Air Quality Permit

Issued To: Williston Basin Interstate Pipeline Company
Little Beaver Compressor Station
P.O. Box 131
Glendive, Montana 59330

Permit #2741-03
Application Complete: 06/21/04
Preliminary Determination Issued: 07/01/04
Department Decision Issued: 07/19/04
Permit Final: 08/04/04
AFS #: 025-0002

An air quality permit, with conditions, is hereby granted to the Williston Basin Interstate Pipeline Company (WBI), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA) and the Administrative Rules of Montana (ARM) 17.8.740, *et seq*., as amended for the following:

Section I: Permitted Facilities

A. Plant Location

WBI owns and operates a natural gas compressor station and associated equipment located in the Northeast ¼ of Section 19, Township 4 North, Range 62 East in Fallon County, Montana. The facility is known as the Little Beaver Compressor Station. A complete list of the permitted equipment is contained in Section I.A of the Permit Analysis.

B. Current Permit Action

On June 6, 2004, Aspen Consulting and Engineering (Aspen) on behalf of WBI submitted modeling to complete the Montana Air Quality Permit application received by the Department of Environmental Quality (Department) on April 5, 2004. In the application WBI requested a modification to Permit #2741-02, which would include the installation and operation of two 1,680 horsepower (Hp) natural gas-fired engines. Each engine would be driving natural gas compressors and would have the ability to pull suction on production and/or storage pipelines and to discharge into gathering and/or transmission pipelines. The proposed units would replace the existing Little Beaver Units #1, 2, 3, 4, 5, 6, and 7. The current permit action also updates rule references and language currently used by the Department.

Section II: Conditions and Limitations

A. Emission Limitations:

1. WBI shall install, operate and properly maintain a non-selective catalytic reduction (NSCR) unit and an air/fuel ratio (AFR) controller on the 880-Hp Ingersoll Rand compressor engine (Unit #09). NO_x[1] emissions from the engine shall not exceed 5.82 lb/hr (ARM 17.8.749).

2. WBI shall not operate more than one 1,100-Hp natural gas compressor engine (Unit #10) at any given time (ARM 17.8.749).

1 NO_x reported as NO_2

3. The 1,100 Hp natural gas compressor engine shall be a lean burn engine operated with an AFR controller. The engine speed shall not exceed 900 revolutions per minute (rpm) of continuous duty operation. Emissions from the engine shall not exceed the following limits (ARM 17.8.752):

NO_x[2]	4.85 lb/hr
CO	7.28 lb/hr
VOC	2.43 lb/hr

4. WBI shall not operate more than two 1,680-Hp natural gas compressor engines (Unit #15 and Unit #16) at any given time (ARM 17.8.749.)

5. Emissions from each of the two 1,680 Hp natural gas compressor engines (Unit #15 and Unit #16) shall be controlled by an NSCR unit and an AFR controller. Emissions from each of the engines shall not exceed the following limits:

NO_x	3.70 lb/hr (ARM 17.8.752)
CO	4.44 lb/hr (ARM 17.8.749)
VOC	1.85 lb/hr (ARM 17.8.752)

6. WBI shall maintain the minimum stack heights of each compressor engine and the generator engine to correspond with the following heights (ARM 17.8.749):

Source #	Stack Height (feet above ground level)
08	35
09	30
10	30
11	30
15	27
16	27

7. WBI shall operate all equipment to provide the maximum air pollution control for which it was designed (ARM 17.8.752).

8. WBI 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).

9. WBI shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed on or before November 23, 1968, that exhibit an opacity of 40% or greater averaged over 6 consecutive minutes (ARM 17.8.304).

10. WBI shall not cause or authorize emissions to be discharged into the atmosphere from haul roads, access roads, parking lots, or the general plant property without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).

11. WBI shall treat all unpaved portions of the access roads, parking lots, and general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.10 (ARM 17.8.749).

[2] NO_x reported as NO_2.

12. WBI shall operate the 1,000 gallon unleaded gasoline tank with a permanent submerged fill pipe or another vapor loss control device (ARM 17.8.324(3)).

B. Testing Requirements

1. Each of the two 1,680-Hp natural gas compressor engines shall be initially tested for NO_x and CO, concurrently, to demonstrate compliance with the emission limits in Section II.A.4. The testing shall be conducted within 180 days of the initial start up date of the respective compressor engine. Further testing shall continue on an every 4-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).

2. All compliance source tests shall be conducted in accordance with the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

3. The Department may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. WBI 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 be 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. WBI 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 WBI 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

WBI shall provide the Department with written notification of the actual start-up date of each of the two 1,680-Hp natural gas compressor engines within 15 days after the actual start-up date of each respective engine.

Section III: General Conditions

A. Inspection - WBI shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections, 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 WBI fails to appeal as indicated below.

