f)
NOx	5.73E-03 g/hp-hr (3)	2.52 (c)	11.04 (d)
CO	3.85E-03 g/hp-hr (3)	1.69 (c)	7.42 (d)
VOC	1.65E-03 g/hp-hr (3)	0.73 (c)	3.18 (d)
Hazardous Air Pollutants			
1,1,2,2-Tetrachloroethane	4.00E-05 lb/MMBtu (1)	0.000 (a)	0.001 (b)
1,1,2-Trichloroethane	3.18E-05 lb/MMBtu (1)	0.000 (a)	0.000 (b)
1,3-Butadiene	2.67E-04 lb/MMBtu (1)	0.001 (a)	0.004 (b)
1,3-Dichloropropene	2.64E-05 lb/MMBtu (1)	0.000 (a)	0.000 (b)
2-Methylnaphthalene	3.32E-05 lb/MMBtu (1)	0.000 (a)	0.001 (b)
2,2,4-Trimethylpentane	2.50E-05 lb/MMBtu (1)	0.000 (a)	0.000 (b)
Acetaldehyde	8.36E-03 lb/MMBtu (1)	0.029 (a)	0.129 (b)
Acrolein	5.14E-03 lb/MMBtu (1)	0.018 (a)	0.079 (b)
Benzene	4.40E-04 lb/MMBtu (1)	0.002 (a)	0.007 (b)
Carbon Tetrachloride	3.67E-05 lb/MMBtu (1)	0.000 (a)	0.001 (b)
Chlorobenzene	3.04E-05 lb/MMBtu (1)	0.000 (a)	0.000 (b)
Chloroform	2.85E-05 lb/MMBtu (1)	0.000 (a)	0.000 (b)
Ethylbenzene	3.97E-05 lb/MMBtu (1)	0.000 (a)	0.001 (b)
Ethylene Dibromide	4.43E-05 lb/MMBtu (1)	0.000 (a)	0.001 (b)
Formaldehyde	5.28E-02 lb/MMBtu (1)	0.186 (a)	0.814 (b)
Methanol	2.50E-03 lb/MMBtu (1)	0.009 (a)	0.039 (b)
Methylene Chloride	2.00E-05 lb/MMBtu (1)	0.000 (a)	0.000 (b)
n-Hexane	1.11E-03 lb/MMBtu (1)	0.004 (a)	0.017 (b)
Naphthalene	7.44E-05 lb/MMBtu (1)	0.000 (a)	0.001 (b)
PAH (POM)	2.69E-05 lb/MMBtu (1)	0.000 (a)	0.000 (b)
Phenanthrene	1.04E-05 lb/MMBtu (1)	0.000 (a)	0.000 (b)
Phenol	2.40E-05 lb/MMBtu (1)	0.000 (a)	0.000 (b)
Styrene	2.36E-05 lb/MMBtu (1)	0.000 (a)	0.000 (b)
Toluene	4.08E-04 lb/MMBtu (1)	0.001 (a)	0.006 (b)
Vinyl Chloride	1.49E-05 lb/MMBtu (1)	0.000 (a)	0.000 (b)
Xylenes	1.84E-04 lb/MMBtu (1)	0.001 (a)	0.003 (b)
Total HAPs		0.253	1.106
Greenhouse Gas Emissions			
CO ₂	116.89 lb/MMBtu (4)	411.45 (a)	1802.15 (b)
CH ₄	2.2E-03 lb/MMBtu (4)	0.01 (a)	0.03 (b)
N ₂ O	2.2E-04 lb/MMBtu (4)	0.00 (a)	0.00 (b)
CO ₂ e ^(g)	-	411.87	1804.01

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

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

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 (lb/hp-hr) * Engine Power Output (hp) * Annual Hours of operation (hr/yr) * (1ton/2000lbs)

SO₂ Emissions - If emission factor note 2 is used, use calculations (e) and (f) for hourly and annual emissions, respectively.

(e) Maximum Hourly Emissions SO₂ Calculation (lb/hr) = (20 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 Calculation (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)

EMISSION INPUTS TABLE		
Engine Power Output (kW) =	328	
Engine Power Output (hp) =	440	
Number of Engines Operating at a Time =	1	
Average BSFC (BTU/HP-hr) =	8,000	(5)
Heat Content Natural Gas(Btu/scf) =	1,020.0	(6)
Fuel Throughput (ft ³ /hr) =	3,451.0	(7)
PTE Hours of Operation =	8,760	

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

CO ₂	1	(8)
CH ₄	25	(8)
N ₂ O	298	(8)

Notes:

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

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

(3) Emission Factors supplied from Waukesha Performance Data Bulletin 7071 (1/96)

(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 3.2-3, 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 6. Heating System Boiler Emissions (BL4)
American Standard; Model # 1-B-J-3
Columbia Pipeline Group - Adaline Compressor Station

Pollutant	Emission Factor	PTE (lb/hr)	PTE (ton/yr)
Criteria Pollutants			
PM/PM10/PM2.5	1.9 lb/MMcf (1)	0.01 (a)	0.03 (b)
SO ₂ (Hourly)	20 grains S / 100ft ³ (5)	0.19 (e)	-
SO ₂ (Annual)	0.25 grains S / 100ft ³ (5)	-	0.01 (f)
NO _x	100 lb/MMcf (2)	0.34 (a)	1.49 (b)
CO	84 lb/MMcf (2)	0.29 (a)	1.26 (b)
VOC	5.5 lb/MMcf (1)	0.02 (a)	0.08 (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)	0.001 (b)
Hexane	1.80E+00 lb/MMcf (4)	0.01 (a)	0.027 (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	0.028
Greenhouse Gas Emissions			
CO ₂	116.89 lb/MMBtu (6)	406.77 (c)	1781.67 (d)
CH ₄	2.2E-03 lb/MMBtu (6)	0.01 (c)	0.03 (d)
N ₂ O	2.2E-04 lb/MMBtu (6)	0.00 (c)	0.00 (d)
CO ₂ e ^(g)	- -	407.19	1783.51

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/yr) * Hours of operation (hr/yr) * (1ton/2000lbs)

SO₂

(e) Hourly Emissions SO₂ Calculation (lb/hr) = (20 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 Calculation (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) =	3.48
Hours of Operation (hr/yr) =	8760
MMBtu/MMcf =	1020
PTE Fuel Use (MMft ³ /yr) =	29.9

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

CO ₂	1	(7)
CH ₄	25	(7)
N ₂ O	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 7. Natural Gas Heater Emissions (H2)
BS&B; Model # 70S-2
Columbia Pipeline Group - Adaline Compressor Station

Pollutant	Emission Factor	PTE (lb/hr)	PTE (ton/yr)
Criteria Pollutants			
PM/PM10/PM2.5	1.9 lb/MMcf (1)	0.00 (a)	0.01 (b)
SO ₂ (Hourly)	20 grains S / 100ft ³ (5)	0.06 (e)	-
SO ₂ (Annual)	0.25 grains S / 100ft ³ (5)	-	0.00 (f)
NOx	100 lb/MMcf (2)	0.10 (a)	0.43 (b)
CO	84 lb/MMcf (2)	0.08 (a)	0.36 (b)
VOC	5.5 lb/MMcf (1)	0.01 (a)	0.02 (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)	0.008 (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	0.008
Greenhouse Gas Emissions			
CO ₂	116.89 lb/MMBtu (6)	116.89 (c)	511.97 (d)
CH ₄	2.2E-03 lb/MMBtu (6)	0.00 (c)	0.01 (d)
N ₂ O	2.2E-04 lb/MMBtu (6)	0.00 (c)	0.00 (d)
CO ₂ e ^(g)	- -	117.01	512.50

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/yr) * Hours of operation (hr/yr) * (1ton/2000lbs)

SO₂

(e) Hourly Emissions SO₂ Calculation (lb/hr) = (20 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 Calculation (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
Hours of Operation (hr/yr) =	8760
MMBtu/MMcf =	1020
PTE Fuel Use (MMft ³ /yr) =	8.6

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

CO ₂	1	(7)
CH ₄	25	(7)
N ₂ O	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 8. DEG Dehydrator Reboiler Emissions (BL5 - BL7)
NATCO; Model # GREG-550-CE
Columbia Pipeline Group - Adaline Compressor Station

Pollutant	Emission Factor	PTE per Burner (lb/hr)	PTE per Burner (ton/yr)
Criteria Pollutants			
PM/PM10/PM2.5	1.9 lb/MMcf (1)	0.00 (a)	0.00 (b)
SO ₂ (Hourly)	20 grains S / 100ft ³ (5)	0.03 (e)	-
SO ₂ (Annual)	0.25 grains S / 100ft ³ (5)	-	0.00 (f)
NO _x	100 lb/MMcf (2)	0.05 (a)	0.24 (b)
CO	84 lb/MMcf (2)	0.05 (a)	0.20 (b)
VOC	5.5 lb/MMcf (1)	0.00 (a)	0.01 (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)	0.004 (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	0.004
Greenhouse Gas Emissions			
CO ₂	116.89 lb/MMBtu (6)	64.29 (c)	281.59 (d)
CH ₄	2.2E-03 lb/MMBtu (6)	0.00 (c)	0.01 (d)
N ₂ O	2.2E-04 lb/MMBtu (6)	0.00 (c)	0.00 (d)
CO ₂ e ^(g)	- -	64.36	281.88

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)

SO₂

(e) Hourly Emissions SO₂ Calculation (lb/hr) = (20 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 Calculation (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) =	0.55
Number of Reboilers =	3
Hours of Operation (hr/yr) =	8760
MMBtu/MMcf =	1020
PTE Fuel Use (MMft ³ /yr) =	4.7

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

CO ₂	1	(7)
CH ₄	25	(7)
N ₂ O	298	(7)

Notes:

- AP-42, Chapter 1.4, Table 1.4-2. Emission Factors For Criteria Pollutants and Greenhouse Gases From Natural Gas Combustion, July 1998.
- 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.
- AP-42, Chapter 1.4, Table 1.4-4. Emission Factors For Metals From Natural Gas Combustion, July 1998.
- AP-42, Chapter 1.4, Table 1.4-3. Emission Factors for Speciated Organic Compounds from Natural Gas Combustion, July 1998.
- AP-42, Chapter 5.3, Section 5.3.1
- Emission factors are from 40 CFR 98, Subpart C, Table C-1 and C-2.
- Global Warming Potentials obtained from 40 CFR 98, Subpart A, Table A-1

Table 9. Dehydration Unit Still Vent Emissions (DEG-DEHY1 - DEG-DEHY3)
BS&B Contact Tower; 6 Bubble Trays
Columbia Pipeline Group - Adaline Compressor Station

Source	PTE per unit (lb/hr)	PTE per unit (lb/day)	PTE ⁽¹⁾ per unit (tons/yr)
Criteria Pollutants			
VOC	0.201	4.822	0.880
Hazardous Air Pollutants			
Benzene	0.057	1.370	0.250
Toluene	0.043	1.041	0.190
Ethylbenzene	0.021	0.493	0.090
Xylenes	0.030	0.712	0.130
n-Hexane	0.002	0.055	0.010
Total HAP	0.1530	3.6712	0.6700
Greenhouse Gas Emissions			
CO ₂			-
CH ₄	38.5312	924.7496	168.7668
N ₂ O	-	-	-
CO ₂ e ^(a)	963.28	23118.74	

Calculations:

EMISSION INPUTS	
Dehy Rating (MMscf/d) =	117.0
Number of Units =	3
Control Efficiency (%) =	98.00%
Hours of Operation =	8760

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

Global Warming Potential (GWP)

CO ₂	1	(2)
CH ₄	25	(2)
N ₂ O	298	(2)

Notes:

- (1) Emissions Calculated utilizing GRI-GLYCalc and reflect the controlled regenerator emissions
(2) Global Warming Potentials obtained from 40 CFR 98, Subpart A, Table A-1

Table 10. Flare (FL1) Emissions
NATCO; Model # SHV-4.0
Columbia Pipeline Group - Adaline Compressor Station

Criteria Pollutants:

Pollutant	Emission Factor (lb/MMBtu) ⁽¹⁾	Volume (scf/hr) ⁽²⁾	Gas Heat Value (Btu/scf) ⁽³⁾	Emissions (lbs/hr)	Emissions (ton/yr)
CO ⁽¹⁾	0.37	2,451	1,020	0.92	4.05
NOx ⁽¹⁾	0.07	2,451	1,020	0.17	0.74
VOC ⁽¹⁾	0.01	2,451	1,020	0.03	0.15

Calculations:

Hourly Emissions (lb/hr) = Emission Factor (lb/MMBtu) * Volume (scf/hr) * gas heat value (Btu/scf) * (1MMBtu/1000000Btu)

