TECHNICAL REVIEW DOCUMENT
OPERATING PERMIT 95OPRB044
to be issued to:

El Paso Corporation – El Paso Field Services
Dragon Trail Gas Processing Plant
Rio Blanco County
Source ID 1030036

Prepared by Geoffrey D. Drissel
April 19, 2001

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. The conclusions made in this report are based on information provided in the original application submittal of March 1, 1995 and supplemental technical submittals of March 13, 1995, May 19, 1995 and July 14, 1995. Conoco owned this facility at the time the initial application was submitted; Coastal acquired this facility in 1998 and submitted additional information on March 18, 1999. Coastal Corporation and El Paso Corporation merged toward the end of 2000 and the parent corporation for this facilitly became El Paso Corporation. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

On April 16, 1998 the Colorado Air Quality Control Commission directed the Division to implement new procedures regarding the use of short term emission and production/throughput limits on Construction permits. These procedures are being directly implemented in all operating permits that had not started their Public Comment period as of April 16, 1998. All short term emission and production/ throughput limits that appeared in the construction permits associated with this facility that are not required by a specific State or Federal standard or by the above referenced Division procedures have been deleted and all annual emission and production/throughput limits converted to a rolling 12 month total. Note that, if applicable, appropriate modeling to demonstrate compliance with the National Ambient Air Quality Standards was conducted as part of the Construction Permit processing procedures. If required by this permit, portable monitoring results and/or EPA reference test method results will be multiplied by 8760 hours for comparison to annual emission limits unless there is a specific condition in the permit restricting hours of operation.

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 source is classified as a natural gas liquids production facility defined under Standard Industrial Classification 1321. The plant processes natural gas using refrigerated oil absorption, refrigeration and cryogenic processes. The gas is compressed at various points in the process using eleven Internal Combustion Engines to power eleven compressor units. Additional equipment includes three process heaters, a glycol dehydration unit and several storage tanks.

The facility is located in a rural area south of Rangely in Rio Blanco County, Colorado, in an area designated as attainment for all criteria pollutants. Utah is designated as an affected state located within a 50 mile radius of the facility. This source is major (but has not yet had to go through Prevention of Significant Deterioration (PSD) review). Future modifications at the facility which trigger PSD significance levels as defined in Colorado Regulation No. 3, Part A, Section I.B.57 will require analysis of Best Available Control Technology (BACT) for the unit(s) in question. Facility-wide potential and actual emissions are as follows:

Pollutant	Potential to Emit (tpy)	Actual 1994 Emissions (tpy)
NOx	762.9	253.3
VOC	128.1	145.7
CO	288.2	163.2

Potential emissions are taken from the construction permits for this facility and from estimates based on AP-42 emission factors. Actual emissions are taken from AIRS data sheets issued in May of 1995, with the addition of emission estimates for the dehydrator vent, NGL skid fugitive emissions, cryogenic skid fugitive emissions and facility fugitive emissions. Fugitive emissions were assumed to be equal to PTE, lacking any measured data to show otherwise. The Division assumes that emissions from the facility have remained the same or decreased from the levels listed above.

The applicant certified that the facility was in compliance with all applicable requirements at the time of application submittal. The applicant also indicated that the facility is subject to 112(r), the Accidental Release Prevention Program of the Federal Clean Air Act. There are currently no Maximum Achievable Control Technology (MACT) standards applicable to this facility.

III. Emission Sources:

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

Unit H001- RADCO Model 511 Natural Gas Fired Hot Oil Heater Rated at 6.1 MMBTU, Serial No. 511

Discussion:

1. Applicable Requirements- This unit was first placed in service in 1992. Prior to Title V application submittal, Colorado Construction Permit 92RB514 defined applicable requirements for this heater. Revisions to the existing permit limits were not requested by the applicant. The terms contained in the existing Construction Permit are as follows:

Parameter	Short Term Limit	Long Term Limit
NOx	1.35 lbs/hr	5.9 tons/yr
VOC	0.02 lbs/hr	0.1 tons/yr
CO	0.21 lbs/hr	0.9 tons/yr
Fuel Use	6,000 scf/hr	50.88 MMscf/yr

As stated previously, none of the short term limits will be incorporated into the Operating Permit. In addition, the VOC and CO long term limits will not be incorporated because they are below the APEN de minimis level of 2 tons per year. The Regulation No. 1 particulate limit for fuel burning equipment will be included as an applicable requirement because it defines a short term limit. The annual NOx and fuel use limitations and the 20% opacity limit will be incorporated into the Operating Permit.

2. Emission Factors- Emissions from this heater are produced during the combustion process, and are dependent upon certain operating parameters and specific properties of the natural gas being burned. The pollutants of concern are nitrogen oxides (NOx) and carbon monoxide

(CO) and volatile organic compounds (VOCs). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. NOx emissions will be calculated using emission factor derived from the annual emission limit and annual fuel use limit listed in the Construction Permit. Detailed calculations demonstrating this derivation are provided in the attached Summary of Emission Factor Derivations. The derived emission factor is as follows:

Pollutant	Emission Factor	Source
NOx	0.232 lb/MMBtu	Calculation

3. Monitoring Plan- Conditions 1.1 through 1.5 of Section II of the Operating Permit list the monitoring and recordkeeping provisions necessary to monitor compliance with applicable requirements for this heater. Specific monitoring guidance for heaters in attainment areas has been developed by the Division as shown on the attached grid titled "Compliance/Scenario Summary - Gas Fired Boilers." This grid defines emission calculation and measurement of fuel use as the minimum requirements for this heater.

Because Construction Permit 92RB514 contains an annual emission limit for NOx, the applicant will be required to calculate emissions monthly using actual monthly fuel use and the fuel-based emission factor. Rolling twelve month emission and fuel use totals will be maintained for comparison with the annual emission and fuel use limits.

