# TECHNICAL REVIEW DOCUMENT
# OPERATING PERMIT 03OPLA266
to be issued to:

## Pioneer Natural Resources, USA
## Wet Canyon Compressor Station

Las Animas County
Source ID 0710094

Prepared by Cathy Rhodes
October, 2003

## I. Purpose:

This document establishes the basis for decisions made regarding the Applicable Requirements, Emission Factors, Monitoring Plan and Compliance Status of Emission Units covered within the Operating Permit proposed for this site. It is designed for reference during review of the proposed permit by the EPA, the Public and other interested parties. Conclusions made in this report are based on information provided by the applicant in the Title V application received October 14, 2003, subsequent additional information submittals, and review of Division files. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised Construction Permit.

## II. Source Description:

This facility consists of five 3300 HP compressor engines. The facility compresses coal-bed methane gas for sales to a pipeline, and is defined under Standard Industrial Classification 1311. The engines are equipped with oxidation catalysts to control CO, VOC, and formaldehyde emissions. The engines are fueled with coal seam gas.

The facility is located 1.5 miles northwest of Weston on Wet Canyon Road, in Las Animas County. The area is designated as attainment for all pollutants. The facility is considered to be a synthetic minor source for Prevention of Significant Deterioration purposes.

Facility wide emissions are as follows:

| Pollutant | Facility Potential to Emit (tons/yr) |
|---|---|
| $NO_X$ | 127.5 |
| CO | 59.8 |
| VOC | 16.7 |
| Each Individual HAP | 9.7 |
| Total HAPs | 9.7 |

Potential to Emit is based on permitted emission limits. This facility began operation in June 2002 with a partial set of compressors. “Actual” emissions are defined by the Division as two years of “normal” operation. The facility has not yet operated for two years with a full set of compressors.

Wheeler Peak National Wilderness Area (located in New Mexico) is a Federal Class I designated area within 100 kilometers of this facility. New Mexico is an affected state within 50 miles of this facility.

This facility certified within the Title V permit application they are not subject to 112(r), the Accidental Release Requirements.

## III. Emission Sources:

The following sources are specifically regulated under terms and conditions of the Operating Permit for this Site:

**<u>Units C1 through C5</u> - Five (5) Caterpillar Model G3612 TALE, Natural Gas Fired Internal Combustion Engines, rated at 3,300 HP each. The engines are equipped with low NOx combustion systems. CO, VOC and formaldehyde emissions are controlled with an oxidation catalyst.**

1. **Applicable Requirements –** Initial Approval Construction Permit 03LA0100 was issued for these sources. The due date of the first semi-annual monitoring and deviation report required by this operating permit will be more than 180 days after the initial approval Construction Permit 03LA0100 was issued and/or the equipment commenced operation. Therefore, under the provisions of Colorado Regulation No. 3, Part C, Section V.A.2, the Division is allowing the initial approval construction permit to continue in full force and effect and will consider the Responsible Official certification submitted with that report to serve as the demonstration pursuant to Regulation No. 3, Part B, Section IV.H and no final approval Construction Permit will be issued. The appropriate provisions of the initial approval construction permit have been

directly incorporated into this operating permit. The following applicable requirements have been identified for these units:

Construction Permit 03LA0100

- Visible emissions shall not exceed twenty percent (20%) opacity during normal operation of the source. During periods of startup, process modification, or adjustment of control equipment visible emissions shall not exceed 30% opacity for more than six minutes in any sixty consecutive minutes (Condition 1 and Colorado Regulation No. 1, Sections II.a.1 & 4). Note: The operating permit condition reflects the specific Regulation No. 1 language for this applicable requirement.)

- Limits emissions from the engines on monthly and rolling twelve month bases. (Condition 3) The monthly emission limits apply during the first twelve months of operation. The permit limits formaldehyde emissions to a level which makes the source a synthetic minor source for Maximum Achievable Control Technology (MACT) purposes.

- Limits natural gas consumption on monthly and on rolling twelve month bases. (Condition 4) The monthly limit applies only for the first year of operation.

  The Construction Permit includes an Alternative Operating Scenario (AOS) which allows the permittee to temporarily or permanently replace existing engines with similar engines. (Conditions 7 and 8) This operating permit includes the most recent version of the AOS.

- Formaldehyde emissions from insignificant activities are limited in order to ensure the source remains a synthetic minor source for MACT purposes. (Condition 10)

2. **Emission Factors-** Emissions from the engines are produced during the combustion process, and are dependent upon operating conditions and specific properties of the natural gas being burned. The pollutants of concern are Nitrogen Oxides ($NO_X$), Carbon Monoxide (CO), and Volatile Organic Compounds (VOC). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted dependent upon the makeup of the fuel and combustion efficiency. Emission limits from the engines were established using manufacturers' data.

**3. Monitoring Plan-** The source shall be required to monitor compliance with the emission limits by monitoring fuel consumption and using emission factors based on heat input. The source shall be required to record fuel consumption and calculate emissions monthly. The Division has developed specific monitoring guidance for Internal Combustion engines located in attainment areas, as shown on the attached grid titled "Compliance/Scenario Summary - Gas Fired IC Engines." Facility emissions are less than 200 tons/year, and the permit contains limits, and controls are used. Therefore, according to the monitoring grid, for the

IC engines, the source will be required to: conduct the emission calculations and record fuel use on a monthly basis; record catalyst parameters on a monthly or daily basis and during portable monitoring; record air/fuel ratio data monthly; and perform quarterly portable monitoring. Monitoring of the inlet catalyst temperature ensures that the temperature is within the recommended range for proper catalyst operation. Pressure drop measurements assist the operator in determining proper operation of the catalyst, and if the catalyst is damaged or fouled. In the absence of credible evidence to the contrary, compliance with the formaldehyde emission limits is assumed when CO emission limits are met using these monitoring methods. In addition, for HAP sources with emission limits greater than 8 tons/year but less than the major threshold of 10 tons/year, catalyst inlet and outlet CO measurements are required on the schedule set forth in the MACT standard. The source should use the parameter data to monitor performance of the catalyst, and to make any necessary adjustments for proper operation. In addition the source uses the data to determine compliance status for the semi-annual and annual reports (Appendices B and C of the permit).

The heat content of the natural gas shall be determined annually through either sampling and analysis or use of vendor analyses. In the absence of credible evidence to the contrary, compliance with the opacity limits is assumed when natural gas is used as fuel.

**4. Compliance Status-** The permittee indicated in their application that they are in compliance with all applicable requirements.

## IV. Compliance Assurance Monitoring (CAM) Requirements

The engines are equipped with an oxidation catalyst to control CO, VOC and formaldehyde emissions. Since the engines are not large pollutant specific emission units (i.e. potential controlled emissions, including limits in the Construction Permit, are less than 100 tons/year criteria pollutants and less than 10/25 tons year HAPS), the applicant is not required to submit a CAM plan until the permit is renewed (if applicable). Therefore, in accordance with the provisions of 40 CFR Part 64, as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV, the CEM engines are not subject to the compliance assurance monitoring (CAM) requirements at this time.

## V. Alternative Operating Scenarios

The permittee requested an Alternative Operating Scenario (AOS) in order to temporarily and permanently replace turbines. The permit contains the Division's AOS for turbine replacement.

## VII. Maximum Available Control Technology (MACT)

This facility is considered a synthetic minor source for MACT purposes (individual HAP emissions limited to <10 TPY and total HAP emissions limited to <25 TPY), therefore the MACT provisions do not apply to this facility.