

Engineer	Jerry Williams, P.E.
Email Address	jerry.williams@wv.gov
Company Name	Columbia Gas Transmission, LLC
Company ID	031-00002
Facility Name	Lost River Compressor Station
Permit Number	R14-0013E
County	Hardy
Newspaper	<i>The Moorefield Examiner</i> 530-6397
Company Email and "Attention To:"	Steven A. Nelson snelson@cpg.com
Environmental Contact Email Address	Lacey Ivey livey@cpg.com
Regional Office (if applicable)	EPRO
New or Modified Source?	modified
Construction, Modification, or Relocation?	modification
Type of Facility	natural gas compressor station
"Located" or "To Be Located"?	located
Place where I can find electronic versions of your notice, engineering evaluation, and draft permit	Q:\AIR_QUALITY\Willi\Permit Applications Under Review\Columbia Gas Transmission\R14-0013E Lost River Compressor Station

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# INTERNAL PERMITTING DOCUMENT TRACKING MANIFEST

Company Name Columbia Gas Transmission, LLC

Permitting Action Number R14-0013E Total Days 59 DAQ Days 29

**Permitting Action:**

- |   |                                    |  |
|---|------------------------------------|--|
| <input type="radio"/> Permit Determination  | <input type="radio"/> Temporary    | <input checked="" type="radio"/> Modification  |
| <input type="radio"/> General Permit        | <input type="radio"/> Relocation   | <input checked="" type="radio"/> PSD (Rule 14) |
| <input type="radio"/> Administrative Update | <input type="radio"/> Construction | <input type="radio"/> NNSR (Rule 19)           |

**Documents Attached:**

- |  |  |
|--|--|
| <input checked="" type="radio"/> Engineering Evaluation/Memo   | <input type="radio"/> Completed Database Sheet |
| <input checked="" type="radio"/> Draft Permit                  | <input type="radio"/> Withdrawal               |
| <input checked="" type="radio"/> Notice                        | <input type="radio"/> Letter                   |
| <input type="radio"/> Denial                                   | <input type="radio"/> Other (specify) _____    |
| <input type="radio"/> Final Permit/General Permit Registration | _____  |

Date	From	To	Action Requested
3/24/2016	Jerry <i>pw</i>	Bev	Please review and approve to go to public notice.
<i>3/29</i>	<i>Bev</i>	<i>Jerry</i>	<i>See comments - Admin - No to Notice</i>
<i>3/29</i>	<i>Jerry</i>	<i>SANDIE</i>	<i>APPROVED FOR NOTICE</i>

NOTE: Retain a copy of this manifest for your records when transmitting your document(s).

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# AIR QUALITY PERMIT NOTICE

## Notice of Intent to Approve

On January 25, 2016, Columbia Gas Transmission LLC applied to the WV Department of Environmental Protection, Division of Air Quality (DAQ) for a permit to modify the Lost River Compressor Station located on Upper Cove Road, Mathias, Hardy County, WV at latitude 38.876675 and longitude - 78.860800. A preliminary evaluation has determined that all State and Federal air quality requirements will be met by the proposed facility. The DAQ is providing notice to the public of its preliminary determination to issue the permit as R14-0013E.

The following increase in potential emissions will be authorized by this permit action: Particulate Matter less than 10 microns, 5.22 tons per year (TPY); Sulfur Dioxide, 0.77 TPY; Carbon Monoxide, 68.83 TPY; Volatile Organic Compounds, 11.97 TPY; Carbon Dioxide Equivalents, 133,989 TPY.

The following decrease in potential emissions will be authorized by this permit action: Oxides of Nitrogen, 37.92 TPY; Total Hazardous Air Pollutants, 2.60 TPY.

Written comments or requests for a public meeting must be received by the DAQ before 5:00 p.m. on (Day of Week, Month, Day, Year). A public meeting may be held if the Director of the DAQ determines that significant public interest has been expressed, in writing, or when the Director deems it appropriate.

The purpose of the DAQ's permitting process is to make a preliminary determination if the proposed modification will meet all state and federal air quality requirements. The purpose of the public review process is to accept public comments on air quality issues relevant to this determination. Only written comments received at the address noted below within the specified time frame, or comments presented orally at a scheduled public meeting, will be considered prior to final action on the permit. All such comments will become part of the public record.

Jerry Williams, P.E.  
WV Department of Environmental Protection  
Division of Air Quality  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304  
Telephone: 304/926-0499, ext. 1223  
FAX: 304/926-0478

Additional information, including copies of the draft permit, application and all other supporting materials relevant to the permit decision may be obtained by contacting the engineer listed above. The draft permit and engineering evaluation can be downloaded at:

[www.dep.wv.gov/daq/Pages/NSRPermitsforReview.aspx](http://www.dep.wv.gov/daq/Pages/NSRPermitsforReview.aspx)



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**west virginia department of environmental protection**

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Division of Air Quality  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304  
Phone (304) 926-0475 • FAX: (304) 926-0479

Ear Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

## **ENGINEERING EVALUATION / FACT SHEET**

### **BACKGROUND INFORMATION**

Application No.: R14-0013E  
Plant ID No.: 031-00002  
Applicant: Columbia Gas Transmission LLC  
Facility Name: Lost River Compressor Station  
Location: Hardy County  
NAICS Code: 486210  
Application Type: Minor Modification  
Received Date: January 25, 2016  
Engineer Assigned: Jerry Williams, P.E.  
Fee Amount: \$2,000  
Date Received: January 25, 2016  
Complete Date: February 24, 2016  
Due Date: May 24, 2016  
Applicant Ad Date: January 20, 2016  
Newspaper: *The Moorefield Examiner*  
UTM's: Easting: 685.5 km Northing: 4,305.1 km Zone: 17  
Latitude/Longitude: 38.87517/-78.86162  
Description: Addition of two (2) new Solar Mars 100 turbines, one (1) process heater, 48 catalytic heaters and the removal of one (1) existing Clark HRA-8T Compressor engine. Additionally, the synthetic minor limit on the two (2) existing Solar 70 turbines for GHG will be removed. A Prevention of Significant Deterioration (PSD) applicability analysis is included in the following review.

On February 19, 2003, Columbia Gas Transmission LLC (Columbia Gas) was issued PSD Permit Number R14-0013 for a major modification of the Lost River Compressor Station (which was constructed in 1952). The major modification consisted of removing limitations on Engine E10 (Clark TLAD-10 4,640 hp) that had not been previously permitted but had been operating with restrictions under a Consent Order (signed in 1990) with the West Virginia Air Pollution Control Commission. The following is a brief discussion of substantive preconstruction permitting actions involving the facility since that time.

- On July 10, 2006, Permit Number R14-0013A was issued to Columbia Gas as a minor modification to a major source. The modification involved adjusting CO emission levels from engines E1 through E9.
- On August 8, 2007, Permit Number R14-0013B was issued to Columbia Gas as a minor modification to a major source. The modification involved the addition of Engine E11 and the removal of Engines E03 and E06 (which did not occur until 2009).
- On April 17, 2008, Permit Number R14-0013C was issued to Columbia Gas as a minor modification to a major source. The modification involved changing the required retirement date of Engines E03 and E06.
- On May 31, 2013, Permit Number R14-0013D was issued to Columbia Gas as a minor modification to a major source. The modification involved the addition of two (2) new Solar Taurus 70 Combustion Turbines and removal of three (3) existing Clark HRA-8T Compressor Engines.

## **DESCRIPTION OF PROCESS/MODIFICATIONS**

### ***Existing Facility***

The existing Lost River Compressor Station is a typical large natural gas compression facility that utilizes reciprocating internal combustion engines (RICE) to drive centrifugal gas compressors. In addition to compressor engines the existing facility also contains two (2) turbines, two (2) natural gas-fired emergency generators, one (1) waste water evaporator/boiler, one (1) fuel gas heater, and numerous storage tanks. The existing facility consists of the following substantive combustion sources:

**Table 1: Lost River Combustion Sources**

<b>Emission Unit ID</b>	<b>Description</b>	<b>Make/Model</b>	<b>Design Capacity</b>	<b>Installed</b>
001-01	Heating System Boiler	Pennco 633SA	3.99 MMBtu/hr	1953
001-02	Fuel Heater #1	NATCO SBW/20-8D	0.72 MMBtu/hr	1990
001-03	Wastewater Evaporator Boiler	SAMSCO	0.20 MMBtu/hr	1997
001-04	Fuel Gas Heater #2	NA	0.75 MMBTU/hr	2013
001-05	Fuel Gas Heater #3	NA	0.25 MMBTU/hr	2013
001-06	40 Catalytic Heaters	NA	40 x 0.072 MMBTU/hr	2013
002-01	Compressor Engine	Clark HRA-8T	1,320 hp	1953 (To be retired by 10/2017)

002-02	Compressor Engine	Clark HRA-8T	1,320 hp	1953
002-04	Compressor Engine	Clark HRA-8T	1,320 hp	1953
002-05	Compressor Engine	Clark HRA-8T	1,320 hp	1954
002-07	Compressor Engine	Clark TLA-8	2,700 hp	1969
002-08	Compressor Engine	Clark TLA-8	2,700 hp	1969
002-09	Compressor Engine	Clark TLA-8	2,700 hp	1970
002-10	Compressor Engine	Clark TLA-10	4,640 hp	1991
002-11	Emergency Generator	Ingersoll-RandPVG-6	306 hp	1952
002-12	Emergency Generator	Waukesha VGF48GL	1,063 hp	2009
002-13	Compressor Engine	Caterpillar G3616	4,735 hp	2009
003-01	Turbine	Solar Taurus 70	9,236 hp @ 59° F 11,557 hp @ 0° F	2013
003-02	Turbine	Solar Taurus 70	9,236 hp @ 59° F 11,557 hp @ 0° F	2013
006-01	Water Evaporation Unit	NA	50,000 gal/yr	2009

***Proposed Modifications***

The proposed modifications evaluated herein are:

- Addition of two (2) Solar Mars 100 15,067 hp natural gas-fired turbines (003-03 and 003-04);
- Addition of one (1) 0.50 mmBtu/hr natural gas-fired Fuel Heater (001-07);
- Addition of 26 natural gas-fired Catalytic Heaters (18 x 0.072 mmBtu/hr, 8 x 0.005 mmBtu/hr) (001-08);
- Addition of 22 previously unpermitted 0.03 mmBtu/hr natural gas-fired Catalytic Heaters (001-09); and
- Removal of six (6) existing Clark TLA-8 2,700 hp compressor engines (E01 - E06) and one (1) Clark TLA-10 4,640 hp compressor engine (E10) on standby status;

In addition Columbia Gas is proposing to remove synthetic minor limits on the two (2) existing Solar Taurus 70 Turbines (T01) and (T02) which is contained in R14-0013D permit condition 4.1.7. On July 24, 2014, EPA rescinded the Tailoring Rule, therefore, PSD cannot be triggered solely based on GHG emissions. Because of this, the limit is no longer needed. Columbia Gas also requests removal of permit condition 4.2.5, which requires visible emission monitoring of the catalytic heaters.

## SITE INSPECTION

On March 28, 2014, Karl Dettinger of the Compliance/Enforcement (C/E) Section conducted a site inspection of the Lost River Compressor Station. The result of the inspection was, at the time: "Status 30 - In Compliance." Due to the recent site inspection of the facility conducted by a C/E inspector, an additional inspection by the writer was deemed unnecessary.

## AIR EMISSIONS AND CALCULATION METHODOLOGIES

The following will detail the air emissions and calculation methodologies for the emission units added/removed as part of this permitting action and added/removed during the PSD applicability analysis contemporaneous period (see below under the Regulatory Applicability for a full discussion of this analysis).

### *New Emission Units*

#### Solar Mars 100 Turbines

Potential emissions from each of the two (2) 15,067 hp natural gas-fired Solar Mars 100 turbines (T03 and T04) were based on emission factors provided by the turbine manufacturer (NO<sub>x</sub>, CO, and VOC), fuel mass balance calculations (SO<sub>2</sub>), and as given in AP-42, Section 3.1 (particulate matter and GHGs). AP-42 is a database of emission factors maintained by USEPA.