Emission calculation for fee purposes will be based on actual annual fuel use and the fuel-based emission factor. The applicant will be required to conduct the emission calculation annually and submit a revised APEN to the Division if emissions increase by the levels described in Colorado Regulation No. 3, Part A, Section II.C.2, compared to the latest APEN on file with the Division.

Compliance with the opacity standard of 20% will be monitored by a certification that the heater has used natural gas exclusively during the reporting period. The Division has determined, based on AP-42 emission factors and engineering judgement, that particulate emissions from this heater will be insignificant if natural gas is used as the fuel.

4. Compliance Status- The applicant certified in the operating permit application that this heater was in compliance with all applicable requirements at the time of submittal. Using AP-42 emission factors,

maximum fuel input and annual operating hours to calculate this source's potential to emit, the construction permit emission limits cannot be exceeded. The use of natural gas satisfies the opacity and Regulation No. 1 particulate limits. Thus, this source is considered to be in compliance with all applicable requirements.

Unit E03 - Superior Model 8G825 Natural Gas Fired Internal Combustion Engine, 4 Cycle, Rich Burn, Rated at 635 HP, Serial No. 19245

Unit E04 - Ingersol Rand Model PSVG8 Natural Gas Fired Internal Combustion Engine, 4 Cycle, Rich Burn, Rated at 544 HP, Serial No. 8BPST345

Unit E05 - Waukesha Model L5108 Natural Gas Fired Internal Combustion Engine, 4 Cycle, Rich Burn, Rated at 610 HP, Serial No. 129940

Unit E06 - Waukesha Model L5108 Natural Gas Fired Internal Combustion Engine, 4 Cycle, Rich Burn, Rated at 610 HP, Serial No. 114550

Discussion:

1. Applicable Requirements- These units were installed and began operation in 1967 (E05, E06) and 1971(E03, E04), and are therefore grandfathered from Colorado construction permitting requirements per Regulation No. 3, Part B, Section I.A. Consequently, the only specific applicable requirements for these engines are a 20% opacity limitation and APEN reporting in accordance with Regulation No. 3, Part A.II.

2. Emission Factors- Emissions from reciprocating engines are produced during the combustion process, and are dependent upon the air to fuel ratio adjustment and specific properties of the natural gas being burned. The pollutants of concern are nitrogen oxides (NOx), carbon monoxide (CO) and volatile organic compounds (VOCs). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. The applicant proposes to calculate NOx, CO and VOC emissions using emission factors provided by the manufacturer. These emission factors are as follows:

E03

Pollutant	Emission Factor	Source
NOx	15.0 g/hp-hr	Manufacturer

VOC	0.20 g/hp-hr	Manufacturer

E04

Pollutant	Emission Factor	Source
NOx	25.0 g/hp-hr	Manufacturer
VOC	0.30 g/hp-hr	Manufacturer

E05 and E06

Pollutant	Emission Factor	Source
NOx	18.0 g/hp-hr	Manufacturer
VOC	0.14 g/hp-hr	Manufacturer

The NOx emission factors shown above are all higher than the AP-42 factors listed in Table 3.2-2, which the Division considers default values. The Division will accept these emission factors for the purpose of calculating annual NOx emissions and the associated fees.

The CO emission factors shown above are all lower than the AP-42 factors listed in Table 3.2-2. However, since fees are not paid for CO emissions, and since the magnitude of the CO emissions is of importance only in determining the need for submitting revised APENs and for maintaining an accurate emissions inventory, the Division will accept these emission factors for the purpose of calculating annual CO emissions.

The VOC emission factors shown above are all higher than or equal to the AP-42 factors listed in Table 3.2-2. Using the manufacturer's emission factors, the annual VOC PTE is less than the APEN de minimis level. Consequently, calculation of VOC emissions for the purpose of estimating annual fees will not be required.

3. Monitoring Plan- Emissions of NOx and CO will be calculated based on hours of operation and the gram per horsepower-hour emission factor using the maximum design horsepower of each engine. The applicant will be required to conduct the emission calculation annually and submit a revised APEN to the Division if emissions increase by the levels described in Colorado Regulation No. 3, Part A, Section II.C.2, compared to the latest APEN on file with the Division. This plan is consistent with the Monitoring Grid for Internal Combustion Engines developed by the Division (attached).

Compliance with the opacity standard of 20% will be monitored by a

certification that each engine has used pipeline-quality natural gas exclusively during the reporting period. The Division has determined, based on AP-42 emission factors and engineering judgment, that particulate emissions from these engines will be insignificant if the listed condition is met.

4. Compliance Status- The applicant certified within the original application that natural gas has been used exclusively as the fuel for these units. Therefore, these units are currently in compliance with all applicable requirements.

Unit E07- Waukesha Model L5790GSIU Natural Gas Fired Internal Combustion Engine, 4 Cycle, Rich Burn, Rated at 1,060 HP, Serial No. 149631

Discussion:

1. Applicable Requirements- Prior to Title V application submittal, Colorado Construction Permit 88RB026-1 defined applicable requirements for this engine. Construction Permit modification requests were not made by Conoco as part of the Operating Permit application process. The terms contained in the existing Construction Permit are as follows:

Parameter	Short Term Limit	Long Term Limit
NOx	None	20.47 tons/yr
VOC	None	5.12 tons/yr
CO	None	20.47 tons/yr
Fuel Use	None	75.3 MMscf/yr

The annual NOx, CO, VOC and fuel use limitations and the 20% opacity limit will be incorporated into the Operating Permit.

