

# Fact Sheet



## *For General Permit Registration Under 45CSR30 and Title V of the Clean Air Act*

Permit Number: R30-NGGP-2007-05100100  
Application Received: November 22, 2002  
Plant Identification Number: 05100100  
Permittee: **Columbia Gas Transmission**  
Facility Name: Adaline Compressor Station  
Mailing Address: 1700 MacCorkle Avenue, SE  
Charleston, WV 25314  
Issued: October 15, 2007

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Physical Location:	Cameron, Marshall County, West Virginia
UTM Coordinates:	530.4 km Easting • 4,401.6 km Northing • Zone 17
Directions:	Located in Liberty District, Marshall County and south of Cameron, which is 25 miles south of Wheeling on US Rt. 250. From intersection in Cameron, travel west a short distance to a "Y" intersection. Go left, cross bridge, then up a hill on a brick road. Proceed south along this road (Cameron Ridge Road) for approximately 7 miles to station that is on left side of road and partially visible.

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### **Facility Description**

Adaline Compressor Station is a natural gas transmission facility covered by Standard Industrial Classification (SIC) 4922. The station has the potential to operate seven (7) days per week, twenty-four (24) hours per day. The station consists of three (3) 880-hp & two (2) 2,000-hp natural gas fired reciprocating engines, two (2) 1,080-hp turbines, a 1 MMBtu/hr line heater, three (3) diethylene glycol (DEG) dehydrator systems with corresponding 0.5 MMBtu/hr glycol regenerators (all controlled by an enforceable NATCO SHV flare) and numerous storage tanks of various sizes. On-site support equipment includes a 440-hp emergency generator and a 3.48 MMBtu/hr heating system boiler. The facility also

periodically operates a mobile glycol reclaimer to regenerate spent glycol from the facility's dehydration systems.

### Emissions Summary

<b>Plantwide Emissions Summary [Tons per Year]</b>		
<b>Criteria Pollutants</b>	<b>Potential Emissions</b>	<b>2005 Actual Emissions</b>
Carbon Monoxide (CO)	146.7	24.8
Nitrogen Oxides (NO <sub>x</sub> )	867.5	162.8
Particulate Matter (PM <sub>10</sub> )	10.2	2.0
Total Particulate Matter (TSP)	10.2	2.0
Sulfur Dioxide (SO <sub>2</sub> )	0.3	0.1
Volatile Organic Compounds (VOC)*	48.3	13.0
<i>PM<sub>10</sub> is a component of TSP.</i>		
<b>Hazardous Air Pollutants</b>	<b>Potential Emissions</b>	<b>2005 Actual Emissions</b>
Formaldehyde	15.1	2.8
Other HAPs*	5.4	1.1
Total HAPs*	20.5*	3.9
<i>Some of the above HAPs may be counted as PM or VOCs.</i>		
* Includes use of dehydration unit flare as control device.		

### Title V Program Applicability Basis

This facility has the potential to emit 867.5 tons/yr of NO<sub>x</sub>, 146.7 tons of CO and 15.1 tons of Formaldehyde. Due to this facility's potential to emit over 100 tons per year of criteria pollutant and over 10 tons of individual HAP, Columbia Gas Transmission Corporation is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

### Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

This facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR2 45CSR6 45CSR10 45CSR11 45CSR13 WV Code § 22-5-4 (a) (14)  45CSR30 40 C.F.R. 60.18 40 C.F.R. Part 61 40 C.F.R. Part 82, Subpart F	Indirect Heat Exchangers Open burning prohibited. SO <sub>2</sub> Emissions Standby plans for emergency episodes.  The Secretary can request any pertinent information such as annual emission inventory reporting. Operating permit requirement. NSPS Flare Requirement Asbestos inspection and removal Ozone depleting substances
State Only:	45CSR4 45CSR17	No objectionable odors. Particulate Fugitive

Each State and Federally-enforceable condition of the Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR15, 45CSR34 and 45CSR30.

**Active Permits/Consent Orders**

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit ( <i>if any</i> )
R13-2149B	May 30, 2001	
R13-2362-P6	February 15, 2000	

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the General Requirement Comparison Table B which may be downloaded from DAQ's website.

## Determinations and Justifications

This facility is a major source of HAPs

The boilers and heater at the facility are < 10 mmBtu/hr and gas fired; hence Section 4.0 of the Title V General Permit is applicable to the boiler and heaters. According to 45CSR§10-10 these boilers are exempt from MRR and 45CSR§10-3.

Flare - Based on an incinerator capacity of 0.072 ton/hr, and a value of  $F = 5.43$ , the corresponding particulate limit according to 45CSR§6-4.1 is 0.392 lb/hr. According to R13-2149B, PM emission limit is 0.0113 lb/hr. Compliance with PM limit of 0.0113 lb/hr shall show compliance with 45CSR§6-4.1 limit of 0.392 lb/hr limit.

Flare – Considering the maximum flow rate of gas through the flare, 2000 ppm limit for  $SO_2$  (45CSR§10-4.1) translates into 0.83 lb/hr  $SO_2$  limit. According to R13-2149B,  $SO_2$  emission limit is 0.0018 lb/hr. Compliance with  $SO_2$  limit of 0.0018 lb/hr shall show compliance with 45CSR§10-4.1 limit of 2000 ppm.