For particulate matter, hourly emissions were based on the maximum design heat input (MDHI) of the turbine of 128.84 mmBtu/hr (HHV) and annual emissions were based on 8,760 hours of operation per year. For GHGs, hourly emissions were based on the MDHI of the turbine and annual emissions were based on 8,760 hours of operation per year. For SO<sub>2</sub>, hourly emissions were based on the MDHI of the turbine and a worst-case fuel (short-term) sulfur level of 20 grains/100 ft<sup>3</sup>-natural gas. Annual emissions of SO<sub>2</sub> were based on a worst-case fuel (long-term) sulfur level of 0.25 grains/100 ft<sup>3</sup>-natural gas and 8,760 hours of operation per year. For NO<sub>x</sub>, CO, and VOC, hourly emissions were based on the emission factors provided by Solar that are temperature/load dependent. Annual emissions were based on an aggregate total operation of 8,760 hours of operation per year with a worst-case estimate of operational hours at each temperature/load with different emissions characteristics. The following table details the potential-to-emit (PTE) of each engine:

**Table 1: Per- Turbine PTE**

Pollutant	Emission Factor	Source	Hourly <sup>(1)</sup> (lb/hr)	Annual (ton/yr)
CO	Varies Based on Load/Temperature -See Above	Vendor	7.07	48.14
NO <sub>x</sub>	Varies Based on Load/Temperature -See Above	Vendor	6.96	32.26
PM <sup>(2)</sup>	6.60 x 10 <sup>-3</sup> lb/mmBtu	AP-42, Table 3.1-2a	0.85	3.72

Pollutant	Emission Factor	Source	Hourly <sup>(1)</sup> (lb/hr)	Annual (ton/yr)
SO <sub>2</sub>	20 grains-S/ft <sup>3</sup> /hr 0.25 grains-S/ft <sup>3</sup> /yr	Mass Balance	7.36	0.40
VOCs <sup>(3)</sup>	Varies Based on Load/Temperature	Vendor	0.81	3.81
Formaldehyde	$7.10 \times 10^{-4}$ lb/mmBtu	AP-42, Table 3.1-3	0.09	0.39
Non-CH <sub>2</sub> O HAPs <sup>(4)</sup>	$3.17 \times 10^{-4}$ lb/mmBtu	AP-42, Table 3.1-3	0.04	0.19
Total HAPs	n/a	n/a	0.13	0.58
CO <sub>2</sub> e <sup>(5)</sup>	n/a	40CFR98 Subpart C	15,087.00	66,079.00

- (1) Hourly emissions listed are for the worst-case short-term emissions even if expected to occur only rarely.
- (2) Conservatively, all particulate matter emissions are assumed to be less than 2.5 microns. Includes condensables.
- (3) VOC emissions based on 25% of Unburned Hydrocarbon (UHC) vendor emission factors per Solar.
- (4) An aggregate of all HAP emission factors (minus C<sub>2</sub>HO) from AP-42 Table 3.1-3.
- (5) Based on multiplying the mass amount of emissions for each of the six greenhouse gases by the gas's associated global warming potential published at Table A-1 to Subpart A of 40 CFR Part 98 - Global Warming Potentials. Used to determine major source status of facilities under 45CSR14.

### Natural Gas-Fired Heaters

Potential emissions from the Fuel Heater (001-07) and the Catalytic Heaters (001-08, 001-09) were based on the emission factors provided for natural gas combustion as given in AP-42 Section 1.4. and fuel mass balance calculations (SO<sub>2</sub>). Hourly emissions were based on the maximum design heat input (MDHI) of each unit and annual emissions were based on an annual operation of 8,760 hours. A heat content of the gas of 1,020 Btu/scf was used in the calculations. For SO<sub>2</sub>, hourly emissions were based on a maximum natural gas usage of 490.2 ft<sup>3</sup>/hour and a worst-case fuel (short-term) sulfur level of 20 grains/100 ft<sup>3</sup>-natural gas. Annual emissions of SO<sub>2</sub> were based on a worst-case fuel (long-term) sulfur level of 0.25 grains/100 ft<sup>3</sup>-natural gas and 8,760 hours of operation per year.

**Table 2: Natural Gas-Fired Heaters' Exhaust PTE**

Pollutant	Fuel Heater 4 (001-07)		Catalytic Heaters 2 (001-08)		Catalytic Heaters 3 (001-09)	
	lbs/hr	tons/year	lbs/hr	tons/year	lbs/hr	tons/year
CO	0.04	0.18	0.11	0.48	0.05	0.24
NO <sub>x</sub>	0.05	0.21	0.13	0.57	0.06	0.28
PM <sup>(1)</sup>	<0.01	<0.01	0.01	0.04	<0.01	0.02
SO <sub>2</sub>	0.03	<0.01	0.08	<0.01	0.04	<0.01
VOCs	<0.01	0.01	0.01	0.03	<0.01	0.02
HAPs	<0.01	<0.01	<0.01	0.01	<0.01	0.01

Pollutant	Fuel Heater 4 (001-07)		Catalytic Heaters 2 (001-08)		Catalytic Heaters 3 (001-09)	
	lbs/hr	tons/year	lbs/hr	tons/year	lbs/hr	tons/year
CO <sub>2e</sub>	58.55	256.45	156.92	687.31	77.29	338.53

(1) Conservatively, all particulate matter emissions are assumed to be less than 2.5 microns. Includes condensables.

### ***Removed Emission Units***

#### **Clark HRA-8T Engines (E01-E06)**

Engines E03 and E06 were removed in 2009. Potential emissions from 2-Stroke Lean Burn (2SLB) Clark HRA-8T 1,320 hp engine (E01) to be removed was based on the annual emission limits given under Section A of R14-0013D (NO<sub>x</sub> and CO) and on AP-42, Section 3.2 (other criteria pollutants, HAPs, and GHGs). When AP-42 emission factors were used, hourly emissions were based on the maximum design heat input (MDHI) of each unit (calculated @ 8,200 Btu/hp) and annual emissions were based on an annual operation of 8,760 hours.

Actual emissions of NO<sub>x</sub> and CO from the above units and the three (3) 2SLB Clark HRA-8T 1,320 hp engines (E02, E04, E05) removed in 2014 are also based on the emission factors discussed above with actual operating data from November 2010 through October 2012 used to calculate annualized average emissions. For the determination of actual emissions, however, Columbia did not use the hourly emission limits (given in g/hp-hr) listed in R14-0013D for the engines as these represent short-term emission limits with built-in safety factors. Instead the annual emission limits were used and, based on 8,760 hours of operation per year, a long-term average hourly emission rate was calculated. This hourly emission rate, when combined with the operating data, was used to calculate actual emissions. Using the long-term average hourly emission rate produces lower emissions than using the short-term emission limit listed in the permit (see 45CSR14 discussion in the Regulatory Applicability section below).

### ***Other Contemporaneous Changes***

In 2013, two (2) natural gas fired Solar Taurus 70 turbines (T01, T02), two (2) fuel gas heaters (HTR2, HTR3), and 40 catalytic space heaters were installed. In addition, three (3) RICE compressors (E02, E04, E05) were retired. There were also vented GHG and VOC emissions associated with these changes. The past actual baseline emissions of the RICE (E02, E04, E05) was determined from the period between November 2010 through October 2012.

**Project Emissions Summary**

Based on the above estimation methodology, which is determined to be appropriate, a summary of the post-modification PTE change is given in the following table:

**Table 3: Annual (ton/yr) Criteria Pollutant/HAP/GHG PTE Summary**

Source	CO	NO <sub>x</sub>	PM <sup>(1)</sup>	SO <sub>2</sub>	VOCs	HAPs	CO <sub>2</sub> e
Turbine T03	48.14	32.26	3.72	0.40	3.81	0.58	66,079
Turbine T04	48.14	32.26	3.72	0.40	3.81	0.58	66,079
Process Heater HTR4	0.18	0.21	0.02	0.00	0.01	0.00	256
26 Catalytic Heaters SH2	0.48	0.57	0.04	0.00	0.03	0.01	685
22 Catalytic Heaters SH3	0.24	0.28	0.02	0.00	0.02	0.01	339
Equipment Leaks (fugitive) <sup>(2)</sup>	0.00	0.00	0.00	0.00	0.40	0.00	258
Venting	0.00	0.00	0.00	0.00	9.99	0.00	6,471
<b>New Equipment Increase →</b>	<b>97.19</b>	<b>65.59</b>	<b>7.53</b>	<b>0.81</b>	<b>17.68</b>	<b>1.18</b>	<b>139,910</b>
Engine E01	28.10	103.20	2.29	0.03	5.69	3.77	5,552
Fuel Gas Heater HTR1	0.26	0.31	0.02	0.00	0.02	0.01	369
<b>Removed Equipment Decrease →</b>	<b>(28.36)</b>	<b>(103.51)</b>	<b>(2.31)</b>	<b>(0.04)</b>	<b>(5.71)</b>	<b>(3.78)</b>	<b>(5,921)</b>
<b>Project PTE Change →</b>	<b>68.83</b>	<b>(37.92)</b>	<b>5.22</b>	<b>0.77</b>	<b>11.97</b>	<b>(2.60)</b>	<b>133,989</b>

- (1) Conservatively, all particulate matter emissions are assumed to be less than 2.5 microns. Includes condensables.
- (2) Fugitive emissions are not part of PSD applicability analysis.

Based on information given in the current permit application, the new post-modification facility-wide PTE is given in the following table:

**Table 4: Post-Modification Change in Annual (ton/yr) PTE**

Source	NO <sub>x</sub>	CO	VOCs	SO <sub>2</sub>	PM <sup>(1)</sup>	HAPs	CO <sub>2</sub> e
<b>Pre-Modification</b>	838.76	464.06	112.62	1.07	20.36	47.05	186,508.0 0
<b>Modification Change</b>	<b>(37.92)</b>	<b>68.83</b>	<b>11.97</b>	<b>0.77</b>	<b>5.22</b>	<b>(2.60)</b>	<b>133,989</b>
<b>Post-Modification</b>	<b>800.84</b>	<b>532.89</b>	<b>124.59</b>	<b>1.84</b>	<b>25.58</b>	<b>44.45</b>	<b>320,497</b>

## **REGULATORY APPLICABILITY**

This section will address the potential regulatory applicability/non-applicability of substantive state and federal air quality rules relevant to the new emissions units discussed above.

### ***45CSR2: To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers***

The Fuel Heater (001-07) and the Catalytic Heaters (001-08, 001-09) each have been determined to meet the definition of a “fuel burning unit” under 45CSR2 and are, therefore, subject to the applicable requirements therein. However, pursuant to the exemption given under §45-2-11, as the MDHI of the units are each less than 10 mmBtu/hr, they are not subject to sections 4, 5, 6, 8 and 9 of 45CSR2. The only remaining substantive requirement is under Section 3.1 - Visible Emissions Standards.

Pursuant to 45CSR2, Section 3.1, the heaters are subject to an opacity limit of 10%. Proper maintenance and operation of the units (and the use of natural gas as fuel) should keep the opacity of the units well below 10% during normal operations.

### ***45CSR10: To Prevent and Control Air Pollution from the Emission of Sulfur Oxides (non-applicability)***

45CSR10 has requirements limiting SO<sub>2</sub> emissions from “fuel burning units,” limiting in-stack SO<sub>2</sub> concentrations of “manufacturing processes,” and limiting H<sub>2</sub>S concentrations in process gas streams. The only potential applicability of 45CSR10 to Lost River is the limitations on fuel burning units. The Fuel Heater (001-007) and the Catalytic Heaters (001-08, 001-09) have each been determined to meet the definition of a “fuel burning unit” under 45CSR10. However, pursuant to the exemption given under §45-10-10.1, as the MDHI of the units are all less than 10 mmBtu/hr, those units are not subject to the limitations on fuel burning units under 45CSR10.

### ***45CSR13: Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation***

The proposed changes at Lost River have the potential to increase a regulated pollutant in excess of six (6) lbs/hour and ten (10) TPY that would, pursuant to §45-13-2.17, define the changes as a “modification” under 45CSR13. Pursuant to §45-13-5.1, “[n]o person shall cause, suffer, allow or permit the modification . . . and operation of any stationary source to be commenced without . . . obtaining a permit to construct.” Therefore, Columbia Gas was required to obtain a permit under 45CSR13 for the proposed modification discussed herein.

As required under §45-13-8.3 (“Notice Level A”), Columbia Gas placed a Class I legal advertisement in a “newspaper of general circulation in the area where the source is . . . located.” The ad ran on January 20, 2016 in the *Moorefield Examiner*. The affidavit of publication for this legal advertisement was submitted on February 19, 2016.

***45CSR14: Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration***

Determination of Existing Major Source Status

Columbia Gas' Lost River Compressor Station is located in an area - Hardy County - classified as "in attainment" with all National Ambient Air Quality Standards (NAAQS) and, therefore, the major source status of the source is determined under 45CSR14. As the facility is not a source listed under §45-14-2.43(a), the threshold for defining the existing source as a "major stationary source," pursuant to §45-14-2.43(b), is a potential-to-emit (PTE) of 250 TPY of any regulated pollutant (or greater than 100,000 TPY of CO<sub>2</sub>e pursuant to §45-14-2.80(e)(2)).