2. Emission Factors- Emissions from this reciprocating engine are produced during the combustion process, and are dependent upon the air to fuel ratio adjustment and specific properties of the natural gas being burned. The pollutants of concern are nitrogen oxides (NOx), carbon monoxide (CO) and volatile organic compounds (VOCs). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. Emissions of NOx, CO and VOC from this engine will be calculated using emission factors provided by the engine manufacturer, which provide the basis for the emission limits contained in the

Construction Permit. These emission factors are as follows:

Pollutant	Emission Factor	Source
NOx	2.0 g/hphr	Manufacturer
CO	2.0 g/hphr	Manufacturer
VOC	0.5 g/hphr	Manufacturer

It is Division policy, for permitted engines, to convert the horsepower based emission factors to fuel based emission factors. This will result in the source being out of compliance if an excessive amount of fuel is combusted in this engine. The emission factor conversion is accomplished using the horsepower based emission factors, the design heat rate of the engine and the maximum engine horsepower, as shown on the attached calculation sheet. The resulting fuel based emission factors are as follows:

Pollutant	Emission Factor	Source
NOx	0.52 lb/MMBtu	Conversion
CO	0.52 lb/MMBtu	Conversion
VOC	0.13 lb/MMBtu	Conversion

3. Monitoring Plan- Conditions 5.1 through 5.5 of Section II of the Operating Permit list the monitoring and recordkeeping provisions necessary to monitor compliance with applicable requirements for this engine. Specific monitoring guidance for internal combustion engines in attainment areas has been developed by the Division as shown on the attached grids titled "Compliance/Scenario Summary - Gas Fired IC Engines." This grid defines emission calculation and measurement of fuel use or operating hours as minimum requirements for this engine.

The NOx and CO emission limits specified on the Construction Permit are based on emission factors that are much lower than AP-42. Consequently, the source will be required to perform quarterly portable monitoring to verify both the emission rate and the emission factors for NOx and CO. Simultaneous verification of the CO emission rate and emission factor will be required because of the correlation between NOx and CO emissions. In addition, the applicant will measure and record the catalytic converter inlet temperature, outlet temperature, inlet pressure and outlet pressure at least once per calendar month.

Emissions of NOx, CO and VOC will be calculated monthly using actual

fuel use and the fuel based emission factors. A rolling 12 month emission total will be calculated to determine compliance with the annual emission limits.

The Division has determined that emission calculations for fee purposes will be based on the fuel based emission factors listed above and actual annual fuel use. The applicant will be required to conduct the emission calculation annually and submit a revised APEN to the Division if emissions increase by the levels described in Colorado Regulation No. 3, Part A, Section II.C.2, compared to the latest APEN on file with the Division.

Compliance with the opacity standard of 20% will be monitored by a certification that the engine has used pipeline-quality natural gas exclusively during the reporting period. The Division has determined, based on AP-42 emission factors and engineering judgment, that particulate emissions from this engine will be insignificant if the listed condition is met.

4. Compliance Status- The applicant certified in the operating permit application that this engine was in compliance with all applicable requirements at the time of submittal. Lacking any evidence to the contrary, this source is considered to be in compliance with all applicable requirements.

<u>Unit E08</u>- Waukesha Model L5790GSIU Natural Gas Fired Internal Combustion Engine, 4 Cycle, Rich Burn, Rated at 1,060 HP, Serial No. 149629

<u>Unit E09</u>- Waukesha Model L5790GSIU Natural Gas Fired Internal Combustion Engine, 4 Cycle, Rich Burn, Rated at 1,060 HP, Serial No. 149630

Discussion:

1. Applicable Requirements- Prior to Title V application submittal, Colorado Construction Permits 88RB376-3 and 88RB376-4 defined applicable requirements for these engines. Construction Permit modification requests were not made by the applicant as part of the Operating Permit application process. The terms contained in the existing Construction Permit are as follows:

	Short	Long

Parameter	Term Limit	Term Limit
NOx	None	20.5 tons/yr
VOC	None	5.1 tons/yr
CO	None	15.4 tons/yr
Fuel Use	None	75.3 MMscf/yr

The annual NOx, CO, VOC and fuel use limitations and the 20% opacity limit will be incorporated into the Operating Permit.

2. Emission Factors- Emissions from these reciprocating engines are produced during the combustion process, and are dependent upon the air to fuel ratio adjustment and specific properties of the natural gas being burned. The pollutants of concern are nitrogen oxides (NOx), carbon monoxide (CO) and volatile organic compounds (VOCs). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. Emissions of NOx, CO and VOC from these engines will be calculated using emission factors provided by the engine manufacturer, which provide the basis for the emission limits contained in the Construction Permits. These emission factors are as follows:

Pollutant	Emission Factor	Source
NOx	2.0 g/hphr	Manufacturer
CO	1.5 g/hphr	Manufacturer
VOC	0.5 g/hphr	Manufacturer

It is Division policy, for permitted engines, to convert the horsepower based emission factors to fuel based emission factors. This will result in the source being out of compliance if an excessive amount of fuel is combusted in this engine. The emission factor conversion is accomplished using the horsepower based emission factors, the design heat rate of the engine and the maximum engine horsepower, as shown on the attached calculation sheet. The resulting fuel based emission factors are as follows:

Pollutant	Emission Factor	Source
NOx	0.52 lb/MMBtu	Conversion
CO	0.39 lb/MMBtu	Conversion

3. Monitoring Plan- Conditions 6.1 through 6.5 of Section II of the Operating Permit list the monitoring and recordkeeping provisions necessary to monitor compliance with applicable requirements for these engines. Specific monitoring guidance for internal combustion engines in

attainment areas has been developed by the Division as shown on the attached grids titled "Compliance/Scenario Summary - Gas Fired IC Engines." This grid defines emission calculation and measurement of fuel use or operating hours as minimum requirements for these engines.

The NOx and CO emission limits specified on the Construction Permits are based on emission factors that are much lower than AP-42. Consequently, the source will be required to perform quarterly portable monitoring to verify both the emission rate and the emission factors for NOx and CO. Simultaneous verification of the CO emission rate and emission factor will be required because of the correlation between NOx and CO emissions. In addition, the applicant will measure and record the catalytic converter inlet temperature, outlet temperature, inlet pressure and outlet pressure at least once per calendar month.

