

May 4, 2017

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

RE: Construction/Modification Application (45CSR13) and
Significant Modification Application (Revision to Title V)
Columbia Gas Transmission, LLC
Ceredo Compressor Station (Facility ID#099-00013)
Permit No. R30-09900013-2016

Dear Mr. Durham,

On behalf of Columbia Gas Transmission, AECOM hereby submits the attached application for the use of significant modification procedures to revise Title V permit R30-09900013-2016 for the Columbia Gas Transmission, LLC (Columbia) – Ceredo Compressor Station, located in Wayne County, West Virginia. This modification application consists of a Regulation 13 application package requesting a change in the horsepower of the recently-permitted Waukesha emergency generator (Emission Unit 005G4, Emission Point G4) from 880 hp to 1,175 hp because of a change in model selection. The 880-hp emergency generator G4 has not yet been installed. Through this modification application, Columbia intends to change the emergency generator selection while retaining the emission unit and emission point identification. Installation is anticipated in 2017.

Based on this change, the Station will continue to be classified as a major source under Title V regulations (annual potential emissions of NO_x and CO are more than 100 tons per year). The new emergency generator will be considered part of the same project as the equipment permitted in R13-1856A for the Prevention of Significant Deterioration (PSD) analysis. That modification included the addition of a Solar Titan 250 combustion turbine, the 880-hp emergency generator, and a 1.0 MMBtu/hr heater. The potential annual emissions from the new equipment after revision of the emergency generator to the 1,175-hp model remain less than PSD significant emission levels for all pollutants.

To revise the emergency generator selection, the application includes forms for G4 but does not include forms for the other sources permitted in R13-1856A since only G4 is being modified. However, the potential to emit calculations provided with this application include the complete set of sources associated with R13-1856A so that the PSD applicability determination is accurate.

Very little of the permit text needs to be changed as a result of the emergency generator change, and to facilitate the changes a permit markup is provided as an addendum to the application form set. In this markup, Columbia is also identifying minor changes to the permit to be made through this modification. These changes are items for which the Division of Air Quality provided guidance indicating that the request for change should be addressed through an R13 modification.

The additional minor changes include the following:

- Correction of designation of Boiler 2 (BLR2) to Boiler 3 (BLR3);
- Correction of Heater 1 (HTR1) heat input from 0.35 MMBtu/hr to 0.375 MMBtu/hr;
and
- Correction of designation of Heater 2 (HTR2) to Heater 3 (HTR3).

Regarding the fee assessment, G4 was permitted as an NSPS source (Subpart JJJJ) in 2016, and the model change will not affect the NSPS requirements (same engine category). Therefore Columbia believes that no fee should be assessed for NSPS.

This application package includes:

1. Description of changes, and any new specific applicable requirements;
2. Certification for the use of significant modification procedures; and
3. Check in the amount of \$1,000 for application fee.

Should you have any questions or need additional information, please feel free to contact Jeff McCombs of TransCanada at (724) 223-2764 or via email at jeffrey_mccombs@transcanada.com.

Sincerely,



Jennifer Ehrhardt
Project Manager
AECOM

Attachments

APPLICATION FOR 45 CSR 13
CONSTRUCTION PERMIT
AND
TITLE V PERMIT MODIFICATION

Columbia Gas Transmission LLC
Ceredo Compressor Station
Wayne County, West Virginia
Title V Permit No. R30-09900013-2016

May 2017

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WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR QUALITY
 601 57th Street, SE
 Charleston, WV 25304
 (304) 926-0475
www.dep.wv.gov/daq

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

PLEASE CHECK ALL THAT APPLY TO **NSR (45CSR13)** (IF KNOWN):
 CONSTRUCTION **MODIFICATION** **RELOCATION**
 CLASS I ADMINISTRATIVE UPDATE **TEMPORARY**
 CLASS II ADMINISTRATIVE UPDATE **AFTER-THE-FACT**

PLEASE CHECK TYPE OF **45CSR30 (TITLE V)** REVISION (IF ANY):
 ADMINISTRATIVE AMENDMENT **MINOR MODIFICATION**
 SIGNIFICANT MODIFICATION
 IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS **ATTACHMENT S** TO THIS APPLICATION

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

Section I. General

| | | | |
|---|--|---|--|
| 1. Name of applicant (as registered with the WV Secretary of State's Office): Columbia Gas | | 2. Federal Employer ID No. (FEIN): 310802435 | |
| 3. Name of facility (if different from above): Ceredo Compressor Station | | 4. The applicant is the: <input type="checkbox"/> OWNER <input type="checkbox"/> OPERATOR <input checked="" type="checkbox"/> BOTH | |
| 5A. Applicant's mailing address: Columbia Gas Transmission LLC 1700 MacCorkle Ave, SE Charleston, WV 25314 | | 5B. Facility's present physical address: 1664 Walkers Branch Road Huntington, WV 25704 | |
| 6. West Virginia Business Registration. Is the applicant a resident of the State of West Virginia? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO – If YES , provide a copy of the Certificate of Incorporation/Organization/Limited Partnership (one page) including any name change amendments or other Business Registration Certificate as Attachment A . – If NO , provide a copy of the Certificate of Authority/Authority of L.L.C./Registration (one page) including any name change amendments or other Business Certificate as Attachment A . | | | |
| 7. If applicant is a subsidiary corporation, please provide the name of parent corporation: Columbia Pipeline Group, Inc. | | | |
| 8. Does the applicant own, lease, have an option to buy or otherwise have control of the <i>proposed site</i> ? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO – If YES , please explain: Application is for modification of existing natural gas compressor station which Columbia Gas owns and operates. – If NO , you are not eligible for a permit for this source. | | | |
| 9. Type of plant or facility (stationary source) to be constructed, modified, relocated, administratively updated or temporarily permitted (e.g., coal preparation plant, primary crusher, etc.): Natural gas compressor station | | 10. North American Industry Classification System (NAICS) code for the facility: 486210 | |
| 11A. DAQ Plant ID No. (for existing facilities only): 099-00013 | | 11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only): R30-09900013-2016, R13-1856A | |

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

| | | | | | |
|---|---|-----------------------|---------------|---------------|----------------|
| <p>12A.</p> <ul style="list-style-type: none"> For Modifications, Administrative Updates or Temporary permits at an existing facility, please provide directions to the <i>present location</i> of the facility from the nearest state road; For Construction or Relocation permits, please provide directions to the <i>proposed new site location</i> from the nearest state road. Include a MAP as Attachment B. <p>Traveling I-64 West from Charleston, take the Kenova-Ceredo exit. Turn left onto Route 52. Make a left onto Airport Road. Turn right onto Walker's Branch Road at the Pilgrim Glass Plant, and travel 2 miles; the station is on the left.</p> | | | | | |
| 12.B. New site address (if applicable): | 12C. Nearest city or town: Huntington | 12D. County: Wayne | | | |
| 12.E. UTM Northing (KM): 4,247.7 | 12F. UTM Easting (KM): 366.1 | 12G. UTM Zone: 17 | | | |
| <p>13. Briefly describe the proposed change(s) at the facility: The permitted horsepower for G4 is being changed from 880 hp to 1,175 hp (change to model selection of permitted but not installed unit).</p> | | | | | |
| 14A. Provide the date of anticipated installation or change: 10/1/2017 | 14B. Date of anticipated Start-Up if a permit is granted: | | | | |
| <ul style="list-style-type: none"> If this is an After-The-Fact permit application, provide the date upon which the proposed change did happen: / / | 11/1/2018 | | | | |
| <p>14C. Provide a Schedule of the planned Installation of/Change to and Start-Up of each of the units proposed in this permit application as Attachment C (if more than one unit is involved).</p> | | | | | |
| <p>15. Provide maximum projected Operating Schedule of activity/activities outlined in this application: 500 hours/year</p> <table border="0"> <tr> <td>Hours Per Day</td> <td>Days Per Week</td> <td>Weeks Per Year</td> </tr> </table> | | | Hours Per Day | Days Per Week | Weeks Per Year |
| Hours Per Day | Days Per Week | Weeks Per Year | | | |
| <p>16. Is demolition or physical renovation at an existing facility involved? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p> | | | | | |
| <p>17. Risk Management Plans. If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed changes (for applicability help see www.epa.gov/ceppo), submit your Risk Management Plan (RMP) to U. S. EPA Region III.</p> | | | | | |
| <p>18. Regulatory Discussion. List all Federal and State air pollution control regulations that you believe are applicable to the proposed process (<i>if known</i>). A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance (<i>if known</i>). Provide this information as Attachment D.</p> | | | | | |

Section II. Additional attachments and supporting documents.

| |
|--|
| <p>19. Include a check payable to WVDEP – Division of Air Quality with the appropriate application fee (per 45CSR22 and 45CSR13).</p> |
| <p>20. Include a Table of Contents as the first page of your application package.</p> |
| <p>21. Provide a Plot Plan, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as Attachment E (Refer to Plot Plan Guidance).</p> <ul style="list-style-type: none"> Indicate the location of the nearest occupied structure (e.g. church, school, business, residence). |
| <p>22. Provide a Detailed Process Flow Diagram(s) showing each proposed or modified emissions unit, emission point and control device as Attachment F.</p> |
| <p>23. Provide a Process Description as Attachment G.</p> <ul style="list-style-type: none"> Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable). |
| <p>All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.</p> |
| <p>24. Provide Material Safety Data Sheets (MSDS) for all materials processed, used or produced as Attachment H.</p> <ul style="list-style-type: none"> For chemical processes, provide a MSDS for each compound emitted to the air. |

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

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

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

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

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

General Emission Unit, specify: One (1) natural gas-fired emergency generator

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

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

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

Other Collectors, specify

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

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

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

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

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

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

YES NO

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

Section III. Certification of Information

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

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

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

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

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

Certification of Truth, Accuracy, and Completeness

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

Compliance Certification

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

SIGNATURE Craig Roberts DATE: 4-28-2017
(Please use blue ink) (Please use blue ink)

35B. Printed name of signee: Craig Roberts

35C. Title:
Manager of Operations

35D. E-mail:
Craig_roberts@transcanada.com

36E. Phone: 304-453-7502

36F. FAX: 304-453-7516

36A. Printed name of contact person (if different from above): Jeff McCombs

36B. Title: Air Permitting Principal

36C. E-mail:
Jeffrey_mccombs@transcanada.com

36D. Phone: 724-223-2764

36E. FAX:

PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:

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

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

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

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

Addendum

Markup of Existing Permit

West Virginia Department of Environmental Protection
Division of Air Quality

Earl Ray Tomblin
Governor

Randy C. Huffman
Cabinet Secretary

This addendum provides markups to indicate requested changes associated with a change in emergency generator (G4) model selection plus additional minor permit corrections.

Permit to Operate



Pursuant to
Title V
of the Clean Air Act

Issued to:
Columbia Gas Transmission, LLC
Ceredo Compressor Station
R30-09900013-2016



William F. Durham
Director

Issued: December 27, 2016 • Effective: January 10, 2017
Expiration: December 27, 2021 • Renewal Application Due: June 27, 2021

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BL3, H1, H3



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

1.1 Emission Units

| Emission Unit ID | Emission Point ID | Emission Unit Description | Year Installed | Design Capacity | Control Device |
|------------------|-------------------|--|----------------|--------------------------|---------------------|
| 00501 | E01 | Reciprocating Engine/Integral Compressor; Cooper-Bessemer GMWH-8; 2-cycle, lean burn | 1954 | 2,800 HP | N/A |
| 00502 | E02 | Reciprocating Engine/Integral Compressor; Cooper-Bessemer GMWH-8; 2-cycle, lean burn | 1954 | 2,800 HP | N/A |
| 00503 | E03 | Reciprocating Engine/Integral Compressor; Cooper-Bessemer GMWH-8; 2-cycle, lean burn | 1954 | 2,800 HP | N/A |
| 00504 | E04 | Reciprocating Engine/Integral Compressor; Cooper-Bessemer GMWH-8; 2-cycle, lean burn | 1957 | 2,800 HP | N/A |
| 00505 | E05 | Reciprocating Engine/Integral Compressor; Cooper-Bessemer GMWH-8; 2-cycle, lean burn | 1958 | 2,800 HP | N/A |
| 00506 | E06 | Reciprocating Engine/Integral Compressor; Cooper-Bessemer GMWH-8; 2-cycle, lean burn | 1960 | 2,800 HP | N/A |
| 00507 | E07 | Reciprocating Engine/Integral Compressor; Cooper-Bessemer 8V-250; 2-cycle, lean burn | 1965 | 2,700 HP | N/A |
| 00510 | E10 | Solar Titan 250 Combustion Turbine | 2017 | 30,399 HP | SoloNO _x |
| 005G3 | G3 | Reciprocating Engine/Generator; Waukesha F3521GL; 4-cycle, lean burn; emergency | 1996 | 738 HP | N/A |
| 005G4 | G4 | Waukesha VGFL36GL Emergency Generator | 2017 | 880 HP | N/A |
| BLR2 | BL3 | Hurst S-4-G-150-15 Boiler | 2012 | 6.276 MMBtu/hr | N/A |
| HTR1 | H1 | Fuel Gas Heater | 1998 | 0.25 MMBtu/hr | N/A |
| HTR2 | H2 | Heater | 2017 | 1.0 MMBtu/hr | NA |

BLR3 → ~~BLR2~~ → BL3 → Hurst S-4-G-150-15 Boiler
HTR3 → ~~HTR2~~ → H3 → Fuel Gas Heater
VGFL-P48GL → ~~VGFL36GL~~ → Waukesha ~~VGFL36GL~~ Emergency Generator
1,175 HP → ~~880 HP~~ → Design Capacity
0.375 → ~~0.25~~ → Design Capacity

1.2 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 |
|---------------|------------------|
| R13-1856A | August 30, 2016 |

4.0 Source Specific Requirements [emission point ID(s): ~~BL2, H1, H2~~]

BL3, H1, H3

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. You must meet the work practice standard in 40 C.F.R 63 Subpart DDDDD Table 3 that applies to your boiler or process heater, for each boiler or process heater at your source, except as provided under 40 C.F.R. §63.7522.