As shown above in Table 4, the existing unmodified source has a PTE of NO<sub>x</sub> and CO greater than 250 TPY (and a CO<sub>2</sub>e PTE of greater than 100,000 TPY). The PTE of these pollutants define the source as an existing major stationary source under 45CSR14.

Determination of a Major Modification

As Columbia Gas is proposing a "physical change in or change in the method of operation of a major stationary source," included in the permit application is an applicability analysis to determine if the proposed changes to the facility are defined as a "major modification" and subject to Prevention of Significant Deterioration (PSD) review under 45CSR14. A "major modification" is defined under section 2.40 of 45CSR14 as a:

. . . physical change in or change in the method of operation of a major stationary source which results in: a significant emissions increase (as defined in subsection 2.75) of any regulated NSR pollutant (as defined in subsection 2.66); and a significant net emissions increase of that pollutant from the major stationary source. [ . . . ]

Section 3.4 of 45CSR14 provides guidance on the process of determining if proposed changes are a major modification. §45-14-3.4(a) states that:

. . . consistent with the definition of major modification contained in subsection 2.40, a project is a major modification for a regulated NSR pollutant if it causes two types of emissions increases -- a significant emissions increase (as defined in subsection 2.75), and a significant net emissions increase (as defined in subsections 2.46 and 2.74). The proposed project is not a major modification if it does not cause a significant emissions increase. [ . . . ]

Therefore, for the proposed changes to meet the definition of a major modification, the changes themselves must result in a significant emissions increase. The methodology for calculating the emissions increase under the first step is given under Sections 3.4(b), 3.4(c), 3.4(d) and 3.4(f). The substantive language of each is given below:

[§45-14-3.4(b)]

The procedure for calculating (before beginning actual construction) whether a significant emissions increase (i.e., the first step of the process) will occur depends upon the type of emissions units being modified, according to subdivisions 3.4.c through 3.4.f.

[§45-14-3.4(c)]

Actual-to-projected-actual applicability test for projects that only involve existing emissions units. -- A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the projected actual emissions (as defined in subsection 2.63) and the baseline actual emissions (as defined in subdivisions 2.8.a and 2.8.b), for each existing emissions unit, equals or exceeds the significant amount for that pollutant (as defined in subsection 2.74).

[§45-14-3.4(d)]

Actual-to-potential test for projects that only involve construction of a new emissions unit(s). -- A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the potential to emit (as defined in subsection 2.58) from each new emissions unit following completion of the project and the baseline actual emissions (as defined in subdivision 2.8.c) of these units before the project equals or exceeds the significant amount for that pollutant (as defined in subsection 2.74).

[§45-14-3.4(f)]

Hybrid test for projects that involve multiple types of emissions units. -- A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the emissions increases for each emissions unit, using the method specified in subdivisions 3.4.c through 3.4.d as applicable with respect to each emissions unit, for each type of emissions unit equals or exceeds the significant amount for that pollutant (as defined in subsection 2.74).

Further, under the definition of “projected actual emissions” - Section 2.63(a)(4), the applicant may use an emission unit’s PTE in lieu of projecting actual emissions.

### ***Columbia Gas PSD Applicability Analysis***

Based on the above, Columbia Gas included a PSD applicability analysis for the proposed project as outlined in the Description of Process/Modifications above. Pursuant to Step 1 of the of the applicability analysis, the following table details the annual emissions increase of the proposed new equipment:

**Table 5: PSD Applicability Analysis Step 1 - Project Increase<sup>(1)</sup>**

Source	CO	NO <sub>x</sub>	PM <sup>(2)</sup>	SO <sub>2</sub>	VOCs	CO <sub>2</sub> e
Turbine T03	48.14	32.26	3.72	0.40	3.81	66,079
Turbine T04	48.14	32.26	3.72	0.40	3.81	66,079
Process Heater HTR4	0.18	0.21	0.02	0.00	0.01	256
26 Catalytic Heaters SH2	0.48	0.57	0.04	0.00	0.03	685
22 Catalytic Heaters SH3	0.24	0.28	0.02	0.00	0.02	339
<b>New Equipment Increase →</b>	<b>97.18</b>	<b>65.58</b>	<b>7.52</b>	<b>0.81</b>	<b>7.68</b>	<b>133,438</b>
<i>PSD Significance Level</i>	<i>100</i>	<i>40</i>	<i>10</i>	<i>40</i>	<i>40</i>	<i>NA</i>
<i>Potential Major Modification?</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

(1) In lieu of projecting actual emissions, emission unit’s PTEs were used.

(2) Conservatively, all particulate matter emissions are assumed to be less than 2.5 microns. Includes condensables.

Based on the above, only NO<sub>x</sub> has the potential to trigger a major modification under 45CSR14 (equal a “significant emissions increase”). Therefore, the other pollutants do not require further review. While Columbia Gas has claimed decreases as part of the project (removal of compressor engine, heater), these decreases may only be included in the analysis as part of Step 2 - the determination of a “significant net emissions increase.” This is given in the following table:

**Table 6: PSD Applicability Analysis Step 2 - Project Net Emissions Increase**

Source	NO <sub>x</sub>
<b>New Equipment Increase →</b>	<b>65.58</b>
<b><i>Proposed Project Removed Equipment</i></b>	
Engine E01	(103.20)
Heater HTR1	(0.31)
<b><i>Removed Equipment Decrease →</i></b>	<b><i>(103.51)</i></b>
<b><i>Project Change →</i></b>	<b><i>(37.93)</i></b>

For the removed sources, “baseline actual emissions” were based - pursuant to the definition under §45-14-2.8 - on the annualized actual operating data from the calendar years November 2010 through October 2012 and the emission factors as described above in the AIR EMISSIONS AND CALCULATION METHODOLOGIES Section.

It is important to note that when any emissions decrease is claimed including those associated with the proposed modification, all source-wide creditable and contemporaneous increases and decreases of the pollutant subject to netting must be included in the PSD applicability analysis (see DRAFT New Sour Review Workshop Manual - i.e., “The Puzzle Book” pp. A.36). This determination is defined under the definition of “net emissions increase” [§45-14-2.46] and must include “any other increases and decreases in actual emissions at the major source that are contemporaneous with the particular change and are otherwise creditable.” A change is contemporaneous if it “occurs not more than five (5) years prior to the date on which construction on the particular change commences nor later than the date on which the increase from the particular change occurs.” Based on the expected date of construction of the new equipment - January 2017, the contemporaneous period extends back to January 2012. Several changes have occurred since that time and are detailed in the following table:

**Table 7: PSD Applicability Analysis Step 2 Continued - Contemporaneous Changes**

Source	NO <sub>x</sub>
<b><i>Contemporaneous Decreases</i></b>	
Engine E02 (2014)	(27.28)
Engine E04 (2014)	(25.71)
Engine E05 (2014)	(29.23)
<b><i>Removed Equipment Decrease →</i></b>	<b>(82.22)</b>
<b><i>Contemporaneous Increases<sup>(1)</sup></i></b>	
Turbine T01 (2013)	23.79
Turbine T02 (2013)	23.79
Fuel Gas Heater HTR2 (2013)	0.32
Fuel Gas Heater HTR3 (2013)	0.11
Catalytic Space Heaters SH1 (2013)	1.24
<b><i>Added Equipment Increase →</i></b>	<b>49.24</b>
<b><i>Net Emissions Increase →</i></b>	<b>(32.98)</b>

(1) In lieu of projecting actual emissions, emission unit's PTEs were used.

For the removed sources, “baseline actual emissions” were based - pursuant to the definition under §45-14-2.8 - on the annualized actual operating data from the calendar years November 2010 through October 2012 and the emission factors as described above in the AIR EMISSIONS AND CALCULATION METHODOLOGIES Section.

As the net emissions increase of NO<sub>x</sub>, when considering creditable contemporaneous increases and decreases, are less than the significant levels, the proposed modifications are not defined as a “major modification” and are not subject to PSD review. The following table provides the complete NO<sub>x</sub> PSD Applicability Analysis:

**Table 8: NO<sub>x</sub> Complete PSD Applicability Analysis**

Source	NO <sub>x</sub>	
Turbine T03	32.26	<i>Step 1 65.59 tpy</i>
Turbine T04	32.26	
Process Heater HTR4	0.21	
26 Catalytic Heaters SH2	0.57	
22 Catalytic Heaters SH3	0.28	
Decreases	(82.22)	<i>Contemporaneous -32.98 tpy</i>
Increases	49.24	
<b>Net Emissions Increase →</b>	<b>32.61</b>	
<i>PSD Significance Level</i>	<i>40</i>	
<i>Defined as Major Modification?</i>	<i>No</i>	

It is important to note that, based on the language of §45-14-2.46(h), and the historical interpretation thereof, the removal of engine E01 is required by the conclusion of a “reasonable shakedown period” - not to exceed 180 days from startup - of the new turbines (see 4.1.2. and 4.1.3. of the draft permit).

#### ***45CSR30: Requirements for Operating Permits***

45CSR30 provides for the establishment of a comprehensive air quality permitting system consistent with the requirements of Title V of the Clean Air Act. The Lost River Compressor Station, defined under Title V as a “major source,” was last issued a Title V permit on August 13, 2013. Proposed changes evaluated herein must also be incorporated into the facility's Title V operating permit. Commencement of the operations authorized by this permit shall be determined by the appropriate timing limitations associated with Title V permit revisions per 45CSR30.

#### ***40 CFR 60 Subpart KKKK: Standards of Performance for Stationary Combustion Turbines***

Pursuant to §60.4305, Subpart KKKK applies to each “stationary combustion turbine with a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour, based on the higher heating value of the fuel, which commenced construction, modification, or reconstruction after February 18, 2005.” Columbia Gas’ proposed two (2) 15,067 hp natural gas-fired Solar Mars 100 turbines (T03, T04) are defined as stationary combustion turbines with a heat input greater than 10 mmBtu/hr (128.84 mmBtu/hr). Therefore, these units are subject to applicable requirements under Subpart KKKK.

Subpart KKKK requires applicable combustion turbines to meet emission limits for NO<sub>x</sub> and SO<sub>2</sub>. Under §60.4320, the turbines must meet the NO<sub>x</sub> emission limits given in Table 1 of Subpart KKKK. As the Solar Turbines are each a “new turbine firing natural gas” between 50 and 850 mmBtu/hr, Table 1 sets a NO<sub>x</sub> limit of 25 ppm at 15% O<sub>2</sub> or 150 ng/J of useful output. Based on information provided by Solar, the turbines will have NO<sub>x</sub> emission rates of 15 ppm at 15% O<sub>2</sub> at

loads above 50% and under normal meteorological conditions. To demonstrate compliance with the limit, §60.4400(a) requires both an initial (within 180 days of startup or 60 days of achieving full load operation) and annual (not to exceed 14 months from previous test) performance test. However, §60.4340 allows the permittee to be exempted from the annual testing if continuous emission monitors or continuous parameter monitoring systems are installed that meet the requirements of the section. Additionally, if the NO<sub>x</sub> testing results show emissions less than 75% of the limit, testing frequency can be reduced to once every 2 years (with no more than 26 months after the previous test.)

Subpart KKKK also limits SO<sub>2</sub> emissions from the turbines. Pursuant to §60.4330(a)(2), the facility can meet the SO<sub>2</sub> limit by burning fuel with a total potential SO<sub>2</sub> emissions of less than 0.06 lb/mmBtu. The worst-case hourly emission rate of SO<sub>2</sub> from each turbine is 0.056 lb/mmBtu which is in compliance with Subpart KKKK. Additionally, §60.4365(a) exempts the permittee from monitoring fuel sulfur content if a source burns only natural gas that is covered by a purchase or transportation contract that limits sulfur to no more than 20 grains per 100 scf. Columbia qualifies for this exemption.

***40CFR63 Subpart DDDDD: NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters***

This rule applies to existing and new applicable units at major sources of HAPs. The new fuel has heater is a new affected source (gas 1 subcategory) and is less than 5 MMBTU/hr heat input. Therefore, it is not subject to Subpart DDDDD emissions limitations but is subject to tune-ups every five (5) years.

**TOXICITY ANALYSIS OF NON-CRITERIA REGULATED POLLUTANTS**

This section provides an analysis for those regulated pollutants that may be emitted from the new/modified equipment and that are not classified as “criteria pollutants” or Greenhouse Gases. Criteria pollutants are defined as Carbon Monoxide (CO), Lead (Pb), Oxides of Nitrogen (NO<sub>x</sub>), Ozone, Particulate Matter (PM), Particulate Matter less than 10 microns (PM<sub>10</sub>), Particulate Matter less than 2.5 microns (PM<sub>2.5</sub>), and Sulfur Dioxide (SO<sub>2</sub>). Criteria pollutants have National Ambient Air Quality Standards (NAAQS) set for each that are designed to protect the public health and welfare. Other pollutants of concern, although designated as non-criteria and without national concentration standards, are regulated through various federal and programs designed to limit their emissions and public exposure. These programs include federal source-specific Hazardous Air Pollutants (HAPs) limits promulgated under 40 CFR 61 (NESHAPS) and 40 CFR 63 (MACT). Any potential applicability to these programs were discussed above under REGULATORY APPLICABILITY.

