

**TECHNICAL REVIEW AND EVALUATION  
OF APPLICATION FOR  
AIR QUALITY PERMIT NO 48172**

**I. INTRODUCTION**

This Class II Minor Source permit is a renewal of the operating permit for the El Paso Natural Gas Company's Cimarron Compressor Station located 8 miles west of Bowie, along Interstate 10, in Cochise County, Arizona.

**A. Company Information**

Facility Name: Cimarron Compressor Station  
Facility Location: 8 miles west of Bowie, along Interstate 10  
Bowie, Cochise County, Arizona 85605  
Lat. N 32° 19'7.2" / Long. W 109° 47' 27.4" Elevation 4350  
Mailing Address: El Paso Natural Gas Company  
P.O. Box 1087  
Colorado Springs, CO 80901-1087

**B. Attainment Classification (Source: 40 CFR §81.303)**

El Paso Natural Gas Company, Cimarron Compressor Station is located in an area which is in attainment or unclassifiable for all criteria pollutants.

**C. Learning Sites Evaluation**

In accordance with ADEQ's Environmental Permits and Approvals Near Learning Sites Policy, the Department conducted an evaluation to determine if any nearby learning sites would be adversely impacted by the facility. Learning sites consist of all existing public schools, charter schools and private schools the K-12 level, and all planned sites for schools approved by the Arizona School Facilities Board. The learning sites policy was established to ensure that the protection of children at learning sites is considered before a permit approval is issued by ADEQ.

As of October 28, 2008, there are no learning sites within a two-mile radius of the El Paso Natural Gas, Cimarron Compressor Station.

**II. PROCESS DESCRIPTION**

El Paso Natural Gas Company, herein referred to as EPNG, provides natural gas transportation services for natural gas suppliers and end users throughout the southwestern United States, and owns and operates a large natural gas pipeline network. The Cimarron Compressor Station is one of several such stations that provide natural gas compression to the pipeline network. Compression is needed to maintain enough pressure in the pipeline to keep the natural gas flowing, and is accomplished at the Cimarron Compressor Station by a Solar Mars 100S, 15,000 hp gas turbine that drives separate centrifugal pipeline gas compressors. An auxiliary generator provides backup

electrical power.

There is no air pollution control equipment installed on either the gas turbine or the auxiliary generator at the Cimarron Compressor Station.

From a common pipeline system, natural gas flows into the compressors connected in either parallel or in series. The compressors are driven by the natural gas fueled turbine engine. The turbine engine operates depending on the amount of natural gas being transported to various customers along the pipeline system.

The gas turbine stack is the primary sources of air pollutant emissions. The primary pollutant present in the stack emissions is nitrogen oxides (NO<sub>x</sub>), which results from the combustion of natural gas. Other pollutants present in the emissions are particulate matter (PM), sulfur dioxide (SO<sub>2</sub>), carbon monoxide (CO) and volatile organic compounds (VOCs).

### III. COMPLIANCE HISTORY

El Paso Natural Gas - Cimarron Compressor Station has had fifteen air quality inspections associated with this facility since February 10, 2004. No Air Quality cases and/or violations have been developed for this facility as a result of the inspections.

### IV. EMISSIONS

The facility is a Class II minor source pursuant to Arizona Administration Code (A.A.C.) R18-2-101.66. The potential emission rates of all pollutants are less than major source thresholds as shown in Table 1 below:

**Table 1 - Facility-Wide Emissions of Other Pollutants**

Pollutant	Tons per Year
PM	5.2
VOC	2.0
SO <sub>2</sub>	1.8
NO <sub>x</sub>	50
CO	60
Federal HAPs	<10 tpy for any one HAP <25 for combination of HAPs

The emissions calculations for the permit review process relied upon emission factors drawn from The Environmental Protection Agency's (EPA's) Compilation of Air Pollution Emission Factors fifth ed. (A.P. 42), as well as manufacturer's data supplied to EPNG by Solar.

**V. PREVIOUS PERMIT CONDITIONS**

**A. Previous Permits**

**Table 2: Previous Permit**

Date of Permit Issuance	Permit Number	Application Basis
01/20/2004	28649	Class II Minor Source

**B. Previous Permit Conditions**

The previous permit issued to the facility was for a Class II minor source.