| If your unit is . . . | You must meet the following. . . |
|---|---|
| 1. A new or existing boiler or process heater with a continuous oxygen trim system that maintains an optimum air to fuel ratio, or a heat input capacity of less than or equal to 5 million Btu per hour in any of the following subcategories: unit designed to burn gas 1; unit designed to burn gas 2 (other); or unit designed to burn light liquid, or a limited use boiler or process heater (H1, H2) H1, H3 | Conduct a tune-up of the boiler or process heater every 5 years as specified in §63.7540. |
| 2. A new or existing boiler or process heater without a continuous oxygen trim system and with heat input capacity of less than 10 million Btu per hour in the unit designed to burn heavy liquid or unit designed to burn solid fuel subcategories; or a new or existing boiler or process heater with heat input capacity of less than 10 million Btu per hour, but greater than 5 million Btu per hour, in any of the following subcategories: unit designed to burn gas 1; unit designed to burn gas 2 (other); or unit designed to burn light liquid (BL2) (BL3) | Conduct a tune-up of the boiler or process heater biennially as specified in §63.7540. |

- 4.1.5. 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 40 C.F.R. §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 40 C.F.R. §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 of 40 C.F.R. 63 subpart DDDDD, or the operating limits in Table 4 of 40 C.F.R. 63 subpart DDDDD.
[45CSR34; 40 C.F.R. §63.7500(e)]
- 4.1.6. For existing affected sources (as defined in 40 C.F.R. §63.7490), you must complete the initial compliance demonstrations, as specified in 40 C.F.R. §63.7510(a) through (d), no later than 180 days after the compliance date that is specified for your source in 40 C.F.R. §63.7495 and according to the applicable provisions in 40 C.F.R. §63.7(a)(2) as cited in 40 C.F.R. 63 Subpart DDDDD Table 10, except as specified in 40 C.F.R. §63.7510(j). You must complete an initial tune-up by following the procedures described in 40 C.F.R. §§63.7540(a)(10)(i) through (vi) no later than the compliance date specified in 40 C.F.R. §63.7495, except as specified in 40 C.F.R. §63.7510(j). You must complete the one-time energy assessment specified in Table 3 to this subpart no later than the compliance date specified in 40 C.F.R. §63.7495.
[45CSR34; 40 C.F.R. §63.7510(e)](H1)
- 4.1.7. For new or reconstructed affected sources (as defined in 40 C.F.R. §63.7490), you must demonstrate initial compliance with the applicable work practice standards in 40 C.F.R. 63 Subpart DDDDD Table 3 within the applicable annual, biennial, or 5-year schedule as specified in 40 C.F.R. §63.7515(d) following the initial compliance date specified in 40 C.F.R. §63.7495(a). Thereafter, you are required to complete the applicable annual, biennial, or 5-year tune-up as specified in 40 C.F.R. §63.7515(d).
[45CSR34; 40 C.F.R. §63.7510(g)](~~H2 and BL2~~) **H3 and BL3**
- 4.1.8. 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 40 C.F.R. §63.7540(a)(10), (11), or (12), respectively. Each annual tune-up specified in 40 C.F.R. §63.7540(a)(10) must be no more than 13 months after the previous tune-up. Each biennial tune-up specified in 40 C.F.R. §63.7540(a)(11) must be conducted no more than 25 months after the previous tune-up. Each 5-year tune-up specified in 40 C.F.R. §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 40 C.F.R. §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.
[45CSR34; 40 C.F.R. §63.7515(d)]
- 4.1.9. If your boiler or process heater has a heat input capacity of less than 10 million Btu per hour (except as specified in 40 C.F.R. §63.7540(a)(12)), you must conduct a biennial tune-up of the boiler or process heater as specified in 40 C.F.R. §63.7540(a)(10)(i) through (vi) to demonstrate continuous compliance.
[45CSR34; 40 C.F.R. §63.7540(a)(11)](~~BL2~~) **BL3**
- 4.1.10. If your boiler or process heater has a continuous oxygen trim system that maintains an optimum air to fuel ratio or a heat input capacity of less than or equal to 5 million Btu per hour and the unit is in the units designed to burn gas 1; you must conduct a tune-up of the boiler or process heater every 5 years as specified in paragraphs 40 C.F.R. §63.7540(a)(10)(i) through (vi) to demonstrate continuous compliance. You may delay the burner inspection specified in paragraph 40 C.F.R. §63.7540(a)(10)(i) until the next scheduled or unscheduled unit shutdown, but you must inspect each burner at least once every 72 months. If an oxygen

trim system is utilized on a unit without emission standards to reduce the tune-up frequency to once every 5 years, set the oxygen level no lower than the oxygen concentration measured during the most recent tune-up. These tune-ups shall consist of the following:

- a. As applicable, inspect the burner, and clean or replace any components of the burner as necessary (you may perform the burner inspection any time prior to the tune-up or delay the burner inspection until the next scheduled unit shutdown). Units that produce electricity for sale may delay the burner inspection until the first outage, not to exceed 36 months from the previous inspection. At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment;
- b. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;
- c. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (you may delay the inspection until the next scheduled unit shutdown). Units that produce electricity for sale may delay the inspection until the first outage, not to exceed 36 months from the previous inspection;
- d. Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_x requirement to which the unit is subject;
- e. Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer; and
- f. Maintain on-site and submit, if requested by the Administrator, a report containing the following information:
 - i. The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater;
 - ii. A description of any corrective actions taken as a part of the tune-up; and
 - iii. The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit.

[45CSR34; 40 C.F.R. §§63.7540(a)(10) & (a)(12)]

4.1.11. The Heater, identified as ~~H2~~^{H3}, shall operate according to the following requirements:

- a. The MDHI shall not exceed 1.00 mmBtu/hr and the unit shall only be fired by natural gas;
- b. As the annual emission limits given in table 4.1.11(c) are based on operating 8,760 hours/year, there is no limit on the annual hours of operation or fuel usage of the Heater.

- c. The maximum combustion exhaust emissions from the Heater shall not exceed the limits given in the following table;

Table 4.1.11.c: Heater Emission Limits

| Pollutant | PPH | TPY |
|-----------------|------|------|
| CO | 0.08 | 0.36 |
| NO _x | 0.10 | 0.43 |

- d. **45CSR2**
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.]

- e. **40 C.F.R. 63 Subpart DDDDD**
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.

[45CSR34, 40 C.F.R. §63.7500(e)]

H3

[45CSR13, R13-1856, Condition 4.1.4](H2)

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.

[45CSR§30-5.1.c.]

4.3. Testing Requirements

- 4.3.1. At such reasonable times(s) as the Secretary may designate, in accordance with the provisions of 3.3.1 of this permit, the permittee shall conduct of have conducted test(s) to determine compliance with the emission limitations established in this permit and/or applicable regulations.

[45CSR13, R13-1856, Condition 4.3.1](H2)

H3

4.4. Recordkeeping Requirements

- 4.4.1. You must keep records of each notification and report that you submitted to comply with 40 C.F.R. 63 Subpart DDDDD, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that you submitted, according to the requirements in 40 C.F.R. §63.10(b)(2)(xiv).

[45CSR34; 40 C.F.R. §63.7555(a)(1)]

§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.
- c. 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 40 C.F.R. §63.6640(f)(2). 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.

[45CSR34; 40 C.F.R. §§63.6640(f)(1) through (3)](G3 and G4)

5.1.4. The Emergency Generators (EGs), Identified as 005G3 and 005G4, shall meet the following requirements:

- a. The authorized EGs shall each be the make, model, and size as specified under Table 1.1, shall only be fired by pipeline-quality natural gas, and each shall not operate in excess of 500 hours per year (during periods of non-emergencies);
- b. The maximum emissions from the Waukesha F3521GL Emergency Generator, identified as 005G3, shall not exceed the limits given in the following table:

| Pollutant | PPH | TPY |
|-----------------|------|------|
| CO | 4.31 | 1.08 |
| NO _x | 2.44 | 0.61 |
| VOC | 1.63 | 0.41 |
| Formaldehyde | 0.31 | 0.08 |

VGf-P48GL

- c. The maximum emissions from the Waukesha ~~VGFL36GL~~ Emergency Generator, identified as 005G4, shall not exceed the limits given in the following table:

| Pollutant | PPH | TPY |
|-----------------|--------------|-------------|
| CO | 10.36 | 2.59 |
| NO _x | 5.18 | 1.30 |
| VOC | 2.59 | 0.65 |
| Formaldehyde | 0.49 | 0.12 |

- d. **40 C.F.R 60, Subpart JJJJ**

The Waukesha ~~VGFL36GL~~ identified as 005G4 shall meet all applicable requirements under 40 C.F.R. 60, Subpart JJJJ including the following:

VGf-P48GL

- (1) Owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) must comply with the emission standards in 40 C.F.R. 60, Subpart JJJJ Table 1 for their stationary ICE

West Virginia Department of Environmental Protection

Division of Air Quality

*Earl Ray Tomblin
Governor*

*Randy C. Huffman
Cabinet Secretary*

Permit to Modify



R13-1856A

This permit is issued in accordance with the West Virginia Air Pollution Control Act (West Virginia Code §§ 22-5-1 et seq.) and 45 C.S.R. 13 — Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation. The permittee identified at the facility listed below is authorized to construct the stationary sources of air pollutants identified herein in accordance with all terms and conditions of this permit.

Issued to:

Columbia Gas Transmission, LLC

Ceredo Compressor Station

099-00013

A handwritten signature in blue ink, appearing to read "William F. Durham", written over a horizontal line.

*William F. Durham
Director*

Issued: August 30, 2016

1.0 Emission Units

| Emission Unit ID | Emission Point ID | Emission Unit Description | Year Installed | Design Capacity | Control Device |
|----------------------|-------------------|--|----------------|--------------------------|---------------------|
| 00501 ⁽¹⁾ | E01 | Cooper-Bessemer GMWH-8 2SLB Engine | 1954 | 2,800 hp | None |
| 00502 ⁽¹⁾ | E02 | Cooper-Bessemer GMWH-8 2SLB Engine | 1954 | 2,800 hp | None |
| 00503 ⁽¹⁾ | E03 | Cooper-Bessemer GMWH-8 2SLB Engine | 1954 | 2,800 hp | None |
| 00504 ⁽¹⁾ | E04 | Cooper-Bessemer GMWH-8 2SLB Engine | 1957 | 2,800 hp | None |
| 00505 ⁽¹⁾ | E05 | Cooper-Bessemer GMWH-8 2SLB Engine | 1958 | 2,800 hp | None |
| 00506 ⁽¹⁾ | E06 | Cooper-Bessemer GMWH-8 2SLB Engine | 1960 | 2,800 hp | None |
| 00507 ⁽¹⁾ | E07 | Cooper-Bessemer 8V-250 2SLB Engine | 1965 | 2,700 hp | None |
| 00510 | E10 | Solar Titan 250 Combustion Turbine | 2017 | 30,399 hp (@ 32 °F) | None ⁽²⁾ |
| 005G3 | G3 | Waukesha F3521GL Emergency Generator | 1996 | 738 hp | None |
| 005G4 | G4 | Waukesha VGFL36GL Emergency Generator | 2017 | 880 hp | None |
| HTR1 | H1 | Fuel Gas Heater | 1998 | 0.25 mmBtu/hr | None |
| BLR2 | BL2 | Hurst S-4-G-150-15 Boiler | 2012 | 6.276 mmBtu/hr | None |
| HTR2 | H2 | Heater | 2017 | 1.0 mmBtu/hr | None |

(1) Units are grandfathered under 45CSR13.

(2) Turbine is equipped with a SoloNO_x dry low-NO_x combustor

HTR3 H3

BLR3 BL3

VGFL-P48GL

0.375

1,175 HP

Table 4.1.3(b): Waukesha F3521GL Emergency Generator Emission Limits

| Pollutant | PPH | TPY |
|-----------------|------|------|
| CO | 4.31 | 1.08 |
| NO _x | 2.44 | 0.61 |
| VOC | 1.63 | 0.41 |
| Formaldehyde | 0.31 | 0.08 |

VGf-P48GL

- c. The maximum emissions from the Waukesha ~~VGFL36GL~~ Emergency Generator, identified as 005G4, shall not exceed the limits given in the following table:

Table 4.1.3(c): Waukesha ~~VGFL36GL~~ Emergency Generator Emission Limits

| Pollutant | PPH | TPY |
|-----------------|-------|------|
| CO | 10.36 | 2.59 |
| NO _x | 5.18 | 1.30 |
| VOC | 2.59 | 0.65 |
| Formaldehyde | 0.49 | 0.12 |

- d. **40 CFR 60, Subpart JJJJ**
 The Waukesha ~~VGFL36GL~~, identified as 005G4, shall meet all applicable requirements under 40 CFR 60, Subpart JJJJ including the following:

VGf-P48GL

- (1) Owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) must comply with the emission standards in Table 1 to this subpart for their stationary SI ICE.
 [40 CFR §60.4233(e)]

Table 1 to Subpart JJJJ of Part 60—NO_x, CO, and VOC Emission Standards for Stationary Non-Emergency SI Engines ≥100 HP (Except Gasoline and Rich Burn LPG), Stationary SI Landfill/Digester Gas Engines, and Stationary Emergency Engines >25 HP

| Engine type and fuel | Maximum engine power | Manufacture date | Emission standards ^a | | | | | |
|----------------------|----------------------|------------------|---------------------------------|-----|--------------------|-----------------------------|-----|--------------------|
| | | | g/HP-hr | | | ppmvd at 15% O ₂ | | |
| | | | NO _x | CO | VOC ^(d) | NO _x | CO | VOC ^(d) |
| Emergency | HP≥130 | 1/1/2009 | 2.0 | 4.0 | 1.0 | 160 | 540 | 86 |

- (a) Owners and operators of stationary non-certified SI engines may choose to comply with the emission standards in units of either g/HP-hr or ppmvd at 15 percent O₂.
 (d) For purposes of this subpart, when calculating emissions of volatile organic compounds, emissions of formaldehyde should not be included.
 [40 CFR60, Subpart JJJJ, Table 1]

- (2) The emergency generator shall meet the definition of "Emergency stationary internal combustion engine" as given under §60.4248.
 [40 CFR §60.4248]

4.1.4. The Heater, identified as ~~H2~~^{H3}, shall operate according to the following requirements:

- a. The MDHI shall not exceed 1.00 mmBtu/hr and the unit shall only be fired by natural gas;
- b. As the annual emission limits given in Table 4.1.4(c) are based on operating 8,760 hours/year, there is no limit on the annual hours of operation or fuel usage of the Heater;
- c. The maximum combustion exhaust emissions from the Heater shall not exceed the limits given in the following table;

Table 4.1.4(c): Heater Emission Limits

| Pollutant | PPH | TPY |
|-----------------|------|------|
| CO | 0.08 | 0.36 |
| NO _x | 0.10 | 0.43 |

- d. **45CSR2**
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.
[40CSR§2-3.1]
- e. **40 CFR 63, Subpart DDDDD**
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)]

4.1.5. **40 CFR 60, Subpart OOOOa**
For each affected facility under §60.5365a(j), you must reduce GHG (in the form of a limitation on emissions of methane) and VOC emissions by complying with the requirements of paragraphs (a) through (j) of §60.5397a. These requirements are independent of the closed vent system and cover requirements in §60.5411a.
[40 CFR §63.5397a]

4.1.6. **Operation and Maintenance of Air Pollution Control Equipment.** The permittee shall, to the extent practicable, install, maintain, and operate all pollution control equipment listed in Section 1.0 and associated monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in this permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary.
[45CSR§13-5.11.]