C. Compliance with Statutes and Regulations - Nothing in this permit shall be construed as relieving WBI 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 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 the 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 of 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 WBI 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
Williston Basin Interstate Pipeline Company
Little Beaver Compressor Station
Permit #2741-03

I. Introduction/Process Description

A. Permitted Equipment

Williston Basin Interstate Pipeline Company (WBI) owns and operates a natural gas compressor station and associated equipment located in the Northeast ¼ of Section 19, Township 4 North, Range 62 East in Fallon County, Montana. The facility is known as the Little Beaver Compressor Station and is located in a remote area approximately 20 miles southeast of Baker and one mile from the Montana/North Dakota border. The facility includes, but is not limited to, the following:

Source #	Make	Model	Size/Description
08	Ingersoll Rand	8SVG	400-Hp Compressor Engine
09	Ingersoll Rand	48KVG	880-Hp Compressor Engine
10	Superior	8GTLE	1,100-Hp Compressor Engine
11	Waukesha	WAK-6	190-Hp Generator Engine
12	Miscellaneous Natural Gas Fired Heaters and Boilers		
13	Tri-ethylene glycol Dehydration Unit		
14	Miscellaneous VOC Sources (tanks, valves, flanges, etc.)		
15	Waukesha	7044 GSI	1,680-Hp Compressor Engine
16	Waukesha	7044GSI	1,680 Hp Compressor Engine

* There are no flares at the Little Beaver Compressor Station

B. Source Description

The Little Beaver Compressor Station has two primary purposes. The first is to gather natural gas from natural gas fields in the area and to compress the field gas up to the required pressure in the natural gas transmission system. Natural gas from the Little Beaver Compressor Station is transported via pipeline to a WBI facility at Belle Fourche, South Dakota. The Little Beaver Compressor Station moves an average of 45-million standard cubic feet per day (MMScf/day) of natural gas during the winter months. The volume of gas moved during the summer months is considerably lower.

The second purpose of the facility is to "dry" the gas as it is being processed. The gas contains some moisture, which must be removed from the system prior to being sent into the transmission system. This is accomplished with a dehydrator, also commonly called a reboiler or glycol unit.

C. Permit History

WBI's predecessor, the Montana Dakota Utility Company (MDU), constructed the Little Beaver Compressor Station in 1936. The original facility was comprised of five 190-Hp Ingersoll Rand compressor engines. Two 300-Hp Ingersoll Rand compressor engines were added to the facility in 1939. In 1952 the 190-Hp Waukesha generator engine was installed at the facility. The 440-Hp Ingersoll Rand compressor engine was added in 1954 and the 880-Hp Ingersoll Rand compressor engine was added in 1962. WBI was issued Permit #**2741-00** in 1992, which allowed WBI to install the dehydration unit.

On February 1, 1997, WBI was issued Permit **#2741-01**. This permit action allowed the installation and operation of an 1,100-Hp compressor engine (Source #10). WBI was required to install a Non Selective Catalytic Reduction (NSCR) unit and an Air/Fuel ratio (AFR) controller on the existing 880-Hp Ingersoll-Rand compressor engine (Source #09) in order to offset emissions from the new engine. In addition, minimum stack height requirements were placed in the permit to improve dispersion of emissions and enable the facility to meet ambient air quality standards.

Based on the results from recent source tests at similar WBI facilities, the earlier model Ingersoll-Rand compressor engines were found to have average emission rates of 25.0 grams per horsepower-hour (grams/hp-hr) NO_x and 16.0 grams/hp-hr CO. In addition, Volatile Organic Compounds (VOC) emissions were calculated using an emission factor for Total Organic Carbon (TOC) in the initial permit, which resulted in an over-estimation greater than 90%. Therefore, emissions from the older engines were re-calculated using the current, more accurate emission factors for NO_x and CO. Further, VOC emissions were recalculated using the appropriate VOC emission factor.

Because the Ingersoll Rand compressor engines and the Waukesha generator engine were manufactured and installed prior to 1968 (grandfathered sources), the plant-wide emissions limits contained in Section II.A.5 of Permit #2741-00 were not required; therefore, the Department of Environmental Quality (Department) removed the limits. Permit #2741-01 replaced Permit #2741-00.

On November 1, 2002, the Department received a letter from WBI requesting that the Department remove the every 4-year testing requirements for the 880-Horspower (Hp) Ingersoll-Rand compressor engine (Source #09) and the 1,100-Hp Superior compressor engine (Source #10) from the permit because WBI's Operating Permit #OP2741-00 requires both units to be tested every 6 months. In addition, WBI requested that the Department make "off-sets" a federally enforceable condition for the 1,100-Hp Superior compressor engine so that WBI may be able to make "like for like" engine swaps according to the provisions of ARM 17.8.745(1)(r) for the 1,100-Hp Superior compressor engine.