Annual Emissions (ton/yr) = Emission Factor (lb/MMBtu) * Volume (scf/hr) * gas heat value (Btu/scf) * (1MMBtu/1000000Btu) *

Hours of Operation (8760 hr/yr) * (ton/2000 lbs)

Pollutant	Volume (scf/hr) ⁽²⁾	grain S / 100 scf ⁽⁴⁾	Grain to Lb conversion	Mol weight S (g/mol)	Mol weight SO ₂ (g/mol)	Emissions (lbs/hr)	Emissions (ton/yr)
SO ₂	2,451	0.25	7000 / 1	32.06	64.07	0.002	0.008

Calculations:

Hourly Emissions SO₂ (lb/hr) = (0.25 grain S/100scf) * Volume (scf/hr) * (1lb/7000 grains) * (lbmol S/32.06 lb S) * (lbmol SO₂/lbmol S) * (64.07 lb SO₂/lbmol SO₂)

Annual Emissions SO₂ (ton/yr) = (0.25 grain S/100scf) * Volume (scf/hr) * (1lb/7000 grains) * (lbmol S/32.06 lb S) * (lbmol SO₂/lbmol S) * (64.07 lb SO₂/lbmol SO₂) * Hours of operation (8760 hr/yr) * (ton/2000lbs)

Greenhouse Gases:

Pollutant	Emission Factor (lb/MMBtu) ⁽⁵⁾	Volume (scf/hr) ⁽²⁾	Gas Heat Value (Btu/scf) ⁽³⁾	Emissions (lbs/hr)	Emissions (ton/yr)
CO ₂	116.89	2,451	1,020	292.22	1279.95
CH ₄	2.20E-03	2,451	1,020	0.01	0.02
N ₂ O	2.20E-04	2,451	1,020	0.00	0.00
CO ₂ e ^(a)	-	-	-	292.53	1281.27

(a) CO₂ equivalent = [(CO₂ emissions)*(GWP_{CO2})]+[(CH₄ emissions)*(GWP_{CH4})]+[(N₂O emissions)*(GWP_{N2O})]
Global Warming Potential (GWP)

CO ₂	1	(6)
CH ₄	25	(6)
N ₂ O	298	(6)

Notes:

(1) AP-42, Chapter 13.5, Table 13.5-1. *Emission Factors for Flare Operations* (1/95)

(2) Flare Volume based on manufacturer's specifications

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

(4) AP-42, Chapter 5.3, Section 5.3.1 (1/95)

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

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

Table 11. Tank Emissions
Columbia Pipeline Group - Adaline Compressor 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)
A01	3000	Glycol	None	0.20	8.40E-04	(1)	0.06	0.000	0.000
A02	5000	Glycol	None	0.33	9.24E-04	(1)	0.11	0.000	0.000
A03	5000	Ethanol	None	0.33	4.96E-01	(1)	59.05	0.007	0.030
A05	3000	Methanol	None	0.65	4.98E-01	(1)	118.66	0.014	0.059
A06	5000	Lube Oil	None	0.39	9.73E-03	(1)	1.39	0.000	0.001
A07	2000	Mercaptan Odorant	None	0.16	2.76E+00	(1)	157.55	0.018	0.079
A08	2000	Pipeline Liquids	None	0.52	5.90E-02	(2)	430.07	0.049	0.215
A09	2000	Pipeline Liquids	None	0.52	5.90E-02	(2)	430.07	0.049	0.215
A10	2000	Pipeline Liquids	None	0.52	5.90E-02	(2)	430.07	0.049	0.215
A11	5014	Pipeline Liquids	None	1.96	5.90E-02	(2)	915.42	0.105	0.458
A12	5014	Pipeline Liquids	None	1.96	5.90E-02	(2)	915.42	0.105	0.458
A14	550	Wastewater Mix	None	0.10	4.76E-03	(1)	0.17	0.000	0.000
A16	2000	Used Oil	None	0.13	1.07E-02	(1)	0.51	0.000	0.000
A17	550	Methanol	None	0.11	3.75E-01	(1)	14.75	0.002	0.007
A18	550	Methanol	None	0.11	3.75E-01	(1)	14.75	0.002	0.007
B02	282	Glycol	None	0.04	7.45E-05	(1)	0.00	0.000	0.000
B06	940	Used Oil	None	0.12	6.70E-04	(1)	0.03	0.000	0.000
B09	5000	Water Mixture	None	0.65	5.88E-04	(1)	0.14	0.000	0.000
B10	5000	Water Mixture	None	0.65	5.88E-04	(1)	0.14	0.000	0.000
C07	2000	Gasoline	None	0.78	2.13E+00	(1)	609.52	0.070	0.305
C08	2000	Diesel	None	3.13	1.20E-03	(1)	1.37	0.000	0.001
Totals							4099.25	0.47	2.05

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 Working/Breathing losses as calculated from TANKS 4.0.9.d

(2) VOC emission factor includes Flashing/Working/Breathing losses calculated from pressurized liquid sample direct flash measurement and modeled using E+P Tanks 2.0. The sample was taken from a high pressure separator at a similar site and is considered to be worst case representative with respect to gas composition and pressure at Adaline Station

**Table 12. Fugitive Leak Emissions
Columbia Pipeline Group - Adaline Compressor Station**

Pollutant	Emission Factor	PTE ^(a) Gas Service (tons/yr)
Valves	9.9E-03 lb/hr/source (1)	28.11
Low Bleed Pneumatic Valves	9.9E-03 lb/hr/source (1)	0.48
Flanges	8.6E-04 lb/hr/source (1)	8.53
Connector	4.4E-04 lb/hr/source (1)	4.38
Other Points in Gas Service	1.9E-02 lb/hr/source (1)	8.99
Total Gas Released	- -	50.49
Total VOC Released (gas service)	(b)	1.01
Calculations:	CO2e	23.48

(a) Annual emissions (tons/yr) = [Emission Factor (lb/hr/source)] x [Number of Sources] x [Hours of Operation per Year] x [0.0005 tons/ lb]

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

Number of Components in Gas Service

Valves=	647	(2)
Low Bleed Pneumatic Valves=	11	(2)
Connectors=	2,265	(2)
Other Points in Gas Service =	48	(2)

Maximum Hour of Operation = 8,760

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

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

(3) Worst case VOC wt % assumption for station based on gas sample analysis from compressor stations located in close proximity to the site

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

APPENDIX B

PROPOSED PERMIT LANGUAGE

Title V Operating Permit Renewal Application

**Adaline Compressor Station, Facility ID No. 051-00100
Cameron, West Virginia**

Columbia Gas Transmission, LLC
1700 MacCorkle Avenue, SE
Charleston, West Virginia

March 2016

*West Virginia Department of Environmental Protection
Division of Air Quality*

*Earl Ray Tomblin
Governor*

*Randy C. Huffman
Cabinet Secretary*

Permit to Operate



*Pursuant to
Title V
of the Clean Air Act*

Issued to:
Columbia Gas Transmission, LLC
Adaline Compressor Station
R30-05100100-2016

*William F. Durham
Director*

Issued: • *Effective:* Draft
Expiration: • *Renewal Application Due:*

Permit Number: **R30-05100100-2016**
Permittee: **Columbia Gas Transmission, LLC**
Facility Name: **Adaline Compressor Station**
Permittee Mailing Address: **1700 MacCorkle Avenue, SE**
Charleston, WV 25314

This permit is issued in accordance with the West Virginia Air Pollution Control Act (West Virginia Code §§ 22-5-1 et seq.) and 45CSR30 — Requirements for Operating Permits. The permittee identified at the above-referenced facility is authorized to operate the stationary sources of air pollutants identified herein in accordance with all terms and conditions of this permit.

Facility Location:	Cameron, Marshall County, West Virginia
Facility Mailing Address:	RR 5 Box 100, Cameron, WV 26033
Telephone Number:	(304) 357-2047
Type of Business Entity:	LLC
Facility Description:	Natural Gas Transmission Facility
SIC Codes:	4922
UTM Coordinates:	530.456 km Easting • 4401.860 km Northing • Zone 17

Permit Writer: **Engineer Name**

Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§ 22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §22-5-14.

Issuance of this Title V Operating Permit does not supersede or invalidate any existing permits under 45CSR13, 14 or 19, although all applicable requirements from such permits governing the facility's operation and compliance have been incorporated into the Title V Operating Permit.

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1.0 Emission Units and Active R13, R14, and R19 Permits

1.1 Emission Units

Emission Unit ID	Emission Point ID	Emission Unit Description (Make, Model, Serial No.)	Year Installed	Design Capacity	Control Device
BLR4	BL4	Heating System Boiler; American Standard Model #1-B-J-3	1961	3.48 MMBtu/hr	None
HTR2	H2	Natural Gas Heater; BS&B Model #70S-2	1956	1.0 MMBtu/hr	None
M-BLR1	M-BL1 & M-R1	Mobile Glycol Reclaimer Boiler/preheater	2000	0.19 MMBtu/hr	None
M-BLR2	M-BL2	Mobile Glycol Reclaimer Reclaimer/Vacuum Reboiler	2000	0.20 MMBtu/hr	None
BLR5	BL5	DEG Dehydrator Reboiler	2010	0.55 MMBtu/hr	None
BLR6	BL6	DEG Dehydrator Reboiler	2010	0.55 MMBtu/hr	None
BLR7	BL7	DEG Dehydrator Reboiler	2010	0.55 MMBtu/hr	None
08101	E01	Reciprocating Engine/Integral Compressor; Clark HRA-8; 2-cycle, lean burn	1954	880 Hp	None
08102	E02	Reciprocating Engine/Integral Compressor; Clark HRA-8; 2-cycle, lean burn	1954	880 Hp	None
08103	E03	Reciprocating Engine/Integral Compressor; Clark HRA-8; 2-cycle, lean burn	1956	880 Hp	None
08104	E04	Reciprocating Engine/Integral Compressor; Clark TLA-6, 2-cycle, Lean Burn	1961	2,000 Hp	None
08105	E05	Reciprocating Engine/Integral Compressor; Clark TLA-6, 2-cycle, Lean Burn	1961	2,000 Hp	None

Emission Unit ID	Emission Point ID	Emission Unit Description (Make, Model, Serial No.)	Year Installed	Design Capacity	Control Device
081G3	G3	Reciprocating Engine/Generator; Waukesha VGF18GL; 4-cycle, lean burn; Emergency	1998	440 Hp	None
08106	E06	Turbine Engine/Centrifugal Compressor; Solar Saturn T-1001	1966	1080 Hp	None
08107	E07	Turbine Engine/Centrifugal Compressor; Solar Saturn T-1001	1966	1080 Hp	None
A07	A07	Mercaptan Odorant, Double Wall, Horiz., Above Ground Tank,	1966	2000 gal	Vapor Balance Loading
A11	E11	Pipeline Liquids Tank	1956	5014 gal	None
A12	E12	Pipeline Liquids Tank	1956	5014 gal	None
A08	E08	Pipeline Liquids Tank	1954	2000 gal	None
A09	E09	Pipeline Liquids Tank	1954	2000 gal	None
A10	E10	Pipeline Liquids Tank	1954	2000 gal	None
DEG-DEHY1	FL1	DEG Dehydrator; BS&B Contact Tower, 6-bubble cap trays	1985	117 MM scf/d	FLLP1 NATCO Model SHV-4.0

Emission Unit ID	Emission Point ID	Emission Unit Description (Make, Model, Serial No.)	Year Installed	Design Capacity	Control Device
DEG-DEHY2	FL1	DEG Dehydrator; BS&B Contact Tower, 6-bubble cap trays	1984	117 MM scf/d	FLLP1 NATCO Model SHV-4.0
DEG-DEHY3	FL1	DEG Dehydrator; BS&B Contact Tower, 6-bubble cap trays	1984	117 MM scf/d	FLLP1 NATCO Model SHV-4.0

* Engines 08101, 08102, 08103, 08104 & 08105 are subject to 40 C.F.R. Part 63 Subpart ZZZZ because of being included within the source category, but are not subject to requirements at this time according to 40 C.F.R. § 63.6600(c) and 40 C.F.R. § 63.6590(b)(3)(i).

** Compliance Date – October 19, 2013

1.1. Active R13, R14, and R19 Permits

The underlying authority for any conditions from R13, R14, and/or R19 permits contained in this operating permit is cited using the original permit number (e.g. R13-1234). The current applicable version of such permit(s) is listed below.

