

## AIR QUALITY PERMIT

Issued To: Bitter Creek Pipelines, LLC  
Consul 27 Battery Compressor Station  
P.O. Box 131  
Glendive, MT 59330

Permit: #3298-00  
Application Complete: 1/23/04  
Preliminary Determination Issued: 2/19/04  
Department's Decision Issued: 3/8/04  
Permit Final: 3/24/04  
AFS: # 003-0022

An air quality permit, with conditions, is hereby granted to Bitter Creek Pipelines, LLC (BCPL), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq.*, as amended, for the following:

### SECTION I: Permitted Facilities

#### A. Permitted Equipment

Permit #3298-00 is issued to BCPL for the construction and operation of the Consul 27 Battery Compressor Station. The facility is a natural gas central compressor station. A complete list of the permitted equipment is contained in Section I.A of the permit analysis.

#### B. Plant Location

The facility is located near Decker, Montana. The legal description of the facility is the NW ¼ of Section 27, Township 9 South, Range 40 East, Big Horn County, Montana. BCPL proposed to permit the two 400-horsepower (hp) Waukesha F18GL compressor engines that currently exist at the facility along with four additional 400-hp Waukesha F18GL engines.

### SECTION II. Conditions and Limitations

#### A. Emission Limitations

1. Emissions from each of the six 400-hp Waukesha F18GL compressor engines shall be controlled by a catalytic oxidation unit. BCP shall install catalytic oxidation units on the existing compressor engines (Units #1 & #2) within 180 days of Permit #3298-00 being issued final. Emissions from each of the compressor engines shall not exceed the following (ARM 17.8.752):

NO <sub>x</sub> <sup>1</sup>	0.88 lb/hr
CO	0.44 lb/hr
VOC	0.44 lb/hr

2. BCPL shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6-consecutive minutes (ARM 17.8.304).
3. BCPL shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).

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<sup>1</sup> NO<sub>x</sub> reported as NO<sub>2</sub>.

4. BCPL shall treat all unpaved portions of the haul roads, access roads, parking lots, or general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.3 (ARM 17.8.749).

B. Testing Requirements

1. Each of the four new compressor engines (Units #3-6) shall be initially tested for NO<sub>x</sub> and CO, concurrently, to demonstrate compliance with the emission limits in Section II.A.1, within 180 days of the initial start up date of the compressor engines. Further testing shall continue on an every 4-year basis or according to another testing/monitoring schedule as may be approved by the Department of Environmental Quality (Department) (ARM 17.8.105 and ARM 17.8.749).
2. The two existing compressor engines (Units #1 & #2) shall be initially tested for NO<sub>x</sub> and CO, concurrently, to demonstrate compliance with the emission limits in Section II.A.1, within 180 days of Permit #3298-00 being issued final. Further testing shall continue on an every 5-year basis or according to another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105 and ARM 17.8.749).
3. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).
4. The Department may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. BCPL shall supply the Department with annual production information for all emission points, as required by the Department, in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

Production information shall be gathered on a calendar-year basis, and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. BCPL shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745, that would include a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit. The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).
3. All records compiled in accordance with this permit must be maintained by BCPL as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

#### D. Notification

BCPL shall provide the Department (both the Billings regional office and the Helena office) with written notification of the following information within the specified time periods:

1. Commencement of construction of units #3-6 within 30 days after the commencement of construction (ARM 17.8.749).
2. Actual start-up date of units #3-6 within 15 days after the actual start-up date of each respective engine (ARM 17.8.749).

#### SECTION III: General Conditions

- A. Inspection – BCPL shall allow the Department’s representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.
- B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if BCPL fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving BCPL of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).
- D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties or other enforcement action as specified in Section 75-2-401, *et seq.*, MCA.
- E. Appeals – Any person or persons jointly or severally adversely affected by the Department’s decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The Department’s decision on the application is not final unless 15 days have elapsed and there is no request for a hearing under this section. The filing of a request for a hearing postpones the effective date of the Department’s decision until conclusion of the hearing and issuance of a final decision by the Board.
- F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy the air quality permit shall be made available for inspection by the Department at the location of the source.
- G. Permit Fee – Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by BCPL may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.
- H. Construction Commencement – Construction must begin within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall be revoked (ARM 17.8.762).

Permit Analysis  
Bitter Creek Pipelines, LLC  
Consul 27 Battery Compressor Station  
Permit #3298-00

I. Introduction/Process Description

Bitter Creek Pipelines, LLC (BCPL) is permitted for the construction and operation of the Consul 27 Battery Compressor Station. The facility is a natural gas compressor station located near the town of Decker, in the NW ¼ of Section 27, Township 9 South, Range 40 East, Big Horn County, Montana.

A. Permitted Equipment

The facility consists of the following equipment:

1. (6) 400-horsepower (hp) natural gas fired Waukesha F18GL compressor engines
  - a. Units #1 and #2 are existing
  - b. Units #3-6 are new
2. (1) Natural gas fired heater up to 2.21 million British thermal units per hour (MMBtu/hr).

B. Source Description

The purpose of the BCPL – Consul 27 Battery Compressor Station is to compress natural gas for transmission through the natural gas pipeline. The compression of the gas is accomplished with the compressor engines listed in Section I.A of the permit analysis.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the Department of Environmental Quality (Department). Upon request, the Department will provide references for location of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 – General Provisions, including but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.
3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, Montana Code Annotated (MCA).

BCPL shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than 4 hours.
5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction of the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2 – Ambient Air Quality, including, but not limited to the following:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM<sub>10</sub>

BCPL must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 – Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.
2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, BCPL shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.
3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.
4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.