Emissions of NOx, CO and VOC will be calculated monthly using actual fuel use and the fuel based emission factors. A rolling 12 month emission total will be calculated to determine compliance with the annual emission limits.

The Division has determined that emission calculations for fee purposes will be based on the fuel based emission factors listed above and actual annual fuel use. The applicant will be required to conduct the emission calculation annually and submit a revised APEN to the Division if emissions increase by the levels described in Colorado Regulation No. 3, Part A, Section II.C.2, compared to the latest APEN on file with the Division.

Compliance with the opacity standard of 20% will be monitored by a certification that each engine has used pipeline-quality natural gas exclusively during the reporting period. The Division has determined, based on AP-42 emission factors and engineering judgment, that particulate emissions from these engines will be insignificant if the listed condition is met.

4. Compliance Status- The applicant certified in the operating permit application that these engines were in compliance with all applicable requirements at the time of submittal. Lacking any evidence to the contrary, this source is considered to be in compliance with all applicable requirements.

<u>Unit E10</u>- Cooper Model GMVH12-C2 Natural Gas Fired Internal Combustion

Engine, 2 Cycle, Lean Burn, Rated at 2,700 HP, Serial No. 49071

Unit E11- Cooper Model GMVH12-C2 Natural Gas Fired Internal Combustion Engine, 2 Cycle, Lean Burn, Rated at 2,700 HP, Serial No. 49072

Discussion:

1. Applicable Requirements- Prior to Title V application submittal, Colorado Construction Permits 88RB026-2 and 88RB026-3 defined applicable requirements for these engines. Construction Permit modification requests were not made by the applicant as part of the Operating Permit application process. The terms contained in the existing Construction Permit are as follows:

Parameter	Short Term Limit	Long Term Limit
NOx	None	52.1 tons/yr
VOC	None	13.0 tons/yr
CO	None	39.1 tons/yr
Fuel Use	None	191.8 MMscf/yr

The annual NOx, CO, VOC and fuel use limitations and the 20% opacity limit will be incorporated into the Operating Permit.

2. Emission Factors- Emissions from these reciprocating engines are produced during the combustion process, and are dependent upon the air to fuel ratio adjustment and specific properties of the natural gas being burned. The pollutants of concern are nitrogen oxides (NOx), carbon monoxide (CO) and volatile organic compounds (VOCs). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. Emissions of NOx, CO and VOC from these engines will be calculated using emission factors provided by the engine manufacturer, which provide the basis for the emission limits contained in the Construction Permits. These emission factors are as follows:

Pollutant	Emission Factor	Source
NOx	2.0 g/hphr	Manufacturer
CO	1.5 g/hphr	Manufacturer
VOC	0.5 g/hphr	Manufacturer

It is Division policy, for permitted engines, to convert the horsepower based emission factors to fuel based emission factors. This will result in

the source being out of compliance if an excessive amount of fuel is combusted in this engine. The emission factor conversion is accomplished using the horsepower based emission factors, the design heat rate of the engine and the maximum engine horsepower, as shown on the attached calculation sheet. The resulting fuel based emission factors are as follows:

Pollutant	Emission Factor	Source
NOx	0.52 lb/MMBtu	Conversion
CO	0.39 lb/MMBtu	Conversion
VOC	0.13 lb/MMBtu	Conversion

3. Monitoring Plan- Conditions 7.1 through 7.4 of Section II of the Operating Permit list the monitoring and recordkeeping provisions necessary to monitor compliance with applicable requirements for these engines. Specific monitoring guidance for internal combustion engines in attainment areas has been developed by the Division as shown on the attached grids titled "Compliance/Scenario Summary - Gas Fired IC Engines." This grid defines emission calculation and measurement of fuel use or operating hours as minimum requirements for these engines.

The annual NOx emission limit specified on the Construction Permits is based on an emission factor that is much lower than AP-42. Consequently, the source will be required to perform quarterly portable monitoring to verify both the emission rate and the emission factors for NOx and CO. Simultaneous verification of the CO emission rate and emission factor will be required because of the correlation between NOx and CO emissions.

Emissions of NOx, CO and VOC will be calculated monthly using actual fuel use and the fuel based emission factors. A rolling 12 month emission total will be calculated to determine compliance with the annual emission limits.

The Division has determined that emission calculations for fee purposes will be based on the fuel based emission factors listed above and actual annual fuel use. The applicant will be required to conduct the emission calculation annually and submit a revised APEN to the Division if emissions increase by the levels described in Colorado Regulation No. 3, Part A, Section II.C.2, compared to the latest APEN on file with the Division.

Compliance with the opacity standard of 20% will be monitored by a certification that each engine has used pipeline-quality natural gas exclusively during the reporting period. The Division has determined, based on AP-42 emission factors and engineering judgment, that particulate emissions from these engines will be insignificant if the listed condition is met.

4. Compliance Status- The applicant certified in the operating permit application that each engine was in compliance with all applicable requirements at the time of submittal. Lacking any evidence to the contrary, this source is considered to be in compliance with all applicable requirements.

Unit H012- Petrofac Model H-801 Natural Gas Fired Hot Oil Heater Rated at 13.8 MMBTU Each, Serial No. P88139

Discussion:

1. Applicable Requirements- This unit was first placed in service in 1989. Prior to Title V application submittal, Colorado Construction Permit 88RB376-8 defined applicable requirements for this heater. Revisions to the existing permit limits were not requested by the applicant. The terms contained in the existing Construction Permit are as follows:

Parameter	Short Term Limit	Long Term Limit
NOx	3.04 lbs/hr	13.3 tons/yr
VOC	0.05 lbs/hr	0.2 tons/yr
CO	0.25 lbs/hr	2.0 tons/yr
Particulate	0.05 lbs/hr	0.3 tons/yr
Fuel Use	None	115.9 MMscf/yr

As stated previously, none of the short term limits will be incorporated into the Operating Permit. In addition, the VOC and particulate long term limits will not be incorporated because they are below the APEN de minimis level of 2 tons per year. The Regulation No. 1 particulate limit for fuel burning equipment will be included as an applicable requirement because it defines a short term limit. The annual NOx, CO and fuel use limitations and the 20% opacity limit will be incorporated into the Operating Permit.