The majority of non-criteria regulated pollutants fall under the definition of HAPs which, with some revision since, were 188 compounds identified under Section 112(b) of the Clean Air Act (CAA) as pollutants or groups of pollutants that EPA knows or suspects may cause cancer or other serious human health effects. The following table lists formaldehyde’s general carcinogenic risk as based on analysis provided in the Integrated Risk Information System. EPA's Integrated Risk Information System (IRIS) is a human health assessment program that

evaluates information on health effects that may result from exposure to environmental contaminants. For a complete discussion of the known health effects of each compound, and the underlying studies supporting these assessments, refer to the IRIS database located at [www.epa.gov/iris](http://www.epa.gov/iris).

**Table 6: Potential HAPs - Carcinogenic Risk**

HAPs	Type	Known/Suspected Carcinogen	Classification
Formaldehyde	VOC	Yes	B1 - Probable Human Carcinogen

All HAPs have other non-carcinogenic chronic and acute effects. These adverse health effects may be associated with a wide range of ambient concentrations and exposure times and are influenced by source-specific characteristics such as emission rates and local meteorological conditions. Health impacts are also dependent on multiple factors that affect variability in humans such as genetics, age, health status (e.g., the presence of pre-existing disease) and lifestyle (e.g., smoking). As stated previously, *there are no federal or state ambient air quality standards for these specific chemicals.*

The majority of non-criteria regulated pollutants fall under the definition of HAPs which, with some revision since, were 188 compounds identified under Section 112(b) of the Clean Air Act (CAA) as pollutants or groups of pollutants that EPA knows or suspects may cause cancer or other serious human health effects. As the net PTE change of HAPs from the modifications discussed herein is a decrease, no toxicity analysis is required.

### **AIR QUALITY IMPACT ANALYSIS**

The estimated maximum emissions of the proposed changes are less than applicability thresholds that would define the proposed changes as a “major modification” under 45CSR14 and, therefore, no air quality impacts modeling analysis was required. Additionally, based on the nature of the proposed modifications, modeling was not required under 45CSR13, Section 7.

### **MONITORING, COMPLIANCE DEMONSTRATIONS, REPORTING, AND RECORDING OF OPERATIONS**

The following substantive monitoring, compliance demonstration, reporting and recording requirements (MRR) shall be required for the new equipment (the MRR requirements for the existing equipment will substantively remain the same as under R14-0013D):

- Columbia Gas shall be required to calculate and record, on a monthly and rolling twelve month basis, the emissions of each pollutant generated by turbines T03 and T04. The calculation shall be based on the emission factors used in permit application R14-0013E and the following information:

- Columbia Gas shall be required to monitor and record the number of hours that the turbines T03 and T04 operate in the following operational modes:
  - (1) Normal Load @ 32°F;
  - (2) Low Temp: < 0°F; and
  - (3) Low Load: <50% Load.
- Columbia Gas shall be required to monitor and record the number of startup/shutdowns of each turbine;
- Columbia Gas shall be required to meet all applicable Monitoring, Compliance Demonstration, Source-Specific Recording and Reporting Requirements as given under 40 CFR 60, Subpart KKKK and 40 CFR 63, Subpart ZZZZ.

### **PERFORMANCE TESTING OF OPERATIONS**

The following performance testing requirements shall be required for the new equipment:

- In addition to the NO<sub>x</sub> performance testing as required under 40 CFR 60, Subpart KKKK, within 60 days after achieving full load, but not later than 180 days after initial startup, and at such times thereafter as may be required by the Director, Columbia Gas shall be required to conduct, or have conducted, a performance test on each turbine to determine compliance with the "normal load" CO emission limit specified under the draft permit and in accordance with the draft permit. Columbia Gas shall be required to use an appropriate EPA-approved test method as given under 40 CFR 60, Appendix A and approved in writing by the Director in a protocol submitted pursuant to the draft permit. The testing shall take place while the engines are operating at "normal load" as defined under the draft permit.
- In addition to the NO<sub>x</sub> performance testing as required under 40 CFR 60, Subpart KKKK, within 60 days after achieving full load, but not later than 180 days after initial startup, and at such times thereafter as may be required by the Director, Columbia Gas shall be required to conduct, or have conducted, a performance test on each turbine to determine compliance with the particulate matter emission limit (Including condensables) specified under the draft permit. The permittee shall use an appropriate EPA-approved test method as given under 40 CFR 60, Appendix A and approved in writing by the Director in a protocol submitted pursuant to the draft permit. The testing shall take place while the engines are operating at 100% of load or, if this is not practicable, the results of the test shall scaled up by an appropriate ration to represent operation at 100% load.
- Columbia Gas shall be required to meet all applicable testing requirements as given under 40 CFR 60, Subpart KKKK.



# Permit to Modify



**R14-0013E**

*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 above-referenced facility 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  
Lost River Compressor Station  
031-00002**

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*William F. Durham*  
*Director*

*Issued: Draft*

*This permit will supercede and replace Permit R14-0013D issued on May 31, 2013.*

Facility Location: Mathias, Hardy County, West Virginia  
Mailing Address: 1700 MacCorkle Avenue, SE, Charleston, WV 25314  
Facility Description: Transmission Station for a natural gas pipeline system  
NAICS Codes: 486210  
UTM Coordinates: 685.5 km Easting • 4,305.1 km Northing • Zone 17  
Permit Type: Modification  
Description of Change: Addition of two (2) new Solar Mars 100 turbines, one (1) process heater, 48 catalytic heaters and the removal of one (1) existing Clark HRA-8T Compressor engine. Additionally, the synthetic minor limit on the two (2) existing Solar 70 turbines for GHG will be removed.

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

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*The source is subject to 45CSR30. Changes authorized by this permit must also be incorporated into the facility's Title V operating permit. Commencement of the operations authorized by this permit shall be determined by the appropriate timing limitations associated with Title V permit revisions per 45CSR30.*

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**1.0. Emission Units**

Source ID	Emission Point ID	Description	Make/Model	Design Capacity	Installed (year)
002-01 <sup>(1)</sup>	E01	Compressor Engine No. 1	Clark HRA-8T	1,320 hp	1953
002-07	E07	Compressor Engine No. 7	Clark TLA-8	2,700 hp	1969
002-08	E08	Compressor Engine No. 8	Clark TLA-8	2,700 hp	1969
002-09	E09	Compressor Engine No. 9	Clark TLA-8	2,700 hp	1970
002-10	E10	Compressor Engine No. 10	Clark TLAD-10	4,640 hp	1991
002-12	G3	Emergency Generator #2	Waukesha VGF48GL	1,063 hp	2009
002-13	E11	Compressor Engine No. 11	Caterpillar G3616	4,735 hp	2009
003-01	T01	Turbine #1	Solar Taurus 70	9,236 hp @ 59°F 11,557 hp @ 0°F	2013
003-02	T02	Turbine #2	Solar Taurus 70	9,236 hp @ 59°F 11,557 hp @ 0°F	2013
001-04	HTR2	Fuel Heater #2	n/a	0.75 MMBtu/hr	2013
001-05	HTR3	Fuel Heater #3	n/a	0.25 MMBtu/hr	2013
001-06	SH1	40 Catalytic Heaters	n/a	2.88 MMBtu/hr <sup>(2)</sup>	2013
003-03	T03	Turbine #3	Solar Mars 100	15,067 hp @ 32°F	2016
003-04	T04	Turbine #4	Solar Mars 100	15,067 hp @ 32°F	2016
001-07	HTR4	Fuel Gas Heater	n/a	0.50 MMBTU/hr	2016
001-08	SH2	26 Catalytic Heaters	n/a	1.34 MMBtu/hr <sup>(2)</sup>	2016
001-09	SH3	22 Catalytic Heaters	n/a	0.66 MMBtu/hr <sup>(2)</sup>	2013

(1) Engine shall be removed from service

(2) Listed design capacity is aggregate for all heaters.

## 2.0. General Conditions

### 2.1. Definitions

- 2.1.1. All references to the “West Virginia Air Pollution Control Act” or the “Air Pollution Control Act” mean those provisions contained in W.Va. Code §§ 22-5-1 to 22-5-18.
- 2.1.2. The “Clean Air Act” means those provisions contained in 42 U.S.C. §§ 7401 to 7671q, and regulations promulgated thereunder.
- 2.1.3. “Secretary” means the Secretary of the Department of Environmental Protection or such other person to whom the Secretary has delegated authority or duties pursuant to W.Va. Code §§ 22-1-6 or 22-1-8 (45CSR§30-2.12.). The Director of the Division of Air Quality is the Secretary’s designated representative for the purposes of this permit.

### 2.2. Acronyms

CAAA	Clean Air Act Amendments	NO <sub>x</sub>	Nitrogen Oxides
CBI	Confidential Business Information	NSPS	New Source Performance Standards
CEM	Continuous Emission Monitor	PM	Particulate Matter
CES	Certified Emission Statement	PM <sub>2.5</sub>	Particulate Matter less than 2.5 μm in diameter
C.F.R. or CFR	Code of Federal Regulations	PM <sub>10</sub>	Particulate Matter less than 10μm in diameter
CO	Carbon Monoxide	Ppb	Pounds per Batch
C.S.R. or CSR	Codes of State Rules	Pph	Pounds per Hour
DAQ	Division of Air Quality	Ppm	Parts per Million
DEP	Department of Environmental Protection	Ppm <sub>v</sub> or ppm <sub>v</sub>	Parts per Million by Volume
dscm	Dry Standard Cubic Meter	PSD	Prevention of Significant Deterioration
FOIA	Freedom of Information Act	Psi	Pounds per Square Inch
HAP	Hazardous Air Pollutant	SIC	Standard Industrial Classification
HON	Hazardous Organic NESHAP	SIP	State Implementation Plan
HP	Horsepower	SO <sub>2</sub>	Sulfur Dioxide
lbs/hr	Pounds per Hour	TAP	Toxic Air Pollutant
LDAR	Leak Detection and Repair	TPY	Tons per Year
M	Thousand	TRS	Total Reduced Sulfur
MACT	Maximum Achievable Control Technology	TSP	Total Suspended Particulate
MDHI	Maximum Design Heat Input	USEPA	United States Environmental Protection Agency
MM	Million	UTM	Universal Transverse Mercator
MMBtu/hr or mmbtu/hr	Million British Thermal Units per Hour	VEE	Visual Emissions Evaluation
MMCF/hr or mmcf/hr	Million Cubic Feet per Hour	VOC	Volatile Organic Compounds
NA	Not Applicable	VOL	Volatile Organic Liquids
NAAQS	National Ambient Air Quality Standards		
NESHAPS	National Emissions Standards for Hazardous Air Pollutants		

### **2.3. Authority**

This permit is issued in accordance with West Virginia Air Pollution Control Act W.Va. Code §§ 22-5-1. et seq. and the following Legislative Rules promulgated thereunder:

- 2.3.1. 45CSR13 – *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation;*
- 2.3.2. 45CSR14 – *Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration;*

### **2.4. Term and Renewal**

- 2.4.1. This permit supersedes and replaces previously issued Permit R14-0013D. This Permit shall remain valid, continuous and in effect unless it is revised, suspended, revoked or otherwise changed under an applicable provision of 45CSR13 or any other applicable legislative rule;

### **2.5. Duty to Comply**

- 2.5.1. The permitted facility shall be constructed and operated in accordance with the plans and specifications filed in Permit Applications R14-0013 through R14-0013E, and any modifications, administrative updates, or amendments thereto. The Secretary may suspend or revoke a permit if the plans and specifications upon which the approval was based are not adhered to; [45CSR§§13-5.11 and 10.3.]
- 2.5.2. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the West Virginia Code and the Clean Air Act and is grounds for enforcement action by the Secretary or USEPA;
- 2.5.3. Violations of any of the conditions contained in this permit, or incorporated herein by reference, may subject the permittee to civil and/or criminal penalties for each violation and further action or remedies as provided by West Virginia Code 22-5-6 and 22-5-7;
- 2.5.4. Approval of this permit does not relieve the permittee herein of the responsibility to apply for and obtain all other permits, licenses, and/or approvals from other agencies; i.e., local, state, and federal, which may have jurisdiction over the construction and/or operation of the source(s) and/or facility herein permitted.