5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. (4) Commencing July 1, 1972, no person shall burn liquid or solid fuels containing sulfur in excess of 1 pound of sulfur per million Btu fired. (5) Commencing July 1, 1971, no person shall burn any gaseous fuel containing sulfur compounds in excess of 50 grains per 100 cubic feet of gaseous fuel, calculated as hydrogen sulfide at standard conditions. BCPL will burn natural gas in all fuel burning equipment, which will meet this limitation.
6. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.
7. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR 60, Standards of Performance for New Stationary Sources (NSPS). This facility is not an NSPS affected source because it does not meet the definition of any NSPS subpart defined in 40 CFR 60.
8. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR 63, shall comply with the requirements of 40 CFR 63, as listed below:

40 CFR 63, Subpart HH - National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities. Owners or operators of oil and natural gas production facilities, as defined and applied in 40 CFR Part 63, shall comply with the applicable provisions of 40 CFR Part 63, Subpart HH. In order for a natural gas production facility to be subject to 40 CFR Part 63, Subpart HH requirements, certain criteria must be met. First, the facility must be a major source of Hazardous Air Pollutants (HAP) as determined according to paragraphs (a)(1)(i) through (a)(1)(iii) of 40 CFR 63, Subpart HH. Second, a facility that is determined to be major for HAPs must also either process, upgrade, or store hydrocarbon liquids prior to the point of custody transfer, or process, upgrade, or store natural gas prior to the point at which natural gas enters the natural gas transmission and storage source category or is delivered to a final end user. Third, the facility must also contain an affected source as specified in paragraphs (b)(1) through (b)(4) of 40 CFR Part 63, Subpart HH. Finally, if the first three criteria are met, and the exemptions contained in paragraphs (e)(1) and (e)(2) of 40 CFR Part 63, Subpart HH do not apply, the facility is subject to the applicable provisions of 40 CFR Part 63, Subpart HH. Based on the information submitted by BCPL, the Consul 27 Battery Compressor Station is not subject to the provisions of 40 CFR Part 63, Subpart HH because the facility is not a major source of HAPs.

40 CFR 63, Subpart HHH National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities. Owners or operators of natural gas transmission or storage facilities, as defined and applied in 40 CFR Part 63, shall comply with the standards and provisions of 40 CFR Part 63, Subpart HHH. In order for a natural gas transmission and storage facility to be subject to 40 CFR Part 63, Subpart HHH requirements, certain criteria must be met. First, the facility must transport or store natural gas prior to the gas entering the pipeline to a local distribution company or to a final end user if there is no local distribution company. In addition, the facility must be a major source of HAPs as determined using the maximum natural gas throughput as calculated in either paragraphs (a)(1) and (a)(2) or paragraphs (a)(2) and (a)(3) of 40 CFR Part 63, Subpart HHH. Second, a facility must contain an affected source (glycol dehydration unit)

as defined in paragraph (b) of 40 CFR Part 63, Subpart HHH. Finally, if the first two criteria are met, and the exemptions contained in paragraph (f) of 40 CFR Part 63, Subpart HHH, do not apply, the facility is subject to the applicable provisions of 40 CFR Part 63, Subpart HHH. Based on the information submitted by BCPL, the Consul 27 Battery Compressor Station is not subject to the provisions of 40 CFR 63, Subpart HHH.

D. ARM 17.8, Subchapter 4 – Stack Height and Dispersion Techniques, including, but not limited to:

1. ARM 17.8.401 Definitions. This rule includes a list of definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.402 Requirements. BCPL must demonstrate compliance with the ambient air quality standards with a stack height that does not exceed Good Engineering Practices (GEP). The proposed height of the new or altered stack for BCPL is below the allowable 65-meter GEP stack height.

E. ARM 17.8, Subchapter 5 – Air Quality Permit Application, Operation and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. BCPL submitted the appropriate permit application fee for the current permit action.
2. ARM 17.8.505 When Permit Required--Exclusions. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that prorate the required fee amount.

F. ARM 17.8, Subchapter 7 – Permit, Construction and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit alteration to construct, alter or use any air contaminant sources that have the Potential to Emit (PTE) greater than 25 tons per year of any pollutant. BCPL has the PTE more than 25 tons per year of nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO) and volatile organic compounds (VOC); therefore, an air quality permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.
4. ARM 17.8.745 Montana Air Quality Permits—Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.
5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, alteration or use of a source. BCPL submitted the required permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. BCPL submitted an affidavit of publication of public notice for the December 26, 2003, issue of the *Billings Gazette*, a newspaper of general circulation in the Town of Decker, MT, in Big Horn County, as proof of compliance with the public notice requirements.
6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.
7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.
8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.
9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving BCPL of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.*
10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.
11. ARM 17.8.760 Additional Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those applications that require an environmental impact statement.
12. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.

13. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).
14. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.
15. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.

G. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.
2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is not a major stationary source since this facility is not a listed source and the facility's PTE is below 250 tons per year of any pollutant (excluding fugitive emissions).

H. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:
  - a. PTE > 100 tons/year of any pollutant;
  - b. PTE > 10 tons/year of any one HAP, PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or
  - c. PTE > 70 tons/year of PM<sub>10</sub> in a serious PM<sub>10</sub> nonattainment area.
2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA amendments of 1990 require that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #3298-00 for BCPL, the following conclusions were made:

- a. The facility's PTE is less than 100 tons/year for any pollutant.
- b. The facility's PTE is less than 10 tons/year for and one HAP and less than 25 tons/year for all HAPs.
- c. This source is not located in a serious PM<sub>10</sub> nonattainment area.
- d. This facility is not subject to any current NSPS.
- e. This facility is not subject to any current NESHAP standards.
- f. This source is not a Title IV affected source, nor a solid waste combustion unit.
- g. This source is not an EPA designated Title V source.

Based on these facts, the Department determined that BCPL would be a minor source of emissions as defined under Title V. However, if minor sources subject to NSPS are required to obtain a Title V Operating Permit, BCPL will be required to obtain a Title V Operating Permit.

### III. BACT Determination

A BACT determination is required for each new or altered source. BCPL shall install on the new or altered source the maximum air pollution control that is technically practicable and economically feasible, except that BACT shall be utilized. A BACT determination is required for each new or modified source. The BACT analysis addresses the available methods for controlling CO, NO<sub>x</sub>, VOC, particulate matter with an aerodynamic diameter of 10 microns or less (PM<sub>10</sub>), and sulfur dioxide (SO<sub>2</sub>) emissions from the proposed project. The Department reviewed previous BACT determinations for compressor engines before making the following BACT determinations.