Attachment A

Business Certificate

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

ISSUED TO:
**COLUMBIA GAS TRANSMISSION LLC
5151 SAN FELIPE ST 2500
HOUSTON, TX 77056-3639**

BUSINESS REGISTRATION ACCOUNT NUMBER: **1025-1555**

This certificate is issued on: **07/1/2011**

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

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

This certificate is not transferrable and must be displayed at the location for which issued.

This certificate shall be permanent until cessation of the business for which the certificate of registration was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.

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

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

Attachment B

Map



Traveling I-64 West from Charleston, take the Kenova-Ceredo exit. Turn left onto Route 52. Make a left onto Airport Road. Turn right onto Walker's Branch Road at the Pilgrim Glass Plant and travel 2 miles; station is on the left.

Attachment B

Date: May 2017

Facility Map
Ceredo Compressor Station

Attachment C

Installation and Start Up Schedule

Installation and Start Up Schedule

| Emission Point | Change | Effective date of change | Start Up Date |
|-----------------------------------|----------------------|--------------------------|---------------|
| G4 – Waukesha Emergency Generator | Horsepower and Model | October 2017 | November 2018 |

Attachment D

Regulatory Discussion

1.0 INTRODUCTION

1.1 Summary and Conclusions

Columbia Gas Transmission, LLC (Columbia), which is now part of TransCanada Corporation, operates the Ceredo Compressor Station (the “Station”) under Title V Permit No. R30–09900013-2016. Through this application, Columbia is proposing to change the model and horsepower of a previously permitted but not yet installed emergency generator. This equipment change (the “Project”) is scheduled to occur in October 2017 along with the installation of the recently-permitted Solar Titan 250 combustion turbine. This application package contains Columbia’s application to:

- Correct the model and horsepower (hp) of the previously-permitted Waukesha emergency generator (G4) from 880-hp Model VGFL36GL to 1,175-hp Model WVG-P48GL; and
- Modify the Station’s Title V permit to reflect this change.

Very little of the permit text needs to be changed. The model number and horsepower need to be revised in the emission unit table in Section 1.1 and in paragraphs c and d of Section 5.1.4. Federal and state requirements are identical for both emergency generator models.

The station is in compliance with all requirements in the existing permit and will continue to comply with permit requirements after the proposed modifications.

An analysis of federal and state regulations was performed to identify applicable air quality regulations. Federal and state regulations potentially applying to the proposed Project are summarized in Section 3.

1.2 Report Organization

The existing Station and proposed Project are described in Section 2.0. An analysis of applicable regulations and proposed compliance procedures is presented in Section 3.0. Completed permit application forms, including emissions estimating basis, emission calculations, and supporting data, are contained within this application package.

2.0 PROJECT DESCRIPTION

2.1 Description of Existing and Permitted Facility Equipment

Columbia's Ceredo Compressor Station is located in Wayne County, West Virginia, near the town of Huntington. The Station receives natural gas via pipeline from an upstream compressor station, compresses it using natural gas-fired turbines and reciprocating internal combustion engines (RICE), and transmits it via pipeline to a downstream station. The Station is covered by Standard Industrial Classification (SIC) 4922 and operates under Title V Permit No. R30-09900013-2016. The Station has the potential to operate seven (7) days per week, twenty-four (24) hours per day. An R13 preconstruction permit was issued on August 30, 2016 for the addition of new sources, including one combustion turbine, one emergency generator, and one process heater, as well as for the retirement of two combustion turbines. Upon completion, the facility compressor engines will include seven (7) RICE units and one (1) natural gas-fired turbine, including:

- Six (6) 2,800-hp natural gas-fired, Cooper-Bessemer GMWH-8, two-cycle, lean-burn RICE with installation dates in 1954 (3 units), 1957, 1958, and 1960;
- One (1) 2,700-hp natural gas-fired, Cooper-Bessemer 8V-250, two-cycle, lean-burn RICE with installation date in 1965; and
- One (1) 30,399-hp natural gas-fired, Solar Titan 250 combustion turbine with installation date in 2017.

The approved project to install the Titan 250 combustion turbine includes the removal of two General Electric compressor engines (E08 and E09).

Upon completion of the approved project, auxiliary equipment at the Station will include two natural gas-fired Waukesha emergency generators, two natural gas-fired process heaters, and one natural gas-fired boiler. The 738-hp Waukesha Emergency Generator (G3) was installed in 1996 and will remain unchanged. Emergency Generator G4 is a permitted but not yet installed 880-hp Waukesha unit. Auxiliary equipment also includes numerous storage tanks for various low vapor pressure liquids; no changes to auxiliary equipment other than G4 are proposed herein.

A plot plan of the modified Station is provided as Attachment E.

Based on the current annual potential to emit (PTE) oxides of nitrogen (NO_x) and carbon monoxide (CO) as presented in Table N-1 of Attachment N, the existing Station is classified as a major source under New Source Review (NSR) regulations. Also provided in Table N-1 are the current potential emissions of volatile organic compounds (VOC), greenhouse gases as carbon dioxide equivalents (CO₂e), sulfur dioxide (SO₂), respirable particulate matter with an aerodynamic diameter of less than or equal to 10 microns (PM₁₀), respirable particulate matter with an aerodynamic diameter of less than or equal to 2.5 microns (PM_{2.5}), formaldehyde [CH₂O, the primary hazardous air pollutant (HAP)], and total HAPs. The existing Station is a major source of HAPs.

Wayne County is classified as attainment or unclassifiable for all National Ambient Air Quality Standards. It is a maintenance area for the 1997 8-hour ozone and annual PM_{2.5} standards. There are no Class I areas located within 100 kilometers of the Station.

2.2 Proposed Modification

Columbia is proposing to correct the horsepower of the previously permitted Waukesha emergency generator (005G4) with Emission Point ID (G4) from 880 hp to 1,175 hp. Emissions from the revised emergency generator are provided in Attachment N and are based on AP-42, NSPS Subpart JJJJ, and vendor data emission factors.

For purposes of the application forms, the recently-approved equipment is considered existing even if not yet installed such that herein the focus of the application forms is on the change to Emergency Generator G4. However, because the Solar Titan 250 combustion turbine, G4, and Process Heater H2 (now H3) were recently permitted as one project, the revised G4 emissions are included in PTE calculations as if the now-proposed 1,175-hp model were in the original application. In this manner the PSD non-applicability determination for the project properly includes the revised (and greater) PTE for G4.

No other changes in station equipment are currently being proposed. The target date for starting construction is October 2017 (no change). Initial commercial operation is scheduled for November 2018 (no change).

2.3 Contemporaneous Equipment Changes

With this Project, Columbia will correct the horsepower of the existing emergency generator (G4). As mentioned above, the equipment associated with the recently-approved modification as well as the emergency generator change are all being treated as one project for the PSD applicability analysis. The only contemporaneous equipment changes are those associated with this Project, as presented in the PTE calculations in Attachment N.

3.0 REGULATORY ANALYSIS AND COMPLIANCE METHODS

This section reviews the applicability of state and federal regulations potentially affecting the new emission units and proposed compliance procedures. Supporting calculations are included in Attachment N.

3.1 Prevention of Significant Deterioration

West Virginia implements the Prevention of Significant Deterioration (PSD) permitting program pursuant to the USEPA-approved West Virginia State Implementation Plan and in accordance with Regulation 14 (a.k.a., Series 14) of Title 45 of the Code of State Rules (45 CSR 14). Regulation 14 closely mirrors federal PSD regulations at 40 CFR §52.21. The Station is a major source under PSD rules per §45-14-2.43. For a major stationary source such as the existing Station, PSD requirements apply to projects that have the potential to increase annual emissions beyond defined significance levels. This potential is evaluated as a two-step process. First, any emissions increase associated with the project itself is evaluated. If the project will result in a significant emissions increase (as defined at §45-14-2.74 and -2.75), then the net emissions increase, considering all contemporaneous equipment changes must be evaluated based on the definition of net emissions increase at §45-14-2.46.

Emissions calculations for the PSD applicability analysis are provided in Attachment N, and potential annual emissions associated with the Project are summarized in Table N-1. Project-related emissions of all PSD-regulated pollutants are below the PSD significant emission increase thresholds; therefore, PSD is not applicable to emissions increases at Step 1 of the PSD applicability procedure.

3.2 New Source Performance Standards

New Source Performance Standards (NSPS) apply to new, modified or reconstructed stationary sources meeting criteria established in 40 CFR Part 60. This section describes requirements that apply to the proposed units.

Subpart JJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines) applies to stationary spark ignition engine manufacturers and owners/operators. For natural gas-fired emergency engines manufactured after January 1, 2009, the applicable emission limits for engines greater than 130 hp rated capacity are specified in Table 1¹ of Subpart JJJ as follows.

- For NO_x, the limit is 2.0 g/hp-hr or 160 ppmvd at 15 percent O₂;
- For CO, the limit is 4.0 g/hp-hr or 540 ppmvd at 15 percent O₂; and
- For VOC, the limit is 1.0 g/hp-hr or 86 ppmvd at 15 percent O₂.

The proposed emergency generator will be subject to the Subpart JJJ emission limits for engines greater than 130 hp. In accordance with 40 CFR §60.4243(a)(2)(iii), if this engine is not certified, an initial performance test is required within one year of startup. Subsequent performance testing is required every 8,760 hours of operation or every three years, whichever comes first. Note that Waukesha does not currently certify this engine. Based on manufacturer data, the engine will comply with these emission limits. The now-proposed emergency generator (G4) model will be subject to the same Subpart JJJ requirements as the recently approved model; therefore, the permit text associated with Subpart JJJ does not need revision.

¹ Compliance with the emission limits specified in Table 1 of Subpart JJJ is required by 40 CFR §60.4233(e).

3.3 National Emission Standards for Hazardous Air Pollutants

National Emission Standards for Hazardous Air Pollutants (NESHAP) are promulgated under 40 CFR Part 63 for specific processes and HAP emissions. The Station is classified as a major source of HAP emissions and will remain so after the Project.²

The proposed emergency generator is subject to the NESHAP for stationary RICE. The proposed engine is a 1,175-hp emergency generator which will not, and is not contractually obligated to, be available for more than 15 hours per calendar year for emergency demand response programs and voltage deviation as described in 40 CFR 63.6640(f)(2)(ii) and (iii). As a new emergency stationary RICE with a site rating greater than 500 brake horsepower at a major source of HAPs which does not operate for these purposes, the proposed engine does not have to meet the requirements of Subpart ZZZZ and Subpart A except for the initial notification requirements in 40 CFR 63.6645(f). This preconstruction permit application will satisfy the initial notification requirement.³

3.4 Pre-construction Permitting under West Virginia Air Regulation 13 (45 CSR 13)

Because neither the potential increase in emissions nor the net emissions increase from the Project exceeds PSD significance levels, the Project is not classified as major for PSD purposes and is subject to the permitting requirements in 45 CSR 13. This document contains the information required by this permitting program that is specific to the change of the emergency generator (G4) model.

3.5 Requirements for Operating Permits (45 CSR 30)

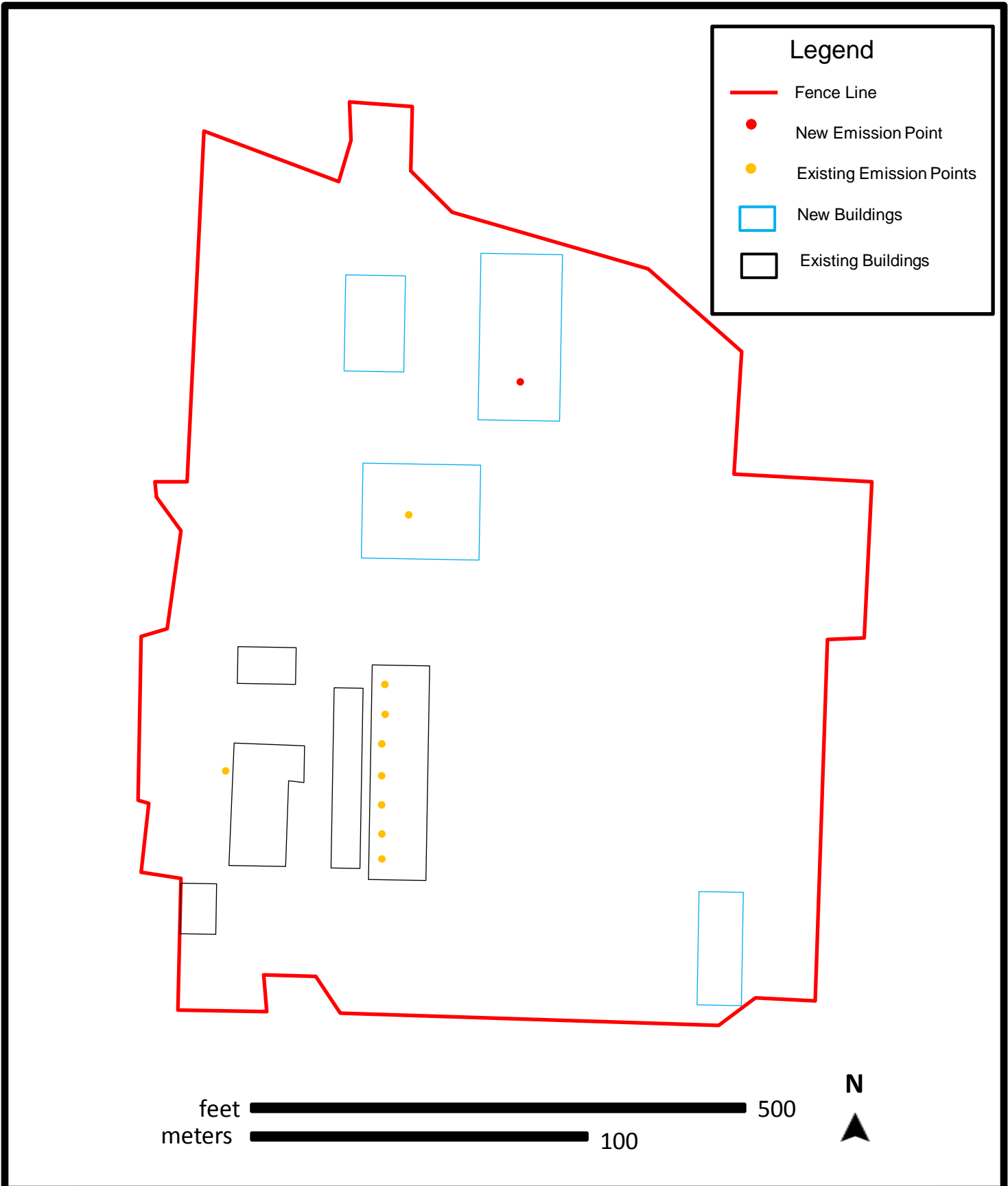
After this Project, the Ceredo Compressor Station will continue to be classified as a major source under Title V regulations. A significant modification application to revise the Station's Title V permit is being submitted to WVDAQ as part of the application package.