### **2.6. Duty to Provide Information**

The permittee shall furnish to the Secretary within a reasonable time any information the Secretary may request in writing to determine whether cause exists for administratively updating, modifying, revoking, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Secretary copies of records to be kept by the permittee. For information claimed to be confidential, the permittee shall furnish such records to the Secretary along with a claim of confidentiality in accordance with 45CSR31. If confidential information is to be sent

to USEPA, the permittee shall directly provide such information to USEPA along with a claim of confidentiality in accordance with 40 C.F.R. Part 2.

**2.7. Duty to Supplement and Correct Information**

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

**2.8. Administrative Update**

The permittee may request an administrative update to this permit as defined in and according to the procedures specified in 45CSR13.  
[45CSR§13-4.]

**2.9. Permit Modification**

The permittee may request a minor modification to this permit as defined in and according to the procedures specified in 45CSR13.  
[45CSR§13-5.4.]

**2.10 Major Permit Modification**

The permittee may request a major modification as defined in and according to the procedures specified in 45CSR14 or 45CSR19, as appropriate.  
[45CSR§13-5.1]

**2.11. Inspection and Entry**

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

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

**2.12. Emergency**

- 2.12.1. An "emergency" means any situation arising from sudden and reasonable unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate

corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

- 2.12.2. Effect of any emergency. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions of Section 2.12.3 are met.
- 2.12.3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:
- a. An emergency occurred and that the permittee can identify the cause(s) of the emergency;
  - b. The permitted facility was at the time being properly operated;
  - c. During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and
  - d. The permittee submitted notice of the emergency to the Secretary within one (1) working day of the time when emission limitations were exceeded due to the emergency and made a request for variance, and as applicable rules provide. This notice must contain a detailed description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.
- 2.12.4. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.
- 2.12.5. The provisions of this section are in addition to any emergency or upset provision contained in any applicable requirement.

### **2.13. Need to Halt or Reduce Activity Not a Defense**

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

### **2.14. Suspension of Activities**

In the event the permittee should deem it necessary to suspend, for a period in excess of sixty (60) consecutive calendar days, the operations authorized by this permit, the permittee shall notify the Secretary, in writing, within two (2) calendar weeks of the passing of the sixtieth (60) day of the suspension period.

**2.15. Property Rights**

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

**2.16. Severability**

The provisions of this permit are severable and should any provision(s) be declared by a court of competent jurisdiction to be invalid or unenforceable, all other provisions shall remain in full force and effect.

**2.17. Transferability**

This permit is transferable in accordance with the requirements outlined in Section 10.1 of 45CSR13. [45CSR§13-10.1.]

**2.18. Notification Requirements**

The permittee shall notify the Secretary, in writing, no later than thirty (30) calendar days after the actual startup of the operations authorized under this permit.

**2.19. Credible Evidence**

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

### 3.0. Facility-Wide Requirements

#### 3.1. Limitations and Standards

- 3.1.1. **Open burning.** The open burning of refuse by any person, firm, corporation, association or public agency is prohibited except as noted in 45CSR§6-3.1.  
[45CSR§6-3.1.]
- 3.1.2. **Open burning exemptions.** The exemptions listed in 45CSR§6-3.1 are subject to the following stipulation: Upon notification by the Secretary, no person shall cause, suffer, allow or permit any form of open burning during existing or predicted periods of atmospheric stagnation. Notification shall be made by such means as the Secretary may deem necessary and feasible.  
[45CSR§6-3.2.]
- 3.1.3. **Asbestos.** The permittee is responsible for thoroughly inspecting the facility, or part of the facility, prior to commencement of demolition or renovation for the presence of asbestos and complying with 40 C.F.R. § 61.145, 40 C.F.R. § 61.148, and 40 C.F.R. § 61.150. The permittee, owner, or operator must notify the Secretary at least ten (10) working days prior to the commencement of any asbestos removal on the forms prescribed by the Secretary if the permittee is subject to the notification requirements of 40 C.F.R. § 61.145(b)(3)(i). The USEPA, the Division of Waste Management, and the Bureau for Public Health - Environmental Health require a copy of this notice to be sent to them.  
[40CFR§61.145(b) and 45CSR§34]
- 3.1.4. **Odor.** No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public.  
[45CSR§4-3.1] *[State Enforceable Only]*
- 3.1.5. **Permanent shutdown.** A source which has not operated at least 500 hours in one 12-month period within the previous five (5) year time period may be considered permanently shutdown, unless such source can provide to the Secretary, with reasonable specificity, information to the contrary. All permits may be modified or revoked and/or reapplication or application for new permits may be required for any source determined to be permanently shutdown.  
[45CSR§13-10.5.]
- 3.1.6. **Standby plan for reducing emissions.** When requested by the Secretary, the permittee shall prepare standby plans for reducing the emissions of air pollutants in accordance with the objectives set forth in Tables I, II, and III of 45CSR11.  
[45CSR§11-5.2.]

#### 3.2. Monitoring Requirements

*[Reserved]*

#### 3.3. Testing Requirements

- 3.3.1. **Stack testing.** As per provisions set forth in this permit or as otherwise required by the Secretary, in accordance with the West Virginia Code, underlying regulations, permits and orders, the permittee shall conduct test(s) to determine compliance with the emission limitations set forth in this permit and/or established or set forth in underlying documents. The Secretary, or his duly

authorized representative, may at his option witness or conduct such test(s). Should the Secretary exercise his option to conduct such test(s), the operator shall provide all necessary sampling connections and sampling ports to be located in such manner as the Secretary may require, power for test equipment and the required safety equipment, such as scaffolding, railings and ladders, to comply with generally accepted good safety practices. Such tests shall be conducted in accordance with the methods and procedures set forth in this permit or as otherwise approved or specified by the Secretary in accordance with the following:

- a. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with 40 C.F.R. Parts 60, 61, and 63 in accordance with the Secretary's delegated authority and any established equivalency determination methods which are applicable. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4 or 45CSR§13-5.4 as applicable.
- b. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with applicable requirements which do not involve federal delegation. In specifying or approving such alternative testing to the test methods, the Secretary, to the extent possible, shall utilize the same equivalency criteria as would be used in approving such changes under Section 3.3.1.a. of this permit. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4 or 45CSR§13-5.4 as applicable.
- c. All periodic tests to determine mass emission limits from or air pollutant concentrations in discharge stacks and such other tests as specified in this permit shall be conducted in accordance with an approved test protocol. Unless previously approved, such protocols shall be submitted to the Secretary in writing at least thirty (30) days prior to any testing and shall contain the information set forth by the Secretary. In addition, the permittee shall notify the Secretary at least fifteen (15) days prior to any testing so the Secretary may have the opportunity to observe such tests. This notification shall include the actual date and time during which the test will be conducted and, if appropriate, verification that the tests will fully conform to a referenced protocol previously approved by the Secretary.
- d. The permittee shall submit a report of the results of the stack test within sixty (60) days of completion of the test. The test report shall provide the information necessary to document the objectives of the test and to determine whether proper procedures were used to accomplish these objectives. The report shall include the following: the certification described in paragraph 3.5.1.; a statement of compliance status, also signed by a responsible official; and, a summary of conditions which form the basis for the compliance status evaluation. The summary of conditions shall include the following:
  1. The permit or rule evaluated, with the citation number and language;
  2. The result of the test for each permit or rule condition; and,
  3. A statement of compliance or noncompliance with each permit or rule condition.

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

### 3.4. Recordkeeping Requirements

- 3.4.1. **Retention of records.** The permittee shall maintain records of all information (including monitoring data, support information, reports, and notifications) required by this permit recorded in a form suitable and readily available for expeditious inspection and review. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation. The files shall be maintained for at least five (5) years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent two (2) years of data shall be maintained on site. The remaining three (3) years of data may be maintained off site, but must remain accessible within a reasonable time. Where appropriate, the permittee may maintain records electronically (on a computer, on computer floppy disks, CDs, DVDs, or magnetic tape disks), on microfilm, or on microfiche.
- 3.4.2. **Odors.** For the purposes of 45CSR4, the permittee shall maintain a record of all odor complaints received, any investigation performed in response to such a complaint, and any responsive action(s) taken.  
**[45CSR§4. State Enforceable Only.]**

### 3.5. Reporting Requirements

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

**If to the DAQ:**

Director  
WVDEP  
Division of Air Quality  
601 57<sup>th</sup> Street  
Charleston, WV 25304-2345

**If to the US EPA:**

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

#### 3.5.4. Operating Fee

- 3.5.4.1. In accordance with 45CSR30 – Operating Permit Program, the permittee shall submit a certified emissions statement and pay fees on an annual basis in accordance with the submittal requirements of the Division of Air Quality. A receipt for the appropriate fee shall be

maintained on the premises for which the receipt has been issued, and shall be made immediately available for inspection by the Secretary or his/her duly authorized representative.

- 3.5.5. **Emission inventory.** At such time(s) as the Secretary may designate, the permittee herein shall prepare and submit an emission inventory for the previous year, addressing the emissions from the facility and/or process(es) authorized herein, in accordance with the emission inventory submittal requirements of the Division of Air Quality. After the initial submittal, the Secretary may, based upon the type and quantity of the pollutants emitted, establish a frequency other than on an annual basis.

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#### 4.0. Source-Specific Requirements

##### 4.1. Limitations and Standards

- 4.1.1. Only those emission units as identified in Table 1.0 are authorized by this permit. In accordance with the information filed in Permit Applications R14-0013E, the emission units identified under Table 1.0 of this permit shall be installed, maintained, and operated so as to minimize any fugitive escape of pollutants and shall not exceed the listed design capacities.
- 4.1.2. The facility shall employ three (3) Clark TLA-8 natural-gas fired compressor engines. The operation of these engines shall not exceed the following maximum combined operating and emission limitations:
- a. The engines shall be limited to the maximum operating capacities as shown in Table 4.1.2(a).

**Table 4.1.2(a)**

Engine No. - Source ID -	Maximum Engine Rating <sup>(1)</sup> (hp)	Total Combined Annual Operating Limit (bhp-hr/yr)
No. 7 - 002-07 -	2,700	70,956,000
No. 8 - 002-08 -	2,700	
No. 9 - 002-09 -	2,700	

(1) Maximum rating based on standard operating conditions. Under ambient operating conditions (less than 40F), the maximum peak rating of each engine is 3,015 horsepower.

- b. Emissions released from the engines shall not exceed the maximum individual hourly and total combined annual emission limits set forth in Table 4.1.2(b).

**Table 4.1.2(b)**

Emission Point ID	Pollutant	Emission Limits	
		Individual Hourly (g/hp-hr)	Total Combined Annual (tons/yr)
E07, E08, E09	NO <sub>x</sub>	9.5	562.5
	CO	3.1	203.4

4.1.3. The facility shall employ one (1) Clark TLAD-10 natural-gas fired compressor engine. The operation of this engine shall not exceed the following maximum operating and emission limitations:

- a. The engines shall be limited to the maximum operating capacities as shown in Table 4.1.3(a).

**Table 4.1.3(a)**

Engine No. - Source ID -	Maximum Engine Rating (hp)
No. 10 - 002-10 -	4,640

- b. Emissions released from the engine shall not exceed the maximum hourly and annual emission limits set forth in Table 4.1.3(b).

**Table 4.1.3(b)**

Emission Point ID	Pollutant	Emission Factor (g/hp-hr)	Maximum Emission Rates	
			Hourly (lb/hr)	Annual (ton/yr)
E10	NO <sub>x</sub>	2.0	20.5	89.6
	CO	2.1	22.5	98.5
	VOC	0.7	8.2	35.8
	SO <sub>2</sub>	0.003	0.1	0.2
	PM <sup>(1)</sup>	0.19	1.9	8.3

(1) All particulate matter emissions assumed to be less than PM2.5. Includes condensables.

4.1.4. The facility shall employ one (1) Caterpillar G3616 natural-gas fired compressor engine. The operation of this engine shall not exceed the following maximum operating and emission limitations:

- a. The engine shall be limited to the maximum operating capacities as shown in Table 4.1.4(a).

**Table 4.1.4(a)**

Engine No. - Source ID -	Maximum Engine Rating (hp)
No. 11 - 002-13 -	4,735

- b. Emissions released from the engine shall not exceed the maximum hourly and annual emission limits set forth in Table 4.1.4(b).