#### A. CO BACT

##### 1. Lean-Burn Engine with Catalytic Oxidation Unit

Catalytic Oxidation is a post combustion technology that has been applied to oxidize CO emissions from lean-burn engines. As mentioned in Section III.A.4 of this permit analysis, lean-burn technologies may cause increased CO emissions. In a catalytic oxidation system, CO passes over a catalyst, usually a noble metal, which oxidizes the CO to carbon dioxide (CO<sub>2</sub>) at efficiencies of 70-90%. A lean-burn engine with a catalytic oxidation unit is capable of achieving a CO emission limit of 0.44 pounds per hour (lb/hr), which corresponds to an emission factor of 0.5 grams per brake horsepower hour (g/bhp-hr).

##### 2. Rich-Burn with a Non-Selective Catalytic Reduction Unit (NSCR) And Air to Fuel Ratio Controller (AFR)

An NSCR unit controls NO<sub>x</sub> emissions by using the CO and the residual hydrocarbons in the exhaust of a rich-burn engine as a reducing agent for NO<sub>x</sub>. Without the catalyst, in the presence of oxygen, the hydrocarbons will be oxidized instead of reacting with NO<sub>x</sub>. As the excess hydrocarbon and NO<sub>x</sub> pass over a honeycomb or monolithic catalyst (usually a combination of noble metals such as platinum, palladium, and/or rhodium), the reactants are reduced to nitrogen (N<sub>2</sub>), water (H<sub>2</sub>O), and carbon dioxide (CO<sub>2</sub>). The noble metal catalyst usually operates between 800 degrees Fahrenheit (°F) and 1,200°F; therefore, the

unit would normally be mounted near the engine exhaust to maintain a high enough temperature to allow the various reactions to occur. In order to achieve maximum performance, 80% to 90% reduction of NO<sub>x</sub> concentration, the engine needs to burn a rich fuel mixture, causing the engine to operate less efficiently.

In order to provide the most effective use of the catalyst in an NSCR unit, it is necessary to install an electronic AFR controller. This device maintains the proper air to fuel ratio that will optimize the degree of reducing agents in order to provide maximum emission reduction while minimizing agents that can poison the catalyst. A rich-burn engine with an NSCR unit and an AFR Controller is capable of achieving a CO emission limit of 1.76 lb/hr, which corresponds to an emission factor 2.0 g/bhp-hr.

### 3. Lean-Burn Engine with an AFR Controller

Installing an electronic AFR controller can stabilize both CO and NO<sub>x</sub> emissions from a lean-burn engine. This device maintains the proper air to fuel ratio that will optimize the performance of the lean burn engine. A lean-burn engine with an AFR controller achieves approximately the same reduction in emissions as a rich-burn engine fitted with an NSCR unit and an AFR controller.

In this process, the proper air-to-fuel ratio is obtained by adjusting the engine to operate at the crossover point, where NO<sub>x</sub> and CO emissions are equal. At the crossover point, the engine operates neither too lean nor too rich. Excess hydrocarbon in a rich fuel mixture causes incomplete combustion; thus, lowering the exhaust temperature to a point where the concentration of NO<sub>x</sub> decreases, but the concentration of CO increases. Combustion of a lean fuel mixture occurs at higher temperatures accompanied by higher concentration of NO<sub>x</sub> but a lower concentration of CO.

An engine can operate manually at the crossover point; however, the engine must be tuned frequently to account for operational changes such as varying engine load, operating temperature, fuel gas quality, etc.

### 4. Lean-Burn Engine with No Additional Controls

This practice would consist of operating the natural gas compressor engine without any add-on pollution control equipment. The lean-burn engine uses a pre-combustion chamber to enclose a rich mixture of air and fuel; the mixture is then ignited in this chamber. The resulting ignition front fires into the larger main cylinder that contains a much leaner fuel mixture. Staging the combustion and burning a leaner fuel mixture results in lowering of peak flame temperatures. Lower combustion temperature assures lower NO<sub>x</sub> concentration in the exhaust gas stream; however, excess air in the fuel to air mixture can result in increased CO emissions. CO emissions from a lean-burn engine with no additional controls are much higher than the CO emissions from a lean-burn engine with additional controls.

### 5. Rich-Burn Engine with No Additional Control

A rich-burn natural gas compressor engine operated with no additional control equipment may fluctuate between rich fuel mixtures and lean fuel mixtures. This fluctuation makes it difficult to control both CO and NO<sub>x</sub> emissions. CO emissions from a rich-burn engine with no additional controls are significantly higher than a lean-burn engine with no additional controls.

## 6. Summary

While no additional controls would have no energy or economic impacts on BCPL, no additional controls would have negative impacts on air quality. Therefore, the Department determined that no additional controls will not constitute BACT for the natural gas compressor engines. Furthermore, AFR Controllers were eliminated as a technically practicable option because the manufacturer does not offer AFR Controllers for the Waukesha F-18GL lean-burn engines proposed in this permitting action.

The Department determined that a CO emission limit of 0.44 lb/hr, which corresponds to an emission factor of 0.5 g/bhp-hr, constitutes BACT for CO emissions resulting from the operation of the proposed natural gas compressor engines. In addition, the Department determined that the lean-burn engines with oxidation catalysts proposed by BCPL are necessary to meet the BACT limit. The catalytic oxidation unit effectively reduces CO emissions and is an economically and environmentally feasible option.

### B. NO<sub>x</sub> BACT

#### 1. Lean-Burn Engine with a Selective Catalytic Reduction (SCR) Unit

SCR is a post combustion technology that has been shown to be effective in reducing NO<sub>x</sub> emissions from lean burn engines. SCR units can achieve NO<sub>x</sub> control efficiencies as high as 90% for lean burn engines that are operated at a constant load. An SCR unit selectively reduces NO<sub>x</sub> emissions by injecting either liquid anhydrous ammonia or aqueous ammonium hydroxide into the exhaust gas stream prior to the gas stream reaching the catalyst. The catalyst is typically made from noble metals, base metal oxides such as vanadium and titanium, and zeolite-based material. NO<sub>x</sub>, ammonia (NH<sub>3</sub>), and Oxygen (O<sub>2</sub>) react on the surface of the catalyst to form N<sub>2</sub> and H<sub>2</sub>O. For an SCR unit to operate properly, the exhaust gas must be within a particular temperature range (typically between 450°F and 850°F). The catalyst that is utilized dictates the temperature range. Exhaust gas temperatures greater than the upper limit will pass the NO<sub>x</sub> and NH<sub>3</sub> through the catalyst prior to the reaction. NH<sub>3</sub> emissions, called ammonia slip, are a key consideration when specifying an SCR unit. A lean-burn engine with a SCR Unit is capable of achieving a NO<sub>x</sub> emission limit of 0.88 lb/hr, which corresponds to an emission factor of 1.0 g/bhp-hr.