2. Emission Factors- Emissions from this heater are produced during the

combustion process, and are dependent upon certain operating parameters and specific properties of the natural gas being burned. The pollutants of concern are nitrogen oxides (NOx) and carbon monoxide (CO) and volatile organic compounds (VOCs). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. NOx and CO and emissions will be calculated using emission factors derived from the annual emission limits and annual fuel use limit listed in the Construction Permit. Detailed calculations demonstrating these derivations are provided in the attached Summary of Emission Factor Derivations. The derived emission factors are as follows:

Pollutant	Emission Factor	Source
NOx	0.230 lb/MMBtu	Calculation
CO	0.035 lb/MMBtu	Calculation

3. Monitoring Plan- Conditions 8.1 through 8.5 of Section II of the Operating Permit list the monitoring and recordkeeping provisions necessary to monitor compliance with applicable requirements for this heater. Specific monitoring guidance for heaters in attainment areas has been developed by the Division as shown on the attached grid titled "Compliance/Scenario Summary - Gas Fired Boilers." This grid defines emission calculation and measurement of fuel use as the minimum requirements for this heater.

Because Construction Permit 88RB376-8 contains annual emission limits for NOx and CO, the applicant will be required to calculate emissions monthly using actual monthly fuel use and the fuel-based emission factors. Rolling twelve month emission and fuel use totals will be maintained for comparison with the annual emission and fuel use limits.

Emission calculation for fee purposes will be based on actual annual fuel use and the fuel-based emission factors. The applicant will be required to conduct the emission calculation annually and submit a revised APEN to the Division if emissions increase by 5 tons/year or more compared to the latest APEN on file with the Division.

Compliance with the opacity standard of 20% will be monitored by a certification that the heater has used natural gas exclusively during the reporting period. The Division has determined, based on AP-42 emission factors and engineering judgment, that particulate emissions from this heater will be insignificant if natural gas is used as the fuel.

4. Compliance Status- The applicant certified in the operating permit application that this heater was in compliance with all applicable requirements at the time of submittal. Using AP-42 emission factors, maximum fuel input and annual operating hours to calculate this source's potential to emit, the construction permit emission limits cannot be exceeded. The use of natural gas satisfies the opacity and Regulation No. 1 particulate limits. Thus, this source is considered to be in compliance with all applicable requirements.

Unit H013- Petrofac Natural Gas Fired Glycol Regenerator Heater Rated at 6.8 MMBTU Each, Serial No. 630

Discussion:

1. Applicable Requirements- This unit was first placed in service in 1989. Prior to Title V application submittal, Colorado Construction Permit 88RB376-9 defined applicable requirements for this heater. Revisions to the existing permit limits were not requested by the applicant. The terms contained in the existing Construction Permit are as follows:

Parameter	Short Term Limit	Long Term Limit
NOx	0.95 lbs/hr	4.2 tons/yr
CO	0.24 lbs/hr	1.0 tons/yr
Fuel Use	6,507 scf/hr	57.0 MMscf/yr

As stated previously, none of the short term limits will be incorporated into the Operating Permit. In addition, the CO long term limit will not be incorporated because it is below the APEN de minimis level of 2 tons per year. The Regulation No. 1 particulate limit for fuel burning equipment will be included as an applicable requirement because it defines a short term limit. The annual NOx and fuel use limitations and the 20% opacity limit will be incorporated into the Operating Permit.

2. Emission Factors- Emissions from this heater are produced during the combustion process, and are dependent upon certain operating parameters and specific properties of the natural gas being burned. The pollutants of concern are nitrogen oxides (NOx) and carbon monoxide (CO) and volatile organic compounds (VOCs). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. Calculation of particulate, CO and VOC emissions will not be

required because the annual emission limit is less than the APEN de minimis level. NOx emissions will be calculated using an emission factor derived from the annual emission limit and annual fuel use limit listed in the Construction Permit. Detailed calculations demonstrating these derivations are provided in the attached Summary of Emission Factor Derivations. The derived emission factors are as follows:

Pollutant	Emission Factor	Source
NOx	0.141 lb/MMBtu	Calculation

3. Monitoring Plan- Conditions 9.1 through 9.5 of Section II of the Operating Permit list the monitoring and recordkeeping provisions necessary to monitor compliance with applicable requirements for this heater. Specific monitoring guidance for heaters in attainment areas has been developed by the Division as shown on the attached grid titled "Compliance/Scenario Summary - Gas Fired Boilers." This grid defines emission calculation and measurement of fuel use as the minimum requirements for this heater.

Because Construction Permit 88RB376-9 contains annual emission limits for NOx, the applicant will be required to calculate emissions monthly using actual monthly fuel use and the fuel-based emission factors. Rolling twelve month emission and fuel use totals will be maintained for comparison with the annual emission and fuel use limits.

Emission calculation for fee purposes will be based on actual annual fuel use and the fuel-based emission factors. The applicant will be required to conduct the emission calculation annually and submit a revised APEN to the Division if emissions increase by 5 tons/year or more compared to the latest APEN on file with the Division.

Compliance with the opacity standard of 20% will be monitored by a certification that the heater has used natural gas exclusively during the reporting period. The Division has determined, based on AP-42 emission factors and engineering judgment, that particulate emissions from this heater will be insignificant if natural gas is used as the fuel.

4. Compliance Status- The applicant certified in the operating permit application that this heater was in compliance with all applicable requirements at the time of submittal. Using AP-42 emission factors, maximum fuel input and annual operating hours to calculate this source's potential to emit, the construction permit emission limits cannot be

exceeded. The use of natural gas satisfies the opacity and Regulation No. 1 particulate limits. Thus, this source is considered to be in compliance with all applicable requirements.