² Per 40 CFR §63.2, a major source of HAPs is defined as a stationary source or group of sources with the potential to emit 10 tpy or more of any HAP or 25 tpy or more of any combination of HAPs.

³ Per 40 CFR §63.9(b)(1)(iii)

Attachment E

Plot Plan



Legend

- Fence Line
- New Emission Point
- Existing Emission Points
- New Buildings
- Existing Buildings

feet 500
 meters 100



Attachment E

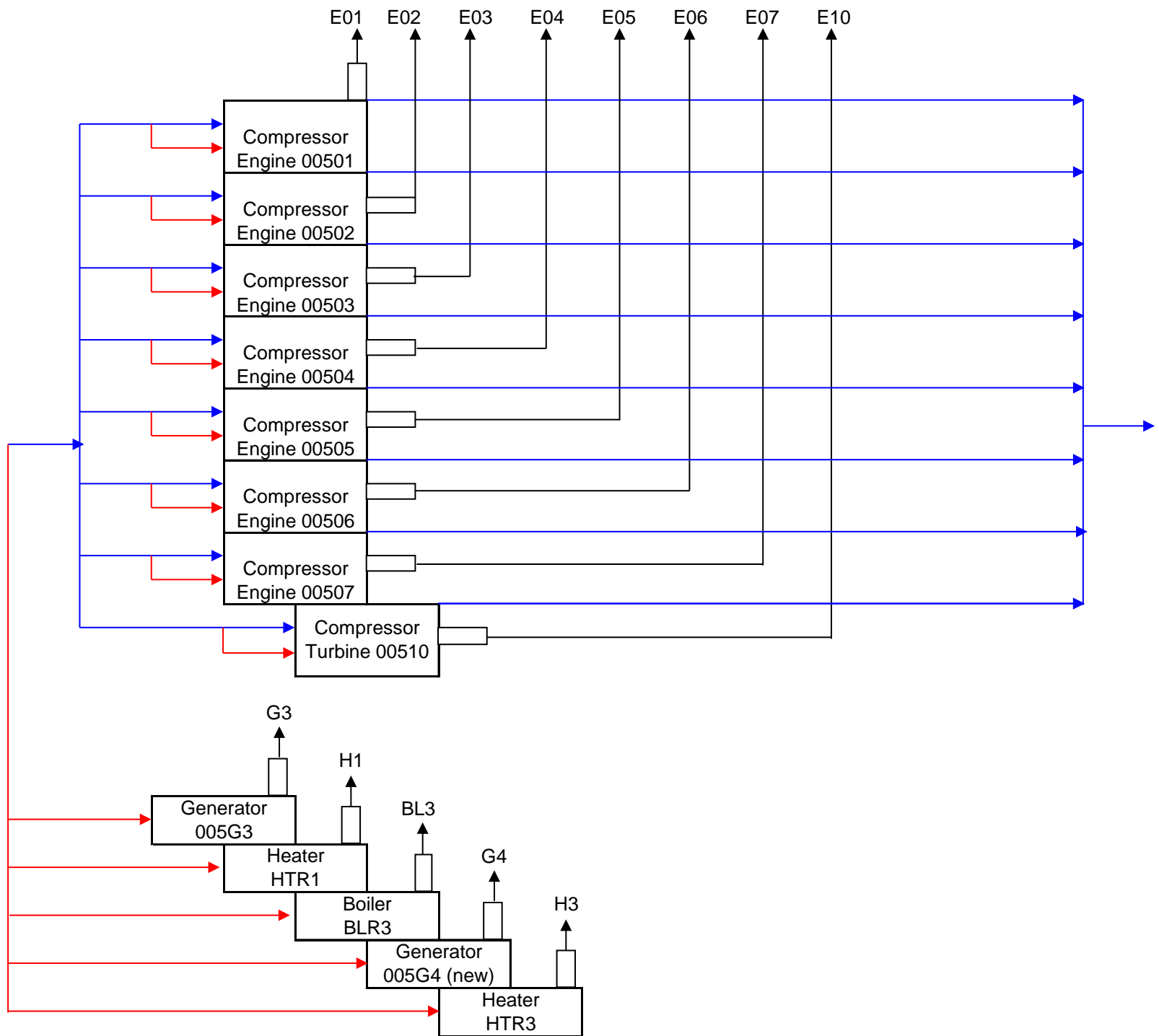
Date: March 2017

Plot Plan
 Ceredo Compressor Station

Attachment F

Detailed Process Flow Diagram

ATTACHMENT F CEREDO COMPRESSOR STATION PROCESS FLOW DIAGRAM



- Transmission Gas Stream
- Fuel Gas
- Emission Stream



Attachment G

Process Description

Process Description

Columbia Gas Transmission, LLC's Ceredo Compressor Station, located in Wayne County, West Virginia currently operates under Title V Permit No. R30-09900013-2016. Natural gas is received from upstream compressor stations via pipelines and compressed using one (1) Solar turbine-driven compressor and seven (7) natural gas-fired reciprocating internal combustion engines for transmission to a downstream station. Auxiliary equipment permitted at the station includes natural gas-fired emergency generators, process heaters, a boiler, and numerous storage tanks for lubricating oils, glycol, and pipeline liquids.

The proposed modification will change the model and horsepower of the previously-permitted but not yet installed emergency generator (G4), from 880 hp to 1,175 hp. Emissions for the facility have been revised, taking into account the changes in emissions from this emergency generator. The facility will remain a major source under Title V regulations.

Attachment H

SDSs

No new processes or chemicals will be added to the compressor station as a result of this project. Therefore, the Department can continue to rely on the SDS package submitted with the prior application.

Attachment I

Emission Units Table

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

| Emission Unit ID ¹ | Emission Point ID ² | Emission Unit Description | Year Installed/ Modified | Design Capacity | Type ³ and Date of Change | Control Device ⁴ |
|-------------------------------|--------------------------------|--|-----------------------------|-------------------|---|-----------------------------|
| 00501 | E01 | Cooper-Bessemer GMWH-8 Compressor Engine | 1954 | 2,800 HP | Existing, remains in service | - |
| 00502 | E02 | Cooper-Bessemer GMWH-8 Compressor Engine | 1954 | 2,800 HP | Existing, remains in service | - |
| 00503 | E03 | Cooper-Bessemer GMWH-8 Compressor Engine | 1954 | 2,800 HP | Existing, remains in service | - |
| 00504 | E04 | Cooper-Bessemer GMWH-8 Compressor Engine | 1957 | 2,800 HP | Existing, remains in service | - |
| 00505 | E05 | Cooper-Bessemer GMWH-8 Compressor Engine | 1958 | 2,800 HP | Existing, remains in service | - |
| 00506 | E06 | Cooper-Bessemer GMWH-8 Compressor Engine | 1960 | 2,800 HP | Existing, remains in service | - |
| 00507 | E07 | Cooper-Bessemer 8V-250 Compressor Engine | 1965 | 2,700 HP | Existing, remains in service | - |
| 00510 | E10 | Solar Titan 250 Combustion Turbine | 2017 | 30,399 HP @ 32 °F | Existing, remains in service | - |
| 005G3 | G3 | Waukesha F3521GL Emergency Generator | 1996 | 738 HP | Existing, remains in service | - |
| 005G4 | G4 | Waukesha VGF-P48GL Emergency Generator | 2017 | 1,175 HP | Modification – Correction of horsepower, 2017 | |
| HTR1 | H1 | Total Energy Resources, Inc. Fuel Gas Heater | 1998 | 0.375 MMBtu/hr | Existing, remains in service | - |
| HTR3 | H3 | Total Energy Resources, Inc. Process Heater | 2017 | 1.00 MMBtu/hr | Existing, remains in service | |
| BLR3 | BL3 | Hurst S-4-G-150-15 Heating Boiler | 2012 | 6.276 MMBtu/hr | Existing, remains in service | - |

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

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

³ New, modification, removal

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

Attachment J

Emission Points Data Summary Sheet

**Attachment J
EMISSION POINTS DATA SUMMARY SHEET**

Table 1: Emissions Data

| Emission Point ID No. (Must match Emission Units Table & Plot Plan) | Emission Point Type ¹ | Emission Unit Vented Through This Point (Must match Emission Units Table & Plot Plan) | | Air Pollution Control Device (Must match Emission Units Table & Plot Plan) | | Vent Time for Emission Unit (chemical processes only) | | All Regulated Pollutants - Chemical Name/CAS ³ (Speciate VOCs & HAPS) | Maximum Potential Uncontrolled Emissions ⁴ | | Maximum Potential Controlled Emissions ⁵ | | Emission Form or Phase (At exit conditions, Solid, Liquid or Gas/Vapor) | Est. Method Used ⁶ | Emission Concentration ⁷ (ppmv or mg/m ³) |
|--|----------------------------------|--|--------|---|-------------|--|-------------|---|---|--------|---|--------|--|-------------------------------|---|
| | | ID No. | Source | ID No. | Device Type | Short Term ² | Max (hr/yr) | | lb/hr | ton/yr | lb/hr | ton/yr | | | |
| E01 | Upward vertical stack | 00501 | | | | | | NO _x | 247.02 | 491.79 | | | Gas | EE | |
| | | | | | | | | CO | 17.65 | 35.08 | | | Gas | EE | |
| | | | | | | | | VOC | 3.10 | 12.36 | | | Gas | EE | |
| | | | | | | | | SO ₂ | 1.48 | 0.07 | | | Gas | EE | |
| | | | | | | | | PM | 1.25 | 4.98 | | | Solid | EE | |
| | | | | | | | | CH ₂ O | 1.43 | 5.69 | | | Gas | EE | |
| E02 | Upward vertical stack | 00502 | | | | | | NO _x | 247.02 | 491.79 | | | Gas | EE | |
| | | | | | | | | CO | 17.65 | 35.08 | | | Gas | EE | |
| | | | | | | | | VOC | 3.10 | 12.36 | | | Gas | EE | |
| | | | | | | | | SO ₂ | 1.48 | 0.07 | | | Gas | EE | |
| | | | | | | | | PM | 1.25 | 4.98 | | | Solid | EE | |
| | | | | | | | | CH ₂ O | 1.43 | 5.69 | | | Gas | EE | |
| E03 | Upward vertical stack | 00503 | | | | | | NO _x | 247.02 | 491.79 | | | Gas | EE | |
| | | | | | | | | CO | 17.65 | 35.08 | | | Gas | EE | |
| | | | | | | | | VOC | 3.10 | 12.36 | | | Gas | EE | |
| | | | | | | | | SO ₂ | 1.48 | 0.07 | | | Gas | EE | |
| | | | | | | | | PM | 1.25 | 4.98 | | | Solid | EE | |
| | | | | | | | | CH ₂ O | 1.43 | 5.69 | | | Gas | EE | |
| E04 | Upward vertical stack | 00504 | | | | | | NO _x | 247.02 | 491.79 | | | Gas | EE | |
| | | | | | | | | CO | 17.65 | 35.08 | | | Gas | EE | |
| | | | | | | | | VOC | 3.10 | 12.36 | | | Gas | EE | |
| | | | | | | | | SO ₂ | 1.48 | 0.07 | | | Gas | EE | |
| | | | | | | | | PM | 1.25 | 4.98 | | | Solid | EE | |
| | | | | | | | | CH ₂ O | 1.43 | 5.69 | | | Gas | EE | |
| E05 | Upward vertical stack | 00505 | | | | | | NO _x | 247.02 | 491.79 | | | Gas | EE | |
| | | | | | | | | CO | 17.65 | 35.08 | | | Gas | EE | |
| | | | | | | | | VOC | 3.10 | 12.36 | | | Gas | EE | |
| | | | | | | | | SO ₂ | 1.48 | 0.07 | | | Gas | EE | |
| | | | | | | | | PM | 1.25 | 4.98 | | | Solid | EE | |
| | | | | | | | | CH ₂ O | 1.43 | 5.69 | | | Gas | EE | |