**Table 6.1 CLASS II OPERATING PERMIT NO. 28649**

Condition No.	Determination				Comments
	Revise	Keep	Delete	Stream-line	
Att. A.	✓				General Provisions - Revised to represent most recent permitting language
Att. B. I.			✓		SIP Plan Installation Permit
Att. B. II.		✓			Facility Wide Requirements
Att. B. II.A		✓			Certified Reference 9 observer
Att. B. II.B		✓			Compliance certifications and reports
Att. B. II.C		✓			Provide logs of emission related maintenance
Att. B. III.		✓			Gas Turbine Engines
Att. B. III.A.		✓			Applicability
Att. B. III.B.		✓			Fuel limited to natural gas
Att. B. III.C.1.		✓			NO <sub>x</sub> limitation
Att. B. III.C.2.		✓			Annual performance test requirement
Att. B. III.D.1.		✓			Natural gas sulfur content limit
Att. B. III.D.2.a		✓			Custom fuel monitoring schedule
Att. B. III.D.2.b		✓			Specifies method for sulfur content analysis

Condition No.	Determination				Comments
	Revise	Keep	Delete	Stream-line	
Att. B. IV.		✓			Auxiliary Generator
Att. B. IV.A		✓			Applicability
Att. B. IV.B.1		✓			Hours limited to 1500 in a 12 month rolling average
Att. B. IV.B.2		✓			Fuel limited to natural gas
Att. B. IV.B.3.a		✓			Stack height must exceed 36 feet
Att. B. IV.B.3.b		✓			Rain caps must be hinged
Att. B. IV.B.4.a		✓			Record monthly hours of operation
Att. B. IV.B.4.b		✓			Record 12 month rolling total hours of operation
Att. B. IV.C.1.a		✓			Visible emission limitation
Att. B. IV.C.1.b		✓			Particulate emissions calculation based on heat input
Att. B. IV.C.1.c		✓			Total heat input is the aggregate of all fuel burning equipment
Att. B. IV.C.2.a		✓			Quarterly visible emission survey
Att. B. IV.C.2.b		✓			The Permittee is required to keep on site a copy of the FERC agreement that limits the sulfur content to .8% and limits heating value to 967 Btu/ft <sup>3</sup> or greater.
Att. B. IV. D.1.		✓			Sulfur content of natural gas burned in the auxiliary generator cannot exceed 0.8 percent by weight
Att. B. IV.D.2		✓			Sulfur content shall be monitored to show compliance with FERC tariff agreement limit of less than 0.8 percent by weight

Condition No.	Determination				Comments
	Revise	Keep	Delete	Stream-line	
Att. B. V		✓			Fugitive Dust Requirements
Att. B. V.A		✓			Applicability
Att. B. V.B.1.a.(1)		✓			Opacity from any fugitive source cannot be greater than 40 percent by Method 9 observation
Att. B. V.B.1.a.(2).(a)		✓			Minimize fugitive dust from earth moving, construction operations excavation, using good, modern practices
Att. B. V.B.1.a.(2)(b)		✓			Motor vehicular activity in driveways, parking areas and vacant lots shall be minimized by using dust suppressants, soil stabilizers, or paving
Att. B. V.B.1.a.(2)(c)		✓			Roadway repair, construction, or reconstructed shall minimize dust by dust suppressants, temporary paving, detouring, wetting
Att. B. V.B.1.a.(2)(d)		✓			When transporting material which might cause airborne dust, load must be covered
Att. B. V.B.1.a.(2)(e)		✓			Crushing, handling and conveying
Att. B. V.B.1.a.(2)(f)		✓			Stacking, piling and storing of organic or inorganic dust
Att. B. V.B.1.a.(2)(g)		✓			Stacking, and reclaiming machinery operation
Att. B. V.B.1.a.(2)(h)		✓			Other methods
Att. B. V.B.1.b.(1)		✓			Maintain records of operations listed above and control measures applied