**Table 4.1.4(b)**

Emission Point ID	Pollutant	Emission Factor (g/hp-hr)	Maximum Emission Rates	
			Hourly (lb/hr)	Annual (ton/yr)
E11	NO <sub>x</sub>	0.70	7.30	32.00
	CO	0.63	6.52	28.60
	VOC	0.16	1.70	7.42
	SO <sub>2</sub>	0.0024	0.02	0.11
	PM <sup>(1)</sup>	0.034	0.40	1.60
	Formaldehyde	0.114	1.19	5.22

- (1) All particulate matter emissions assumed to be less than PM<sub>2.5</sub>. Includes condensables.
- c. The permittee shall install, maintain and operate an oxidation catalyst on engine E11 to reduce CO, VOC, and formaldehyde emissions. The oxidation catalyst shall be utilized at all times the engine is operating.
- d. Pursuant to 40 CFR 63, Subpart ZZZZ, the permittee shall:
  - (1) Reduce uncontrolled CO emissions by 93 percent or more; or
  - (2) Limit concentration of formaldehyde in the exhaust to 14 ppmvd or less at 15 percent O<sub>2</sub>.  
[40 CFR §63.6600 - Table 2a]
- e. Pursuant to 40 CFR 63, Subpart ZZZZ, the permittee shall, with respect to the oxidation catalyst:
  - (1) Maintain the catalyst so that the pressure drop across the catalyst does not change by more than two inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst that was measured during the initial performance test; and
  - (2) Maintain the temperature of the exhaust so that the catalyst inlet temperature is greater than or equal to 450 F and less than or equal to 1350 F.  
[40 CFR §63.6600 - Table 2b]
- f. The permittee shall regularly inspect, maintain, and repair engine E11 and its oxidation catalyst to assure proper operation. The engine and the oxidation catalyst shall be operated, maintained and serviced per manufacturer recommendations. Based on manufacturer recommendations, the permittee must either maintain on-site spare parts for use in immediate repair or participate in a quick turn-around catalyst element cleaning/loaner program with a catalyst supplier.
- g. The permittee shall comply with all applicable requirements of NSPS for Stationary Compression Ignition Internal Combustion Engines specified in 40 CFR Part 60, Subpart JJJJ.

4.1.5. The facility shall employ two (2) Solar Taurus 70 and two (2) Solar Mars 100 natural-gas fired turbines. The operation of these turbines shall not exceed the following maximum operating and emission limitations:

a. The turbines shall be limited to the maximum operating capacities as shown in Table 4.1.5(a).

**Table 4.1.5(a)**

<b>Turbine No. - Source ID -</b>	<b>Maximum Turbine Rating (hp)</b>
No. 1 - 003-01 -	9,236 hp @ 59° F 11,557 hp @ 0° F
No. 2 - 003-02 -	9,236 hp @ 59° F 11,557 hp @ 0° F
No. 3 - 003-03 -	15,067 hp @ 32° F
No. 4 - 003-04 -	15,067 hp @ 32° F

b. Emissions released from the turbines shall not exceed the maximum individual hourly (per operation mode) and total combined annual emission limits set forth in Table 4.1.5(b) and (c).

**Table 4.1.5(b)**

<b>Emission Point ID</b>	<b>Pollutant</b>	<b>Maximum Emission Rates</b>					<b>Combined Annual (ton/yr)</b>
		<b>Individual Hourly (lb/hr)<sup>(1)</sup></b>					
		<b>Normal Load</b>	<b>Low Temp</b>	<b>Very Low Temp</b>	<b>Low-Load</b>	<b>Startup/Shutdown <sup>(1)</sup></b>	
T01, T02	NO <sub>x</sub>	5.04	15.00	42.84	24.56	2.40	47.57
	CO	5.12	21.73	32.60	1,708.23	214.60	103.01
	VOC	0.73	1.55	1.55	24.40	3.05	7.36
	SO <sub>2</sub>	4.70	4.70	4.70	4.70	4.70	0.52
	PM <sup>(2)</sup>	0.61	0.61	0.61	0.61	0.61	5.38
	CO <sub>2</sub> e	10,904	10,904	10,904	10,904	10,904	95,518
	Formaldehyde	0.06	0.06	0.06	0.06	0.06	0.52

(1) Operating modes are defined under 4.2.3(a). Startup/shutdown emissions are per cycle and not lb/hr.

(2) All particulate matter emissions assumed to be less than PM<sub>2.5</sub>. Includes condensables.

**Table 4.1.5(c)**

Emission Point ID	Pollutant	Maximum Emission Rates				
		Individual Hourly (lb/hr) <sup>(1)</sup>				Combined Annual (ton/yr)
		Normal Load	Low Temp	Low-Load	Startup/Shutdown <sup>(1)</sup>	
T03, T04	NO <sub>x</sub>	6.96	21.16	16.10	3.10	64.52
	CO	7.07	30.67	653.41	272.70	96.29
	VOC	0.81	1.75	7.47	3.12	7.62
	SO <sub>2</sub>	7.36	7.36	7.36	7.36	0.81
	PM <sup>(2)</sup>	0.85	0.85	0.85	0.85	7.45
	CO <sub>2e</sub>	15,087	15,087	15,087	15,087	132,159
	Formaldehyde	0.09	0.09	0.09	0.09	0.80

(1) Operating modes are defined under 4.2.4(a). Startup/shutdown emissions are per cycle and not lb/hr.

(2) All particulate matter emissions assumed to be less than PM<sub>2.5</sub>. Includes condensables.

c. Each Turbine shall be equipped with SoLoNO<sub>x</sub><sup>™</sup> lean-premixed combustion technology to ensure uniform air/fuel mixture and to prevent formation of NO<sub>x</sub>.

d. Pursuant to 40 CFR 60, Subpart KKKK, the permittee meet the following requirements:

(1) You must meet the emission limits for NO<sub>x</sub> specified in Table 1 to this subpart.  
**[40 CFR § 60.4320]**

(2) If your turbine is located in a continental area, you must comply with either paragraph (a)(1), (a)(2), or (a)(3) of this section.

(i) You must not cause to be discharged into the atmosphere from the subject stationary combustion turbine any gases which contain SO<sub>2</sub> in excess of 110 nanograms per Joule (ng/J) (0.90 pounds per megawatt-hour (lb/MWh)) gross output;

(ii) You must not burn in the subject stationary combustion turbine any fuel which contains total potential sulfur emissions in excess of 26 ng SO<sub>2</sub> /J (0.060 lb SO<sub>2</sub> /MMBtu) heat input. If your turbine simultaneously fires multiple fuels, each fuel must meet this requirement.  
**[40 CFR § 60.4330]**

4.1.6. The Fuel Heaters (001--04, 001-05, 001-07) and the Catalytic Heaters (001-06, 001-08, 001-09) shall operate according to the following requirements:

- a. The maximum emissions from Fuel Heater 001-04 shall not exceed the limits given in the following table;

**Table 4.1.6(a): Fuel Heater 001-04 Emission Limits**

Pollutant	Hourly (lb/hr)	Annual (ton/yr)
CO	0.06	0.27
NO <sub>x</sub>	0.07	0.32

- b. The maximum emissions from Fuel Heater 001-05 shall not exceed the limits given in the following table;

**Table 4.1.6(b): Fuel Heater 001-05 Emission Limits**

Pollutant	Hourly (lb/hr)	Annual (ton/yr)
CO	0.02	0.09
NO <sub>x</sub>	0.02	0.11

- c. The maximum emissions from Fuel Heater 001-07 shall not exceed the limits given in the following table;

**Table 4.1.6(c): Fuel Heater 001-07 Emission Limits**

Pollutant	Hourly (lb/hr)	Annual (ton/yr)
CO	0.04	0.18
NO <sub>x</sub>	0.05	0.21

- d. The maximum emissions from the Catalytic Heaters (001-06) shall not exceed the limits given in the following table;

**Table 4.1.6(d): Catalytic Heaters (001-06) Emission Limits<sup>(1)</sup>**

Pollutant	Hourly (lb/hr)	Annual (ton/yr)
CO	0.24	1.04
NO <sub>x</sub>	0.28	1.24

(1) Both hourly and annual limits are aggregate limits for all 40 Catalytic Heaters.

- e. The maximum emissions from the Catalytic Heaters (001-08) shall not exceed the limits given in the following table;

**Table 4.1.6(e): Catalytic Heaters (001-08) Emission Limits<sup>(1)</sup>**

Pollutant	Hourly (lb/hr)	Annual (ton/yr)
CO	0.11	0.48
NO <sub>x</sub>	0.13	0.57

(1) Both hourly and annual limits are aggregate limits for all 26 Catalytic Heaters.

- f. The maximum emissions from the Catalytic Heaters (001-09) shall not exceed the limits given in the following table;

**Table 4.1.6(f): Catalytic Heaters (001-09) Emission Limits<sup>(1)</sup>**

Pollutant	Hourly (lb/hr)	Annual (ton/yr)
CO	0.05	0.24
NO <sub>x</sub>	0.06	0.28

(1) Both hourly and annual limits are aggregate limits for all 22 Catalytic Heaters.

- g. As the annual emission limits given in Table 4.1.6(a-f) are based on operating 8,760 hours/year, there is no limit on the annual hours of operation or fuel usage of the Fuel Heaters or the Catalytic Heaters.
- h. 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.]

- 4.1.7. The Waukesha VGF48GL Emergency Generator (002-12) shall operate according to the following requirements:

- a. The maximum emissions from 002-12 shall not exceed the limits given in the following table;

**Table 4.1.7(a): Emergency Generator 002-12 Emission Limits**

Pollutant	Hourly (lb/hr)	Annual (ton/yr)
CO	3.04	0.76
NO <sub>x</sub>	4.68	1.17
VOC	0.61	0.15

- b. The Emergency Generator shall not operate in excess of 500 hours per year. Compliance with the Maximum Yearly Operation Limitation shall be determined using a twelve month rolling total. A twelve month rolling total shall mean the sum of the hours of operation at any given time during the previous twelve consecutive calendar months.
- c. The permittee shall maintain on-site verification that the Emergency Generator was manufactured prior to January 1, 2009.

### 4.3. Testing Requirements

- 4.3.1. For the purpose of demonstrating compliance with the hourly emission limits set forth in Section 4.1.2. of this permit, the permittee shall conduct annual emissions testing for NO<sub>x</sub> and CO emissions released from engines No.7 through No. 9 (emission points E07 through E09) using portable emissions analyzers.

Upon utilization of the air-to-fuel ratio monitoring established in Section 4.2.2. of permit R14-0013E, periodic emissions testing shall be performed once every five (5) years. This periodic testing may be performed using portable emissions analyzers.

- 4.3.2. In addition to the NO<sub>x</sub> performance testing as required under 40 CFR 60, Subpart KKKK, within 60 days after achieving full load, but not later than 180 days after initial startup, and at such times thereafter as may be required by the Director, the permittee shall conduct, or have conducted, a performance test on each turbine to determine compliance with the “normal load” CO emission limit specified under Table 4.1.5(b) and (c) and in accordance with 3.3.1. The permittee shall use an appropriate EPA-approved test method as given under 40 CFR 60, Appendix A and approved in writing by the Director in a protocol submitted pursuant to 3.3.1(c). The testing shall take place while the engines are operating at “normal load” as defined under 4.2.3(a) and 4.2.4(a).
- 4.3.3. In addition to the NO<sub>x</sub> performance testing as required under 40 CFR 60, Subpart KKKK, within 60 days after achieving full load, but not later than 180 days after initial startup, and at such times thereafter as may be required by the Director, the permittee shall conduct, or have conducted, a performance test on each turbine to determine compliance with the particulate matter emission limit (including condensables) specified under Table 4.1.5(b) and (c) and in accordance with 3.3.1. The permittee shall use an appropriate EPA-approved test method as given under 40 CFR 60, Appendix A and approved in writing by the Director in a protocol submitted pursuant to 3.3.1(c). The testing shall take place while the engines are operating at 100% of load or, if this is not practicable, the results of the test shall scaled up by an appropriate ration to represent operation at 100% load.
- 4.3.4. The permittee shall meet all applicable testing requirements as given under 40 CFR 60 Subpart JJJJ, 40 CFR 60, Subpart KKKK and 40 CFR 63, Subpart ZZZZ.

### 4.4. Recordkeeping Requirements

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

4.4.2. **Record of Maintenance of Air Pollution Control Equipment.** For all pollution control equipment listed in Section 1.0, the permittee shall maintain accurate records of all required pollution control equipment inspection and/or preventative maintenance procedures.

4.4.3. **Record of Malfunctions of Air Pollution Control Equipment.** For all air pollution control equipment listed in Section 1.0, the permittee shall maintain records of the occurrence and duration of any malfunction or operational shutdown of the air pollution control equipment during which excess emissions occur. For each such case, the following information shall be recorded:

- a. The equipment involved.
- b. Steps taken to minimize emissions during the event.
- c. The duration of the event.
- d. The estimated increase in emissions during the event.

For each such case associated with an equipment malfunction, the additional information shall also be recorded:

- e. The cause of the malfunction.
- f. Steps taken to correct the malfunction.
- g. Any changes or modifications to equipment or procedures that would help prevent future recurrences of the malfunction.