Unit D013A-Petrofac Triethylene Glycol Dehydration Unit, Model 630, 6.8 MMBtu Per Hour, Rated at 56.0 MMSCF Per Day

Discussion:

1. Applicable Requirements - Emissions of VOC from the triethylene glycol regeneration unit had not been reported prior to submittal of the original Operating Permit application, nor were they provided in the initial Operating Permit application. In a response to a request for information made by the Division, Conoco estimated VOC emissions from the regenerator vent to be 59.0 tons per year, of which 20.6 tons per year are estimated to be HAPs. Because this was an existing dehydrator at the time Conoco submitted the emissions estimate, it was not considered a major PSD modification. Coastal subsequently resubmitted information for this unit indicating that the flash tank and regenerator exhaust streams are controlled by a flare. Emission estimates are based on GlyCalc modeling and a flare control efficiency of 98%. The following conditions will be incorporated into Operating Permit:

Parameter	Short Term Limit	Long Term Limit
VOC	None	6.69 tons/yr
Gas Throughput	None	56.0 MMscf/yr

2. Emission Factors - Triethylene glycol is contacted with the natural gas stream to remove moisture from the gas. The glycol then passes through a flash tank and is heated in the regeneration unit to drive off water, which also drives off VOCs that were absorbed from the gas stream. Combustion emissions from the heater for this unit are incorporated into the Operating Permit as emission unit H013. VOC and HAP emissions from the regenerator vent and flash tank were estimated by the applicant using GRI GlyCalc. Emissions from the flash tank and emissions from the regenerator vent are sent to a flare.

3. Monitoring Plan - El Paso will use GRI GlyCalc modeling to estimate annual emissions of VOC and HAPs from the flash tank and regeneration unit of this dehydrator, assuming a flare control efficiency of 98%, in order

to determine compliance with the VOC emission limit. Monthly recording of process operating parameters will be conducted as outlined in Condition 10.1 of Section II of the Draft Operating Permit. Extended wet analysis of the gas to be processed will be required quarterly to verify the constituent composition in the gas stream. This monitoring plan is consistent with the attached monitoring grid developed by the Division for glycol dehydrators.

4. Compliance Status - Emissions from the regenerator vent were previously not reported. The Division has determined that the failure to obtain a construction permit for emissions from an existing dehydrator vent is not considered noncompliance due to the fact that VOC emissions from these units were only recently determined to be significant. Consequently, the Division considers this source to be in compliance with all applicable requirements.

Unit E14- Cooper Model GMVA-6 Natural Gas Fired Internal Combustion Engine, 2 Cycle, Rich Burn, Rated at 810 HP, Serial No. 44290

Discussion:

1. Applicable Requirements- Prior to Title V application submittal, Colorado Construction Permit 88RB376-6 defined applicable requirements for this engine. Construction Permit modification requests were not made by the applicant as part of the Operating Permit application process. The terms contained in the existing Construction Permit are as follows:

Parameter	Short Term Limit	Long Term Limit
NOx	None	117.2 tons/yr
VOC	None	7.1 tons/yr
CO	None	11.2 tons/yr
Fuel Use	None	57.82 MMscf/yr

The annual NOx, CO, VOC and fuel use limitations and the 20% opacity limit will be incorporated into the Operating Permit.

2. Emission Factors- Emissions from this reciprocating engine are produced during the combustion process, and are dependent upon the air to fuel ratio adjustment and specific properties of the natural gas being burned. The pollutants of concern are nitrogen oxides (NOx), carbon monoxide (CO) and volatile organic compounds (VOCs). Small quantities

of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. Emissions of NOx, CO and VOC from this engine will be calculated using emission factors provided by the engine manufacturer, which provide the basis for the emission limits contained in the Construction Permit. These emission factors are as follows:

Pollutant	Emission Factor	Source
NOx	15.0 g/hphr	Manufacturer
CO	1.44 g/hphr	Manufacturer
VOC	0.9 g/hphr	Manufacturer

It is Division policy, for permitted engines, to convert the horsepower based emission factors to fuel based emission factors. This will result in the source being out of compliance if an excessive amount of fuel is combusted in this engine. The emission factor conversion is accomplished using the horsepower based emission factors, the design heat rate of the engine and the maximum engine horsepower, as shown on the attached calculation sheet. The resulting fuel based emission factors are as follows:

Pollutant	Emission Factor	Source
NOx	3.88 lb/MMBtu	Conversion
CO	0.37 lb/MMBtu	Conversion
VOC	0.23 lb/MMBtu	Conversion

3. Monitoring Plan- Conditions 11.1 through 11.4 of Section II of the Operating Permit list the monitoring and recordkeeping provisions necessary to monitor compliance with applicable requirements for this engine. Specific monitoring guidance for internal combustion engines in attainment areas has been developed by the Division as shown on the attached grids titled "Compliance/Scenario Summary - Gas Fired IC Engines." This grid defines emission calculation and measurement of fuel use or operating hours as minimum requirements for this engine.

The NOx and VOC emission limits specified on the Construction Permit are based on emission factors that are higher than AP-42. The CO emission limit is based on an emission factor that is slightly less than, but essentially equal to, AP-42. Consequently, portable monitoring will not be required for any pollutant.

Emissions of NOx, CO and VOC will be calculated monthly using actual fuel use and the fuel based emission factors. A rolling 12 month emission

total will be calculated to determine compliance with the annual emission limits.

The Division has determined that emission calculations for fee purposes will be based on the fuel based emission factors listed above and actual annual fuel use. The applicant will be required to conduct the emission calculation annually and submit a revised APEN to the Division if emissions increase by the levels described in Colorado Regulation No. 3, Part A, Section II.C.2, compared to the latest APEN on file with the Division.