#### 2. Lean-Burn Engine with an AFR Controller

A lean-burn engine with an AFR Controller is capable of achieving a NO<sub>x</sub> emission limit of 0.88 lb/hr, which corresponds to an emission factor of 1.0g/bhp-hr. A full description of this technology is contained in Section III.A.3 of this permit analysis.

#### 3. Lean-Burn Engine with No Additional Controls

A lean-burn engine with no additional controls is capable of achieving a NO<sub>x</sub> emission limit of 0.88 lb/hr, which corresponds to an emission factor of 1.0 g/bhp-hr. A full description of this technology is contained in Section III.A.4 of this permit analysis.

#### 4. Rich-Burn Engine with an NSCR and an AFR Controller

A rich-burn engine with an NSCR Unit and an AFR Controller can achieve NO<sub>x</sub> emissions comparable to a lean-burn engine with or without additional controls. A full description of this technology is contained in Section III.A.2 of this permit analysis.

#### 5. Summary

SCR Units and AFR Controllers were eliminated as technically practicable options because the manufacturer does not offer SCR Units or AFR Controllers for the Waukesha F-18GL lean-burn engines proposed by BCPL.

The Department determined that a NO<sub>x</sub> emission limit of 0.88 lb/hr, which corresponds to an emission factor of 1.0 g/bhp-hr, constitutes BACT for NO<sub>x</sub> emissions resulting from the operation of the proposed natural gas compressor engines. The compressor engines proposed in this permitting action can achieve the BACT emission limits with no additional controls; therefore, BCPL's proposal to utilize lean-burn technology and to utilize good combustion practices and engineering design to effectively reduce NO<sub>x</sub> emissions is an economically and environmentally feasible option.

#### C. VOC BACT

##### Summary

The Department determined that a VOC emission limit of 0.44 lb/hr, which corresponds to an emission factor of 0.5 g/bhp-hr, constitutes BACT for VOC emissions resulting from the operation of the proposed natural gas compressor engines.

The compressor engines proposed in this permitting action can achieve the BACT emission limits with no additional controls; therefore, BCPL's proposal to use lean-burn technology and to utilize good combustion practices and engineering design to effectively reduce VOC emissions is an economically and environmentally feasible option.

#### D. SO<sub>2</sub>/PM<sub>10</sub> BACT

##### Summary

The combustion of natural gas in the proposed lean-burn compressor engines produces very low PM<sub>10</sub> and SO<sub>2</sub> emissions. Furthermore, the cost to control these emissions would be economically unreasonable. Therefore, the Department determined that no additional control would constitute BACT for the proposed project. BCPL's proposal to utilize good combustion practices and engineering design is an economically and environmentally feasible option.

The control options and emission limits selected are consistent with other recently permitted similar sources.

IV. Emission Inventory

Source	Ton/year					
	PM <sub>10</sub>	NO <sub>x</sub>	VOC	CO	SO <sub>x</sub>	HCHO
400-hp Compressor Engine (Unit #1)	.001	3.85	1.93	1.93	.009	0.788
400-hp Compressor Engine (Unit #2)	.001	3.85	1.93	1.93	.009	0.788
400-hp Compressor Engine (Unit #3)	.001	3.85	1.93	1.93	.009	0.788
400-hp Compressor Engine (Unit #4)	.001	3.85	1.93	1.93	.009	0.788
400-hp Compressor Engine (Unit #5)	.001	3.85	1.93	1.93	.009	0.788
400-hp Compressor Engine (Unit #6)	.001	3.85	1.93	1.93	.009	0.788
2.21 MMBtu/hr Heater (Unit #7)	.075	0.97	0.05	0.81	.006	0.000
<b>Total</b>	<b>0.08</b>	<b>24.07</b>	<b>11.63</b>	<b>12.39</b>	<b>0.06</b>	<b>4.73</b>

**400-hp Compressor Engines (6 Engines, Units #1-6)**

Brake Horsepower: 400 bhp  
 Hours of operation: 8760 hr/yr

PM<sub>10</sub> Emissions

Emission Factor: 7.71E-05 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)  
 Fuel Consumption: 3.40 MMBtu/hr (Maximum Design)  
 Calculations: 3.40 MMBtu/hr \* 7.71E-05 lb/MMBtu = 0.0003 lb/hr  
 0.0003 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 0.001 ton/yr

NO<sub>x</sub> Emissions

Emission factor: 1.00 gram/bhp-hour (BACT Determination)  
 Calculations: 1.00 gram/bhp-hour \* 400 bhp \* 0.002205 lb/gram = 0.88 lb/hr  
 0.88 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 3.85 ton/yr

VOC Emissions

Emission factor: 0.50 gram/bhp-hour (BACT Determination)  
 Calculations: 0.50 gram/bhp-hour \* 400 bhp \* 0.002205 lb/gram = 0.44 lb/hr  
 0.44 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 1.93 ton/yr

CO Emissions

Emission factor: 0.50 gram/bhp-hour (BACT Determination)  
 Calculations: 0.50 gram/bhp-hour \* 400 bhp \* 0.002205 lb/gram = 0.44 lb/hr  
 0.44 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 1.93 ton/yr

SO<sub>2</sub> Emission

Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)  
 Fuel Consumption: 3.40 MMBtu/hr (Maximum Design)  
 Calculations: 3.40 MMBtu/hr \* 5.88E-04 lb/MMBtu = 0.002 lb/hr  
 0.002 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 0.009 ton/yr