The emission limits for the flare (FL1) were based on the following:

1. For CO, NOx, and PM: the use of AP-42 emission factors (5<sup>th</sup> Edition) and the design heat input of the flare.
2. For  $SO_2$ : the use of a maximum emission factor of 0.057 lb  $SO_2$ /MMBtu (derived from FERC 20 grains Sulfur/100 scf) to calculate pph limit and an average emission factor of 0.0007 lb  $SO_2$ /MMBtu (derived from average 0.25 grains Sulfur/100 scf) to calculate tpy limit.
3. For VOC: the sum of VOC generated from combustion of natural gas using AP-42 factors (5<sup>th</sup> Edition) and the design heat input of the flare, and the VOC generated from the combustion of the regenerator overhead vent streams derived from GRI-GLYCalc (assuming a minimum 95% destruction efficiency for the flare).
4. For HAP: the use of GRI-GLYCalc at 95% destruction efficiency for the flare.

Since the emission limits for the flare (FL1) were based on the above referenced methods, complying with the operating requirements for the flare to ensure proper operation of the flare, as well as the recordkeeping requirements for operating times of the flare, amount of natural gas used, and amount of waste gas processed will also serve as compliance demonstrations for the emission limitations.

40 C.F.R 63 Subpart HHH - This facility is a major source of HAPs because of potential emissions of more than 10 tons of formaldehyde. R13-2149B, condition A.6 makes a false statement that enforceable flare makes the facility not subject to 40 C.F.R 63 Subpart HHH. The permittee shall comply with Section 12.1.7(a) of the General Permit (Less than 1 ton of Benzene exemption), which makes the facility subject to Section 12.0 (Natural Gas Dehydration Units not subject to MACT standards). Please note that records of determination have to be maintained according to 12.1.7(a) of the General Permit.

### Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

- a. 40 C.F.R. 60 Subparts K,Ka; *Standards of Performance for Storage Vessels for Petroleum Liquids* - All tanks at Adaline station are below 40,000 gallons in capacity.
- b. 40 C.F.R. 60 Subpart Kb; *Standards of Performance for Volatile Organic Liquid Storage Vessels* - All tanks at Adaline station are below 75 m<sup>3</sup> in capacity.
- c. 40 C.F.R. 60 Subpart KKK; *Standards of Performance for Equipment Leaks of VOC From Onshore Natural Gas Processing Plant* - Adaline station is not engaged in the extraction or fractionation of natural gas liquids from field gas, the fractionation of mixed natural gas liquids to natural gas products, or both.
- d. 45CSR21; *To Prevent and Control Air Pollution from the Emission of Volatile Organic Compounds*: This facility is not located in one of the affected counties.
- e. 45CSR27; *To Prevent and Control the Emissions of Toxic Air Pollutants*: Natural gas is included as a petroleum product and contains less than 5% benzene by weight. 45CSR§27-2.4 exempts equipment “used in the production and distribution of petroleum products providing that such equipment does not produce or contact materials containing more than 5% benzene by weight.”
- f. 40 C.F.R. 60 Subparts Dc; *Standards of Performance for Steam Generating Units* – The boilers and gas heater at this facility are less than 10 MMBtu/hr; Hence Subpart Dc is not applicable.
- g. 40 C.F.R. 63 Subpart ZZZZ; *RICE MACT* - All the engines are “existing” 2-cycle or 4-cycle, lean burn or less than 500 HP; Hence Rice MACT is not applicable to this facility even though this facility is a major source of HAPs.
- h. 40 C.F.R. 63 Subpart DDDDD; *Boiler MACT* – All the boilers at this facility use gaseous fuel and are less than 10 MMBtu/hr; Hence Boiler MACT is not applicable to this facility even though this facility is a major source of HAPs. Boiler MACT regulations were vacated on July 30<sup>th</sup> 2007 in accordance with the D.C. Circuit of Appeals June 8<sup>th</sup> 2007 ruling.
- i. 40 C.F.R. 60 Subpart GG; *Turbine NSPS* – Not applicable to this facility because the turbines were installed in 1966 and have not been modified/reconstructed. 40 C.F.R. 60 Subpart GG is applicable to turbines installed or modified after October 3, 1977.
- j. 40 C.F.R. 60 Subpart KKKK; *Turbine NSPS* – Not applicable to this facility because the turbines were installed in 1966 and have not been modified/reconstructed. 40 C.F.R. 60 Subpart KKKK is applicable to turbines installed or modified after February 18, 2005.
- k. 40 C.F.R. 63 Subpart YYYYY; *Turbine MACT* – The turbines in this facility were installed in 1966 and classified as existing turbine (Turbines constructed before January 14, 2003). The turbines have not been modified/reconstructed. Existing stationary combustion turbines in all subcategories do not have to meet the requirements of 40 C.F.R. 63 Subpart YYYYY and of subpart A of 40 C.F.R 63.

Since the last Title V modification WVDEP has determined that 45CSR10 does not apply to gas fired engines.

40 CFR 64 - Engines or Turbines do not have any add-on control; therefore, in accordance with 40 C.F.R § 64.2(a), CAM is not applicable to this facility. The boilers are not a major source; therefore, CAM is not applicable. For Dehydration unit, existing Title V permit specified a continuous compliance demonstration method, as defined in 40 C.F.R § 64.1, hence the Dehydration unit is exempted from CAM requirements.

**Request for Variances or Alternatives**

None

**Insignificant Activities**

Insignificant emission unit(s) and activities are identified in the Title V application.

**Comment Period**

Title V general Permit has already been advertised and finalized. This fact sheet for facility registration is written for the file. This fact sheet states which rules are applicable to the particular facility and which rules are not applicable.

**Procedure for Requesting Public Hearing**

N/A

**Point of Contact**

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Division of Air Quality  
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**Response to Comments (Statement of Basis)**

N/A