Permit Number	Date of Issuance
R13-2149C	01-13-2010

2.0 General Conditions

2.1. Definitions

- 2.1.1. All references to the "West Virginia Air Pollution Control Act" or the "Air Pollution Control Act" mean those provisions contained in W.Va. Code §§ 22-5-1 to 22-5-18.
- 2.1.2. The "Clean Air Act" means those provisions contained in 42 U.S.C. §§ 7401 to 7671q, and regulations promulgated thereunder.
- 2.1.3. "Secretary" means the Secretary of the Department of Environmental Protection or such other person to whom the Secretary has delegated authority or duties pursuant to W.Va. Code §§ 22-1-6 or 22-1-8 (45CSR§30-2.12.). The Director of the Division of Air Quality is the Secretary's designated representative for the purposes of this permit.
- 2.1.4. Unless otherwise specified in a permit condition or underlying rule or regulation, all references to a "rolling yearly total" shall mean the sum of the monthly data, values or parameters being measured, monitored, or recorded, at any given time for the previous twelve (12) consecutive calendar months.

2.2. Acronyms

CAAA	Clean Air Act Amendments	PM	Particulate Matter
CBI	Confidential Business Information	PM₁₀	Particulate Matter less than 10µm in diameter
CEM	Continuous Emission Monitor	pph	Pounds per Hour
CES	Certified Emission Statement	ppm	Parts per Million
C.F.R. or CFR	Code of Federal Regulations	PSD	Prevention of Significant Deterioration
CO	Carbon Monoxide	psi	Pounds per Square Inch
C.S.R. or CSR	Codes of State Rules	SIC	Standard Industrial Classification
DAQ	Division of Air Quality	SIP	State Implementation Plan
DEP	Department of Environmental Protection	SO₂	Sulfur Dioxide
FOIA	Freedom of Information Act	TAP	Toxic Air Pollutant
HAP	Hazardous Air Pollutant	TPY	Tons per Year
HON	Hazardous Organic NESHAP	TRS	Total Reduced Sulfur
HP	Horsepower	TSP	Total Suspended Particulate
lbs/hr or lb/hr	Pounds per Hour	USEPA	United States Environmental Protection Agency
LDAR	Leak Detection and Repair	UTM	Universal Transverse Mercator
m	Thousand	VEE	Visual Emissions Evaluation
MACT	Maximum Achievable Control Technology	VOC	Volatile Organic Compounds
mm	Million		
mmBtu/hr	Million British Thermal Units per Hour		
mmft³/hr or mmcf/hr	Million Cubic Feet Burned per Hour		
NA or N/A	Not Applicable		
NAAQS	National Ambient Air Quality Standards		
NESHAPS	National Emissions Standards for Hazardous Air Pollutants		
NO_x	Nitrogen Oxides		
NSPS	New Source Performance Standards		

2.3. Permit Expiration and Renewal

- 2.3.1. Permit duration. This permit is issued for a fixed term of five (5) years and shall expire on the date specified on the cover of this permit, except as provided in 45CSR§30-6.3.b. and 45CSR§30-6.3.c.
[45CSR§30-5.1.b.]
- 2.3.2. A permit renewal application is timely if it is submitted at least six (6) months prior to the date of permit expiration.
[45CSR§30-4.1.a.3.]
- 2.3.3. Permit expiration terminates the source's right to operate unless a timely and complete renewal application has been submitted consistent with 45CSR§30-6.2. and 45CSR§30-4.1.a.3.
[45CSR§30-6.3.b.]
- 2.3.4. If the Secretary fails to take final action to deny or approve a timely and complete permit application before the end of the term of the previous permit, the permit shall not expire until the renewal permit has been issued or denied, and any permit shield granted for the permit shall continue in effect during that time.
[45CSR§30-6.3.c.]

2.4. Permit Actions

- 2.4.1. This permit may be modified, revoked, reopened and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.
[45CSR§30-5.1.f.3.]

2.5. Reopening for Cause

- 2.5.1. This permit shall be reopened and revised under any of the following circumstances:
 - a. Additional applicable requirements under the Clean Air Act or the Secretary's legislative rules become applicable to a major source with a remaining permit term of three (3) or more years. Such a reopening shall be completed not later than eighteen (18) months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to 45CSR§§30-6.6.a.1.A. or B.
 - b. Additional requirements (including excess emissions requirements) become applicable to an affected source under Title IV of the Clean Air Act (Acid Deposition Control) or other legislative rules of the Secretary. Upon approval by U.S. EPA, excess emissions offset plans shall be incorporated into the permit.
 - c. The Secretary or U.S. EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.
 - d. The Secretary or U.S. EPA determines that the permit must be revised or revoked and reissued to assure compliance with the applicable requirements.
[45CSR§30-6.6.a.]

2.6. Administrative Permit Amendments

- 2.6.1. The permittee may request an administrative permit amendment as defined in and according to the procedures specified in 45CSR§30-6.4.
[45CSR§30-6.4.]

2.7. Minor Permit Modifications

- 2.7.1. The permittee may request a minor permit modification as defined in and according to the procedures specified in 45CSR§30-6.5.a.
[45CSR§30-6.5.a.]

2.8. Significant Permit Modification

- 2.8.1. The permittee may request a significant permit modification, in accordance with 45CSR§30-6.5.b., for permit modifications that do not qualify for minor permit modifications or as administrative amendments.
[45CSR§30-6.5.b.]

2.9. Emissions Trading

- 2.9.1. No permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for in the permit and that are in accordance with all applicable requirements.
[45CSR§30-5.1.h.]

2.10. Off-Permit Changes

- 2.10.1. Except as provided below, a facility may make any change in its operations or emissions that is not addressed nor prohibited in its permit and which is not considered to be construction nor modification under any rule promulgated by the Secretary without obtaining an amendment or modification of its permit. Such changes shall be subject to the following requirements and restrictions:
- a. The change must meet all applicable requirements and may not violate any existing permit term or condition.
 - b. The permittee must provide a written notice of the change to the Secretary and to U.S. EPA within two (2) business days following the date of the change. Such written notice shall describe each such change, including the date, any change in emissions, pollutants emitted and any applicable requirement that would apply as a result of the change.
 - c. The change shall not qualify for the permit shield.
 - d. The permittee shall keep records describing all changes made at the source that result in emissions of regulated air pollutants, but not otherwise regulated under the permit, and the emissions resulting from those changes.
 - e. No permittee may make any change subject to any requirement under Title IV of the Clean Air Act (Acid Deposition Control) pursuant to the provisions of 45CSR§30-5.9.

- f. No permittee may make any changes which would require preconstruction review under any provision of Title I of the Clean Air Act (including 45CSR14 and 45CSR19) pursuant to the provisions of 45CSR§30-5.9.

[45CSR§30-5.9.]

2.11. Operational Flexibility

- 2.11.1. The permittee may make changes within the facility as provided by § 502(b)(10) of the Clean Air Act. Such operational flexibility shall be provided in the permit in conformance with the permit application and applicable requirements. No such changes shall be a modification under any rule or any provision of Title I of the Clean Air Act (including 45CSR14 and 45CSR19) promulgated by the Secretary in accordance with Title I of the Clean Air Act and the change shall not result in a level of emissions exceeding the emissions allowable under the permit.

[45CSR§30-5.8]

- 2.11.2. Before making a change under 45CSR§30-5.8., the permittee shall provide advance written notice to the Secretary and to U.S. EPA, describing the change to be made, the date on which the change will occur, any changes in emissions, and any permit terms and conditions that are affected. The permittee shall thereafter maintain a copy of the notice with the permit, and the Secretary shall place a copy with the permit in the public file. The written notice shall be provided to the Secretary and U.S. EPA at least seven (7) days prior to the date that the change is to be made, except that this period may be shortened or eliminated as necessary for a change that must be implemented more quickly to address unanticipated conditions posing a significant health, safety, or environmental hazard. If less than seven (7) days' notice is provided because of a need to respond more quickly to such unanticipated conditions, the permittee shall provide notice to the Secretary and U.S. EPA as soon as possible after learning of the need to make the change.

[45CSR§30-5.8.a.]

- 2.11.3. The permit shield shall not apply to changes made under 45CSR§30-5.8., except those provided for in 45CSR§30-5.8.d. However, the protection of the permit shield will continue to apply to operations and emissions that are not affected by the change, provided that the permittee complies with the terms and conditions of the permit applicable to such operations and emissions. The permit shield may be reinstated for emissions and operations affected by the change:

- a. If subsequent changes cause the facility's operations and emissions to revert to those authorized in the permit and the permittee resumes compliance with the terms and conditions of the permit, or
- b. If the permittee obtains final approval of a significant modification to the permit to incorporate the change in the permit.

[45CSR§30-5.8.c.]

- 2.11.4. "Section 502(b)(10) changes" are changes that contravene an express permit term. Such changes do not include changes that would violate applicable requirements or contravene enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements.

[45CSR§30-2.39]

2.12. Reasonably Anticipated Operating Scenarios

2.12.1. The following are terms and conditions for reasonably anticipated operating scenarios identified in this permit.

- a. Contemporaneously with making a change from one operating scenario to another, the permittee shall record in a log at the permitted facility a record of the scenario under which it is operating and to document the change in reports submitted pursuant to the terms of this permit and 45CSR30.
- b. The permit shield shall extend to all terms and conditions under each such operating scenario; and
- c. The terms and conditions of each such alternative scenario shall meet all applicable requirements and the requirements of 45CSR30.

[45CSR§30-5.1.i.]

2.13. Duty to Comply

2.13.1. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the West Virginia Code and the Clean Air Act and is grounds for enforcement action by the Secretary or USEPA; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

[45CSR§30-5.1.f.1.]

2.14. Inspection and Entry

2.14.1. The permittee shall allow any authorized representative of the Secretary, upon the presentation of credentials and other documents as may be required by law, to perform the following:

- a. At all reasonable times (including all times in which the facility is in operation) enter upon the permittee's premises where a source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times (including all times in which the facility is in operation) any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;
- d. Sample or monitor at reasonable times substances or parameters to determine compliance with the permit or applicable requirements or ascertain the amounts and types of air pollutants discharged.

[45CSR§30-5.3.b.]

2.15. Schedule of Compliance

2.15.1. For sources subject to a compliance schedule, certified progress reports shall be submitted consistent with the applicable schedule of compliance set forth in this permit and 45CSR§30-4.3.h., but at least every six (6) months, and no greater than once a month, and shall include the following:

- a. Dates for achieving the activities, milestones, or compliance required in the schedule of compliance, and dates when such activities, milestones or compliance were achieved; and
- b. An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventative or corrective measure adopted.

[45CSR§30-5.3.d.]

2.16. Need to Halt or Reduce Activity not a Defense

2.16.1. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in determining penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continued operations.

[45CSR§30-5.1.f.2.]

2.17. Emergency

2.17.1. An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

[45CSR§30-5.7.a.]

2.17.2. Effect of any emergency. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions of 45CSR§30-5.7.c. are met.

[45CSR§30-5.7.b.]

2.17.3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

- a. An emergency occurred and that the permittee can identify the cause(s) of the emergency;
- b. The permitted facility was at the time being properly operated;
- c. During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and

- d. Subject to the requirements of 45CSR§30-5.1.c.3.C.1, the permittee submitted notice of the emergency to the Secretary within one (1) working day of the time when emission limitations were exceeded due to the emergency and made a request for variance, and as applicable rules provide. This notice, report, and variance request fulfills the requirement of 45CSR§30-5.1.c.3.B. This notice must contain a detailed description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

[45CSR§30-5.7.c.]

- 2.17.4. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

[45CSR§30-5.7.d.]

- 2.17.5. This provision is in addition to any emergency or upset provision contained in any applicable requirement.

[45CSR§30-5.7.e.]

2.18. Federally-Enforceable Requirements

- 2.18.1. All terms and conditions in this permit, including any provisions designed to limit a source's potential to emit and excepting those provisions that are specifically designated in the permit as "State-enforceable only", are enforceable by the Secretary, USEPA, and citizens under the Clean Air Act.

[45CSR§30-5.2.a.]

- 2.18.2. Those provisions specifically designated in the permit as "State-enforceable only" shall become "Federally-enforceable" requirements upon SIP approval by the USEPA.

2.19. Duty to Provide Information

- 2.19.1. The permittee shall furnish to the Secretary within a reasonable time any information the Secretary may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Secretary copies of records required to be kept by the permittee. For information claimed to be confidential, the permittee shall furnish such records to the Secretary along with a claim of confidentiality in accordance with 45CSR31. If confidential information is to be sent to USEPA, the permittee shall directly provide such information to USEPA along with a claim of confidentiality in accordance with 40 C.F.R. Part 2.

[45CSR§30-5.1.f.5.]

2.20. Duty to Supplement and Correct Information

- 2.20.1. Upon becoming aware of a failure to submit any relevant facts or a submittal of incorrect information in any permit application, the permittee shall promptly submit to the Secretary such supplemental facts or corrected information.

[45CSR§30-4.2.]

2.21. Permit Shield

2.21.1. Compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance provided that such applicable requirements are included and are specifically identified in this permit or the Secretary has determined that other requirements specifically identified are not applicable to the source and this permit includes such a determination or a concise summary thereof.

[45CSR§30-5.6.a.]