Compliance with the opacity standard of 20% will be monitored by a certification that the engine has used pipeline-quality natural gas exclusively during the reporting period. The Division has determined, based on AP-42 emission factors and engineering judgment, that particulate emissions from this engine will be insignificant if the listed condition is met.

4. Compliance Status- The applicant certified in the operating permit application that this engine was in compliance with all applicable requirements at the time of submittal. Lacking any evidence to the contrary, this source is considered to be in compliance with all applicable requirements.

Unit E15- Ingersol Rand Model PSVG Natural Gas Fired Internal Combustion Engine, 4 Cycle, Clean Burn, Rated at 1,100 HP, Serial No. 10MF186

Discussion:

1. Applicable Requirements- Prior to Title V application submittal, Colorado Construction Permit 88RB376-7 defined applicable requirements for this engine. Construction Permit modification requests were not made by the applicant as part of the Operating Permit application process. The terms contained in the existing Construction Permit are as follows:

Parameter	Short Term Limit	Long Term Limit
NOx	None	21.2 tons/yr
VOC	None	5.3 tons/yr
CO	None	26.5 tons/yr
Fuel Use	None	77.96 MMscf/yr

The annual NOx, CO, VOC and fuel use limitations and the 20% opacity limit will be incorporated into the Operating Permit.

2. Emission Factors- Emissions from this reciprocating engine are produced during the combustion process, and are dependent upon the air to fuel ratio adjustment and specific properties of the natural gas being burned. The pollutants of concern are nitrogen oxides (NOx), carbon monoxide (CO) and volatile organic compounds (VOCs). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. Emissions of NOx, CO and VOC from this engine will be calculated using emission factors provided by the engine manufacturer, which provide the basis for the emission limits contained in the Construction Permit. These emission factors are as follows:

Pollutant	Emission Factor	Source
NOx	2.0 g/hphr	Manufacturer
CO	2.5 g/hphr	Manufacturer
VOC	0.5 g/hphr	Manufacturer

It is Division policy, for permitted engines, to convert the horsepower based emission factors to fuel based emission factors. This will result in the source being out of compliance if an excessive amount of fuel is combusted in this engine. The emission factor conversion is accomplished using the horsepower based emission factors, the design heat rate of the engine and the maximum engine horsepower, as shown on the attached calculation sheet. The resulting fuel based emission factors are as follows:

Pollutant	Emission Factor	Source
NOx	0.52 lb/MMBtu	Conversion
CO	0.65 lb/MMBtu	Conversion
VOC	0.13 lb/MMBtu	Conversion

3. Monitoring Plan- Conditions 12.1 through 12.5 of Section II of the Operating Permit list the monitoring and recordkeeping provisions necessary to monitor compliance with applicable requirements for this engine. Specific monitoring guidance for internal combustion engines in attainment areas has been developed by the Division as shown on the attached grids titled "Compliance/Scenario Summary - Gas Fired IC Engines." This grid defines emission calculation and measurement of fuel use or operating hours as minimum requirements for this engine.

The NOx and CO emission limits specified on the Construction Permit are based on emission factors that are much lower than AP-42. Consequently, the source will be required to perform quarterly portable monitoring to verify both the emission rate and the emission factors for NOx and CO. Simultaneous verification of the CO emission rate and emission factor will be required because of the correlation between NOx and CO emissions. In addition, the applicant will measure and record the catalytic converter inlet temperature, outlet temperature, inlet pressure and outlet pressure at least once per calendar month.

Emissions of NOx, CO and VOC will be calculated monthly using actual fuel use and the fuel based emission factors. A rolling 12 month emission total will be calculated to determine compliance with the annual emission limits.

The Division has determined that emission calculations for fee purposes will be based on the fuel based emission factors listed above and actual annual fuel use. The applicant will be required to conduct the emission calculation annually and submit a revised APEN to the Division if emissions increase by the levels described in Colorado Regulation No. 3, Part A, Section II.C.2, compared to the latest APEN on file with the Division.

Compliance with the opacity standard of 20% will be monitored by a certification that the engine has used pipeline-quality natural gas exclusively during the reporting period. The Division has determined, based on AP-42 emission factors and engineering judgment, that particulate emissions from this engine will be insignificant if the listed condition is met.

4. Compliance Status- The applicant certified in the operating permit application that this engine was in compliance with all applicable requirements at the time of submittal. Lacking any evidence to the contrary, this source is considered to be in compliance with all applicable requirements.

<u>Unit F017</u>- NGL Plant Fugitive Emissions

Discussion:

1. Applicable Requirements - Prior to Title V application submittal,

Colorado Construction Permit 90RB027, issued in May 1990, defined applicable requirements for this source. This permit sets limitations on annual VOC emissions and it defines a facility component count that is not to be exceeded. In the initial application Conoco requested an emissions increase based on an increased component count and the use of 1993 EPA component emission factors to calculate the NGL plant PTE. The Division has determined, based on the use of 1995 EPA emission factors, that an increase in the permit limit is unnecessary. Consequently, the annual VOC emission limit of 20.1 tons per year contained in the original Construction Permit has been incorporated into the draft Operating Permit as an applicable requirement.

This plant is considered to be an onshore natural gas processing facility as defined in 40CFR60 Subpart KKK. This subpart contains requirements for inspection and monitoring of fugitive leaks at these facilities. The effective date for this subpart is January 20, 1984. Since the NGL plant began operation after that date, Subpart KKK applies to this unit.

2. Emission Factors - Emissions from this source consist of VOC leaks from equipment and associated piping and components at the facility. Emissions from leaking equipment and piping are estimated using facility component counts and EPA emission factors as described in the 1995 EPA document “Protocol for Equipment Leak Emission Estimates”.