**Attachment J
EMISSION POINTS DATA SUMMARY SHEET**

Table 1: Emissions Data

| Emission Point ID No. <i>(Must match Emission Units Table & Plot Plan)</i> | Emission Point Type ¹ | Emission Unit Vented Through This Point <i>(Must match Emission Units Table & Plot Plan)</i> | | Air Pollution Control Device <i>(Must match Emission Units Table & Plot Plan)</i> | | Vent Time for Emission Unit <i>(chemical processes only)</i> | | All Regulated Pollutants - Chemical Name/CAS ³ <i>(Speciate VOCs & HAPS)</i> | Maximum Potential Uncontrolled Emissions ⁴ | | Maximum Potential Controlled Emissions ⁵ | | Emission Form or Phase <i>(At exit conditions, Solid, Liquid or Gas/Vapor)</i> | Est. Method Used ⁶ | Emission Concentration ⁷ <i>(ppmv or mg/m³)</i> |
|---|----------------------------------|---|--------|--|-------------|---|-------------|--|---|--------|---|--------|---|-------------------------------|--|
| | | ID No. | Source | ID No. | Device Type | Short Term ² | Max (hr/yr) | | lb/hr | ton/yr | lb/hr | ton/yr | | | |
| E06 | Upward vertical stack | 00506 | | | | | | NO _x | 247.02 | 491.79 | | | Gas | EE | |
| | | | | | | | | CO | 17.65 | 35.08 | | | Gas | EE | |
| | | | | | | | | VOC | 3.10 | 12.36 | | | Gas | EE | |
| | | | | | | | | SO ₂ | 1.48 | 0.07 | | | Gas | EE | |
| | | | | | | | | PM | 1.25 | 4.98 | | | Solid | EE | |
| | | | | | | | | CH ₂ O | 1.43 | 5.69 | | | Gas | EE | |
| E07 | Upward vertical stack | 00507 | | | | | | NO _x | 297.00 | 591.30 | | | Gas | EE | |
| | | | | | | | | CO | 19.63 | 39.03 | | | Gas | EE | |
| | | | | | | | | VOC | 2.78 | 11.07 | | | Gas | EE | |
| | | | | | | | | SO ₂ | 1.32 | 0.07 | | | Gas | EE | |
| | | | | | | | | PM | 1.12 | 4.46 | | | Solid | EE | |
| | | | | | | | | CH ₂ O | 1.28 | 5.09 | | | Gas | EE | |
| E10 | Upward vertical stack | 00510 | | | | | | NO _x | 7.93 | 35.67 | | | Gas | EE | |
| | | | | | | | | CO | 12.06 | 54.65 | | | Gas | EE | |
| | | | | | | | | VOC | 1.38 | 6.03 | | | Gas | EE | |
| | | | | | | | | SO ₂ | 12.71 | 0.70 | | | Gas | EE | |
| | | | | | | | | PM | 1.47 | 6.44 | | | Solid | EE | |
| | | | | | | | | CH ₂ O | 0.16 | 0.69 | | | Gas | EE | |

**Attachment J
EMISSION POINTS DATA SUMMARY SHEET**

Table 1: Emissions Data

| Emission Point ID No. (Must match Emission Units Table & Plot Plan) | Emission Point Type ¹ | Emission Unit Vented Through This Point (Must match Emission Units Table & Plot Plan) | | Air Pollution Control Device (Must match Emission Units Table & Plot Plan) | | Vent Time for Emission Unit (chemical processes only) | | All Regulated Pollutants - Chemical Name/CAS ³ (Speciate VOCs & HAPS) | Maximum Potential Uncontrolled Emissions ⁴ | | Maximum Potential Controlled Emissions ⁵ | | Emission Form or Phase (At exit conditions, Solid, Liquid or Gas/Vapor) | Est. Method Used ⁶ | Emission Concentration ⁷ (ppmv or mg/m ³) |
|--|----------------------------------|--|--------|---|-------------|--|-------------|---|---|--------|---|--------|--|-------------------------------|---|
| | | ID No. | Source | ID No. | Device Type | Short Term ² | Max (hr/yr) | | lb/hr | ton/yr | lb/hr | ton/yr | | | |
| G3 | Upward vertical stack | 005G3 | | | | | | NO _x | 2.44 | 0.61 | | | Gas | EE | |
| | | | | | | | | CO | 4.31 | 1.08 | | | Gas | EE | |
| | | | | | | | | VOC | 1.63 | 0.41 | | | Gas | EE | |
| | | | | | | | | SO ₂ | 0.34 | 0.001 | | | Gas | EE | |
| | | | | | | | | PM | 0.06 | 0.01 | | | Solid | EE | |
| | | | | | | | | CH ₂ O | 0.31 | 0.08 | | | Gas | EE | |
| G4 | Upward vertical stack | 005G4 | | | | | | NO _x | 5.18 | 1.30 | | | Gas | EE | |
| | | | | | | | | CO | 10.36 | 2.59 | | | Gas | EE | |
| | | | | | | | | VOC | 2.59 | 0.65 | | | Gas | EE | |
| | | | | | | | | SO ₂ | 0.52 | 0.002 | | | Gas | EE | |
| | | | | | | | | PM | 0.09 | 0.02 | | | Solid | EE | |
| | | | | | | | | CH ₂ O | 0.49 | 0.12 | | | Gas | EE | |
| H1 | | HTR1 | | | | | | NO _x | 0.04 | 0.16 | | | Gas | EE | |
| | | | | | | | | CO | 0.03 | 0.14 | | | Gas | EE | |
| | | | | | | | | VOC | 0.002 | 0.01 | | | Gas | EE | |
| | | | | | | | | SO ₂ | 0.02 | 0.001 | | | Gas | EE | |
| | | | | | | | | PM | 0.003 | 0.01 | | | Solid | EE | |
| | | | | | | | | CH ₂ O | 0.00003 | 0.0001 | | | Gas | EE | |
| H3 | | HTR3 | | | | | | NO _x | 0.10 | 0.43 | | | Gas | EE | |
| | | | | | | | | CO | 0.08 | 0.36 | | | Gas | EE | |
| | | | | | | | | VOC | 0.005 | 0.02 | | | Gas | EE | |
| | | | | | | | | SO ₂ | 0.06 | 0.003 | | | Gas | EE | |
| | | | | | | | | PM | 0.007 | 0.03 | | | Solid | EE | |
| | | | | | | | | CH ₂ O | 0.00007 | 0.0003 | | | Gas | EE | |
| BL3 | | BLR3 | | | | | | NO _x | 0.62 | 2.69 | | | Gas | EE | |
| | | | | | | | | CO | 0.52 | 2.26 | | | Gas | EE | |
| | | | | | | | | VOC | 0.03 | 0.15 | | | Gas | EE | |
| | | | | | | | | SO ₂ | 0.36 | 0.02 | | | Gas | EE | |
| | | | | | | | | PM | 0.05 | 0.20 | | | Solid | EE | |
| | | | | | | | | CH ₂ O | 0.0005 | 0.002 | | | Gas | EE | |

Attachment J

EMISSION POINTS DATA SUMMARY SHEET

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

- ¹ Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.
- ² Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (ie., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).
- ³ List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. **LIST** Acids, CO, CS₂, VOCs, H₂S, Inorganics, Lead, Organics, O₃, NO, NO₂, SO₂, SO₃, all applicable Greenhouse Gases (including CO₂ and methane), etc. **DO NOT LIST** H₂, H₂O, N₂, O₂, and Noble Gases.
- ⁴ Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- ⁵ Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- ⁶ Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).
- ⁷ Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m³) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO₂, use units of ppmv (See 45CSR10).

**Attachment J
EMISSION POINTS DATA SUMMARY SHEET**

| Table 2: Release Parameter Data | | | | | | | | |
|---|----------------------|------------------|---|-------------------|--|--|----------------------|---------|
| Emission Point ID No. <i>(Must match Emission Units Table)</i> | Inner Diameter (ft.) | Exit Gas | | | Emission Point Elevation (ft) | | UTM Coordinates (km) | |
| | | Temp. (°F) | Volumetric Flow ¹ (acfm) <i>at operating conditions</i> | Velocity (fps) | Ground Level <i>(Height above mean sea level)</i> | Stack Height ² <i>(Release height of emissions above ground level)</i> | Northing | Easting |
| E01 | 2.58 | 600 | 22,041 | 70.3 | 577 | 57.83 | 4,247.8 | 366.1 |
| E02 | 2.58 | 600 | 22,041 | 70.3 | 577 | 57.83 | 4,247.8 | 366.1 |
| E03 | 2.58 | 600 | 22,041 | 70.3 | 577 | 57.83 | 4,247.8 | 366.1 |
| E04 | 2.58 | 600 | 22,041 | 70.3 | 577 | 57.83 | 4,247.8 | 366.1 |
| E05 | 2.58 | 600 | 22,041 | 70.3 | 577 | 57.83 | 4,247.8 | 366.1 |
| E06 | 2.58 | 600 | 22,041 | 70.3 | 577 | 57.83 | 4,247.8 | 366.1 |
| E07 | 2.58 | 600 | 19,735 | 63.0 | 577 | 57.83 | 4,247.8 | 366.1 |
| E10 | 10.7 ³ | 830 ⁴ | 326,898 ⁴ | 60.4 ⁴ | 575 | 55.0 | 4,247.8 | 366.1 |
| G3 | 1.0 | 900 | 4,010 | 85.1 | 577 | 23.0 | 4,247.8 | 366.1 |
| G4 | | 839 | 6,171 | | 577 | | 4,247.8 | 366.1 |
| H1 | 0.67 | | | | 577 | 15.0 | 4,247.8 | 366.1 |
| H3 | | | | | 577 | | 4,247.8 | 366.1 |
| BL3 | | | | | 577 | | 4,247.8 | 366.1 |

¹ Give at operating conditions. Include inerts.

² Release height of emissions above ground level.

³ Effective diameter based on 114" square duct.

⁴ Based on operation at 32 °F.

Attachment K

Fugitive Emissions Data Summary Sheet

Attachment K

FUGITIVE EMISSIONS DATA SUMMARY SHEET

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

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

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

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

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

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

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

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

Attachment L

Emissions Unit Data Sheets

Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL

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

Identification Number (as assigned on *Equipment List Form*): 005G4

| |
|--|
| <p>1. Name or type and model of proposed affected source:</p> <p>1,175-hp Waukesha Emergency Generator. Emission point ID G4.</p> |
| <p>2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.</p> |
| <p>3. Name(s) and maximum amount of proposed process material(s) charged per hour:</p> <p>N/A</p> |
| <p>4. Name(s) and maximum amount of proposed material(s) produced per hour:</p> <p>N/A</p> |
| <p>5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:</p> <p>Natural gas combustion products.</p> |

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

| | | | | | |
|---|-----------|------------|-----------|-----------|------------|
| <p>6. Combustion Data (if applicable):</p> <p>(a) Type and amount in appropriate units of fuel(s) to be burned:</p> <p>Natural gas at a designed fuel usage of 8,908 scf/hr</p> | | | | | |
| <p>(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:</p> <p>Methane 86.9 All values in volume percent. Ethane 11.7203 Propane 0.3553 I-Butane 0.0215 N-Butane 0.0334 I-Pentane 0.0098 N-Pentane 0.0071 Hexane 0.0147 Carbon Dioxide 0.4256 Nitrogen 0.5123 ash - nil</p> | | | | | |
| <p>(c) Theoretical combustion air requirement (ACF/unit of fuel):</p> <p style="text-align: center;">@ °F and psia.</p> | | | | | |
| <p>(d) Percent excess air:</p> | | | | | |
| <p>(e) Type and BTU/hr of burners and all other firing equipment planned to be used:</p> <p>9.09 MMBtu/hr</p> | | | | | |
| <p>(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:</p> <p>N/A</p> | | | | | |
| <p>(g) Proposed maximum design heat input: 9.09 × 10⁶ BTU/hr.</p> | | | | | |
| <p>7. Projected operating schedule: 500 Hours/year</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; padding: 5px;">Hours/Day</td> <td style="width: 33%; padding: 5px;">Days/Week</td> <td style="width: 33%; padding: 5px;">Weeks/Year</td> </tr> </table> | | | Hours/Day | Days/Week | Weeks/Year |
| Hours/Day | Days/Week | Weeks/Year | | | |

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

| @ | °F and | 14.7 | psia |
|---------------------|--------|-------|------------|
| a. NO _x | 5.18 | lb/hr | grains/ACF |
| b. SO ₂ | 0.52 | lb/hr | grains/ACF |
| c. CO | 10.36 | lb/hr | grains/ACF |
| d. PM ₁₀ | 0.09 | lb/hr | grains/ACF |
| e. Hydrocarbons | | lb/hr | grains/ACF |
| f. VOCs | 2.59 | lb/hr | grains/ACF |
| g. Pb | 0 | lb/hr | grains/ACF |
| h. Specify other(s) | | | |
| CO ₂ e | 1,064 | lb/hr | grains/ACF |
| Formaldehyde | 0.49 | lb/hr | grains/ACF |
| | | lb/hr | grains/ACF |
| | | lb/hr | grains/ACF |

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

(2) Complete the Emission Points Data Sheet.

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

MONITORING
 To demonstrate compliance, Columbia proposes to maintain monthly operating hours.
 This monthly record will be used to track 12-month rolling operating hours.

RECORDKEEPING
 Maintain records of monitored parameters.

REPORTING
 The 12-month rolling operating hours will be reported to the state as part of the station's semi-annual monitoring report. Performance test report will be submitted before the close of business on the 60th day following the completion of testing.

TESTING
 Initial and subsequent performance tests per 40 CFR 60 Subpart JJJJ.