The Department removed the every 4-year testing requirements for Source #09 and Source #10 from the permit. In addition, the Department added a federally enforceable condition for Source #10 so that WBI may make "like for like" engine swaps according to the provisions of ARM 17.8.745(1)(r) for Source #10. Further, the permit format and language were updated to reflect current Department permit format and permit language. Permit **#2741-02** replaced Permit #2741-01.

D. Current Permit Action

On June 6, 2004, Aspen Consulting and Engineering (Aspen) on behalf of WBI submitted modeling to complete the Montana Air Quality Permit application received by the Department on April 5, 2004. In the application WBI requested a modification to Permit #2741-02, which would include the installation and operation of two 1,680 horsepower (Hp) natural gas-fired engines. Each engine would be driving natural gas compressors and would have the ability to pull suction on production and/or storage pipelines and to discharge into gathering and/or transmission pipelines. The proposed units would replace the existing Little Beaver Units #1, 2, 3, 4, 5, 6, and 7. The current permit action also updates rule references and language currently used by the Department. Permit **#2741-03** will replace Permit #2741-02.

E. Additional Information

Additional information, such as applicable rules and regulations, Best Available Control Technology (BACT) determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

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. 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).

   WBI shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, 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 in 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:

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_{10}

WBI 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. (1) This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed on or before November 23, 1968, that exhibit an opacity of 40% or greater averaged over 6 consecutive minutes. (2) 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, WBI 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. 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. WBI consumes pipeline quality natural gas in each engine, the dehydration unit reboiler, and the miscellaneous heaters. The use of natural gas 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 a 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). The owner or operator of any stationary source or modification, as defined and applied in 40 CFR Part 60, shall comply with the standards and provisions of 40 CFR Part 60. The WBI Little Beaver Compressor Station is not an NSPS affected source because it does not meet any of the definitions in 40 CFR Part 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 (HAPs) 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 WBI, the Little Beaver 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 WBI, the Little Beaver Compressor Station is not subject to the provisions of 40 CFR 63, Subpart HHH because the facility is not a major source of HAPs.

D. 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. WBI submitted the appropriate application fee for the current permit action.
2. ARM 17.8.505 Air Quality Operation Fees. 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. This 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 which pro-rate the required fee amount.

E. 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. WBI has PTE greater than 25 tons per year of oxides of nitrogen (NO_x), carbon monoxide (CO), and 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. WBI 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. WBI submitted an affidavit of publication of public notice for the March 31, 2004, issue of *The Billings Gazette*, a newspaper of general circulation in the Town of Billings in Yellowstone 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, which 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 WBI 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 17.8.762 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.

12. 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).

13. 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.

14. 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.

F. 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 Federal Clean Air Act (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 PTE of the facility is below 250 tons per year of any pollutant (excluding fugitive emissions). The current permit action reduces the facility's potential NO_x emissions by 341.7 ton/yr and potential CO emissions by 200.5 ton/yr, which brings the facility's emissions below the PSD threshold.

G. 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 stationary 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_{10} in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #2741-03 for WBI, the following conclusions were made:

   a. The facility's PTE is greater than 100 tons/year for NO_x and CO.

   b. The facility's PTE is less than 10 tons/year of any one HAP and less than 25 tons/year of all HAPs.

   c. This source is not located in a serious PM_{10} 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 the WBI Little Beaver Compressor Station is a major source of emissions as defined under Title V. WBI's Title V Permit #OP2741-01 became effective July 25, 2002.

III. BACT Determination

A BACT determination is required for each new or altered source. WBI shall install on the new or altered source the maximum air pollution control capability, which is technically practicable and economically feasible, except that BACT shall be utilized. A BACT determination is required for each new or modified source.

Under the current permit action, WBI proposed to install and operate two rich-burn Waukesha 7044 GSI natural gas compressor engines (1,680 Hp/engine) utilizing NSCR and AFR controller to achieve BACT. In addition, WBI indicates that 96% to 98% engine run time is required to service natural gas companies served by this station. The following BACT analysis addresses available methods for controlling NO_x and CO emissions from technically feasible internal combustion engine technologies used to compress natural gas for the purpose of transmission. The Department reviewed previous BACT determinations for compressor engines before making the following BACT determination.

A. CO BACT

1. Rich-Burn with an Non-Selective Catalytic Reduction (NSCR) Unit and an Air to Fuel Ratio Controller (AFR)

   An NSCR unit controls NO_x emissions by using the CO and the residual hydrocarbons in the exhaust of a rich-burn engine as a reducing agent for NO_x. Without the catalyst, in the presence of oxygen, the hydrocarbons will be oxidized instead of reacting with NO_x. As the excess hydrocarbon and NO_x 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_2), water (H_2O), and carbon dioxide (CO_2). 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_x 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 0.28 pounds per hour (lb/hr), which corresponds to an emission factor 0.5 grams per brake horsepower hour (g/bhp-hr).