Formaldehyde (HCOH) Emissions

Emission factor: 1.80E-01 lb/hr (Company Information)  
 Calculations: 0.18 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 0.788 ton/yr

**Less than 2.21 MMBtu/hr Heater (Unit #7)**

Heat Output: 2.21 MMBtu/hr (Maximum Design)  
 Hours of Operation: 8760 hr/yr  
 Fuel Heating Value: 0.001 MMScf/MMBtu  
 Fuel Consumption: 2.21 MMBtu/hr \* 0.001 MMScf/MMBtu \* 8760 hr/yr = 19.36 MMScf/yr

PM<sub>10</sub> Emissions

Emission Factor: 7.71 lb/MMScf (AP-42, Table 1.4-1, 7/00)  
 Calculations: 7.71 lb/MMScf \* 19.36 MMScf/yr \* 0.0005 ton/lb = 0.075 ton/yr

NO<sub>x</sub> Emissions

Emission factor: 100.00 lb/MMScf (AP-42, Table 1.4-1, 7/00)  
 Calculations: 100.00 lb/MMScf \* 19.36 MMScf/yr \* 0.0005 ton/lb = 0.97 ton/yr

VOC Emissions

Emission factor: 5.50 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)  
Calculations: 5.50 lb/MMScf \* 19.36 MMScf/yr \* 0.0005 ton/lb = 0.05 ton/yr

CO Emissions

Emission factor: 84.00 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)  
Calculations: 84.00 lb/MMScf \* 19.36 MMScf/yr \* 0.0005 ton/lb = 0.81 ton/yr

SO<sub>2</sub> Emission

Emission factor: 0.60 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)  
Calculations: 0.60 lb/MMScf \* 19.36 MMScf/yr \* 0.0005 ton/lb = 0.006 ton/yr

HCOH Emission

Emission factor: 0.075 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)  
Calculations: 0.075 lb/MMScf \* 19.36 MMScf/yr \* 0.0005 ton/lb = 0.0007 ton/yr

V. Existing Air Quality

The BCPL Consul 27 Battery Compressor Station is located in the NW ¼ of Section 27, Township 9 South, Range 40 East, in Big Horn County, Montana. Big Horn County is unclassifiable/attainment for the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants.

VI. Ambient Air Impact Analysis

The Department determined, based on ambient air quality modeling, that the impact from this permitting action will be minor. The Department believes the current action will not cause or contribute to a violation of any ambient air quality standard.

Aspen Consulting & Engineering (Aspen) conducted air quality modeling for the proposed BCPL Consul 27 Battery Compressor Station as part of the BCPL air quality permit application. The modeling was done to demonstrate compliance with the Montana Ambient Air Quality Standards (MAAQS). In addition, although a New Source Review (NSR) - Prevention of Significant Deterioration (PSD) increment analysis was not required for this permitting action, the Department requested BCPL to complete a PSD increment analysis. Due to the increased coal-bed methane projects, the Department determined that NO<sub>x</sub> increment modeling was necessary to track the effects of industry growth in this area.

The Environmental Protection Agency (EPA) approved Industrial Source Complex (ISC3) model and 5 years of meteorological data (1984 and 1987 through 1990) were utilized for the air quality model. The surface data was collected from Sheridan, Wyoming (MET Station #24029), and the upper air data was collected from Lander, Wyoming (MET Station #24021). The receptor grid elevations were derived from digital elevation model (DEM) files using the United States Geological Survey (USGS) 7.5-minute series (1:24,000 scale) digitalized topographic maps. The Decker, Holmes Ranch, and Pearl School, Montana quadrangles and the Acme, Bar-N-Draw, and Cedar Canyon, Wyoming quadrangles were used to determine the receptor grid. The receptors were placed along the facility fence line at no more than 50-meter (m) intervals. A Cartesian receptor grid was developed outside the fence line boundary. Receptors were spaced at 100-meters for a distance of 1 km from the fence line. Receptors were spaced at 250-meters for distances of 1 km to 3 km from the fence line. Receptors were spaced at 500-meters for distances of 3 km to 10 km from the fence line. All receptors were placed using Universal Transverse Mercator (UTM) coordinates. Building downwash was calculated using the EPA Building Profile Input Program (BPIP). The building corner coordinates and peak roof heights were provided by a BCPL plot plan submitted as part of the air quality permit application and were used to determine the appropriate direction-specific building dimension parameters to use for each emission source evaluated in the model.

Each NO<sub>x</sub> emitting unit from BCPL's Consul 27 Battery as well as area NO<sub>x</sub> sources in Montana and Wyoming were input into the air dispersion model. The emissions of total NO<sub>x</sub> (NO + NO<sub>2</sub>) from each source were assumed as the basis for the model. As show in Table 1, the modeled concentrations are well below the NAAQS/MAAQS. The Ambient Ratio Method and the Ozone Limiting Method were applied to the NO<sub>x</sub> emissions to convert the modeled concentrations to NO<sub>2</sub> for comparison to the NAAQS/MAAQS. The model results for NO<sub>x</sub> are summarized in Table 1.

<b>Pollutant</b>	<b>Avg. Period</b>	<b>NO<sub>x</sub> Modeled Conc. (µg/m<sup>3</sup>)</b>	<b>OLM/arm Adjusted to NO<sub>2</sub> (µg/m<sup>3</sup>)</b>	<b>Background Conc. (µg/m<sup>3</sup>)</b>	<b>Ambient Conc. (µg/m<sup>3</sup>)</b>	<b>NAAQS (µg/m<sup>3</sup>)</b>	<b>MAAQS (µg/m<sup>3</sup>)</b>	<b>% of NAAQS/MAAQS</b>
NO <sub>2</sub>	1-hr	233.2	211.2	75	286.2	-----	564	---- / 50.7
	Annual	7.0	5.2	6	11.2	100	94	11.2 / 12.0

<sup>a</sup> Concentration calculated using OLM

<sup>b</sup> Applying the Ambient Ratio Method with national default of 75%

Although a PSD increment analysis was not required by the ARM, due to the high projected development of coal bed methane in Montana, the Department requested that BCPL demonstrate compliance with PSD increments for NO<sub>x</sub>. Therefore, a Class II increment analysis was conducted. The modeling demonstrated compliance with the Class II increments. The Class II modeling results are summarized in Table 2.