2.21.2. Nothing in this permit shall alter or affect the following:

- a. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance; or
- b. The applicable requirements of the Code of West Virginia and Title IV of the Clean Air Act (Acid Deposition Control), consistent with § 408 (a) of the Clean Air Act.
- c. The authority of the Administrator of U.S. EPA to require information under § 114 of the Clean Air Act or to issue emergency orders under § 303 of the Clean Air Act.

[45CSR§30-5.6.c.]

2.22. Credible Evidence

2.22.1. Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defenses otherwise available to the permittee including but not limited to any challenge to the credible evidence rule in the context of any future proceeding.

[45CSR§30-5.3.e.3.B. and 45CSR38]

2.23. Severability

2.23.1. The provisions of this permit are severable. If any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid by a court of competent jurisdiction, the remaining permit terms and conditions or their application to other circumstances shall remain in full force and effect.

[45CSR§30-5.1.e.]

2.24. Property Rights

2.24.1. This permit does not convey any property rights of any sort or any exclusive privilege.

[45CSR§30-5.1.f.4]

2.25. Acid Deposition Control

2.25.1. Emissions shall not exceed any allowances that the source lawfully holds under Title IV of the Clean Air Act (Acid Deposition Control) or rules of the Secretary promulgated thereunder.

- a. No permit revision shall be required for increases in emissions that are authorized by allowances acquired pursuant to the acid deposition control program, provided that such increases do not require a permit revision under any other applicable requirement.
- b. No limit shall be placed on the number of allowances held by the source. The source may not, however, use allowances as a defense to noncompliance with any other applicable requirement.
- c. Any such allowance shall be accounted for according to the procedures established in rules promulgated under Title IV of the Clean Air Act.

[45CSR§30-5.1.d.]

- 2.25.2. Where applicable requirements of the Clean Air Act are more stringent than any applicable requirement of regulations promulgated under Title IV of the Clean Air Act (Acid Deposition Control), both provisions shall be incorporated into the permit and shall be enforceable by the Secretary and U. S. EPA.

[45CSR§30-5.1.a.2.]

3.0 Facility-Wide Requirements

3.1 Limitations and Standards

- 3.1.1. **Open burning.** The open burning of refuse by any person is prohibited except as noted in 45CSR§6-3.1.
[45CSR§6-3.1.]
- 3.1.2. **Open burning exemptions.** The exemptions listed in 45CSR§6-3.1 are subject to the following stipulation: Upon notification by the Secretary, no person shall cause or allow any form of open burning during existing or predicted periods of atmospheric stagnation. Notification shall be made by such means as the Secretary may deem necessary and feasible.
[45CSR§6-3.2.]
- 3.1.3. **Asbestos.** The permittee is responsible for thoroughly inspecting the facility, or part of the facility, prior to commencement of demolition or renovation for the presence of asbestos and complying with 40 C.F.R. § 61.145, 40 C.F.R. § 61.148, and 40 C.F.R. § 61.150. The permittee, owner, or operator must notify the Secretary at least ten (10) working days prior to the commencement of any asbestos removal on the forms prescribed by the Secretary if the permittee is subject to the notification requirements of 40 C.F.R. § 61.145(b)(3)(i). The USEPA, the Division of Waste Management and the Bureau for Public Health - Environmental Health requires a copy of this notice to be sent to them.
[40 C.F.R. §61.145(b) and 45CSR34]
- 3.1.4. **Odor.** No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public.
[45CSR§4-3.1 State-Enforceable only.]
- 3.1.5. **Standby plan for reducing emissions.** When requested by the Secretary, the permittee shall prepare standby plans for reducing the emissions of air pollutants in accordance with the objectives set forth in Tables I, II, and III of 45CSR11.
[45CSR§11-5.2]
- 3.1.6. **Emission inventory.** The permittee is responsible for submitting, on an annual basis, an emission inventory in accordance with the submittal requirements of the Division of Air Quality.
[W.Va. Code § 22-5-4(a)(14)]
- 3.1.7. **Ozone-depleting substances.** For those facilities performing maintenance, service, repair or disposal of appliances, the permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 C.F.R. Part 82, Subpart F, except as provided for Motor Vehicle Air Conditioners (MVACs) in Subpart B:
- a. Persons opening appliances for maintenance, service, repair, or disposal must comply with the prohibitions and required practices pursuant to 40 C.F.R. §§ 82.154 and 82.156.
 - b. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 C.F.R. § 82.158.
 - c. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 C.F.R. § 82.161.

[40 C.F.R. 82, Subpart F]

- 3.1.8. **Risk Management Plan.** Should this stationary source, as defined in 40 C.F.R. § 68.3, become subject to Part 68, then the owner or operator shall submit a risk management plan (RMP) by the date specified in 40 C.F.R. § 68.10 and shall certify compliance with the requirements of Part 68 as part of the annual compliance certification as required by 40 C.F.R. Part 70 or 71.

[40 C.F.R. 68]

- 3.1.9. No person shall cause, suffer, allow or permit fugitive particulate matter to be discharged beyond the boundary lines of the property on which the discharge originates or at any public or residential location, which causes or contributes to statutory air pollution.
[45CSR§17-3.1; State Enforceable Only]

3.2. Monitoring Requirements

- 3.2.1. Reserved

3.3. Testing Requirements

- 3.3.1. **Stack testing.** As per provisions set forth in this permit or as otherwise required by the Secretary, in accordance with the West Virginia Code, underlying regulations, permits and orders, the permittee shall conduct test(s) to determine compliance with the emission limitations set forth in this permit and/or established or set forth in underlying documents. The Secretary, or his duly authorized representative, may at his option witness or conduct such test(s). Should the Secretary exercise his option to conduct such test(s), the operator shall provide all necessary sampling connections and sampling ports to be located in such manner as the Secretary may require, power for test equipment and the required safety equipment, such as scaffolding, railings and ladders, to comply with generally accepted good safety practices. Such tests shall be conducted in accordance with the methods and procedures set forth in this permit or as otherwise approved or specified by the Secretary in accordance with the following:
- a. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with 40 C.F.R. Parts 60, 61, and 63, if applicable, in accordance with the Secretary's delegated authority and any established equivalency determination methods which are applicable.
 - b. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with applicable requirements which do not involve federal delegation. In specifying or approving such alternative testing to the test methods, the Secretary, to the extent possible, shall utilize the same equivalency criteria as would be used in approving such changes under Section 3.3.1.a. of this permit.
 - c. All periodic tests to determine mass emission limits from or air pollutant concentrations in discharge stacks and such other tests as specified in this permit shall be conducted in accordance with an approved test protocol. Unless previously approved, such protocols shall be submitted to the Secretary in writing at least thirty (30) days prior to any testing and shall contain the information set forth by the Secretary. In addition, the permittee shall notify the Secretary at least fifteen (15) days prior to any testing so the Secretary may have the opportunity to observe such tests. This notification shall include the actual date and time during which the test will be conducted and, if appropriate, verification that the tests will fully conform to a referenced protocol previously approved by the Secretary.

- d. The permittee shall submit a report of the results of the stack test within 60 days of completion of the test. The test report shall provide the information necessary to document the objectives of the test and to determine whether proper procedures were used to accomplish these objectives. The report shall include the following: the certification described in paragraph 3.5.1; a statement of compliance status, also signed by a responsible official; and, a summary of conditions which form the basis for the compliance status evaluation. The summary of conditions shall include the following:
 1. The permit or rule evaluated, with the citation number and language.
 2. The result of the test for each permit or rule condition.
 3. A statement of compliance or non-compliance with each permit or rule condition.

[WV Code §§ 22-5-4(a)(14-15) and 45CSR13]

3.4. Recordkeeping Requirements

- 3.4.1. **Monitoring information.** The permittee shall keep records of monitoring information that include the following:
 - a. The date, place as defined in this permit and time of sampling or measurements;
 - b. The date(s) analyses were performed;
 - c. The company or entity that performed the analyses;
 - d. The analytical techniques or methods used;
 - e. The results of the analyses; and
 - f. The operating conditions existing at the time of sampling or measurement.

[45CSR§30-5.1.c.2.A.]

- 3.4.2. **Retention of records.** The permittee shall retain records of all required monitoring data and support information for a period of at least five (5) years from the date of monitoring sample, measurement, report, application, or record creation date. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Where appropriate, records may be maintained in computerized form in lieu of the above records.

[45CSR§30-5.1.c.2.B.]

- 3.4.3. **Odors.** For the purposes of 45CSR4, the permittee shall maintain a record of all odor complaints received, any investigation performed in response to such a complaint, and any responsive action(s) taken.

[45CSR§30-5.1.c. State-Enforceable only.]

3.5. Reporting Requirements

- 3.5.1. **Responsible official.** Any application form, report, or compliance certification required by this permit to be submitted to the DAQ and/or USEPA shall contain a certification by the responsible official that states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.
[45CSR§§30-4.4. and 5.1.c.3.D.]
- 3.5.2. A permittee may request confidential treatment for the submission of reporting required under 45CSR§30-5.1.c.3. pursuant to the limitations and procedures of W.Va. Code § 22-5-10 and 45CSR31.
[45CSR§30-5.1.c.3.E.]
- 3.5.3. Except for the electronic submittal of the annual certification to the USEPA as required in 3.5.5 below, all notices, requests, demands, submissions and other communications required or permitted to be made to the Secretary of DEP and/or USEPA shall be made in writing and shall be deemed to have been duly given when delivered by hand, mailed first class or by private carrier with postage prepaid to the address(es) set forth below or to such other person or address as the Secretary of the Department of Environmental Protection may designate:

If to the DAQ:

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

Phone: 304/926-0475
FAX: 304/926-0478

If to the US EPA:

Associate Director
Office of Air Enforcement and Compliance
Assistance (3AP20)
U. S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029

- 3.5.4. **Certified emissions statement.** The permittee shall submit a certified emissions statement and pay fees on an annual basis in accordance with the submittal requirements of the Division of Air Quality.
[45CSR§30-8.]
- 3.5.5. **Compliance certification.** The permittee shall certify compliance with the conditions of this permit on the forms provided by the DAQ. In addition to the annual compliance certification, the permittee may be required to submit certifications more frequently under an applicable requirement of this permit. The annual certification shall be submitted to the DAQ and USEPA on or before March 15 of each year, and shall certify compliance for the period ending December 31. The annual certification to the USEPA shall be submitted in electronic format only. It shall be submitted by e-mail to the following address: R3_APD_Permits@epa.gov. The permittee shall maintain a copy of the certification on site for five (5) years from submittal of the certification.
[45CSR§30-5.3.e.]
- 3.5.6. **Semi-annual monitoring reports.** The permittee shall submit reports of any required monitoring on or before September 15 for the reporting period January 1 to June 30 and on or before March 15 for the reporting period July 1 to December 31. All instances of deviation from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official consistent with 45CSR§30-4.4.
[45CSR§30-5.1.c.3.A.]

3.5.7. **Emergencies.** For reporting emergency situations, refer to Section 2.17 of this permit.

3.5.8. **Deviations.**

- a. In addition to monitoring reports required by this permit, the permittee shall promptly submit supplemental reports and notices in accordance with the following:
 1. Any deviation resulting from an emergency or upset condition, as defined in 45CSR§30-5.7., shall be reported by telephone or telefax within one (1) working day of the date on which the permittee becomes aware of the deviation, if the permittee desires to assert the affirmative defense in accordance with 45CSR§30-5.7. A written report of such deviation, which shall include the probable cause of such deviations, and any corrective actions or preventative measures taken, shall be submitted and certified by a responsible official within ten (10) days of the deviation.
 2. Any deviation that poses an imminent and substantial danger to public health, safety, or the environment shall be reported to the Secretary immediately by telephone or telefax. A written report of such deviation, which shall include the probable cause of such deviation, and any corrective actions or preventative measures taken, shall be submitted by the responsible official within ten (10) days of the deviation.
 3. Deviations for which more frequent reporting is required under this permit shall be reported on the more frequent basis.
 4. All reports of deviations shall identify the probable cause of the deviation and any corrective actions or preventative measures taken.

[45CSR§30-5.1.c.3.C.]

- b. The permittee shall, in the reporting of deviations from permit requirements, including those attributable to upset conditions as defined in this permit, report the probable cause of such deviations and any corrective actions or preventive measures taken in accordance with any rules of the Secretary.

[45CSR§30-5.1.c.3.B.]

3.5.9. **New applicable requirements.** If any applicable requirement is promulgated during the term of this permit, the permittee will meet such requirements on a timely basis, or in accordance with a more detailed schedule if required by the applicable requirement.

[45CSR§30-4.3.h.1.B.]

3.6. Compliance Plan

3.6.1. None

3.7. Permit Shield

3.7.1. The permittee is hereby granted a permit shield in accordance with 45CSR§30-5.6. The permit shield applies provided the permittee operates in accordance with the information contained within this permit.