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

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

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

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

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

Attachment N

Supporting Emissions Calculations

Columbia Gas Transmission, LLC
Ceredo Compressor Station
April 2017 Application

Table N-1 - Facility Total PTE for PSD Applicability - Including Emergency Generator G4 Change in Context with Project for PSD Applicability Purposes

| Source | Capacity | Annual Emissions (tpy) | | | | | | | |
|---|-------------------|------------------------|--------|-------------------|-------------------------------------|-------|-----------------|-------------------|-----------|
| | | NO _x | CO | CO ₂ e | PM ₁₀ /PM _{2.5} | VOC | SO ₂ | CH ₂ O | Total HAP |
| New Sources PTE¹ | | 37.40 | 57.60 | 122,000 | 6.49 | 10.99 | 0.70 | 0.82 | 1.17 |
| E10 - Solar Titan 250 Turbine | 30,399 hp (32 °F) | 35.67 | 54.65 | 114,203 | 6.44 | 6.03 | 0.70 | 0.69 | 1.00 |
| G4 - Waukesha Emergency Generator | 1,175 hp | 1.30 | 2.59 | 266 | 0.02 | 0.65 | 1.62E-03 | 0.12 | 0.17 |
| H3 - Process Heater | 1.00 MMBtu/hr | 0.43 | 0.36 | 513 | 0.03 | 0.02 | 3.13E-03 | 3.22E-04 | 8.11E-03 |
| Equipment Leaks (fugitive emissions) ² | | | | 120 | | 0.07 | | | |
| Venting (except blowdowns) | | | | 326 | | 0.20 | | | |
| Blowdowns | | | | 6,692 | | 4.10 | | | |
| Current PTE | | 4,077 | 313.94 | 193,876 | 40.59 | 87.73 | 1.18 | 39.94 | 57.60 |
| E01 - Cooper-Bessemer GMWH-8 Engine | 2,800 hp | 491.79 | 35.08 | 12,063 | 4.98 | 12.36 | 0.07 | 5.69 | 8.19 |
| E02 - Cooper-Bessemer GMWH-8 Engine | 2,800 hp | 491.79 | 35.08 | 12,063 | 4.98 | 12.36 | 0.07 | 5.69 | 8.19 |
| E03 - Cooper-Bessemer GMWH-8 Engine | 2,800 hp | 491.79 | 35.08 | 12,063 | 4.98 | 12.36 | 0.07 | 5.69 | 8.19 |
| E04 - Cooper-Bessemer GMWH-8 Engine | 2,800 hp | 491.79 | 35.08 | 12,063 | 4.98 | 12.36 | 0.07 | 5.69 | 8.19 |
| E05 - Cooper-Bessemer GMWH-8 Engine | 2,800 hp | 491.79 | 35.08 | 12,063 | 4.98 | 12.36 | 0.07 | 5.69 | 8.19 |
| E06 - Cooper-Bessemer GMWH-8 Engine | 2,800 hp | 491.79 | 35.08 | 12,063 | 4.98 | 12.36 | 0.07 | 5.69 | 8.19 |
| E07 - Cooper-Bessemer 8V-250 Engine | 2,700 hp | 591.30 | 39.03 | 10,801 | 4.46 | 11.07 | 0.07 | 5.09 | 7.34 |
| E08 - General Electric 3912R Turbine | 10,200 hp | 265.82 | 19.70 | 48,130 | 2.71 | 0.86 | 0.29 | 0.29 | 0.42 |
| E09 - General Electric 3112R Turbine | 12,500 hp | 265.54 | 41.28 | 58,982 | 3.32 | 1.06 | 0.36 | 0.36 | 0.52 |
| G3 - Waukesha Emergency Generator | 738 hp | 0.61 | 1.08 | 173 | 0.01 | 0.41 | 1.05E-03 | 0.08 | 0.11 |
| H1 - Fuel Gas Heater | 0.375 MMBtu/hr | 0.16 | 0.14 | 192 | 0.01 | 0.01 | 1.17E-03 | 1.21E-04 | 3.04E-03 |
| BL3 - Heating System Boiler | 6.276 MMBtu/hr | 2.69 | 2.26 | 3,219 | 0.20 | 0.15 | 0.02 | 0.002 | 0.05 |
| Changes to Current PTE | | -531.36 | -60.98 | -107,112 | -6.04 | -1.92 | -0.65 | -0.65 | -0.94 |
| E08 - General Electric 3912R Turbine ³ | 10,200 hp | -265.82 | -19.70 | -48,130 | -2.71 | -0.86 | -0.29 | -0.29 | -0.42 |
| E09 - General Electric 3112R Turbine ⁴ | 12,500 hp | -265.54 | -41.28 | -58,982 | -3.32 | -1.06 | -0.36 | -0.36 | -0.52 |
| Change in PTE (new + changes) | | -493.96 | -3.39 | 14,888 | 0.46 | 9.07 | 0.05 | 0.17 | 0.23 |
| Proposed PTE¹ | | 3,583 | 311 | 208,765 | 41.04 | 96.80 | 1.23 | 40.11 | 57.83 |
| Project PTE^{1,5} | | 37.4 | 57.6 | 122,000 | 6.49 | 10.99 | 0.70 | 0.82 | 1.17 |
| PSD Significance Threshold | | 40 | 100 | | 15 / 10 | 40 | 40 | | |

1. Excludes fugitive emissions (compressor stations are not one of the named source categories that include fugitive emissions). PTE = potential to emit.

2. Fugitive emissions are not part of the PSD or Title V applicability analyses.

3. Will be taken out of service as part of Leach Xpress Project and will be removed as part of Mountaineer Xpress Project.

4. Will be taken out of service and removed as part of Mountaineer Xpress Project.

5. For comparison to PSD significance thresholds

Columbia Gas Transmission, LLC
Ceredo Compressor Station
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Table N-2- Facility Total PTE for Permitting - Including Emergency Generator G4 Change in Context of Changes to Current R30 Permit

| Source | Capacity | Annual Emissions (tpy) | | | | | | | |
|---|-------------------|------------------------|-------|-------------------|-------------------------------------|-------|-----------------|-------------------|-----------|
| | | NO _x | CO | CO ₂ e | PM ₁₀ /PM _{2.5} | VOC | SO ₂ | CH ₂ O | Total HAP |
| New Sources PTE¹ | | 1.30 | 2.59 | 266.00 | 0.02 | 0.65 | 1.62E-03 | 0.12 | 0.17 |
| G4 - Waukesha Emergency Generator | 1,175 hp | 1.30 | 2.59 | 266 | 0.02 | 0.65 | 1.62E-03 | 0.12 | 0.17 |
| Current PTE | | 3,583 | 310 | 208,698 | 41 | 97 | 1 | 40 | 58 |
| E01 - Cooper-Bessemer GMWH-8 Engine | 2,800 hp | 491.79 | 35.08 | 12,063 | 4.98 | 12.36 | 0.07 | 5.69 | 8.19 |
| E02 - Cooper-Bessemer GMWH-8 Engine | 2,800 hp | 491.79 | 35.08 | 12,063 | 4.98 | 12.36 | 0.07 | 5.69 | 8.19 |
| E03 - Cooper-Bessemer GMWH-8 Engine | 2,800 hp | 491.79 | 35.08 | 12,063 | 4.98 | 12.36 | 0.07 | 5.69 | 8.19 |
| E04 - Cooper-Bessemer GMWH-8 Engine | 2,800 hp | 491.79 | 35.08 | 12,063 | 4.98 | 12.36 | 0.07 | 5.69 | 8.19 |
| E05 - Cooper-Bessemer GMWH-8 Engine | 2,800 hp | 491.79 | 35.08 | 12,063 | 4.98 | 12.36 | 0.07 | 5.69 | 8.19 |
| E06 - Cooper-Bessemer GMWH-8 Engine | 2,800 hp | 491.79 | 35.08 | 12,063 | 4.98 | 12.36 | 0.07 | 5.69 | 8.19 |
| E07 - Cooper-Bessemer 8V-250 Engine | 2,700 hp | 591.30 | 39.03 | 10,801 | 4.46 | 11.07 | 0.07 | 5.09 | 7.34 |
| G3 - Waukesha Emergency Generator | 738 hp | 0.61 | 1.08 | 173 | 0.01 | 0.41 | 1.05E-03 | 0.08 | 0.11 |
| H1 - Fuel Gas Heater | 0.375 MMBtu/hr | 0.16 | 0.14 | 192 | 0.01 | 0.01 | 1.17E-03 | 1.21E-04 | 3.04E-03 |
| BL3 - Heating System Boiler | 6.276 MMBtu/hr | 2.69 | 2.26 | 3,219 | 0.20 | 0.15 | 0.02 | 0.002 | 0.05 |
| E10 - Solar Titan 250 Turbine | 30,399 hp (32 °F) | 35.67 | 54.65 | 114,203 | 6.44 | 6.03 | 0.70 | 0.69 | 1.00 |
| G4 - Waukesha Emergency Generator | 880 hp | 0.97 | 1.94 | 200 | 0.02 | 0.49 | 0.00 | 0.09 | 0.13 |
| H3 - Process Heater | 1.00 MMBtu/hr | 0.43 | 0.36 | 513 | 0.03 | 0.02 | 3.13E-03 | 3.22E-04 | 8.11E-03 |
| Equipment Leaks (fugitive emissions) ² | | | | 120 | | 0.07 | | | |
| Venting (except blowdowns) | | | | 326 | | 0.20 | | | |
| Blowdowns | | | | 6,692 | | 4.10 | | | |
| Changes to Current PTE | | -0.97 | -1.94 | -200 | -0.02 | -0.49 | -1.22E-03 | -0.09 | -0.13 |
| G4 - Waukesha Emergency Generator | 880 hp | -0.97 | -1.94 | -200 | -0.02 | -0.49 | -1.22E-03 | -0.09 | -0.13 |
| Change in PTE (new + changes) | | 0.33 | 0.65 | 66 | 0.01 | 0.16 | 0.00 | 0.03 | 0.04 |
| Proposed PTE¹ | | 3,583 | 311 | 208,765 | 41.04 | 96.80 | 1.23 | 40.11 | 57.83 |

1. Excludes fugitive emissions (compressor stations are not one of the named source categories that include fugitive emissions). PTE = potential to emit.

2. Fugitive emissions are not part of the PSD or Title V applicability analyses.

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Ceredo Compressor Station
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Table N-3 - Waukesha VGF-L36GL Emergency Generator (G4) - as initially permitted, but not to be installed

| | |
|---------------------------------|-------------------------------|
| Horsepower | 880 hp |
| Brake Specific Fuel Consumption | 7,757 Btu/Bhp-hr |
| Total Heat Input | 6.83 MMBtu/hr |
| Operating Hours | 500 hr/yr |
| Natural Gas Heat Content | 1,020 Btu/scf |
| Fuel Consumption | 3.35 MMscf/yr 6,692 scf/hr |

| Pollutant | Emission Factor | | Emission Rate | | Emission Factor Reference |
|----------------------------------|-----------------|----------|---------------|----------|---------------------------------|
| | g/bhp-hr | lb/MMBtu | lb/hr | ton/yr | |
| NO _x | 2.00 | | 3.88 | 0.97 | NSPS Subpart JJJJ Limitation |
| CO | 4.00 | | 7.76 | 1.94 | NSPS Subpart JJJJ Limitation |
| CO ₂ e | | 117.1 | 799 | 200 | 40 CFR 98 Subpart C |
| PM ₁₀ | | 0.010 | 0.07 | 0.02 | AP-42 Table 3.2-2 (7/00) - 4SLB |
| PM _{2.5} | | 0.010 | 0.07 | 0.02 | AP-42 Table 3.2-2 (7/00) - 4SLB |
| VOC | 1.00 | | 1.94 | 0.49 | NSPS Subpart JJJJ Limitation |
| SO ₂ (Maximum Hourly) | | 0.0571 | 0.39 | | 20 grains S / 100 scf |
| SO ₂ (Average Annual) | | 0.000714 | | 1.22E-03 | 0.25 grains S / 100 scf |
| Formaldehyde | 0.19 | | 0.37 | 0.09 | Vendor Data |
| Total HAPs | | 0.07340 | 0.50 | 0.13 | AP-42 Table 3.2-2 (7/00) - 4SLB |

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Ceredo Compressor Station
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Table N-4 - Waukesha VGF-P48GL Emergency Generator (G4) - model to be installed

| | |
|---------------------------------|-------------------------------|
| Horsepower | 1,175 hp |
| Brake Specific Fuel Consumption | 7,733 Btu/Bhp-hr |
| Total Heat Input | 9.09 MMBtu/hr |
| Operating Hours | 500 hr/yr |
| Natural Gas Heat Content | 1,020 Btu/scf |
| Fuel Consumption | 4.45 MMscf/yr 8,908 scf/hr |

| Pollutant | Emission Factor | | Emission Rate | | Emission Factor Reference |
|----------------------------------|-----------------|----------|---------------|----------|---------------------------------|
| | g/bhp-hr | lb/MMBtu | lb/hr | ton/yr | |
| NO _x | 2.00 | | 5.18 | 1.30 | NSPS Subpart JJJJ Limitation |
| CO | 4.00 | | 10.36 | 2.59 | NSPS Subpart JJJJ Limitation |
| CO _{2e} | | 117.1 | 1,064 | 266 | 40 CFR 98 Subpart C |
| PM ₁₀ | | 0.010 | 0.09 | 0.02 | AP-42 Table 3.2-2 (7/00) - 4SLB |
| PM _{2.5} | | 0.010 | 0.09 | 0.02 | AP-42 Table 3.2-2 (7/00) - 4SLB |
| VOC | 1.00 | | 2.59 | 0.65 | NSPS Subpart JJJJ Limitation |
| SO ₂ (Maximum Hourly) | | 0.0571 | 0.52 | | 20 grains S / 100 scf |
| SO ₂ (Average Annual) | | 0.000714 | | 1.62E-03 | 0.25 grains S / 100 scf |
| Formaldehyde | 0.19 | | 0.49 | 0.12 | Vendor Data |
| Total HAPs | | 0.07356 | 0.67 | 0.17 | AP-42 Table 3.2-2 (7/00) - 4SLB |

**Columbia Gas Transmission, LLC
Ceredo Compressor Station
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Table N-5 - Solar Titan 250 Turbine (E10)**

| | |
|---------------------------------|---|
| Horsepower | 30,399 hp (32 °F) |
| Brake Specific Fuel Consumption | 6,599 Btu/bhp-hr (LHV, 32 °F) |
| Total Heat Input | 200.60 MMBtu/hr (LHV, 32 °F) |
| | 222.67 MMBtu/hr (HHV, 32 °F) ³ |
| Operating Hours | 8760 hr/yr |
| Natural Gas Heat Content | 1020 Btu/scf |
| Fuel Consumption | 1,912.31 MMscf/yr |
| | 218,300.0 scf/hr (based on 32 °F) |

| Pollutant | Emission Factor | | Emission Rate | | Emission Factor Reference |
|----------------------------------|-----------------|--------------|--------------------|---------------------|---------------------------------------|
| | ppmvd@15%O2 | lb/MMBtu | lb/hr ¹ | ton/yr ² | |
| NO _x | 10.00 | 0.039 LHV | 7.93 | 35.67 | Vendor Data |
| CO | 25.00 | 0.060 LHV | 12.06 | 54.65 | Vendor Data |
| GHG (CO ₂ e) | | 117.1 HHV | 26,074 | 114,203 | 40 CFR 98 Subpart C |
| PM ₁₀ | | 0.0066 HHV | 1.47 | 6.44 | AP-42 Table 3.1-2a (4/00) |
| PM _{2.5} | | 0.0066 HHV | 1.47 | 6.44 | AP-42 Table 3.1-2a (4/00) |
| VOC | 5.00 | 0.007 LHV | 1.38 | 6.03 | Vendor Data (20% of UHC) ⁴ |
| SO ₂ (Maximum Hourly) | | 0.0571 HHV | 12.71 | | 20 grains S / 100 scf |
| SO ₂ (Average Annual) | | 0.000714 HHV | | 0.70 | 0.25 grains S / 100 scf |
| Formaldehyde | | 0.00071 HHV | 0.16 | 0.69 | AP-42 Table 3.1-3 (4/00) |
| Total HAPs | | 0.00102 HHV | 0.23 | 1.00 | AP-42 Table 3.1-3 (4/00) |

1. Maximum hourly emission rate based on normal operation at 32 °F. Heat input, fuel consumption, and emissions increase as temperature decreases, and for the purpose of this application, hourly emissions are characterized by Solar emissions data for 32 °F.
2. Annual emission rate based on maximum of: (1) normal operation or (2) normal operation plus non-SoLoNO_x operation.
3. HHV heat input based on HHV=1.11*LHV
4. VOC based on 20% of vendor data for unburned hydrocarbon.