<b>Pollutant</b>	<b>Avg. Period</b>	<b>Class II Modeled Conc. (µg/m<sup>3</sup>)</b>	<b>Class II Increment (µg/m<sup>3</sup>)</b>	<b>% Class II Increment Consumed</b>
NO <sub>x</sub>	Annual <sup>a</sup>	5.2	25	21.0

<sup>a</sup> Applying the Ambient Ration Method with national default of 75%

In summary, modeling was conducted to determine compliance with the MAAQS, the NAAQS, and the NO<sub>x</sub> PSD increments. The modeling results demonstrated that neither the MAAQS nor the NAAQS would be violated. In addition, the PSD increment analysis for NO<sub>x</sub> demonstrated that the Class II NO<sub>x</sub> increment would not be exceeded.

## VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted a private property taking and damaging assessment and determined there are no taking or damaging implications.

## VIII. Environmental Assessment

An environmental assessment, required by the Montana Environmental Policy Act, was completed for this project. A copy is attached.

**DEPARTMENT OF ENVIRONMENTAL QUALITY**  
**Permitting and Compliance Division**  
**Air Resources Management Bureau**  
**P.O. Box 200901, Helena, Montana 59620**  
**(406) 444-3490**

**FINAL ENVIRONMENTAL ASSESSMENT (EA)**

*Issued To:* Bitter Creek Pipelines, LLC  
Consul 27 Battery Compressor Station  
P.O. Box 131  
Glendive, MT 59330

*Air Quality Permit number:* 3298-00

*Preliminary Determination Issued:* 2/19/04

*Department Decision Issued:* 3/8/04

*Permit Final:* 3/24/04

1. *Legal Description of Site:* BCPL – Consul 27 Battery Compressor Station would be located in Big Horn County, Montana, near the town of Decker. The legal description would be the NW ¼ of Section 27, Township 9 South, Range 40 East.
2. *Description of Project:* BCPL proposes to construct and operate four additional natural gas compressor engines at a facility that currently consists two compressor engines that did not require a Montana Air Quality Permit. The facility consists of two 400-horsepower (hp) natural gas fired compressor engines and BCPL proposes to add four more 400-hp compressor engines and one 2.21-million British thermal unit per hour (MMBtu/hr) heater, and associated equipment. The facility is a compressor station that receives natural gas and compresses the natural gas for transmission through the pipeline. The addition of the new compressor engines would increase the amount of natural gas compressed.
3. *Objectives of Project:* The proposed project would provide additional business and revenue for BCPL by allowing the company to gather and sell larger quantities of natural gas. Natural gas would be sent to the BCPL – Consul 27 Battery Compressor Station to be compressed for transmission through a natural gas pipeline.
4. *Alternatives Considered:* In addition to the proposed action, the Department also considered the “no-action” alternative. The “no-action” alternative would deny issuance of the Air Quality Preconstruction Permit to the proposed facility. However, the Department does not consider the “no-action” alternative to be appropriate because BCPL demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the “no-action” alternative was eliminated from further consideration.
5. *A Listing of Mitigation, Stipulations, and Other Controls:* A list of enforceable conditions, including a BACT analysis, would be included in Permit #3298-00.
6. *Regulatory Effects on Private Property:* The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions would be reasonably necessary to ensure compliance with applicable requirements and would demonstrate compliance with those requirements and do not unduly restrict private property rights.

7. *Coal Bed Methane Programmatic Environmental Impact Statement:* The Bureau of Land Management (BLM), the Department, and the Montana Board of Oil and Gas Conservation (MBOGC) prepared a statewide Environmental Impact Statement (EIS) for coal bed methane development in Montana. The purpose of the EIS was to analyze potential impacts from projected oil and gas activities, particularly from coal bed methane exploration, production, development, and reclamation activities from a broad planning perspective. The planning area (analysis area) was statewide with emphasis placed on the Powder River and Billings Resource Management Plans (RMP), as well as, Blaine, Gallatin, and Park Counties. The BLM, the Department, and the MBOGC were joint lead agencies responsible for preparing the EIS. The lead agencies consulted with the United States Fish and Wildlife Service (USFWS), the Montana Bureau of Mines and Geology (MBMG), the Montana Department of Fish, Wildlife, and Parks (MFWP), the Montana Department of Natural Resources and Conservation (DNRC), the Montana State Historic Preservation Office (MSHPO), the Crow Tribe of Indians, the Northern Cheyenne Tribe, and the Lower Brule Sioux Tribe while preparing the EIS. The final EIS was issued in January 2003, and is available on the Department’s web site at <http://www.deq.state.mt.us/CoalBedMethane/index.asp>. This EA assesses the impacts specific to the proposed BCPL Seven Brothers 35 Battery Compressor Station Facility.
8. The following table summarizes the potential physical and biological effects of the proposed project on the human environment. The “no-action” alternative was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Terrestrial and Aquatic Life and Habitats			X			Yes
B	Water Quality, Quantity, and Distribution			X			Yes
C	Geology and Soil Quality, Stability, and Moisture			X			Yes
D	Vegetation Cover, Quantity, and Quality			X			Yes
E	Aesthetics			X			Yes
F	Air Quality			X			Yes
G	Unique Endangered, Fragile, or Limited Environmental Resources			X			Yes
H	Demands on Environmental Resource of Water, Air, and Energy			X			Yes
I	Historical and Archaeological Sites			X			Yes
J	Cumulative and Secondary Impacts			X			Yes

**SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS:** The following comments have been prepared by the Department.

**A. Terrestrial and Aquatic Life and Habitats**

Minor impacts on terrestrial and aquatic life and habitats would be expected from the proposed project because deer, antelope, coyotes, geese, ducks, and other terrestrials would potentially use the area around the facility and because the facility would be a source of air pollutants. The facility would emit air pollutants and corresponding deposition of pollutants would occur. However, as described in Section 7.F. of this EA, the Department determined, based on ambient air quality modeling, that any impacts from deposition would be minor. In addition, minor land disturbance would occur to construct the facility such as site dirt work and increased construction traffic. Any impacts on terrestrial and aquatic life and habitats from facility construction would be minor due to the relatively small size of the project. Overall, any impacts to terrestrial and aquatic life and habitats from the project would be minor.