- 3.7.2. The following requirements specifically identified are not applicable to the source based on the determinations set forth below. The permit shield shall apply to the following requirements provided the conditions of the determinations are met.

45CSR4	<i>To Prevent and Control the Discharge of Air Pollutants into the Open Air Which Cause or Contributes to an Objectionable Odor or Odors:</i> This State Rule shall not apply to the following source of objectionable odor until such time as feasible control methods are developed: Internal combustion engines.
45CSR21	<i>To Prevent and Control Air Pollution from the Emission of Volatile Organic Compounds:</i> All storage tanks at the Lanham station, which are listed as insignificant sources, are below 40,000 gallons in capacity, which exempts the facility from 45CSR§21-28. Lanham station is not engaged in the extraction or fractionation of natural gas, which exempts the facility from 45CSR§21-29.
45CSR27	<i>To Prevent and Control the Emissions of Toxic Air Pollutants:</i> Natural gas is included as a petroleum product and contains less than 5% benzene by weight. 45CSR§27-2.4 exempts equipment “used in the production and distribution of petroleum products providing that such equipment does not produce or contact materials containing more than 5% benzene by weight.”
40 C.F.R. Part 60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition (SI) Internal Combustion Engines. All SI engines located at this site were installed before July 12, 2006. Thus, these engines are not subject to 40 C.F.R. Part 60 Subpart JJJJ. [40CFR§60.4230(a)(4)]
40 C.F.R. Part 60 Subpart OOOO	Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution. The Storage Vessel requirements defined for transmission sources is not applicable to this site because all vessels were constructed, commenced construction, prior to August 23, 2011 as stated in accordance with [40CFR§60.5365(e)]
40 C.F.R. Part 60 Subpart Dc	Standards of Performance for Steam Generating Units: The heating system boiler and line heater at this facility are both less than 10 MMBtu/hr design heat capacity, which makes them below the applicability criteria stated in [40CFR60.40c(a)].
40 C.F.R. Part 60 Subpart K and Ka	Standards of Performance for Petroleum Liquid Storage Vessels. All tanks at the station are below the applicability criteria of 40,000 gallons in capacity as stated in [40CFR60.110a(a)]
40 C.F.R. Part 60 Subpart Kb	Standards of Performance for Petroleum Liquid Storage Vessels. All tanks at the station are below the applicability criteria of 19,813 gallons in capacity as stated in [40CFR60.110b(a)]
40 C.F.R. Part 60 Subpart KKK	Standards of Performance for Equipment Leaks of VOC From Onshore Natural Gas Processing Plant(s). The station is not engaged in the extraction or fractionation of natural gas liquids from field gas, the fractionation of mixed natural gas liquids from field gas, the fractionation of mixed natural gas liquids to natural gas products, or both. As a result, the Station has no affected sources operating within this source category.
40 C.F.R. Part 60 Subpart GG	The provisions of this subpart are not applicable to this facility because it was installed in 1966, which is prior to the October 3, 1977 NSPS applicability date for these sources defined within §60.330(b). Additionally, no modifications have occurred since the original installation.
40 C.F.R. Part 60 Subpart KKKK	The provisions of this subpart are not applicable to this facility’s turbine because it predates the NSPS applicability date of February 18, 2005

	defined by §60.4305(a)
40 C.F.R. Part 63 Subpart YYYY	This MACT requirement exempts existing turbines constructed prior to January 14, 2003 in accordance with 63.6090(b)(4).
40 C.F.R. Part 64 CAM	The compliance assurance monitoring provisions of Part 64 are not applicable due there being no add-on controls at this facility with the exception of the dehydration units. These dehys. utilize flare control, but are exempt per §64.2(b)(1)(i) because they are subject to 40 CFR 63, subpart HHH; therefore, in accordance with 40CFR§64.2(a)(2) CAM is not applicable.

3.8. Emergency Operating Scenario

For emergency situations which interrupt the critical supply of natural gas to the public, and which pose a life threatening circumstance to the customer, the permittee is allowed to temporarily replace failed engine(s) as long as all of the following conditions are met:

- a. The replacement engine(s) is only allowed to operate until repair of the failed engine(s) is complete, but under no circumstance may the replacement engine(s) operate in excess of sixty (60) days;
- b. Both the replacement engine(s) and the repaired failed engine(s) shall not operate at the same time with the exception of any necessary testing of the repaired engine(s) and this testing may not exceed five (5) hours;
- c. Potential hourly emissions from the replacement engine(s) are less than or equal to the potential hourly emissions from the engine(s) being replaced;
- d. Credible performance emission test data verifying the emission rates associated with the operation of the substitute engine shall be submitted to the Director within five (5) days;
- e. The permittee must provide written notification to the Director within five (5) days of the replacement. This notification must contain:
 - i. Information to support the claim of life threatening circumstances to justify applicability of this emergency provision;
 - ii. Identification of the engine(s) being temporarily replaced;
 - iii. The design parameters of the replacement engine(s) including, but not limited to, the design horsepower and emission factors;
 - iv. Projected duration of the replacement engine(s); and
 - v. The appropriate certification by a responsible official.

[45CSR§30-12.7]

4.0 Miscellaneous Indirect Natural Gas Heaters and Boilers less than 10 MMBtu/hr [Emission Unit IDs (BLR5, BLR6, BLR7, BLR4, HTR2)]

4.1. Limitations and Standards

- 4.1.1. No person shall cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from any fuel burning unit which is greater than ten (10) percent opacity based on a six minute block average.

[45CSR§2-3.1.]

- 4.1.2. Compliance with the visible emission requirements of 45CSR§2-3.1 (Section 4.1.1 of this permit) shall be determined in accordance with 40 C.F.R. Part 60, Appendix A, Method 9 or by using measurements from continuous opacity monitoring systems approved by the Director. The Director may require the installation, calibration, maintenance and operation of continuous opacity monitoring systems and may establish policies for the evaluation of continuous opacity monitoring results and the determination of compliance with the visible emission requirements of 45CSR§2-3.1 (Section 4.1.1 of this permit). Continuous opacity monitors shall not be required on fuel burning units which employ wet scrubbing systems for emission control.

[45CSR§2-3.2.]

- 4.1.3. Maximum Design Heat Input. The maximum design heat input for each of the DEG Dehydrator Reboilers (BLR5, BLR6, and BLR7) shall not exceed 0.55 MMBtu/hr.

[45CSR13, R13-2149C, Condition 6.1.3, Emission Unit ID (BLR5, BLR6, BLR7)]

- 4.1.4. Maximum emissions from each of the 0.55 MMBtu/hr NATCO DEG Dehydrator Reboilers (BLR5, BLR6, and BLR7) shall not exceed the following limits:

Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
Nitrogen Oxides	0.07	0.29
Carbon Monoxide	0.06	0.24

[45CSR13, R13-2149C, Condition 6.1.4, Emission Unit ID (BLR5, BLR6, BLR7)]

4.2. Monitoring Requirements

- 4.2.1. At such reasonable times as the Secretary may designate, the permittee shall conduct visible emissions observations using Method 22 for the purpose of demonstrating compliance with Section 4.1.1. If visible emissions are observed, the permittee shall conduct a Method 9 reading unless the cause for visible emissions is corrected within 24 hours. Records of observation will be kept for at least 5 years from the date of observation.

[45CSR13, R13-2149C, Condition 6.2.1, Emission Unit ID (BLR5, BLR6, BLR7)]

4.3. Testing Requirements

- 8.3.1. N/A

4.4. Recordkeeping Requirements

- 8.4.1. N/A

4.5. Reporting Requirements

- 8.5.1. N/A

5.0 40 C.F.R. 63, Subpart ZZZZ MACT Requirements for Emergency Reciprocating Internal Combustion Engine(s) RICE at Major HAP Sources [Emission Unit IDs (081G3)]

5.1 Limitations and Standards

- 5.1.1. As stated in 40 C.F.R. §§63.6603, the permittee must comply with the following requirements from Table 2c for existing stationary RICE located at area sources of HAP emissions:

For each . . .	The permittee must meet the following requirements, except during periods of startup . . .
Emergency stationary SI RICE and black start stationary SI RICE	Change oil and filter every 500 hours of operation or annually, whichever comes first; ²
	Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first; and
	Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. ³

² Sources have the option to utilize an oil analysis program as described in 40 C.F.R. §63.6625(i) or (j) in order to extend the specified oil change requirement in Table 2c of this subpart.

³ Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

[40 C.F.R. 63.6603 and Table 2c, Item 6]

- 5.1.2. The permittee must comply with the applicable operating limitations in this section no later than October 19, 2013.

[40 C.F.R. §63.6595(a)]

- 5.1.3. The permittee shall comply with the following general requirements:

- a. The permittee must be in compliance with the operating limitations in this subpart that apply to the permittee at all times.
- b. At all times the permittee must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the permittee to make any further efforts to reduce emissions if required levels have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

[40 C.F.R. § 63.6605]

- 5.1.4. The permittee shall demonstrate continuous compliance by doing the following:

- a. The permittee must demonstrate continuous compliance with each emission limitation and operating limitation in Table 2c to 40 C.F.R. 63, Subpart ZZZZ that apply to the permittee according to methods specified in Table 6 to 40 C.F.R. 63, Subpart ZZZZ.

Table 6 states that for work or management practices the permittee shall operate and maintain the stationary RICE according to the manufacturer's emission related operation and maintenance instructions; or develop and follow your own maintenance plan which must provide to the extent

practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

- b. The permittee must report each instance in which you did not meet each emission limitation or operating limitation in Table 2c to 40 C.F.R. 63, Subpart ZZZZ that apply. These instances are deviations from the emission and operating limitations. These deviations must be reported according to the requirements in 40 C.F.R. §63.6650.
- c. The permittee must also report each instance in which the applicable requirements in Table 8 to 40 C.F.R. 63, Subpart ZZZZ were not met.

[40 C.F.R. § 63.6640(a), (b), and (e)]

5.1.5. If you own or operate an emergency stationary RICE, you must operate the emergency stationary RICE according to the requirements in paragraphs (f)(1) through (4) of this section. In order for the engine to be considered an emergency stationary RICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (4) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (4) of this section, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

- (1) There is no time limit on the use of emergency stationary RICE in emergency situations.
- (2) You may operate your emergency stationary RICE for any combination of the purposes specified in paragraphs (f)(2)(i) through (iii) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraphs (f)(3) and (4) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2).
 - (i) Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.
 - (ii) Emergency stationary RICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §63.14), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.
 - (iii) Emergency stationary RICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.

- (3) Emergency stationary RICE located at major sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

[40 C.F.R. § 63.6640(f)]

- 5.1.5. The permittee shall comply with all General Provisions which apply according to Table 8 to 40 C.F.R., Part 63, Subpart ZZZZ.

[40 C.F.R. § 63.6665]

5.2. Monitoring Requirements

- 5.2.1. This facility is subject to the following requirements:

- a. The permittee must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.
[40 C.F.R. §63.6625(e)(2)]
- b. If you own or operate an existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing emergency stationary RICE located at an area source of HAP emissions, you must install a non-resettable hour meter if one is not already installed.
[40 C.F.R. §63.6625(f)]
- c. If you operate a new, reconstructed, or existing stationary engine, you must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in Tables 1a, 2a, 2c, and 2d to this subpart apply.
[40 C.F.R. §63.6625(h)]
- d. If you own or operate a stationary SI engine that is subject to the work, operation or management practices in items 6, 7, or 8 of Table 2c to this subpart or in items 5, 6, 7, 9, or 11 of Table 2d to this subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Tables 2c and 2d to this subpart. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c or 2d to this subpart. The analysis program must at a minimum analyze the following three parameters: Total Acid Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.

[40 C.F.R. § 63.6625(j)]

5.3. Testing Requirements

- 5.3.1. Reserved

5.4. Recordkeeping Requirements

- 5.4.1. If the permittee must comply with the emission and operating limitations, the permittee must keep the following records:
- a. A copy of each notification and report submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status submitted, according to the requirement in 40 CFR §63.10(b)(2)(xiv).
 - b. Records of the occurrence and duration of each malfunction of operation (*i.e.*, process equipment) or the air pollution control and monitoring equipment.
 - c. Records of performance tests and performance evaluations as required in 40 CFR §63.10(b)(2)(viii).
 - d. Records of all required maintenance performed on the air pollution control and monitoring equipment.
 - e. Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR §63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

[40 CFR §63.6655(a)]

- 5.4.2. The permittee shall keep the records required in Table 6 of this subpart to show continuous compliance with each emission or operating limitation that applied.

[40 CFR §63.6655(d)]

- 5.4.3. The permittee must keep records of the maintenance conducted on each stationary RICE in order to demonstrate that the permittee operated and maintained each stationary RICE and after-treatment control device (if any) according to the permittee's own maintenance plan.