3. Monitoring Plan - Conditions 13.1 through 13.3 of Section II of the Operating Permit list the monitoring and recordkeeping provisions necessary to verify compliance with the applicable requirements. Specifically, El Paso must maintain an annual accounting of the number of all equipment components, by tracking all component additions and deletions, that could contribute to fugitive VOC leaks. The resulting leak calculation will be compared to the annual VOC limit to determine compliance. No specific component limit has been specified in the Operating Permit to allow flexibility under the VOC emission limitation.

4. Compliance Status - The applicant certified in the operating permit application that this source was in compliance with all applicable requirements at the time of submittal, including the component count limitations listed in the Construction Permit and Subpart KKK requirements. Calculating fugitive VOC emissions using the 1995 EPA emission factors demonstrates compliance with the annual VOC limit. Consequently, this source is considered to be in compliance with all applicable requirements.

Unit F019- Cryogenic Plant Fugitive Emissions

Discussion:

1. Applicable Requirements -

Prior to Title V application submittal, Colorado Emission Permit 94RB097, issued in May 1994, defined applicable requirements for this source. This permit sets limitations on VOC emissions and it defines a facility component count that is not to be exceeded. Construction Permit modification requests were not made by the applicant as part of the Operating Permit application process. Consequently, the annual VOC emission limit of 21.8 tons per year contained in the original Construction Permit has been incorporated into the draft Operating Permit as an applicable requirement.

This plant is considered to be an onshore natural gas processing facility as defined in 40CFR60 Subpart KKK. This subpart contains requirements for inspection and monitoring of fugitive leaks at these facilities. The effective date for this subpart is January 20, 1984. Since the cryogenic plant began operation after that date, Subpart KKK applies to this unit.

2. Emission Factors - Emissions from this source consist of VOC leaks from equipment and associated piping and components at the facility. Emissions from leaking equipment and piping are estimated using facility component counts and EPA emission factors as described in the 1995 EPA document “Protocol for Equipment Leak Emission Estimates”.

3. Monitoring Plan - Conditions 14.1 through 14.3 of Section II of the Operating Permit list the monitoring and recordkeeping provisions necessary to monitor compliance with the applicable requirements. Specifically, El Paso must maintain an annual accounting of the number of all equipment components, by tracking all component additions and deletions, that could contribute to fugitive VOC leaks. The resulting leak calculation will be compared to the annual VOC limit to determine compliance. No specific component limit has been specified in the Operating Permit to allow flexibility under the VOC emission limitation.

4. Compliance Status - The applicant certified in the operating permit application that this source was in compliance with all applicable

requirements at the time of submittal, including the component count limitations listed in the Construction Permit and Subpart KKK requirements. Calculating fugitive VOC emissions using the 1995 EPA emission factors demonstrates compliance with the annual VOC limit. Consequently, this source is considered to be in compliance with all applicable requirements.

Unit F020- Facility Fugitive Emissions

Discussion:

1. Applicable Requirements - The applicant had not reported facility fugitive VOC emissions prior to submittal of the operating permit application. Conoco submitted calculations based on 1993 EPA emission factors estimating fugitive VOC emissions from this facility to be 155.7 tons per year. Conoco later submitted a revised emission estimate based on 1995 EPA emission factors estimating fugitive VOC emissions to be 21.0 tons per year. That VOC emissions limit has been directly incorporated into the draft Operating Permit.

This plant is considered to be an onshore natural gas processing facility as defined in 40CFR60 Subpart KKK. This subpart contains requirements for inspection and monitoring of fugitive leaks at these facilities. The effective date for this subpart is January 20, 1984. Since the majority of this facility has been modified since that time, Subpart KKK applies to this site.

2. Emission Factors - Emissions from this source consist of VOC leaks from equipment and associated piping and components at the facility. Emissions from leaking equipment and piping are estimated using facility component counts and EPA emission factors as described in the 1995 EPA document “Protocol for Equipment Leak Emission Estimates”.

3. Monitoring Plan - Conditions 15.1 through 15.3 of Section II of the Operating Permit list the monitoring and recordkeeping provisions necessary to monitor compliance with the applicable requirements. Specifically, El Paso must maintain an annual accounting of the number of all equipment components, by tracking all component additions and deletions, that could contribute to fugitive VOC leaks. The resulting leak calculation will be compared to the annual VOC limit to determine compliance. No specific component limit has been specified in the

Operating Permit to allow flexibility under the VOC emission limitation. The Division has determined that maintaining a gas throughput limitation is unnecessary since gas throughput has no influence on the VOC emission calculation.

4. Compliance Status - Conoco submitted an Air Pollution Emission Notice (APEN) and construction permit application for these emissions. The facility did not indicate that they were out of compliance for failing to report these emissions. However, because the current construction permit contains the requested limits, this source appears to be in compliance with current emission and gas throughput limits. Therefore, this source is considered to be currently in compliance with all applicable requirements.

IV. Insignificant Activities

Several insignificant activities were listed by the applicant as an addendum to form 102B. These activities consist of lube oil, methanol, and condensate storage tanks, as well as a 23 horsepower generator engine, all of which were deemed insignificant based on size or emission level.

V. Alternative Operating Scenarios

There are no alternative operating scenarios associated with this facility.

VI. Permit Shield

The permit shield has not been requested for any part of this facility.

VII. Accidental Release Program - 112(r)

A provision under Part 70 of the Clean Air Act (amended) is the Accidental Release provisions of section 112(r). Under this program, EPA established a list of substances which pose the greatest risk of death or serious injury to humans or extreme harm to the environment. Additionally, a list of flammable substances and high explosives were set forth. Each substance was given a threshold or de minimis level by considering their individual toxicity, reactivity, volatility, flammability, explosiveness, and dispersiveness. Facilities using any of these substances in greater-than-threshold quantities are required to prepare and

implement a Risk Management/Prevention Plan for those substances.

Conoco, in the original Operating Permit application, indicated that this facility is subject to section 112(r) and that a prevention plan had not been prepared. Subsequently, a plan has not been submitted.