Condition No.	Determination				Comments
	Revise	Keep	Delete	Stream-line	
Att. B. V.B.1.b.(2).(a)		✓			Quarterly survey of visible emissions
Att. B. V.B.1.b.(2).(b)		✓			Response to observation of a plume judge to exceed 40%
Att. B. VI.		✓			Mobile Source Requirements
Att. B. VI.A.		✓			Applicability
Att. B. VI.B.1.a		✓			Off-Road Machinery
Att. B. VI.B.1.b.(1)		✓			Visible emissions from roadway or site cleaning equipment
Att. B. VI.B.1.b.(2)		✓			Debris on site, roadways, or alleys from trucks, earth moving equipment, or erosion shall be removed without
Att. B. VI.B.1.c		✓			No mobile source shall emit smoke or dust which exceeds 40% opacity
Att. B. VI.B.2		✓			Maintain a record of emissions related maintenance activities performed on mobile sources
Att. B. VII.		✓			Other Periodic Activity Requirements
Att. B. VII.A.		✓			Abrasive Blasting
Att. B. VII.A.1.a.		✓			Particulate Matter and Opacity emissions caused by sand blasting or other abrasive methods shall be minimized by the following:
Att. B. VII.A.1.a.(1)		✓			Wet blasting
Att. B. VII.A.1.a.(2)		✓			Effective enclosures
Att. B. VII.A.1.a.(3)		✓			Any other method approved by the Director
Att. B. VII.A.1.b.		✓			Limit visible emissions to less than

Condition No.	Determination				Comments
	Revise	Keep	Delete	Stream-line	
					40% based on method 9 observation
Att. B. VII.B.1.a.		✓			Paint spray shall meet the following:
Att. B. VII.B.1.a.(1)		✓			Organic solvent emissions shall be conducted in an enclosed area equipped with controls containing no less than 96% of the overspray
Att. B. VII.B.1.a.(2).(a)		✓			No architectural coating shall be used which makes use of photochemically reactive solvents
Att. B. VII.B.1.a.(2).(b)		✓			No architectural coating shall be thinned or diluted with photochemically reactive solvents
Att. B. VII.B.1.a.(3)		✓			Limitation of a photochemically reactive solvent
Att. B. VII.B.1.b.(1)		✓			Every spray painting project shall have logged in ink or electronically, a record of:
Att. B. VII.B.1.b.(1)(a)		✓			Date project begun
Att. B. VII.B.1.b.(1)(b)		✓			Duration
Att. B. VII.B.1.b.(1)(c)		✓			Control measures employed
Att. B. VII.B.1.b.(1)(d)		✓			Material Safety Data Sheets for all paints and solvents used
Att. B. VII.B.1.b.(1)(e)		✓			Amount of paint used
Att. B. VII.B.2.a		✓			Visible emissions shall not exceed 40% by EPA reference method 9
Att. B. VII.B.2.b		✓			Compliance with A.A.C. R18-2-702.B
Att. B. VII.C.1.		✓			Compliance with 40CFR 61 Subpart M Asbestos

Condition No.	Determination				Comments
	Revise	Keep	Delete	Stream-line	
Att. B. VII.C.2.		✓			Records including NESHAP Notification for Renovation and Demolition Activities

## VI. APPLICABLE REGULATIONS

The Permittee has identified the applicable regulations that apply to each unit in its permit application. The following table summarizes the findings of the Department with respect to the regulations that are applicable to each emissions unit.

**Table 3 - Applicable Regulations**

Unit ID	Year of Manufacture	Control Equipment	Applicable Regulations	Verification
Solar Mars 100S	April 2004	None	40 CFR 60 Subpart GG	Stationary Rotating Machinery subject to Subpart GG of the NSPS
Auxiliary Generator	April 2004	None	A.A.C. R18-2-719	Standards of Performance for Existing Stationary Rotating Machinery
Fugitive Dust	Not Applicable	Control Measures	A.A.C. Title 18, Chapter 2, Article 6	This Article is applicable to any fugitive dust source.
Abrasive Blasting	Not Applicable	Wet blasting, enclosure, or equivalent (approved by Director)	A.A.C. R18-2-702.B R18-2-726	Relevant requirements applicable to abrasive blasting
Spray Painting	Not Applicable	Control measures that contains 96% of the overspray	A.A.C. R18-2-727	Relevant requirements applicable to spray painting
Mobile Sources	Not Applicable	Control Measures	A.A.C. R18-2-801 R18-2-802.A R18-2-804	These regulations are applicable to all mobile sources

Unit ID	Year of Manufacture	Control Equipment	Applicable Regulations	Verification
Demolition/ Renovation	Not Applicable	None	A.A.C. R18-2- 1101.A.8 (NESHAP for asbestos)	Relevant requirements applicable to demolition and renovation operations

## VII. OPERATING LIMITATIONS

### Auxiliary Generator

The auxiliary generator is limited to operating 1,500 hours per year or less. The Permittee must monitor and record the hours of operation each month in order to show compliance with this limit.