[40 CFR §63.6655(e)(2)]

- 5.4.4. If you own or operate any of the stationary RICE in paragraphs (f)(1) through (2) of this section, you must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purposes specified in §63.6640(f)(2)(ii) or (iii) or §63.6640(f)(4)(ii), the owner or operator must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes.

- a. An existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions that does not meet the standards applicable to non-emergency engines.

[40 CFR §63.6655(f)(2)]

5.5. Reporting Requirements

- 5.5.1. Each affected source that has obtained a Title V Operating Permit pursuant to 40 CFR part 70 or 71 must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If an affected source submits a Compliance report pursuant to Table 7 of this subpart along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the Compliance report includes all required information concerning deviations from any emission or operating limitation in this subpart, submission of the Compliance report shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a Compliance report shall not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority.
[40 CFR §63.6650(f)]

For each deviation from an emission or operating limitation that occurs for a stationary RICE where you are not using a CMS to comply with the emission or operating limitations in this subpart, the Compliance report must contain the information in paragraphs (c)(1) through (4) of this section and the information in paragraphs (d)(1) and (2) of this section.

(1) The total operating time of the stationary RICE at which the deviation occurred during the reporting period.

(2) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

[40 CFR §63.6650(d)]

5.6. Compliance Plan

- 5.6.1 N/A

**6.0 40 C.F.R. 63, Subpart DDDDD MACT Requirements for Boiler(s) and Process Heater(s)
[Emission Units (BLR4, BLR5, BLR6, BLR7, and HTR2)]**

6.1. Limitations and Standards

6.1.1. Subpart DDDDD applies to new, reconstructed, and existing affected sources as described in paragraphs (a)(1) and (2) of this section.

- (1) The affected source of this subpart is the collection at a major source of all existing industrial, commercial, and institutional boilers and process heaters within a subcategory as defined in §63.7575.

[40 CFR §63.7490(a)(1)]

6.1.2. If you have an existing boiler or process heater, you must comply with this subpart no later than January 31, 2016, except as provided in §63.6(i).

[40 CFR §63.7495(b)]

6.1.3. The boiler and process heater covered by this permit must meet the requirements in paragraphs (a)(1) and (3) of this section as follows, except as provided in paragraphs (b), through (e) of this section. You must meet these requirements at all times the affected unit is operating, except as provided in paragraph (f) of this section.

- (1) You must meet the work practice standard in Table 3, Items 1 and 4, except as provided under §63.7522
- (3) At all times, you must operate and maintain any affected source (as defined in §63.7490), including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

[40 CFR§63.7500(a)(1) and (3)]

6.1.4. Boilers and process heaters in the units designed to burn gas 1 fuels subcategory with a heat input capacity of less than or equal to 5 million Btu per hour must complete a tune-up every 5 years as specified in §63.7540. Boilers and process heaters in the units designed to burn gas 1 fuels subcategory with a heat input capacity greater than 5 million Btu per hour and less than 10 million Btu per hour must complete a tune-up every 2 years as specified in §63.7540. Boilers and process heaters in the units designed to burn gas 1 fuels subcategory are not subject to the emission limits in Tables 1 and 2 or 11 through 13 to this subpart, or the operating limits in Table 4 to this subpart.

[40 CFR§63.7500(e)]

6.1.5. For existing affected sources (as defined in §63.7490), you must complete an initial tune-up by following the procedures described in §63.7540(a)(10)(i) through (vi) no later than the compliance date specified in §63.7495, except as specified in paragraph (j) of this section. You must complete the one-time energy assessment specified in Table 3 to this subpart no later than the compliance date specified in §63.7495 (January 31, 2016).

[40 CFR§63.7510(e)]

6.2. Monitoring Requirements

6.2.1. Reserved

6.3. Testing Requirements

- 6.3.1. If you are required to meet an applicable tune-up work practice standard, you must conduct an annual, biennial, or 5-year performance tune-up according to §63.7540(a)(10), (11), or (12), respectively. Each annual tune-up specified in §63.7540(a)(10) must be no more than 13 months after the previous tune-up. Each biennial tune-up specified in §63.7540(a)(11) must be conducted no more than 25 months after the previous tune-up. Each 5-year tune-up specified in §63.7540(a)(12) must be conducted no more than 61 months after the previous tune-up. For a new or reconstructed affected source (as defined in §63.7490), the first annual, biennial, or 5-year tune-up must be no later than 13 months, 25 months, or 61 months, respectively, after April 1, 2013 or the initial startup of the new or reconstructed affected source, whichever is later.
[40 CFR§63.7515(d)]

6.4. Recordkeeping Requirements

6.4.1. Reserved

6.5. Reporting Requirements

- 6.5.1 The permittee shall demonstrate initial compliance by including with the Notification of Compliance Status a signed certification that either the energy assessment was completed according to Table 3 to this subpart, and that the assessment is an accurate depiction of your facility at the time of the assessment, or that the maximum number of on-site technical hours specified in the definition of energy assessment applicable to the facility has been expended.

You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in §63.7545(e).

[40 CFR§63.7530(e) and (f)]

- 6.5.2. If you are required to conduct an initial compliance demonstration as specified in §63.7530, you must submit a Notification of Compliance Status according to §63.9(h)(2)(ii). For the initial compliance demonstration for each boiler or process heater, you must submit the Notification of Compliance Status, including all performance test results and fuel analyses, before the close of business on the 60th day following the completion of all performance test and/or other initial compliance demonstrations for all boiler or process heaters at the facility according to §63.10(d)(2). The Notification of Compliance Status report must contain all the information specified in paragraphs (e)(1) through (8) of this section, as applicable. If you are not required to conduct an initial compliance demonstration as specified in §63.7530(a), the Notification of Compliance Status must only contain the information specified in paragraphs (e)(1) and (8) of this section and must be submitted within 60 days of the compliance date specified at §63.7495(b).

- (1) A description of the affected unit(s) including identification of which subcategories the unit is in, the design heat input capacity of the unit, a description of the add-on controls used on the unit to comply with this subpart, description of the fuel(s) burned, including whether the fuel(s) were a secondary material determined by you or the EPA through a petition process to be a non-waste under §241.3 of this chapter, whether the fuel(s) were a secondary material processed from discarded non-hazardous

secondary materials within the meaning of §241.3 of this chapter, and justification for the selection of fuel(s) burned during the compliance demonstration.

- (8) In addition to the information required in §63.9(h)(2), your notification of compliance status must include the following certification(s) of compliance, as applicable, and signed by a responsible official:
- (i) “This facility completed the required initial tune-up for all of the boilers and process heaters covered by 40 CFR part 63 subpart DDDDD at this site according to the procedures in §63.7540(a)(10)(i) through (vi).”
 - (ii) “This facility has had an energy assessment performed according to §63.7530(e).”
 - (iii) Except for units that burn only natural gas, refinery gas, or other gas 1 fuel, or units that qualify for a statutory exemption as provided in section 129(g)(1) of the Clean Air Act, include the following: “No secondary materials that are solid waste were combusted in any affected unit.”

[40 CFR§63.7545(e)(1) & (8)]

- 6.5.3. Unless the EPA Administrator has approved a different schedule for submission of reports under §63.10(a), you must submit each report, according to paragraph (h) of this section, by the date in Table 9 to this subpart and according to the requirements in paragraphs (b)(1) through (4) of this section. For units that are subject only to a requirement to conduct subsequent annual, biennial, or 5-year tune-up according to §63.7540(a)(10), (11), or (12), respectively, and not subject to emission limits or Table 4 operating limits, you may submit only an annual, biennial, or 5-year compliance report, as applicable, as specified in paragraphs (b)(1) through (4) of this section, instead of a semi-annual compliance report.

- (5) For each affected source that is subject to permitting regulations pursuant to part 70 or part 71 of this chapter, and if the permitting authority has established dates for submitting semiannual reports pursuant to 70.6(a)(3)(iii)(A) or 71.6(a)(3)(iii)(A), you may submit the first and subsequent compliance reports according to the dates the permitting authority has established in the permit instead of according to the dates in paragraphs (b)(1) through (4) of this section.

[40 CFR§63.7550(b)(5)]

6.6. Compliance Plan

- 6.6.1 N/A

7.0 40 C.F.R. 63, Subpart HHH MACT Requirements for Natural Gas Transmission and Storage Facilities [Emission Unit IDs (FLLP1, DEG DEHY 1, DEG DEHY 2, and DEG DEHY 3)]

7.1 Limitations and Standards

- 7.1.1. The owner or operator of each affected source as defined by Subpart HHH, shall achieve compliance with the provisions of this subpart by the following dates:
(1) Except as specified in paragraphs (d)(3) through (4) of this section, the owner or operator of an affected source, the construction or reconstruction of which commenced before February 6, 1998, shall achieve compliance with this provisions of the subpart no later than June 17, 2002 except as provided for in §63.6(i).

[40 CFR §63.1270(d)(1)]

- 7.1.2. The permittee has the right to claim affirmative defense for violations of emission standards during malfunctions as long as the conditions are satisfied and documented according to the provisions in §63.1272.

[40 CFR §63.1272)]

- 7.1.3. The owner or operator of an affected source (*i.e.*, glycol dehydration unit) located at an existing or new major source of HAP emissions shall comply with the control requirements for glycol dehydration unit process vents specified in §63.1275;

§63.1275(b) Except as provided in paragraph (c) of this section, an owner or operator of a glycol dehydration unit process vent shall comply with the requirements specified in paragraphs (b)(1) and (b)(2) of this section.

- (1) For each glycol dehydration unit process vent, the owner or operator shall control air emissions by either paragraph (b)(1)(i) or (ii) of this section.

(i) The owner or operator of a large glycol dehydration unit, as defined in §63.1271, shall connect the process vent to a control device or a combination of control devices through a closed-vent system. The closed-vent system shall be designed and operated in accordance with the requirements of §63.1281(c). The control device(s) shall be designed and operated in accordance with the requirements of §63.1281(d).

(ii) The owner or operator of a large glycol dehydration unit shall connect the process vent to a control device or a combination of control devices through a closed-vent system and the outlet benzene emissions from the control device(s) shall be less than 0.90 megagrams per year. The closed-vent system shall be designed and operated in accordance with the requirements of §63.1281(c). The control device(s) shall be designed and operated in accordance with the requirements of §63.1281(d), except that the performance requirements specified in §63.1281(d)(1)(i) and (ii) do not apply.

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

[40 CFR§§63.1274 and 63.1275(b)(1)(ii) & (b)(2)]

7.1.4. The closed-vent system requirements for control are stated in §63.1281(c) as follows:

(c) *Closed-vent system requirements.*

(1) The closed-vent system shall route all gases, vapors, and fumes emitted from the material in an emissions unit to a control device that meets the requirements specified in paragraph (d) of this section.

(2) The closed-vent system shall be designed and operated with no detectable emissions.

(3) If the closed-vent system contains one or more bypass devices that could be used to divert all or a portion of the gases, vapors, or fumes from entering the control device, the owner or operator shall meet the requirements specified in paragraphs (c)(3)(i) and (c)(3)(ii) of this section.

(i) For each bypass device, except as provided for in paragraph (c)(3)(ii) of this section, the owner or operator shall either:

(A) At the inlet to the bypass device that could divert the stream away from the control device to the atmosphere, properly install, calibrate, maintain, and operate a flow indicator that is capable of taking periodic readings and sounding an alarm when the bypass device is open such that the stream is being, or could be, diverted away from the control device to the atmosphere; or

(B) Secure the bypass device valve installed at the inlet to the bypass device in the non-diverting position using a car-seal or a lock-and-key type configuration.

(ii) Low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and safety devices are not subject to the requirements of paragraph (c)(3)(i) of this section.

[40 CFR§63.1281(c)]

7.1.5. The control device requirements for large glycol dehydration units as defined in 63.1275(b)(1)(ii) corresponding with the less than 0.90 megagram per year benzene compliance option are as follows:

(iii) A flare, as defined in §63.1271, that is designed and operated in accordance with the requirements of §63.11(b).

[40 CFR§63.1281(d)(1)(iii)]

7.1.6. The owner or operator shall operate each control device in accordance with the requirements specified in paragraphs (d)(4)(i) and (ii) of this section.

(i) Each control device used to comply with this subpart shall be operating at all times when gases, vapors, and fumes are vented from the emissions unit or units through the closed vent system to the control device as required under §63.1275. An owner or operator may vent more than one unit to a control device used to comply with this subpart.

[40 CFR§63.1281(d)(4)]

7.2 Monitoring Requirements

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

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

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

(ii) The owner or operator shall document, to the Administrator's satisfaction, the actual annual average natural gas flowrate to the glycol dehydration unit.