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Table N-6 - Solar Titan 250 (E10) - Normal and Non-SoLoNOx Emission Rates

Normal and Non-SoLoNOx Emission Rates

| Operating Mode | Units | NO _x | CO | VOC |
|------------------------------------|-------|-----------------|-------|-------|
| Normal Load @ 32 °F ¹ | lb/hr | 7.93 | 12.06 | 1.38 |
| Normal Load @ 32 °F ² | tpy | 34.73 | 52.82 | 6.05 |
| Non-SoLoNOx Operation ³ | tpy | 0.94 | 1.82 | -0.03 |
| Total Emissions per Turbine | tpy | 35.67 | 54.65 | 6.03 |

1. Based on data from Solar Titan 250 Compressor Set data sheet and the following concentrations:
 11 ppm NO_x; 25 ppm CO; 5 ppm VOC
2. Based on 8760 hr/yr of normal operation.
3. Potential emissions in excess of 8760 hr/yr at normal operation that may occur when turbine operates in non-SoLoNOx mode such as during low ambient temperatures (<0 °F), low load (< 50%), and during startup and shutdown events. This annual total represents the difference between the aggregate total with non-SoLoNOx operation and 8760 hr/yr of normal operation.

Emission Rates During Normal Operation (g/hp-hr)¹

| Emission Point ID / Model | NO _x | CO | VOC ² | SO ₂ ³ | PM ₁₀ / PM _{2.5} | CH ₂ O |
|---------------------------|-----------------|------|------------------|------------------------------|--------------------------------------|-------------------|
| E10 / Solar Titan 250 | 0.12 | 0.18 | 0.02 | 0.19 | <i>0.02</i> | <i>0.002</i> |

1. Based on vendor performance data; values in italics based on AP-42 emission factors.
2. VOC is based on 20 percent of unburned hydrocarbons per Solar Product Information Letter 168.
3. Conservatively based on 20 grains sulfur per 100 standard cubic feet of natural gas for maximum short-term emissions.

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Ceredo Compressor Station
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Table N-7 - Emissions from Venting, Blowdowns & Equipment Leaks (Fugitives)

| Component | Emission Rate (ton/yr) | | | |
|-----------------------------|------------------------------|------------------------------|--------------------------------|------------------|
| | CH ₄ ¹ | CO ₂ ¹ | CO ₂ e ² | VOC ³ |
| Venting (except blowdowns) | 13.05 | 0.18 | 326 | 0.20 |
| Blowdowns | 267.53 | 3.59 | 6,692 | 4.10 |
| Equipment Leaks (Fugitives) | 4.81 | 0.06 | 120 | 0.07 |

1. CH₄ and CO₂ emission rates based on 86.90 vol% CH₄ and 0.43 vol% CO₂ in natural gas
2. Based on 40 CFR 98 Subpart A Global Warming Potentials
3. Based on a 0.0153 ratio of VOC to methane as calculated from gas composition

**Columbia Gas Transmission, LLC
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Table N-8 - Fuel Gas Heater (H3)**

Heat Input 1.00 MMBtu/hr
Operating Hours 8760 hr/yr
Natural Gas Heat Content 1020 Btu/scf
Fuel Consumption 8.59 MMscf/yr
980.4 scf/hr

| Pollutant | Emission Factor | | Emission Rate | | Emission Factor Reference |
|----------------------------------|-----------------|----------|---------------|----------|------------------------------|
| | lb/MMscf | lb/MMBtu | lb/hr | ton/yr | |
| NO _x | 100 | 0.098 | 0.10 | 0.43 | AP-42 Table 1.4-1 (7/98) |
| CO | 84 | 0.082 | 0.08 | 0.36 | AP-42 Table 1.4-1 (7/98) |
| CO ₂ e | | 117.1 | 117 | 513 | 40 CFR 98 Subpart C |
| PM ₁₀ | 7.6 | 0.007 | 7.45E-03 | 0.03 | AP-42 Table 1.4-2 (7/98) |
| PM _{2.5} | 7.6 | 0.007 | 7.45E-03 | 0.03 | AP-42 Table 1.4-2 (7/98) |
| VOC | 5.5 | 0.005 | 5.39E-03 | 0.02 | AP-42 Table 1.4-2 (7/98) |
| SO ₂ (Maximum Hourly) | | 0.0571 | 0.06 | | 20 grains S / 100 scf |
| SO ₂ (Average Annual) | | 0.000714 | | 3.13E-03 | 0.25 grains S / 100 scf |
| Formaldehyde | 0.075 | 0.00007 | 7.35E-05 | 3.22E-04 | AP-42 Table 1.4-3 (7/98) |
| Total HAPs | 1.89 | 0.00185 | 1.85E-03 | 8.11E-03 | AP-42 Table 1.4-3 & 4 (7/98) |

**Columbia Gas Transmission, LLC
Ceredo Compressor Station
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Table N-9 - 2SLB Reciprocating Compressor Engines (E01 - E06)**

Horsepower 2,800 HP
Maximum Horsepower 3,080 HP
Brake Specific Fuel Consumption 8,400 Btu/Bhp-hr
Total Heat Input 23.52 MMBtu/hr
Max Heat Input 25.87 MMBtu/hr
Operating Hours 8,760 hr/yr
Natural Gas Heat Content 1,020 Btu/scf
Fuel Consumption 202.00 MMscf/yr
25,365 scf/hr
Quantity 6

| Pollutant | Emission Factor | | Emission Rate | | | Emission Factor Reference |
|----------------------------------|-----------------|-----------|---------------|---------------------|--------------------|---------------------------------|
| | lb/MMBtu | lb/bhp-hr | lb/hr | ton/yr (per engine) | ton/yr (6 engines) | |
| NO _x (Maximum Hourly) | | 8.02E-02 | 247.02 | | | CGT Test |
| NO _x (Average Annual) | | 4.01E-02 | | 491.79 | 2,951 | CGT Test |
| CO (Maximum Hourly) | | 5.73E-03 | 17.65 | | | CGT Test |
| CO (Average Annual) | | 2.86E-03 | | 35.08 | 210 | CGT Test |
| CO ₂ e | 117.1 | | 3,030 | 12,063 | 72,379 | 40 CFR 98 Subpart C |
| PM ₁₀ | 0.048 | | 1.25 | 4.98 | 29.86 | AP-42 Table 3.2-1 (7/00) - 2SLB |
| PM _{2.5} | 0.048 | | 1.25 | 4.98 | 29.86 | AP-42 Table 3.2-1 (7/00) - 2SLB |
| VOC | 0.120 | | 3.10 | 12.36 | 74.17 | AP-42 Table 3.2-1 (7/00) - 2SLB |
| SO ₂ (Maximum Hourly) | 0.0571 | | 1.48 | | | 20 grains S / 100 scf |
| SO ₂ (Average Annual) | 0.000714 | | | 0.07 | 0.44 | 0.25 grains S / 100 scf |
| Formaldehyde | 0.05520 | | 1.43 | 5.69 | 34.12 | AP-42 Table 3.2-1 (7/00) - 2SLB |
| Total HAPs | 0.07954 | | 2.06 | 8.19 | 49.16 | AP-42 Table 3.2-1 (7/00) - 2SLB |

**Columbia Gas Transmission, LLC
Ceredo Compressor Station
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Table N-10 - 2SLB Reciprocating Compressor Engine (E07)**

Horsepower 2,700 HP
Maximum Horsepower 2,970 HP
Brake Specific Fuel Consumption 7,800 Btu/Bhp-hr
Total Heat Input 21.06 MMBtu/hr
Max Heat Input 23.17 MMBtu/hr
Operating Hours 8,760 hr/yr
Natural Gas Heat Content 1,020 Btu/scf
Fuel Consumption 180.87 MMscf/yr
22,712 scf/hr

| Pollutant | Emission Factor | | Emission Rate | | Emission Factor Reference |
|----------------------------------|-----------------|-----------|---------------|--------|---------------------------------|
| | lb/MMBtu | lb/bhp-hr | lb/hr | ton/yr | |
| NO _x (Maximum Hourly) | | 1.00E-01 | 297.00 | | CGT Test |
| NO _x (Average Annual) | | 5.00E-02 | | 591.30 | CGT Test |
| CO (Maximum Hourly) | | 6.61E-03 | 19.63 | | CGT Test |
| CO (Average Annual) | | 3.30E-03 | | 39.03 | CGT Test |
| CO ₂ e | 117.1 | | 2,713 | 10,801 | 40 CFR 98 Subpart C |
| PM ₁₀ | 0.048 | | 1.12 | 4.46 | AP-42 Table 3.2-1 (7/00) - 2SLB |
| PM _{2.5} | 0.048 | | 1.12 | 4.46 | AP-42 Table 3.2-1 (7/00) - 2SLB |
| VOC | 0.120 | | 2.78 | 11.07 | AP-42 Table 3.2-1 (7/00) - 2SLB |
| SO ₂ (Maximum Hourly) | 0.0571 | | 1.32 | | 20 grains S / 100 scf |
| SO ₂ (Average Annual) | 0.000714 | | | 0.07 | 0.25 grains S / 100 scf |
| Formaldehyde | 0.05520 | | 1.28 | 5.09 | AP-42 Table 3.2-1 (7/00) - 2SLB |
| Total HAPs | 0.07954 | | 1.84 | 7.34 | AP-42 Table 3.2-1 (7/00) - 2SLB |

**Columbia Gas Transmission, LLC
Ceredo Compressor Station
April 2017 Application
Table N-11 - General Electric 3912R Turbine (E08) - Retired**

Horsepower 10,200 HP
Maximum Horsepower 16,320 HP
Brake Specific Fuel Consumption 9,200 Btu/Bhp-hr
Total Heat Input 93.84 MMBtu/hr
Max Heat Input 150.14 MMBtu/hr
Operating Hours 8,760 hr/yr
Natural Gas Heat Content 1,020 Btu/scf
Fuel Consumption 805.92 MMscf/yr
147,200 scf/hr

| Pollutant | Emission Factor | | Emission Rate | | Emission Factor Reference |
|----------------------------------|-----------------|-----------|---------------|--------|---------------------------|
| | lb/MMBtu | lb/bhp-hr | lb/hr | ton/yr | |
| NO _x (Maximum Hourly) | | 1.19E-02 | 194.21 | | CGT Test |
| NO _x (Average Annual) | | 5.95E-03 | | 265.82 | CGT Test |
| CO (Maximum Hourly) | | 8.81E-04 | 14.38 | | CGT Test |
| CO (Average Annual) | | 4.41E-04 | | 19.70 | CGT Test |
| CO ₂ e | 117.10 | | 17,582 | 48,130 | 40 CFR 98 Subpart C |
| PM ₁₀ | 0.0066 | | 0.99 | 2.71 | AP-42 Table 3.1-2a (4/00) |
| PM _{2.5} | 0.0066 | | 0.99 | 2.71 | AP-42 Table 3.1-2a (4/00) |
| VOC | 0.0021 | | 0.32 | 0.86 | AP-42 Table 3.1-2a (4/00) |
| SO ₂ (Maximum Hourly) | 0.0571 | | 8.57 | | 20 grains S / 100 scf |
| SO ₂ (Average Annual) | 0.000714 | | | 0.29 | 0.25 grains S / 100 scf |
| Formaldehyde | 0.00071 | | 0.11 | 0.29 | AP-42 Table 3.1-3 (4/00) |
| Total HAPs | 0.00103 | | 0.15 | 0.42 | AP-42 Table 3.1-3 (4/00) |

**Columbia Gas Transmission, LLC
Ceredo Compressor Station
April 2017 Application
Table N-12 - General Electric 3112R Turbine (E09) - Retired**

Horsepower 12,500 HP
Maximum Horsepower 20,000 HP
Brake Specific Fuel Consumption 9,200 Btu/Bhp-hr
Total Heat Input 115.00 MMBtu/hr
Max Heat Input 184.00 MMBtu/hr
Operating Hours 8,760 hr/yr
Natural Gas Heat Content 1,020 Btu/scf
Fuel Consumption 987.65 MMscf/yr
180,392 scf/hr

| Pollutant | Emission Factor | | Emission Rate | | Emission Factor Reference |
|----------------------------------|-----------------|-----------|---------------|--------|---------------------------|
| | lb/MMBtu | lb/bhp-hr | lb/hr | ton/yr | |
| NO _x (Maximum Hourly) | | 9.69E-03 | 193.80 | | CGT Test |
| NO _x (Average Annual) | | 4.85E-03 | | 265.54 | CGT Test |
| CO | | 7.54E-04 | 15.08 | 41.28 | AP-42 Table 3.1-3 (4/00) |
| CO ₂ e | 117.10 | | 21,546 | 58,982 | 40 CFR 98 Subpart C |
| PM ₁₀ | 0.0066 | | 1.21 | 3.32 | AP-42 Table 3.1-2a (4/00) |
| PM _{2.5} | 0.0066 | | 1.21 | 3.32 | AP-42 Table 3.1-2a (4/00) |
| VOC | 0.0021 | | 0.39 | 1.06 | AP-42 Table 3.1-2a (4/00) |
| SO ₂ (Maximum Hourly) | 0.0571 | | 10.51 | | 20 grains S / 100 scf |
| SO ₂ (Average Annual) | 0.000714 | | | 0.36 | 0.25 grains S / 100 scf |
| Formaldehyde | 0.00071 | | 0.13 | 0.36 | AP-42 Table 3.1-3 (4/00) |
| Total HAPs | 0.00103 | | 0.19 | 0.52 | AP-42 Table 3.1-3 (4/00) |

**Columbia Gas Transmission, LLC
Ceredo Compressor Station
April 2017 Application
Table N-13 - Waukesha 4SLB Emergency Generator (G3)**