## B. Water Quality, Quantity, and Distribution

Minor impacts would be expected on water quality, quantity, and distribution from the proposed project because the facility would be a source of air pollutants. The facility would emit air pollutants and corresponding deposition of pollutants would occur. However, as described in Section 7.F. of this EA, the Department determined that the chance of deposition of pollutants impacting water quality, quantity, and distribution would be minor. The facility would be a central compressor station, not a production field facility; therefore, no discharges into surface water would occur from operating the facility. However, minor amounts of water may be required to control fugitive dust emissions from the access roads and the general facility property.

Minor impacts may be expected on water quality, quantity, and distribution from constructing the facility because there is surface water relatively close to the site. However, no discharges into surface water would occur, and no use of surface water would be expected for facility construction. Therefore, minor impacts to water quality, quantity, and distribution would be expected from facility construction. Overall, any impacts to water quality, quantity, and distribution from the project would be minor.

## C. Geology and Soil Quality, Stability, and Moisture

Minor impacts would occur on the geology and soil quality, stability, and moisture from the proposed project because minor construction would be required to develop the facility. Small buildings would be constructed, natural gas pipelines would be installed, and an access road would be developed. In addition, no discharges, other than air emissions, would occur from the facility. Any impacts to the geology and soil quality, stability, and moisture from facility construction would be minor due to the relatively small size of the project.

Deposition of pollutants would occur; however, as described in Section 7.F of this EA, the Department determined, based on ambient air quality modeling, that the chance of deposition of pollutants impacting the geology and soil in the areas surrounding the site would be minor. Overall, any impacts to the geology and soil quality, stability, and moisture from the project would be minor.

## D. Vegetation Cover, Quantity, and Quality

Minor impacts would occur on vegetation cover, quantity, and quality because minor construction would be required to develop the facility. Small buildings would be constructed, natural gas pipelines would be installed, and an access road would be developed.

In addition, no discharges, other than air emissions, would occur from the facility. Any impacts to the vegetation cover, quantity, and quality from facility construction would be minor due to the relatively small size of the project.

The facility would be a source of air pollutants, and corresponding deposition of pollutants would occur. However, as described in Section 7.F of this EA, the Department determined, based on ambient air quality modeling, that the chance of deposition of pollutants impacting the vegetation in the area surrounding the site would be minor. Overall, any impacts to vegetation cover, quantity, and quality from the project would be minor.

E. Aesthetics

Minor aesthetic impacts would result because the facility would be a new facility. Small buildings would be constructed to house the engines, natural gas pipelines would be installed, and an access road would be developed. In addition, the facility would create additional noise in the area. However, the buildings constructed to house the engines would limit the additional noise to a certain extent. Overall, any aesthetic impacts from the project would be minor.

F. Air Quality

The air quality of the area would realize minor impacts from the proposed project because the facility would emit the following air pollutants: PM<sub>10</sub>, NO<sub>x</sub>, CO, VOC, and SO<sub>x</sub>. Deposition of these pollutants may occur. However, the Department determined that any air quality impacts from deposition would be minor due to dispersion characteristics of pollutants (stack height, stack temperature, etc.), the surrounding atmosphere (wind speed, wind direction, ambient temperature, etc.), and conditions placed in Permit #3298-00. Conditions would include, but would not be limited to BACT emission limits and opacity limitations. Therefore, any impacts to air quality from the proposed facility would be minor.

G. Unique Endangered, Fragile, or Limited Environmental Resources

In an effort to identify any unique endangered, fragile, or limited environmental resources in the area, the Department contacted the Montana Natural Heritage Program, Natural Resource Information System (NRIS). The NRIS search identified *Haliaeetus Leucocephalus* (Bald Eagle), *Lomatium nuttallii* (Nuttall Desert-parsley), and *Trionyx Spiniferus* (Spiny Softshell), as species of special concern in the area of the proposed facility. In this case, the area was defined by the section, township, and range of the proposed location with an additional 1-mile buffer zone. Due to the minor amounts of construction that would be required and the relatively low levels of pollutants that would be emitted, the Department determined that it would be unlikely that the proposed project would impact any species of special concern and that any potential impacts would be minor.

H. Demands on Environmental Resource of Water, Air, and Energy

The proposed project would have minor impacts on the demands for the environmental resources of air and water because the facility would be a source of air pollutants. Deposition of pollutants would occur as a result of operating the facility; however, as explained in Section 7.F of this EA, the Department determined that any impacts on air and water resources from the pollutants (including deposition) would be minor.

The proposed project would be expected to have minor impacts on the demand for the environmental resource of energy because power would be required at the site. The impact on the demand for the environmental resource of energy would be minor because the facility would be relatively small by industrial standards. Overall, the impacts for the demands on the environmental resources of water, air, and energy would be minor.

I. Historical and Archaeological Sites

In an effort to identify any historical and archaeological sites located near the proposed project area, the Department contacted the Montana Historical Society, State Historic Preservation Office (SHPO). According to SHPO records, there are not any previously recorded historic or archaeological sites within the proposed area. However, SHPO stated that the absence of

cultural properties in the area does not mean that they do not exist, but may reflect a lack of previous cultural resource inventories in the area because SHPO records indicate only one previous cultural resource inventory has been conducted. The Department determined that the chance of the project impacting any historical and archaeological sites in the area would be minor due to the relatively small size of the project and the fact that the new compressor engines would be installed at an existing site with two compressor engines currently in operation.

J. Cumulative and Secondary Impacts

The cumulative and secondary impacts from this project on the physical and biological aspects of the human environment in the immediate area would be minor due to the relatively small size of the project. Only small amounts of construction and land disturbance would be required to complete the project. Noise impacts would be minor due to the relatively small size of the facility and the fact that the engines would be housed within buildings. There is potential for other operations to locate near the site that the facility would use. However, any operations would have to apply for and receive the appropriate permits from the Department prior to operation. These permits would address the environmental impacts associated with the operations at the proposed site. Further, as stated in Section 7 of this EA, a statewide EIS was completed to analyze potential impacts from coal bed methane exploration, production, development, and reclamation activities from a broad planning perspective. Overall, the Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as would be outlined in Permit #3298-00 and any impacts to the physical and biological environment from the project would be minor.