(2) The determination of actual average benzene or BTEX emissions from a glycol dehydration unit shall be made using the procedures of either paragraph (a)(2)(i) or (ii) of this section. Emissions shall be determined either uncontrolled or with federally enforceable controls in place.

(i) The owner or operator shall determine actual average benzene or BTEX emissions using the model GRI-GLYCalcTM, Version 3.0 or higher, and the procedures presented in the associated GRI-GLYCalcTM Technical Reference Manual. Inputs to the model shall be representative of actual operating conditions of the glycol dehydration unit and may be determined using the procedures documented in the Gas Research Institute (GRI) report entitled "Atmospheric Rich/Lean Method for Determining Glycol Dehydrator Emissions" (GRI-95/0368.1); or

(ii) The owner or operator shall determine an average mass rate of benzene or BTEX emissions in kilograms per hour through direct measurement by performing three runs of Method 18 in 40 CFR part 60, appendix A; or ASTM D6420-99 (Reapproved 2004) (incorporated by reference as specified in §63.14), as specified in §63.772(a)(1)(ii); or an equivalent method; and averaging the results of the three runs. Annual emissions in kilograms per year shall be determined by multiplying the mass rate by the number of hours the unit is operated per year. This result shall be converted to megagrams per year.

[40 CFR§63.1282(a)(1) & (2)]

7.2.2. Control device monitoring requirements.

(1) For each control device except as provided for in paragraph (d)(2) of this section, the owner or operator shall install and operate a continuous parameter monitoring system in accordance with the requirements of paragraphs (d)(3) through (7) of this section. Owners or operators that install and operate a flare in accordance with §63.1281(d)(1)(iii) or (f)(1)(iii) are exempt from the requirements of paragraphs (d)(4) and (5) of this section. The continuous monitoring system shall be designed and operated so that a determination can be made on whether the control device is achieving the applicable performance requirements of §63.1281(d), (e)(3), or (f)(1). Each continuous parameter monitoring system shall meet the following specifications and requirements:

(i) Each continuous parameter monitoring system shall measure data values at least once every hour and record either:

(A) Each measured data value; or

(B) Each block average value for each 1-hour period or shorter periods calculated from all measured data values during each period. If values are measured more frequently than once per minute, a single value for each minute may be used to calculate the hourly (or shorter period) block average instead of all measured values.

(ii) A site-specific monitoring plan must be prepared that addresses the monitoring system design, data collection, and the quality assurance and quality control elements outlined in paragraph (d) of this section and in §63.8(d). Each CPMS must be installed, calibrated, operated, and maintained in accordance with the procedures in your approved site-specific monitoring plan. Using the process described in §63.8(f)(4), you may request approval of monitoring system quality assurance and quality control procedures alternative to those specified in paragraphs (d)(1)(ii)(A) through (E) of this section in your site-specific monitoring plan.

- (A) The performance criteria and design specifications for the monitoring system equipment, including the sample interface, detector signal analyzer, and data acquisition and calculations;
 - (B) Sampling interface (e.g., thermocouple) location such that the monitoring system will provide representative measurements;
 - (C) Equipment performance checks, system accuracy audits, or other audit procedures;
 - (D) Ongoing operation and maintenance procedures in accordance with provisions in §63.8(c)(1) and (c)(3); and
 - (E) Ongoing reporting and recordkeeping procedures in accordance with provisions in §63.10(c), (e)(1), and (e)(2)(i).
- (iii) The owner or operator must conduct the CPMS equipment performance checks, system accuracy audits, or other audit procedures specified in the site-specific monitoring plan at least once every 12 months.
 - (iv) The owner or operator must conduct a performance evaluation of each CPMS in accordance with the site-specific monitoring plan.

[40 CFR§§63.1283(d)(1)]

- 7.2.3. The owner or operator shall install, calibrate, operate, and maintain a device equipped with a continuous recorder to measure the values of operating parameters appropriate for the control device as specified in either paragraph (d)(3)(i), (d)(3)(ii), or (d)(3)(iii) of this section.

- (i) A continuous monitoring system that measures the following operating parameters as applicable:
 - (C) For a flare, a heat sensing monitoring device equipped with a continuous recorder that indicates the continuous ignition of the pilot flame.

[40 CFR§§63.1283(d)(3)(i)(C)]

- 7.2.4. An excursion for a given control device is determined to have occurred when the monitoring data or lack of monitoring data result in any one of the criteria specified in paragraphs (d)(6)(i) through (d)(6)(v) of this section being met.

- (iii) An excursion occurs when the monitoring data are not available for at least 75 percent of the operating hours in a day.
- (iv) If the closed-vent system contains one or more bypass devices that could be used to divert all or a portion of the gases, vapors, or fumes from entering the control device, an excursion occurs when:
 - (A) For each bypass line subject to §63.1281(c)(3)(i)(A) the flow indicator indicates that flow has been detected and that the stream has been diverted away from the control device to the atmosphere.
 - (B) For each bypass line subject to §63.1281(c)(3)(i)(B), if the seal or closure mechanism has been broken, the bypass line valve position has changed, the key for the lock-and-key type lock has been checked out, or the car-seal has broken.

For each excursion, the owner or operator shall be deemed to have failed to have applied control in a manner that achieves the required operating parameter limits. Failure to achieve the required operating parameter limits is a violation of this standard.

[40 CFR§§63.1283(d)(6)(iii) & (iv) and 63.1283(d)(7)]

7.3 Testing Requirements

7.3.1. The owner or operator shall demonstrate that a control device achieves the performance requirements of paragraph (d)(1) of this section by following the procedures specified in §63.1282(d).

(2) An owner or operator shall design and operate each flare, as defined in §63.1271, in accordance with the requirements specified in §63.11(b) and the compliance determination shall be conducted using Method 22 of 40 CFR part 60, appendix A, to determine visible emissions.

[40 CFR§63.1281(d)(3) & §63.1282(d)(2)]

7.3.2. (c) *Closed-vent system inspection and monitoring requirements.*

(1) For each closed-vent system required to comply with this section, the owner or operator shall comply with the requirements of paragraphs (c)(2) through (7) of this section.

(2) Except as provided in paragraphs (c)(5) and (6) of this section, each closed-vent system shall be inspected according to the procedures and schedule specified in paragraphs (c)(2)(i) and (ii) of this section and each bypass device shall be inspected according to the procedures of (c)(2)(iii) of this section.

(i) For each closed-vent system joints, seams, or other connections that are permanently or semi-permanently sealed (e.g., a welded joint between two sections of hard piping or a bolted or gasketed ducting flange), the owner or operator shall:

(A) Conduct an initial inspection according to the procedures specified in §63.1282(b) to demonstrate that the closed-vent system operates with no detectable emissions. Inspection results shall be submitted with the Notification of Compliance Status Report as specified in §63.1285(d)(1) or (2).

(B) Conduct annual visual inspections for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in piping; loose connections; or broken or missing caps or other closure devices. The owner or operator shall monitor a component or connection using the procedures specified in §63.1282(b) to demonstrate that it operates with no detectable emissions following any time the component or connection is repaired or replaced or the connection is unsealed. Inspection results shall be submitted in the Periodic Report as specified in §63.1285(e)(2)(iii).

(ii) For closed-vent system components other than those specified in paragraph (c)(2)(i) of this section, the owner or operator shall:

(A) Conduct an initial inspection according to the procedures specified in §63.1282(b) to demonstrate that the closed-vent system operates with no detectable emissions. Inspection results shall be submitted with the Notification of Compliance Status Report as specified in §63.1285(d)(1) or (2).

(B) Conduct annual inspections according to the procedures specified in §63.1282(b) to demonstrate that the components or connections operate with no detectable emissions. Inspection results shall be submitted in the Periodic Report as specified in §63.1285(e)(2)(iii).

(C) Conduct annual visual inspections for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in ductwork; loose connections; or broken or missing caps or other closure devices. Inspection results shall be submitted in the Periodic Report as specified in §63.1285(e)(2)(iii).

(iii) For each bypass device, except as provided for in §63.1281(c)(3)(ii), the owner or operator shall either:

(A) At the inlet to the bypass device that could divert the steam away from the control device to the atmosphere, set the flow indicator to take a reading at least once every 15 minutes; or

(B) If the bypass device valve installed at the inlet to the bypass device is secured in the non-diverting position using a car-seal or a lock-and-key type configuration, visually inspect the seal or closure mechanism at least once every month to verify that the valve is maintained in the non-diverting position and the vent stream is not diverted through the bypass device.

(3) In the event that a leak or defect is detected, the owner or operator shall repair the leak or defect as soon as practicable, except as provided in paragraph (c)(4) of this section.

(i) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(ii) Repair shall be completed no later than 15 calendar days after the leak is detected.

(4) Delay of repair of a closed-vent system for which leaks or defects have been detected is allowed if the repair is technically infeasible without a shutdown, as defined in §63.1271, or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be completed by the end of the next shutdown.

(5) Any parts of the closed-vent system or cover that are designated, as described in paragraphs (c)(5)(i) and (ii) of this section, as unsafe to inspect are exempt from the inspection requirements of paragraphs (c)(2)(i) and (ii) of this section if:

(i) The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraph (c)(2)(i) or (ii) of this section; and

(ii) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.

(6) Any parts of the closed-vent system or cover that are designated, as described in paragraphs (c)(6)(i) and (ii) of this section, as difficult to inspect are exempt from the inspection requirements of paragraphs (c)(2)(i) and (ii) of this section if:

(i) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and

(ii) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years.

(7) Records shall be maintained as specified in §63.1284(b)(5) through (8).

[40 CFR§63.1283(c)]

7.4 Recordkeeping Requirements

7.4.1. Each owner or operator using a control device to comply with §63.1274 shall keep the following records up-to-date and readily accessible:

(i) Continuous records of the equipment operating parameters specified to be monitored under §63.1283(d) or specified by the Administrator in accordance with §63.1283(d)(3)(iii). For flares, the hourly records and records of pilot flame outages specified in paragraph (e) of this section shall be maintained in place of continuous records.

(ii) Records of the daily average value of each continuously monitored parameter for each operating day determined according to the procedures specified in §63.1283(d)(4) of this subpart, except as specified in paragraphs (b)(4)(ii)(A) through (C) of this section.

(A) For flares, the records required in paragraph (e) of this section.

(iii) Hourly records of the times and durations of all periods when the vent stream is diverted from the control device or the device is not operating.

(iv) Where a seal or closure mechanism is used to comply with §63.1281(c)(3)(i)(B), hourly records of flow are not required. In such cases, the owner or operator shall record that the monthly visual inspection of the seals or closure mechanism has been done, and shall record the duration of all periods when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type lock has been checked out, and records of any car-seal that has broken.

[40 CFR§63.1284(b)(4)]

7.4.2. (5) Records identifying all parts of the closed-vent system that are designated as unsafe to inspect in accordance with §63.1283(c)(5), an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment.

(6) Records identifying all parts of the closed-vent system that are designated as difficult to inspect in accordance with §63.1283(c)(6), an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment.

(7) For each inspection conducted in accordance with §63.1283(c), during which a leak or defect is detected, a record of the information specified in paragraphs (b)(7)(i) through (b)(7)(viii) of this section.

(i) The instrument identification numbers, operator name or initials, and identification of the equipment.

(ii) The date the leak or defect was detected and the date of the first attempt to repair the leak or defect.

(iii) Maximum instrument reading measured by the method specified in §63.1282(b) after the leak or defect is successfully repaired or determined to be nonreparable.

(iv) "Repair delayed" and the reason for the delay if a leak or defect is not repaired within 15 calendar days after discovery of the leak or defect.

(v) The name, initials, or other form of identification of the owner or operator (or designee) whose decision it was that repair could not be effected without a shutdown.

(vi) The expected date of successful repair of the leak or defect if a leak or defect is not repaired within 15 calendar days.

(vii) Dates of shutdowns that occur while the equipment is unrepaired.

(viii) The date of successful repair of the leak or defect.

(ix) Records identifying the carbon replacement schedule under §63.1281(d)(5) and records of each carbon replacement.

(8) For each inspection conducted in accordance with §63.1283(c) during which no leaks or defects are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks or defects were detected.

[40 CFR§63.1284(b)(5)-(8)]

7.4.3. (c) An owner or operator that elects to comply with the benzene emission limit specified in §63.1275(b)(1)(ii) shall document, to the Administrator's satisfaction, the following items:

- (1) The method used for achieving compliance and the basis for using this compliance method; and
- (2) The method used for demonstrating compliance with 0.90 megagrams per year of benzene.

(3) Any information necessary to demonstrate compliance as required in the methods specified in paragraphs (c)(1) and (c)(2) of this section.