Horsepower 738 hp
Brake Specific Fuel Consumption 8,000 Btu/Bhp-hr
Total Heat Input 5.90 MMBtu/hr
Operating Hours 500 hr/yr
Natural Gas Heat Content 1,020 Btu/scf
Fuel Consumption 2.89 MMscf/yr
5,788 scf/hr

| Pollutant | Emission Factor | | Emission Rate | | Emission Factor Reference |
|----------------------------------|-----------------|-----------|---------------|----------|---------------------------------|
| | lb/MMBtu | lb/bhp-hr | lb/hr | ton/yr | |
| NO _x | | 3.31E-03 | 2.44 | 0.61 | R13-1856 Permit Limit |
| CO | | 5.84E-03 | 4.31 | 1.08 | R13-1856 Permit Limit |
| CO ₂ e | 117.1 | | 691 | 173 | 40 CFR 98 Subpart C |
| PM ₁₀ | 0.010 | | 0.06 | 0.01 | AP-42 Table 3.2-2 (7/00) - 4SLB |
| PM _{2.5} | 0.010 | | 0.06 | 0.01 | AP-42 Table 3.2-2 (7/00) - 4SLB |
| VOC | | 2.21E-03 | 1.63 | 0.41 | R13-1856 Permit Limit |
| SO ₂ (Maximum Hourly) | 0.0571 | | 0.34 | | 20 grains S / 100 scf |
| SO ₂ (Average Annual) | 0.000714 | | | 1.05E-03 | 0.25 grains S / 100 scf |
| Formaldehyde | 0.05280 | | 0.31 | 0.08 | AP-42 Table 3.2-2 (7/00) - 4SLB |
| Total HAPs | 0.07220 | | 0.43 | 0.11 | AP-42 Table 3.2-2 (7/00) - 4SLB |

**Columbia Gas Transmission, LLC
Ceredo Compressor Station
April 2017 Application
Table N-14 - Fuel Gas Heater (H1)**

Heat Input 0.375 MMBtu/hr
Operating Hours 8760 hr/yr
Natural Gas Heat Content 1020 Btu/scf
Fuel Consumption 3.22 MMscf/yr
367.6 scf/hr

| Pollutant | Emission Factor | | Emission Rate | | Emission Factor Reference |
|----------------------------------|-----------------|----------|---------------|----------|------------------------------|
| | lb/MMscf | lb/MMBtu | lb/hr | ton/yr | |
| NO _x | 100 | 0.098 | 0.04 | 0.16 | AP-42 Table 1.4-1 (7/98) |
| CO | 84 | 0.082 | 0.03 | 0.14 | AP-42 Table 1.4-1 (7/98) |
| CO ₂ e | | 117.1 | 44 | 192 | 40 CFR 98 Subpart C |
| PM ₁₀ | 7.6 | 0.007 | 2.79E-03 | 0.01 | AP-42 Table 1.4-2 (7/98) |
| PM _{2.5} | 7.6 | 0.007 | 2.79E-03 | 0.01 | AP-42 Table 1.4-2 (7/98) |
| VOC | 5.5 | 0.005 | 2.02E-03 | 0.01 | AP-42 Table 1.4-2 (7/98) |
| SO ₂ (Maximum Hourly) | | 0.0571 | 0.02 | | 20 grains S / 100 scf |
| SO ₂ (Average Annual) | | 0.000714 | | 1.17E-03 | 0.25 grains S / 100 scf |
| Formaldehyde | 0.075 | 0.00007 | 2.76E-05 | 1.21E-04 | AP-42 Table 1.4-3 (7/98) |
| Total HAPs | 1.89 | 0.00185 | 6.94E-04 | 3.04E-03 | AP-42 Table 1.4-3 & 4 (7/98) |

**Columbia Gas Transmission, LLC
Ceredo Compressor Station
April 2017 Application
Table N-15 - Heating System Boiler (BL3)**

Heat Input 6.276 MMBtu/hr
Operating Hours 8760 hr/yr
Natural Gas Heat Content 1020 Btu/scf
Fuel Consumption 53.90 MMscf/yr
6152.9 scf/hr

| Pollutant | Emission Factor | | Emission Rate | | Emission Factor Reference |
|----------------------------------|-----------------|----------|---------------|----------|------------------------------|
| | lb/MMscf | lb/MMBtu | lb/hr | ton/yr | |
| NO _x | 100 | 0.098 | 0.62 | 2.69 | AP-42 Table 1.4-1 (7/98) |
| CO | 84 | 0.082 | 0.52 | 2.26 | AP-42 Table 1.4-1 (7/98) |
| CO ₂ e | | 117.1 | 735 | 3,219 | 40 CFR 98 Subpart C |
| PM ₁₀ | 7.6 | 0.007 | 0.05 | 0.20 | AP-42 Table 1.4-2 (7/98) |
| PM _{2.5} | 7.6 | 0.007 | 0.05 | 0.20 | AP-42 Table 1.4-2 (7/98) |
| VOC | 5.5 | 0.005 | 0.03 | 0.15 | AP-42 Table 1.4-2 (7/98) |
| SO ₂ (Maximum Hourly) | | 0.0571 | 0.36 | | 20 grains S / 100 scf |
| SO ₂ (Average Annual) | | 0.000714 | | 0.02 | 0.25 grains S / 100 scf |
| Formaldehyde | 0.075 | 0.00007 | 4.61E-04 | 2.02E-03 | AP-42 Table 1.4-3 (7/98) |
| Total HAPs | 1.89 | 0.00185 | 0.01 | 0.05 | AP-42 Table 1.4-3 & 4 (7/98) |

Attachment O

**Monitoring / Recordkeeping / Reporting /
Testing Plans**

Monitoring/Recordkeeping/Reporting/Testing Plans

No major changes to the methods of operation of permitted equipment at the Ceredo Compressor Station are occurring through this modification. Columbia will continue monitoring, recordkeeping, reporting, and testing per the current Title V Permit R30-09900013-2016.

Attachment P

Public Notice

(To be provided as Supplemental Submittal)

AIR QUALITY PERMIT NOTICE
Notice of Application

Notice is given that Columbia Gas Transmission, LLC has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Permit Modification for its existing natural gas compressor station located on Walkers Branch Road near Huntington, in Wayne County, West Virginia. The latitude and longitude coordinates are: 38.36877° N and 82.53238° W.

The applicant estimates the increases in, if the modification application is approved, potential to discharge the following Regulated Air Pollutants will be: Carbon Monoxide by 0.65 tons per year, Nitrogen Oxides by 0.33 tons per year, PM10 and PM2.5 by 0.01 tons per year, Sulfur Dioxide by 0.00 tons per year, Volatile Organic Compounds by 0.16 tons per year, Carbon Dioxide Equivalents (CO₂e) by 66 tons per year, and Formaldehyde by 0.03 tons per year.

Startup of operation is planned to begin on or about the 1st day of November, 2018. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

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

Dated this the 1st day of May, 2017.

By: Columbia Gas Transmission LLC
Craig A Roberts
Manager of Operations
1664 Walker Branch Road
Huntington WV 25704

Attachment R

Delegation of Authority



west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304 926 0475 • FAX: 304 926 0479

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

July 27, 2011

CERTIFIED MAIL
91 7108 2133 3936 1583 6144

Mr. Victor M. Gaglio
Senior Vice-President of Operations
Columbia Gas Transmission
1700 MacCorkle Avenue, S.E.
Charleston, WV 25314

Re: Delegation of Authority Confirmation

Dear Mr. Gaglio:

Based on your letter, dated July 22, 2011, the Division of Air Quality (DAQ) hereby acknowledges the titles of Regional Director and Manager of Operations as delegated authorized representatives for the facilities listed below.

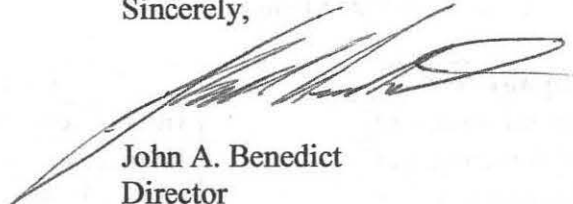
| Company Name | Facility | Facility ID No. |
|---------------------------------------|---------------------|-----------------|
| Columbia Gas Transmission, LLC | Horse Creek Station | 005-00039 |
| Columbia Gas Transmission, LLC | Frametown Station | 007-00100 |
| Columbia Gas Transmission, LLC | Glenville Station | 021-00001 |
| Columbia Gas Transmission, LLC | Lost River Station | 031-00002 |
| Columbia Gas Transmission, LLC | Hardy Station | 031-00031 |
| Columbia Gas Transmission, LLC | Ripley Station | 035-00003 |
| Columbia Gas Transmission, LLC | Lanham Station | 039-00047 |
| Columbia Gas Transmission, LLC | Clendenin Station | 039-00048 |
| Columbia Gas Transmission, LLC | Coco Station | 039-00049 |
| Columbia Gas Transmission Corporation | Walgrove Station | 039-00074 |
| Columbia Gas Transmission Corporation | Cobb Station | 039-00100 |
| Columbia Gas Transmission Corporation | Hunt Station | 039-00101 |
| Columbia Gas Transmission Corporation | Charleston Office | 039-00154 |
| Columbia Gas Transmission Corporation | Clendenin Office | 039-00546 |
| Columbia Gas Transmission, LLC | Hubball Station | 043-00002 |
| Columbia Gas Transmission Corporation | Nye Station | 043-00011 |
| Columbia Gas Transmission, LLC | Hamlin Station | 043-00027 |
| Columbia Gas Transmission, LLC | Majorsville Station | 051-00025 |
| Columbia Gas Transmission, LLC | Adaline Station | 051-00100 |

Letter to Victor M. Gaglio
July 27, 2011
Page 2

| Company Name | Facility | Facility ID No. |
|---------------------------------------|-----------------------|------------------------|
| Columbia Gas Transmission, LLC | Seneca Station | 071-00008 |
| Columbia Gas Transmission, LLC | Terra Alta Station | 077-00017 |
| Columbia Gas Transmission, LLC | Gladys Station | 083-00017 |
| Columbia Gas Transmission, LLC | Files Creek Station | 083-00019 |
| Columbia Gas Transmission, LLC | Flat Top Station | 089-00004 |
| Columbia Gas Transmission, LLC | Cleveland Station | 097-00009 |
| Columbia Gas Transmission, LLC | Ceredo Station | 099-00013 |
| Columbia Gas Transmission, LLC | Kenova Station | 099-00014 |
| Columbia Gas Transmission, LLC | Smithfield Station | 103-00010 |
| Columbia Gas Transmission, LLC | Rockport Station | 107-00100 |
| Columbia Gas Transmission, LLC | Huff Creek Station | 109-00021 |

Should you have any questions or comments, please feel free to contact our office at the address or telephone number listed above.

Sincerely,



John A. Benedict
Director

JAB/seh

c: **Joe Morgan**
Megan Murphy
File Room

Attachment S

Title V Permit Revision Information

Attachment S
Title V Permit Revision Information

| 1. New Applicable Requirements Summary | |
|--|---|
| Mark all applicable requirements associated with the changes involved with this permit revision: | |
| <input type="checkbox"/> SIP | <input type="checkbox"/> FIP |
| <input checked="" type="checkbox"/> Minor source NSR (45CSR13) | <input type="checkbox"/> PSD (45CSR14) |
| <input type="checkbox"/> NESHAP (45CSR15) | <input type="checkbox"/> Nonattainment NSR (45CSR19) |
| <input checked="" type="checkbox"/> Section 111 NSPS (Subpart(s) <u>JJJJ</u>) | <input checked="" type="checkbox"/> Section 112(d) MACT standards (Subpart(s)_ <u>ZZZZ</u>) |
| <input type="checkbox"/> Section 112(g) Case-by-case MACT | <input type="checkbox"/> 112(r) RMP |
| <input type="checkbox"/> Section 112(i) Early reduction of HAP | <input type="checkbox"/> Consumer/commercial prod. reqts., section 183(e) |
| <input type="checkbox"/> Section 129 Standards/Reqts. | <input type="checkbox"/> Stratospheric ozone (Title VI) |
| <input type="checkbox"/> Tank vessel reqt., section 183(f) | <input type="checkbox"/> Emissions cap 45CSR§30-2.6.1 |
| <input type="checkbox"/> NAAQS, increments or visibility (temp. sources) | <input type="checkbox"/> 45CSR27 State enforceable only rule |
| <input type="checkbox"/> 45CSR4 State enforceable only rule | <input type="checkbox"/> Acid Rain (Title IV, 45CSR33) |
| <input type="checkbox"/> Emissions Trading and Banking (45CSR28) | <input type="checkbox"/> Compliance Assurance Monitoring (40CFR64) ⁽¹⁾ |
| <input type="checkbox"/> NO _x Budget Trading Program Non-EGUs (45CSR1) | <input type="checkbox"/> NO _x Budget Trading Program EGUs (45CSR26) |
| <p>⁽¹⁾ If this box is checked, please include Compliance Assurance Monitoring (CAM) Form(s) for each Pollutants Specific Emission Unit (PSEU) (See Attachment H to Title V Application). If this box is not checked, please explain why Compliance Assurance Monitoring is not applicable:</p> <p style="padding-left: 40px;">This regulation does not apply because none of the proposed equipment use add-on emission controls.</p> | |

| 2. Non Applicability Determinations |
|--|
| <p>List all requirements, which the source has determined not applicable to this permit revision and for which a permit shield is requested. The listing shall also include the rule citation and a rationale for the determination.</p> <p>40 CFR 60 Subpart OOOO – The proposed unit is not an affected facility listed under 40 CFR §60.5365.</p> |
| <p><input checked="" type="checkbox"/> Permit Shield Requested (not applicable to Minor Modifications)</p> |

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

3. Suggested Title V Draft Permit Language

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

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

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

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

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

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

6. Change in Potential Emissions

| Pollutant | Change in Potential Emissions (+ or -), TPY |
|------------------|---|
| CO | +0.65 |
| NO _x | +0.33 |
| PM ₁₀ | +0.01 |
| SO ₂ | +0.00 |
| VOC | +0.16 |
| Formaldehyde | +0.03 |

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

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

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

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

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

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

(Signed): Craig Roberts Date: 4 / 28 / 2017
(Please use blue ink) (Please use blue ink)

Named (typed): Craig A. Roberts Title: Manager of Operations

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

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

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