9. The following table summarizes the potential economic and social effects of the proposed project on the human environment. The “no-action” alternative was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Social Structures and Mores			X			Yes
B	Cultural Uniqueness and Diversity			X			Yes
C	Local and State Tax Base and Tax Revenue			X			Yes
D	Agricultural or Industrial Production			X			Yes
E	Human Health			X			Yes
F	Access to and Quality of Recreational and Wilderness Activities			X			Yes
G	Quantity and Distribution of Employment			X			Yes
H	Distribution of Population			X			Yes
I	Demands for Government Services			X			Yes
J	Industrial and Commercial Activity			X			Yes
K	Locally Adopted Environmental Plans and Goals				X		Yes
L	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL ECONOMIC AND SOCIAL EFFECTS: The following comments have been prepared by the Department:

- A. Social Structures and Mores
- B. Cultural Uniqueness and Diversity

The proposed project would cause minor, if any, disruptions to native or traditional lifestyles or communities (social structures and mores or cultural uniqueness and diversity) in the area because the proposed project would take place in a relatively remote location. The facility would be relatively small by industrial standards. Additional activity (vehicle traffic, construction equipment, etc.) would be noticeable during facility construction; however, compressor stations typically do not require day-to-day employees and once the facility is constructed, activities associated with the operation of the facility would be minor. Overall, any impacts to the social structures and mores in the area would be minor.

- C. Local and State Tax Base and Tax Revenue

The proposed project would result in only minor impacts to the local and state tax base and tax revenue because only 2 permanent employees would be hired as a result of operating the facility. In addition, only minor amounts of construction would be needed to complete the project; therefore, any construction related jobs would be temporary and the impacts from the construction jobs would be temporary.

- D. Agricultural or Industrial Production

The land for the proposed project is rural agricultural grazing land. Because the facility is an existing facility and relatively small, the proposed project would result in only a minor disturbance to a relatively small amount of rural agricultural grazing land. The proposed project would have minor impacts to industrial production because the proposed project is an existing industrial source in the area. While emissions of air pollutants and corresponding deposition of pollutants would occur (as Section 7.F of this EA), the Department determined, based on ambient air quality modeling, that the chance of deposition of pollutants impacting agricultural or industrial production in the area surrounding the site would be minor. Overall, any impacts to agricultural or industrial production would be minor.

- E. Human Health

The proposed project would result in only minor, if any, impacts to human health. As explained in Section 7.F of this EA, deposition of pollutants would occur; however, the Department determined that the proposed project would comply with all applicable air quality rules, regulations, and standards. These rules, regulations, and standards are designed to be protective of human health.

- F. Access to and Quality of Recreational and Wilderness Activities

The proposed project would have minor, if any, impacts on access to recreational and wilderness activities because of the relatively remote location and the relatively small size of the facility. The proposed project would have minor impacts on the quality of recreational and wilderness activities in the area because the facility, while relatively small by industrial standards, would be visible and produce noise.

#### G. Quantity and Distribution of Employment

The proposed project would have minor, if any, impacts on the quantity and distribution of employment because only two permanent employees would be hired as a result of the proposed project. BCPL employees would be responsible for the day-to-day operation of the facility. In addition, temporary construction-related positions may result from this project but any impacts to the quantity and distribution of employment from construction related employment would be minor due to the relatively small size of the facility and the corresponding relatively short time period that would be associated with constructing the facility.

#### H. Distribution of Population

The proposed project would have minor, if any, impacts on the distribution of population in the area because the facility would be located in a relatively remote location and the proposed project would create only two permanent jobs. Therefore, no people would be moving to the area for employment opportunities.

#### I. Demands for Government Services

There would be minor impacts on the demands for government services because additional time would be required by government agencies to issue Permit #3298-00 and to assure compliance with applicable rules, standards, and Permit #3298-00. In addition, there would be minor impacts on the demands for government services to regulate the increase in vehicle traffic that would be associated with constructing and operating the facility. The increase in vehicle traffic would be primarily during facility construction because compressor stations typically do not require day-to-day employees. Vehicle traffic during construction would be minor due to the relatively short time period that would be required to construct the facility. Overall, any demands for government services to regulate the facility or activities associated with the facility would be minor due to the relatively small size of the facility.

#### J. Industrial and Commercial Activity

The proposed project may represent a minor increase in the industrial activity in the area during construction of the project, but no additional industrial or commercial activity would result solely from the operation of the facility. Any impacts to industrial and commercial activities in the area would be minor.

#### K. Locally Adopted Environmental Plans and Goals

The Department is not aware of any locally adopted environmental plans and goals that would be affected by issuing Permit # 3298-00. The state standards would protect the proposed site and the environment surrounding the site.

#### L. Cumulative and Secondary Impacts

Overall, cumulative and secondary impacts from this project would result in minor impacts to the economic and social aspects of the human environment in the immediate area. Due to the relatively small size of the project, the industrial production, employment, and tax revenue (etc.) changes resulting from the proposed project would be minor.

Additional facilities would likely locate in the area to withdraw the methane from the coal beds and supply the BCPL with gas to be compressed for transmission through a natural gas pipeline. However, any future facility would be required to apply for and receive the appropriate permits from the appropriate regulating authority. This permitting process would address any additional impacts to the economic and

social aspects of the human environment. Further, as stated in Section VI of the permit analysis and Section 7 of the EA, a statewide EIS was completed to analyze potential impacts from coal bed methane exploration, production, development, and reclamation activities from a broad, wide, planning perspective.

Recommendation: No EIS is required.

The current permitting action is for the construction and operation of a natural gas compressor station. Permit #3298-00 includes conditions and limitations to ensure the facility will operate in compliance with all applicable rules and regulations. In addition, there are no significant impacts associated with this proposal.

Other groups or agencies contacted or which may have overlapping jurisdiction: Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

Individuals or groups contributing to this EA: Department of Environmental Quality – Air Resources Management Bureau, Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

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