4.4.4. The permittee shall meet all applicable record-keeping requirements as given under 40 CFR 60 Subpart JJJJ, 40 CFR 60, Subpart KKKK and 40 CFR 63, Subpart ZZZZ.

4.4.5. The permittee shall keep the following records in accordance with 40CFR§63.7555. This includes but is not limited to the following information during the tune up as required in Condition 4.1.8.b. and 40 CFR §63.7540:

- a. 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.
- b. A description of any corrective actions taken as a part of the tune-up.  
[40 CFR §§63.7540(a)(10)(vi) and 63.7555]

#### 4.5. Reporting Requirements

- 4.5.1. The permittee shall meet all applicable reporting requirements as given under 40 CFR 60 Subpart JJJJ, 40 CFR 60, Subpart KKKK and 40 CFR 63, Subpart ZZZZ.
- 4.5.2. The permittee shall submit “5-year Compliance Reports” for Heaters (HTR2, HTR3, HTR4) electronically using CEDRI that is accessed through the EPA’s Center Data Exchange (CDX) ([www.epa.gov/cdx](http://www.epa.gov/cdx)). However, if the reporting form for this report is not available in CEDRI at the time the report is due, the permittee shall submit the report to the Administrator and Director using the addresses listed in Condition 3.5.3. The first compliance report shall be submitted no later than five years after the initial start-up of the unit and the first date ending on January 31. Subsequent reports shall be submitted once every five years afterwards. Such reports shall contain the information specified in 40 CFR §§63.7550(c)(5) (i)through (iv) and (xiv) which are:
- a. Permittee and facility name, and address;
  - b. Process unit information emission limitations, and operating limitations;
  - c. Date of report and beginning and ending dates of the reporting period;
  - d. Include the date of the most recent tune-up for each boiler; and
  - e. Include the date of the most recent burner inspection if it was not done on a 5-year period and was delayed until the next scheduled or unscheduled unit shutdown.

The permittee shall maintain records of such reports in accordance with Condition 3.4.1.  
**[40CFR §§63.7550(b), (b)(1), (c)(1), & (c)(5)(i) though (iii) and (xiv), and (h)(3)]**

### CERTIFICATION OF DATA ACCURACY

I, the undersigned, hereby certify that, based on information and belief formed after reasonable inquiry, all information contained in the attached \_\_\_\_\_, representing the period beginning \_\_\_\_\_ and ending \_\_\_\_\_, and any supporting documents appended hereto, is true, accurate, and complete.

Signature<sup>1</sup> \_\_\_\_\_  
(please use blue ink) Responsible Official or Authorized Representative Date

Name & Title \_\_\_\_\_  
(please print or type) Name Title

Telephone No. \_\_\_\_\_ Fax No. \_\_\_\_\_

- <sup>1</sup> This form shall be signed by a "Responsible Official." "Responsible Official" means one of the following:
- a. For a corporation: The president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:
    - (i) the facilities employ more than 250 persons or have a gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), or
    - (ii) the delegation of authority to such representative is approved in advance by the Director;
  - b. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;
  - c. For a municipality, State, Federal, or other public entity: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of U.S. EPA); or
  - d. The designated representative delegated with such authority and approved in advance by the Director.



**Permit / Application Information Sheet**  
**Division of Environmental Protection**  
**West Virginia Office of Air Quality**

<b>Company:</b>	Columbia Gas Transmission, LLC	<b>Facility:</b>	Lost River
<b>Region:</b>	9	<b>Plant ID:</b>	031-00002
<b>Engineer:</b>	Williams, Jerry	<b>Application #:</b>	R14-0013E
<b>Physical Address:</b>	419 Upper Cove Road Mathias WV 26812	<b>Category:</b>	Gas Comp
<b>County:</b>	Hardy	<b>SIC:</b> [4922] ELECTRIC, GAS AND SANITARY SERVICES - NATURAL GAS TRANSMISSION <b>NAICS:</b> [486210] Pipeline Transportation of Natural Gas	
<b>Other Parties:</b>	ENV_CONT - Ivey, Lacey 337-241-0686 OPER_MGR - Nelson, Steven 304-548-1630		

**Information Needed for Database and AIRS**  
 1. Pending result code (99) more than two months old

**Regulated Pollutants**

Summary from this Permit R14-0013E		
Air Programs	Fee	Applicable Regulations
Fee Program	\$2,000.00	Application Type MODIFICATION

**Notes from Database**

**Activity Dates**

APPLICATION RECEIVED	01/25/2016
APPLICATION FEE PAID	01/26/2016
ASSIGNED DATE	01/26/2016

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Please note, this information sheet is not a substitute for file research and is limited to data entered into the AIRTRAX database.

Company ID: 031-00002  
 Company: Columbia Gas Transmission, LLC  
 Printed: 01/26/2016  
 Engineer: Williams, Jerry

**Williams, Jerry**

---

**From:** Williams, Jerry  
**Sent:** Wednesday, February 24, 2016 8:27 AM  
**To:** 'snelson@cpq.com'; 'livey@cpq.com'  
**Cc:** McKeone, Beverly D  
**Subject:** WV DAQ NSR Permit Application Complete for Columbia Gas Transmission, LLC - Lost River Compressor Station

**RE: Application Status: Complete  
Columbia Gas Transmission, LLC – Lost River Compressor Station  
Permit Application R14-0013E  
Plant ID No. 031-00002**

Mr. Nelson,

Your application for a modification permit for a natural gas compressor station was received by this Division on January 25, 2016 and assigned to the writer for review. Upon review of said application, it was determined that the application was incomplete and additional information was requested. The requested information has been received, therefore, the statutory review period commenced on February 24, 2016.

**In the case of this application, the agency believes it will take approximately 90 days to make a final permit determination.**

This determination of completeness shall not relieve the permit applicant of the requirement to subsequently submit, in a timely manner, any additional or corrected information deemed necessary for a final permit determination.

Should you have any questions, please contact Jerry Williams at (304) 926-0499 ext. 1223 or reply to this email.

Jerry Williams, P.E.  
Engineer  
WVDEP – Division of Air Quality  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304  
(304) 926-0499 ext. 1223  
[jerry.williams@wv.gov](mailto:jerry.williams@wv.gov)



Please consider the environment before printing this email.

**NON-CONFIDENTIAL**

*John*

Affidavit of Publication for Attachment P of Application for  
Lost River Compressor Station (Facility ID #031-00002)  
Application submitted January 25, 2016

ID # 031-00002  
RLR-0013E  
Reg \_\_\_\_\_  
Company COLUMBIA GAS  
Facility LOST RIVER Initials JK

**NON-CONFIDENTIAL**

*Red*  
*3/5*

AFFIDAVIT OF PUBLICATON

Cost of Publication \$35.71

I, Phoebe Fisher Heishman, being first sworn upon my oath, do depose and say that I am President of the R. E. Fisher Company, a corporation, and publisher of the newspaper entitled THE MOOREFIELD EXAMINER, a Democratic newspaper; that I have been duly authorized by the Board of Directors of such corporation to execute all affidavits of publication; that such newspaper has been published for more than one year prior to publication of the annexed notice described below; that such newspaper is regularly published twice weekly on Wednesdays and Saturdays, for at least fifty weeks during a calendar year, in the municipality of Moorefield, Hardy County, West Virginia; that such newspaper is a newspaper of "general circulation," as that term is defined in article three, chapter fifty-nine of the Code of West Virginia, 1931, as amended within the publication area or areas of aforesaid municipality and county; that such newspaper averages in length four or more pages, exclusive of any cover, per issue; that such newspaper is circulated to the general public at a definite price or consideration; that such newspaper is a newspaper to which the general public resorts for passing events of a political, religious, commercial, and social nature, and for current happenings, announcements, miscellaneous reading matters, that the annexed

Notice of Air Quality Permit Application--Columbia Gas Transmission, LLC

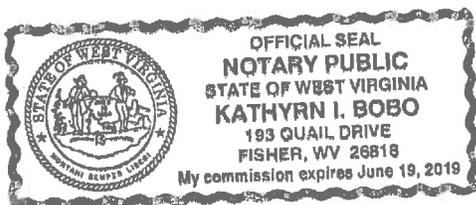
was duly published in said newspaper once a week for 1 successive weeks, commencing with the issue of 20<sup>th</sup> day of January, 2016, and ending with the issue of the 20<sup>th</sup> day of January, 2016, and was posted at the N/A on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

/S/ Phoebe Fisher Heishman  
Phoebe Fisher Heishman, Publisher  
The Moorefield Examiner

Taken, subscribed and sworn to before me in my said county this 20<sup>th</sup> day of January, 2016.

My commission expires June 19, 2019.

/S/ Kathryn I. Bobo  
Notary Public of Hardy County, WV



**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 compression station located on Upper Cove Road, Matthias, in Hardy County, West Virginia. The latitude and longitude coordinates are: 38° 52' 37.10" N and 78° 51' 40.41".

The applicant estimates the increases in, if modification application is approved, potential to discharge the following Regulated Air Pollutants will be: Carbon Monoxide by 97.19 tons per year, Nitrogen Oxides by 65.59 tons per year, PM10 and PM2.5 by 7.53 tons per year, Sulfur Dioxide by 0.81 tons per year, Volatile Organic Compounds (VOC) by 17.68 tons per year, Carbon Dioxide Equivalents (CO<sub>2</sub>e) by 139,910 tons per year, and Formaldehyde by 0.80 tons per year.

Startup of operation is planned to begin on or about the 1st day of October, 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 13th day of January, 2016.

By: Columbia Gas Transmission LLC  
Robert W. Conrad  
Manager of Operations  
34646 Old Valley Pike.  
Strasburg, VA 22657

1/20 1c

**Williams, Jerry**

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**From:** livey@cpg.com  
**Sent:** Friday, February 19, 2016 10:09 AM  
**To:** Williams, Jerry  
**Subject:** columbia permit application information Part 2  
**Attachments:** Affidavit of Publication - Files Creek Compressor Station.pdf; Affidavit of Publication - Cleveland Compressor Station.pdf; Affidavit of Publication - Seneca Compressor Station.pdf; Affidavit of Publication - Lost River Compressor Station.pdf; Solar Data - Cleveland - Mars 100\_2080 ft\_15 ppm\_150226.pdf

Jerry,

This should be all of the information you requested. If there is anything else you need, please do not hesitate to ask.

We will be sending the hard copies of the affidavit once we receive the last one. We spoke to the paper last week, so hopefully we should have it next week.

Thank you,

Lacey A. Ivey  
Principal Air  
Columbia Pipeline Group  
337-241-0686



ID # 031-00002  
Reg R14-0017E  
Company COLUMBIA GAS  
Facility LOST RIVER Initials JW

**NON-CONFIDENTIAL**

# Solar Turbines

A Caterpillar Company

## PREDICTED EMISSION PERFORMANCE

Customer <b>Columbia Pipeline Group</b>	
Job ID <b>Permitting</b>	
Inquiry Number	
Run By <b>Trevor T Keeney</b>	Date Run <b>26-Feb-15</b>

Engine Model <b>MARS 100-16000S CS/MD STANDARD</b>	
Fuel Type <b>CHOICE GAS</b>	Water Injection <b>NO</b>
Engine Emissions Data <b>REV. 1.0</b>	

<b>NOx EMISSIONS</b>	<b>CO EMISSIONS</b>	<b>UHC EMISSIONS</b>
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2	15948 HP	100.0% Load	Elev. 1550 ft	Rel. Humidity 60.0%	Temperature 0 Deg. F
PPMvd at 15% O2	15.00			25.00	25.00
ton/yr	32.26			32.74	18.75
lbm/MMBtu (Fuel LHV)	0.060			0.061	0.035
lbm/(MW-hr)	0.62			0.63	0.36
(gas turbine shaft pwr) lbm/hr	7.37			7.47	4.28

3	15067 HP	100.0% Load	Elev. 1550 ft	Rel. Humidity 60.0%	Temperature 32.0 Deg. F
PPMvd at 15% O2	15.00			25.00	25.00
ton/yr	30.51			30.95	17.73
lbm/MMBtu (Fuel LHV)	0.060			0.061	0.035
lbm/(MW-hr)	0.62			0.63	0.36
(gas turbine shaft pwr) lbm/hr	6.96			7.07	4.05

4	14070 HP	100.0% Load	Elev. 1550 ft	Rel. Humidity 60.0%	Temperature 59.0 Deg. F
PPMvd at 15% O2	15.00			25.00	25.00
ton/yr	28.79			29.22	16.73
lbm/MMBtu (Fuel LHV)	0.060			0.061	0.035
lbm/(MW-hr)	0.63			0.64	0.36
(gas turbine shaft pwr) lbm/hr	6.57			6.67	3.82

### Notes

- For short-term emission limits such as lbs/hr., Solar recommends using "worst case" anticipated operating conditions specific to the application and the site conditions. Worst case for one pollutant is not necessarily the same for another.
- Solar's typical SoLoNOx warranty, for ppm values, is available for greater than 0 deg F or -20 deg C, and between 50% and 100% load for gas, fuel, and between 65% and 100% load for liquid fuel (except for the Centaur 40). An emission warranty for non-SoLoNOx equipment is available for greater than 0 deg F or -20 deg C and between
- Fuel must meet Solar standard fuel specification ES 9-98. Emissions are based on the attached fuel composition, or, San Diego natural gas or equivalent.
- If needed, Solar can provide Product Information Letters to address turbine operation outside typical warranty ranges, as well as non-warranted emissions of SO2, PM10/2.5, VOC, and formaldehyde.
- Solar can provide factory testing in San Diego to ensure the actual unit(s) meet the above values within the tolerances quoted. Pricing and schedule impact will be provided upon request.
- Any emissions warranty is applicable only for steady-state conditions and does not apply during start-up, shut-down, malfunction, or transient event.