## VIII. PERIODIC MONITORING

### A. Gas Turbine Engine

#### Sulfur Oxides (SO<sub>x</sub>)

The Permittee will demonstrate compliance with the fuel sulfur content limit by demonstrating that the gaseous fuel burned in the gas turbine meets the definition of "natural gas" in 40 CFR 60.331(u) by maintaining a current, valid purchase contract, tariff sheet, or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20 grains/100 standard cubic feet or less.

### B. Auxiliary Generator

#### 1. Opacity

A certified EPA Reference Method 9 observer must conduct a quarterly survey of visible emissions emanating from the stack of the auxiliary generator. If the auxiliary generator is not operating at the time the quarterly survey of visible emissions is conducted, the Permittee does not have to set the auxiliary generator in operation to conduct the survey. Instead the Permittee can document that the unit was not operating.

During the visible emissions survey, if the opacity of the emissions observed appears to exceed the standard, then the observer must conduct a certified EPA Reference Method 9 observation. The results of the Method 9 observations must be maintained and excess emissions reported.

#### 2. Particulate Matter

The Permittee must maintain a copy of that part of the Federal Energy Regulatory Commissions (FERC) approved tariff agreement that limits transmission of natural

gas to having a heating value greater than or equal to 967 British thermal units per cubic foot. This record will serve as the periodic monitoring for the particulate matter standard.

**3. Sulfur Oxides (SO<sub>x</sub>)**

The Permittee must maintain a copy of that part of the FERC approved tariff agreement that limits transmission of natural gas to sulfur content less than 0.8 percent by weight. This record will serve as the periodic monitoring for the sulfur standard.

**IX. Fugitive Dust Sources**

**Opacity**

The Permittee must maintain records of the dates on which any reasonable precaution to prevent excessive amounts of particulate matter from becoming airborne is taken. In addition, a certified EPA Reference Method 9 observer must conduct a quarterly survey of visible emissions from fugitive dust sources. If the observer sees a plume that on an instantaneous basis appears to exceed 40%, then the observer must take a six minute Method 9 observation of the plume. If the six-minute opacity of the plume is less than 40%, then the observer must make a record of the location, date, time of the observation and the results of the Method 9 observation. If the six-minute opacity of the plume exceeds 40%, then the Permittee must adjust or repair the controls or equipment to reduce opacity to below 40% and report it as an excess emission.

**X. TESTING REQUIREMENT**

**Gas Turbine Engine**

The Permittee is required to conduct a performance test for NO<sub>x</sub> annually on the solar turbine.

**XI. MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY (40 CFR 63)**

El Paso Natural Gas, Cimarron Compressor Station generates formaldehyde, a hazardous air pollutant (HAP), at the rate of 2.4 tons per year, and total HAP emissions are 3.07 tons per year. However the HAP emissions are not emitted above the major source threshold (10 tons per single HAP or 25 tons per total HAPs), and therefore, the MACT regulation for stationary combustion turbines (40 CFR 63 Subpart YYYYY) is not applicable. The stationary combustion turbine MACT is only applicable to sources which are classified as a major source for HAPs.

This internal combustion engine at the Cimarron Compressor Station is an affected facility under 40 CFR 63 Subpart ZZZZ. Subpart ZZZZ is a MACT standard for reciprocating internal combustion engines that applies to major and area sources of HAPs. Pursuant to 63.6590.b.3, existing 4-stroke stroke rich burn engines located at an area source of HAP emissions do not have to meet the requirements of Subpart ZZZZ.

**XII. LIST OF ABBREVIATIONS**

A.A.C.....	Arizona Administrative Code
CFR.....	Code of Federal Regulations
CO.....	Carbon Monoxide
EPNG.....	El Paso Natural Gas Company
EPA.....	Environmental Protection Agency
FERC.....	Federal Energy Regulatory Commissions
HAP.....	Hazardous Air Pollutant
lb/hr.....	Pounds per Hour
MACT.....	Maximum Achievable Control Technology
NO <sub>x</sub> .....	Nitrogen Oxides
PM.....	Particulate Matter
PM <sub>10</sub> .....	Particulate Matter Nominally less than 10 Micrometers
SO <sub>x</sub> .....	Sulfur Oxides
SO <sub>2</sub> .....	Sulfur Dioxide
tons/yr.....	Tons per Year
VOC.....	Volatile Organic Compound