[40 CFR§63.1284(c)]

- 7.4.4. (e) Record the following when using a flare to comply with §63.1281(d):
- (1) Flare design (i.e., steam-assisted, air-assisted, or non-assisted);
 - (2) All visible emission readings, heat content determinations, flowrate measurements, and exit velocity determinations made during the compliance determination required by §63.1282(d)(2); and
 - (3) All hourly records and other recorded periods when the pilot flame is absent.

[40 CFR§63.1284(e)]

- 7.4.5. (f) The owner or operator of an affected source subject to this subpart shall maintain records of the occurrence and duration of each malfunction of operation (*i.e.*, process equipment) or the air pollution control equipment and monitoring equipment. The owner or operator shall maintain records of actions taken during periods of malfunction to minimize emissions in accordance with §63.1274(h), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

[40 CFR§63.1284(f)]

7.5 Reporting Requirements

- 7.5.1 (e) *Periodic Reports.* An owner or operator shall prepare Periodic Reports in accordance with paragraphs (e)(1) and (2) of this section and submit them to the Administrator.
- (1) An owner or operator shall submit Periodic Reports semiannually beginning 60 calendar days after the end of the applicable reporting period. The first report shall be submitted no later than 240 days after the date the Notification of Compliance Status Report is due and shall cover the 6-month period beginning on the date the Notification of Compliance Status Report is due.
 - (2) The owner or operator shall include the information specified in paragraphs (e)(2)(i) through (xiii) of this section, as applicable.
 - (i) The information required under §63.10(e)(3). For the purposes of this subpart and the information required under §63.10(e)(3), excursions (as defined in §63.1283(d)(6)) shall be considered excess emissions.
 - (ii) A description of all excursions as defined in §63.1283(d)(6) of this subpart that have occurred during the 6-month reporting period.
 - (C) For each excursion caused by lack of monitoring data, as specified in §63.1283(d)(6)(iii), the report must include the date and duration of period when the monitoring data were not collected and the reason why the data were not collected.
 - (iii) For each inspection conducted in accordance with §63.1283(c) during which a leak or defect is detected, the records specified in §63.1284(b)(7) must be included in the next Periodic Report.
 - (iv) For each closed-vent system with a bypass line subject to §63.1281(c)(3)(i)(A), records required under §63.1284(b)(4)(iii) of all periods when the vent stream is diverted from the control device through a bypass line. For each closed-vent system with a bypass line subject to §63.1281(c)(3)(i)(B), records required under §63.1284(b)(4)(iv) of all periods in which the seal or closure mechanism is broken, the bypass valve position has changed, or the key to unlock the bypass line valve was checked out.
 - (v) If an owner or operator elects to comply with §63.1275(b)(1)(ii), the records required under §63.1284(c)(3).

(vi) The information in paragraphs (e)(2)(vi)(A) and (B) of this section shall be stated in the Periodic Report, when applicable.

(A) No excursions.

(B) No continuous monitoring system has been inoperative, out of control, repaired, or adjusted.

(vii) Any change in compliance methods as specified in §63.1282(e).

(viii) If the owner or operator elects to comply with §63.1275(c)(2), the records required under §63.1284(b)(10).

(ix) For flares, the records specified in §63.1284(e).

(x) The results of any periodic test as required in §63.1282(d)(3) conducted during the reporting period.

(xi) For combustion control device inspections conducted in accordance with §63.1283(b) the records specified in §63.1284(h).

(xiii) Certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

[40 CFR§63.1285(e)]

7.5.2. (f) *Notification of process change.* Whenever a process change is made, or a change in any of the information submitted in the Notification of Compliance Status Report, the owner or operator shall submit a report within 180 days after the process change is made or as a part of the next Periodic Report as required under paragraph (e) of this section, whichever is sooner. The report shall include:

(1) A brief description of the process change;

(2) A description of any modification to standard procedures or quality assurance procedures;

(3) Revisions to any of the information reported in the original Notification of Compliance Status Report under paragraph (d) of this section; and

(4) Information required by the Notification of Compliance Status Report under paragraph (d) of this section for changes involving the addition of processes or equipment.

[40 CFR§63.1285(f)]

7.6. Compliance Plan

7.6.1 N/A

8.0 45 CSR 13 Permit Conditions from R13-2149C [Emission Units (081G3, DEG-DEHY1, DEG-DEHY2, DEG-DEHY3, FLLP1)]

8.1. Limitations and Standards

- 8.1.1. The quantity of natural gas that shall be consumed in the 440 Hp Waukesha VGF18GL, 4 cycle lean burn natural gas fired reciprocating engine (081G3) shall not exceed 3,972 cubic feet per hour or 34.79×10^6 cubic feet per year.

[45CSR13, R13-2149C, Condition 5.1.1, Emission Unit ID (081G3)]

- 8.1.2. Maximum emissions from the 440 Hp Waukesha VGF18GL, 4 cycle lean burn natural gas fired reciprocating engine (081G3) shall not exceed the following limits:

Emission Unit ID	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
081G3	Nitrogen Oxides	2.52	11.05
	Carbon Monoxide	1.70	7.44
	Volatile Organic Compounds	0.73	3.19

[45CSR13, R13-2149C, Condition 5.1.2, Emission Unit ID (081G3)]

- 8.1.3. Maximum Throughput Limitation. The maximum wet natural gas throughput to each of the glycol dehydration units / still columns (DEG-DEHY1, DEG-DEHY2, DEG-DEHY3) shall not exceed 4.875 MMscf/hr or 117 MMscf/day. Compliance with the Maximum Throughput Limitation shall be determined using a twelve month rolling total. A twelve month rolling total shall mean the sum of the monthly throughput at any given time during the previous twelve consecutive calendar months.

[45CSR13, R13-2149C, Condition 7.1.1, Emission Unit ID (DEG-DEHY1, DEG-DEHY2, DEG-DEHY3)]

- 8.1.4. The Dehydrator Flare, NATCO Model SHV-4.0 (FLLP1) subject to this section shall be designed and operated in accordance with the following:

- Flares shall be steam-assisted, air-assisted, or non-assisted.
- Flares shall be designed for and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.
- Flares shall be operated, with a flame present at all times whenever emissions may be vented to them, except during SSM (Startup, Shutdown, Malfunctions) events.
- A flare shall be used only where the net heating value of the gas being combusted is 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or where the net heating value of the gas being combusted is 7.45 MJ/scm (200 Btu/scf) or greater if the flares is non-assisted. The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \sum_{i=1}^n C_i H_i$$

Where:

H_T =Net heating value of the sample, MJ/scm; where the net enthalpy per mole of off gas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C.

K =Constant=

$$1.740 \times 10^{-7} \left(\frac{1}{\text{ppmv}} \right) \left(\frac{\text{g-mole}}{\text{scm}} \right) \left(\frac{\text{MJ}}{\text{kcal}} \right)$$

where the standard temperature for (g-mole/scm) is 20 °C.

C_i =Concentration of sample component i in ppmv on a wet basis, which may be measured for organics by Test Method 18, but is not required to be measured using Method 18 (unless designated by the Director).

H_i =Net heat of combustion of sample component i, kcal/g-mole at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 or 88 or D4809-95 if published values are not available or cannot be calculated.

n =Number of sample components.

- e. Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity less than 18.3 m/sec (60 ft/sec), except as provided by 7.1.2.f and 7.1.2.g of this section. The actual exit velocity of a flare shall be determined by dividing by the volumetric flow rate of gas being combusted (in units of emission standard temperature and pressure), by the unobstructed (free) cross-sectional area of the flare tip, which may be determined by Test Method 2, 2A, 2C, or 2D in appendix A to 40 CFR part 60, as appropriate, but is not required to be determined using these Methods (unless designated by the Director).

- f. Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the method specified in 7.1.2.e. of this section, equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec), are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).

- g. Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the method specified in 7.1.2.e. of this section, less than the velocity V_{\max} , as determined by the calculation specified in this paragraph, but less than 122 m/sec (400 ft/sec) are allowed. The maximum permitted velocity, V_{\max} , for flares complying with this paragraph shall be determined by the following equation:

$$\text{Log}_{10}(V_{\max}) = (H_T + 28.8) / 31.7$$

Where:

V_{\max} =Maximum permitted velocity, m/sec.

28.8=Constant.

31.7=Constant.

H_T =The net heating value as determined in 7.1.2.d of this section

- h. Air-assisted flares shall be designed and operated with an exit velocity less than the velocity V_{\max} . The maximum permitted velocity, V_{\max} , for air-assisted flares shall be determined by the following equation:

$$V_{\max} = 8.71 + 0.708(H_T)$$

Where:

V_{\max} =Maximum permitted velocity, m/sec.

8.71=Constant.

0.708=Constant.

H_T =The net heating value as determined in 7.1.2.d of this section.

[45CSR13, R13-2149C, Condition 7.1.1, Emission Unit ID (FLLP1)]

8.2. Monitoring Requirements

- 8.2.1. In order to demonstrate compliance with the requirements of 8.1.4.c, the permittee shall monitor the presence or absence of a flare pilot flame using a thermocouple or any other equivalent device, except during SSM events.
[45CSR13, R13-2149C, Condition 7.2.1, Emission Unit ID (FLLP1)]
- 8.2.2. The permittee shall monitor the throughput of wet natural gas fed to the dehydration system on a monthly basis for each glycol dehydration unit (DEG-DEHY-1, DEG-DEHY2, DEG-DEHY3).
[45CSR13, R13-2149C, Condition 7.2.2, Emission Unit ID (DEG-DEHY1, DEG-DEHY2, DEG-DEHY3)]

8.3. Testing Requirements

- 8.3.1. The Director may require the permittee to conduct a flare compliance assessment to demonstrate compliance with section 8.1.4. This compliance assessment testing shall be conducted in accordance with Test Method 18 for organics and Test Method 2, 2A, 2C, or 2D in appendix A to 40 CFR part 60, as appropriate, or other equivalent testing approved in writing by the Director. Also, Test Method 18 may require the permittee to conduct Test Method 4 in conjunction with Test Method 18.
[45CSR13, R13-2149C, Condition 7.3.2, Emission Unit ID (FLLP1)]

8.4. Recordkeeping Requirements

- 8.4.1. To demonstrate compliance with section 8.1.1 and 8.1.2., the permittee shall maintain records of the quantity of natural gas consumed in the engine and the hours of operation of the engine. Said records shall be maintained on site or in a readily accessible off-site location maintained by the permittee for a period of five (5) years. Said records shall be readily available to the Director of the Division of Air Quality or his/her duly authorized representative for expeditious inspection and review. Any records submitted to the agency pursuant to a requirement of this permit or upon request by the Director shall be certified by a responsible official.
[45CSR13, R13-2149C, Condition 5.4.1, Emission Unit ID (081G3)]
- 8.4.2. For the purpose of demonstrating compliance with section 8.1.4 the permittee shall maintain a record of the flare design evaluation. The flare design evaluation shall include, net heat value calculations, exit (tip) velocity calculations, and all supporting concentration calculations and other related information requested by the Director.
[45CSR13, R13-2149C, Condition 7.4.2, Emission Unit ID (FLLP1)]
- 8.4.3. For the purpose of demonstrating compliance with section 8.1.4.c and 8.2.1, the permittee shall maintain records of the times and duration of all periods which the pilot flame was absent.
[45CSR13, R13-2149C, Condition 7.4.1, Emission Unit ID (FLLP1)]
- 8.4.4. The permittee shall maintain records documenting the wet natural gas flowrates to each of the dehydration units. Additionally, records shall be maintained to demonstrate the initial and subsequent opacity test results.
[45CSR13, R13-2149C, Condition 7.4.3, 7.4.4, 7.4.5, Emission Unit ID (DEG-DEHY1, DEG-DEHY2, DEG-DEHY3, FLLP1)]

8.5. Reporting Requirements

- 8.5.1. Any deviation(s) from the allowable visible emission requirement for any emission source discovered during observations using 40CFR Part 60, Appendix A, Method 9 or 22 shall be reported in writing to the Director of the Division of Air Quality as soon as practicable, but in any case within ten (10) calendar days of the occurrence and shall include at least the following information: the results of the visible determination of opacity of emissions, the cause or suspected cause of the violation(s), and any corrective measures taken or planned.

[45CSR13, R13-2149C, Condition 7.5.1, Emission Unit ID (FLLP1)]

- 8.5.2. Any deviation(s) from the flare design and operation criteria in Section 8.1.4 shall be reported in writing to the Director of the Division of Air Quality as soon as practicable, but in any case within ten (10) calendar days of discovery of such deviation.

[45CSR13, R13-2149C, Condition 7.5.2, Emission Unit ID (FLLP1)]

APPENDIX C

ELECTRONIC SUBMITTAL

Title V Operating Permit Renewal Application

Adaline Compressor Station, Facility ID No. 051-00100
Cameron, West Virginia

Columbia Gas Transmission, LLC
1700 MacCorkle Avenue, SE
Charleston, West Virginia

March 2016