# Solar Turbines

A Caterpillar Company

## PREDICTED ENGINE PERFORMANCE

Customer <b>Columbia Pipeline Group</b>	
Job ID <b>Permitting</b>	Date Run <b>26-Feb-15</b>
Run By <b>Trevor T Keeney</b>	Engine Performance Data <b>REV. 1.0</b>
Engine Performance Code <b>REV. 4.15.1.17.10</b>	

Model <b>MARS 100-16000S</b>
Package Type <b>CS/MD</b>
Match <b>STANDARD</b>
Fuel System <b>GAS</b>
Fuel Type <b>CHOICE GAS</b>

### DATA FOR MINIMUM PERFORMANCE

Elevation	feet	1550			
Inlet Loss	in H2O	4.0			
Exhaust Loss	in H2O	10.0			
Accessory on GP Shaft	HP	27.8			
Engine Inlet Temperature			1	2	3
Relative Humidity	deg F	-20.0	0	32.0	59.0
Driven Equipment Speed	%	60.0	60.0	60.0	60.0
Specified Load	RPM	9399	9343	9202	9018
Net Output Power	HP	FULL	FULL	FULL	FULL
Fuel Flow	HP	16210	15948	15067	14070
Heat Rate	mmBtu/hr	125.70	122.52	116.07	110.02
Therm Eff	Btu/HP-hr	7754	7683	7704	7820
Engine Exhaust Flow	%	32.812	33.118	33.029	32.539
PT Exit Temperature	lbm/hr	354517	346696	332157	315723
Exhaust Temperature	deg F	859	869	889	913
	deg F	858	869	889	913

Fuel Gas Composition (Volume Percent)	Methane (CH4)	93.26
	Ethane (C2H6)	3.68
	Propane (C3H8)	0.88
	I-Butane (C4H10)	0.07
	N-Butane (C4H10)	0.19
	I-Pentane (C5H12)	0.03
	N-Pentane (C5H12)	0.03
	Hexane (C6H14)	0.01
	Carbon Dioxide (CO2)	0.99
	Nitrogen (N2)	0.86
	Sulfur Dioxide (SO2)	0.0001

Fuel Gas Properties	LHV (Btu/Scf)	938.5	Specific Gravity	0.5985	Wobbe Index at 60F	1213.1
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This performance was calculated with a basic inlet and exhaust system. Special equipment such as low noise silencers, special filters, heat recovery systems or cooling devices will affect engine performance. Performance shown is "Expected" performance at the pressure drops stated, not guaranteed.

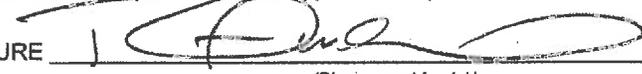
35A. **Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

**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   
(Please use blue ink)

DATE: 2/17/16  
(Please use blue ink)

35B. Printed name of signee: Robert W. Conrad		35C. Title: Manager Operations
35D. E-mail: rconrad@cpg.com	36E. Phone: 540-465-6417	36F. FAX: 540-465-6460
36A. Printed name of contact person (if different from above): Lacey Ivey		36B. Title: Principal Air
36C. E-mail: livey@cpg.com	36D. Phone: 337-241-0686	36E. FAX:

**PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:**

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

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

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

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

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

**Affidavit of Publication for Attachment P of Application for  
Lost River Compressor Station (Facility ID #031-00002)**

**Application submitted January 25, 2016**

AFFIDAVIT OF PUBLICATON

Cost of Publication \$35.71

I, Phoebe Fisher Heishman, being first sworn upon my oath, do depose and say that I am President of the R. E. Fisher Company, a corporation, and publisher of the newspaper entitled THE MOOREFIELD EXAMINER, a Democratic newspaper; that I have been duly authorized by the Board of Directors of such corporation to execute all affidavits of publication; that such newspaper has been published for more than one year prior to publication of the annexed notice described below; that such newspaper is regularly published twice weekly on Wednesdays and Saturdays, for at least fifty weeks during a calendar year, in the municipality of Moorefield, Hardy County, West Virginia; that such newspaper is a newspaper of "general circulation," as that term is defined in article three, chapter fifty-nine of the Code of West Virginia, 1931, as amended within the publication area or areas of aforesaid municipality and county; that such newspaper averages in length four or more pages, exclusive of any cover, per issue; that such newspaper is circulated to the general public at a definite price or consideration; that such newspaper is a newspaper to which the general public resorts for passing events of a political, religious, commercial, and social nature, and for current happenings, announcements, miscellaneous reading matters, that the annexed

Notice of Air Quality Permit Application--Columbia Gas Transmission, LLC

was duly published in said newspaper once a week for 1 successive weeks, commencing with the issue of 20<sup>th</sup> day of January, 2016, and ending with the issue of the 20<sup>th</sup> day of January, 2016, and was posted at the N/A on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

/s/ Phoebe Fisher Heishman  
Phoebe Fisher Heishman, Publisher  
The Moorefield Examiner

Taken, subscribed and sworn to before me in my said county this 20<sup>th</sup> day of January, 2016.

My commission expires June 19, 2019.

/s/ Kathryn I. Boro  
Notary Public of Hardy County, WV



**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 compression station located on Upper Cove Road, Mathias, in Hardy County, West Virginia. The latitude and longitude coordinates are: 36° 52' 37.10" N and 76° 51' 40.41" W.

The applicant estimates the increases in, if modification application is approved, potential to discharge the following Regulated Air Pollutants will be: Carbon Monoxide by 97.19 tons per year, Nitrogen Oxides by 65.59 tons per year, PM10 and PM2.5 by 7.53 tons per year, Sulfur Dioxide by 0.81 tons per year, Volatile Organic Compounds (VOC) by 17.83 tons per year, Carbon Dioxide Equivalents (CO2e) by 139,910 tons per year, and Formaldehyde by 0.80 tons per year.

Startup of operation is planned to begin on or about the 1st day of October, 2018. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 801 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) 623-0499, extension 1227, during normal business hours.

Dated this the 13th day of January, 2018.

By: Columbia Gas Transmission LLC  
Robert W. Conrad  
Manager of Operations  
34648 Old Valley Pike  
Strasburg, VA 22357

1/20 1c

**Williams, Jerry**

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**From:** livey@cpg.com  
**Sent:** Thursday, February 18, 2016 1:48 PM  
**To:** Williams, Jerry  
**Subject:** Fw: Lost River

Lacey A. Ivey  
Principal Air  
Columbia Pipeline Group  
337-241-0686



----- Forwarded by Lacey Ivey/NCS/Enterprise on 02/18/2016 12:48 PM -----

From: Lacey Ivey/NCS/Enterprise  
To: jerry.williams@wv.com,  
Date: 02/11/2016 03:03 PM  
Subject: Lost River

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Jerry,

I have it figured out. The cover letter is partially correct. What happened is that the following units have been removed:

- E01 - included in this PTE as being removed - was actually inactive 2014
- E02 - included in the application as one of the units recently removed - was actually inactive 2014
- E03 - removed 2009
- E04 - included in the application as one of the units recently removed - was actually inactive 2014
- E05 - included in the application as one of the units recently removed - was actually inactive 2014
- E06 - removed 2009

So there are six units that have been removed total. In the last permit it still listed E01, E02, E04 and E05 as active.

I hope this clarifies this issue for you but please do not hesitate to contact me if you have any additional questions.

Thank you,

Lacey A. Ivey  
Principal Air  
Columbia Pipeline Group  
337-241-0686



ID # 031-00002  
Reg RIA-0013E  
Company COLUMBIA GAS  
Facility LOST RIVER Initials LI

**Williams, Jerry**

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**From:** Ward, Beth A  
**Sent:** Wednesday, January 27, 2016 10:01 AM  
**To:** Williams, Jerry  
**Subject:** COLUMBIA GAS TRANSMISSIONS LLC, SENECA & LOST RIVER PERMIT APPLICATION FEES

This is the receipt for payment received from:

COLUMBIA GAS TRANSMISSION LLC, SENECA, CHECK NUMBER 0351152544, CHECK DATE 01/08/2016, \$2,000.00  
R13-2715F ID# 071-00008

COLUMBIA GAS TRANSMISSION LLC, LOST RIVER, CHECK NUMBER 0351152542, CHECK DATE 01/08/2016, \$2,000.00  
R14-0013E ID# 031-00002

OASIS Deposit CR 1600080429

Thank You!

*Beth Ward*

**WV DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BTO FISCAL  
601 57<sup>TH</sup> STREET SE  
CHARLESTON, WV 25304  
(304) 926-0499 EXT 1846  
[beth.a.ward@wv.gov](mailto:beth.a.ward@wv.gov)**

**Adkins, Sandra K**

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**From:** Adkins, Sandra K  
**Sent:** Tuesday, January 26, 2016 4:00 PM  
**To:** 'snelson@cpge.com'; 'livey@cpge.com'  
**Cc:** McKeone, Beverly D; Williams, Jerry  
**Subject:** WV DAQ Permit Application Status for Columbia Gas Transmission, LLC; Lost River

**RE: Application Status  
Columbia Gas Transmission, LLC  
Lost River  
Plant ID No. 031-00002  
Application No. R14-0013E**

Mr. Nelson,

Your application for a modification permit for the Lost River Compressor Station was received by this Division on January 25, 2016, and was assigned to Jerry Williams. The following item was not included in the initial application submittal:

**Original affidavit for Class I legal advertisement not submitted.**

*This item is necessary for the assigned permit writer to continue the 30-day completeness review.*

Within 30 days, you should receive a letter from Jerry stating the status of the permit application and, if complete, given an estimated time frame for the agency's final action on the permit.

Any determination of completeness shall not relieve the permit applicant of the requirement to subsequently submit, in a timely manner, any additional or corrected information deemed necessary for a final permit decision.

Should you have any questions, please contact the assigned engineer, Jerry Williams, at 304-926-0499, extension 1223.

**NON-CONFIDENTIAL**

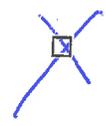
Title V  
Attachments

031-60002  
R14-0013E

Jerry

### 45CSR13 Administrative Update, Construction, Modification, Relocation, Temporary Permit or General Permit Registration Incomplete Application

A complete application is demonstrated when all of the information required below is properly prepared, completed and attached. The items listed below are required information which must be submitted with a 45CSR13 permit application. Any submittal will be considered incomplete if the required information is not included. The applicant must submit a complete application in order to receive a 45CSR13 permit.



Class I legal advertisement not published in a newspaper certified to accept legal advertisements and original affidavit submitted.

- Application fee AND/OR additional application fees not included:
  - \$250 Class I General Permit
  - \$300 Class II Administrative Update
  - \$1,000 Construction, Modification, Relocation or Temporary Permit
  - \$500 Class II General Permit
  - \$1,000 NSPS
  - \$2,500 NESHAP
  - \$2,500 45CSR27 Pollutant
  - \$5,000 Major Modification
  - \$10,000 Major Construction
- Original and two (2) copies of the application not submitted.
- File organization – application pages are not numbered or in correct order, application is not bound in some way, etc.
- Confidential Business Information is not properly identified.
- General application forms not completed and signed by a responsible official.
- Authority of Corporation form not included – required if application is signed by someone other than a responsible official.
- Applicant is not registered with the West Virginia Secretary of State's Office.
- Copy of current Business Registration Certificate not included.
- Process description, including equipment and emission point identification numbers, not submitted.
- Process flow diagram, including equipment and emission point identification numbers, not submitted.
- Plot plan, including equipment and emission point identification numbers, not submitted.
- Applicable technical forms not completed and submitted:
  - Emission Point Data Summary Sheets
  - Air Pollution Control Device Sheets
  - Emission Unit Data Sheets
  - Equipment List Form
- Emission calculations not included – emission factors, references, source identification numbers, etc.
- Electronic submittal diskette not included.