2. 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_2) at efficiencies of 70-90%. A lean-burn engine with a catalytic oxidation unit is capable of achieving a CO emission limit of 0.28 lb/hr, which corresponds to an emission factor of 0.5 g/bhp-hr.

3. Lean-Burn Engine with an AFR Controller

   Installing an electronic AFR controller can stabilize both CO and NO_x 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. In this process, the proper air-to-fuel ratio is obtained by adjusting the engine to operate at the crossover point, where NO_x 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_x decreases, but the concentration of CO increases. Combustion of a lean fuel mixture occurs at higher temperatures accompanied by higher concentration of NO_x 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.

   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. However, a rich-burn engine fitted with a NSCR and AFR typically achieves a higher total reduction in potential uncontrolled emissions than the lean-burn engine with an AFR controller.

4. Lean-Burn Engine with Catalytic Oxidation and AFR Controller

   As stated above, catalytic oxidation on a lean-burn engine can achieve CO control efficiencies between 70-90%. The addition of an AFR controller will ensure that the engine operates in the appropriate air-to-fuel ration resulting in more stable control of the catalytic oxidizer.

5. Rich-Burn with NSCR Unit

   An NSCR unit controls NO_x emissions by using the CO and the residual hydrocarbons in the exhaust of a rich-burn engine as a reducing agent for NO_x. Without the catalyst, in the presence of oxygen, the hydrocarbons will be oxidized instead of reacting with NO_x. As the excess hydrocarbon and NO_x 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_2), water (H_2O), and carbon dioxide (CO_2). 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_x concentration, the engine needs to burn a rich fuel mixture, causing the engine to operate less efficiently

   A rich-burn engine fitted with a NSCR unit alone operates less efficient, does not provide as high a reduction in NO_x or CO emissions, and consumes more fuel than a rich-burn engine fitted with a NSCR unit and an AFR controller. 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 the agents that can poison the catalyst.

6. Rich-Burn with an AFR Controller (control at the crossover point)

   Under this control strategy, the proper air-to-fuel ratio is obtained by adjusting the engine to operate at the crossover point, where NO_x and CO emissions are equal. At the crossover point, the engine operation is neither too lean nor too rich. Excess hydrocarbons in a rich fuel mixture cause incomplete combustion, thereby lowering the exhaust temperature to a point where the concentration of NO_x decreases and the concentration of CO increases. Conversely, combustion of a lean fuel mixture occurs at higher temperatures accompanied by a higher concentration of NO_x and a lower concentration of CO.

   Internal combustion engines can be operated manually at the crossover point; however, the engine must be tuned frequently to account for operational changes such as varying engine load, operating temperatures, fuel gas quality, etc. Use of an AFR controller to adjust the engine to operate at the crossover point results in a reasonable reduction of both NO_x and CO emissions. However, a rich-burn engine operated with an AFR controller alone cannot achieve the NO_x or CO emissions reductions that a rich-burn engine equipped with NSCR or a rich-burn engine equipped with NSCR and an AFR controller can achieve.

7. Rich-Burn Engine with Catalytic Oxidation

   Catalytic oxidation cannot be applied to rich-burn engines because of the inherently low oxygen concentrations of the exhaust stream. Excess oxygen is needed by the catalytic oxidizers to efficiently oxidize CO to CO_2. Catalytic Oxidation is not a technically feasible control option for rich-burn engines.

8. Lean-Burn Engine with a NSCR Unit

   As stated above, a NSCR unit can be used to oxidize CO to CO_2. However, in order to achieve maximum performance and the appropriate reduction of CO emissions, the engine must burn a rich fuel mixture causing the engine to operate less efficiently. NSCR is not generally considered a technically feasible control option on a lean-burn engine.

9. 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_x 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 or a rich-burn engine with controls.

10. 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_x emissions. CO emissions from a rich-burn engine with no additional controls are significantly higher than a lean-burn engine with no additional controls.

11. Summary

While no additional controls would have no energy or economic impacts on WBI, 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 engine.

The Department determined that an NSCR unit with an AFR controller constitutes BACT for the reduction of CO emissions resulting from the operation of the proposed rich-burn natural gas compressor engine. NSCR/AFR control typically constitutes BACT for rich-burn compressor engines. Further, in this case the proposed rich-burn engine operating with NSCR and an AFR controller is capable of meeting the emission limits normally prescribed as BACT for the top lean-burn technology operated with an oxidation catalyst. NSCR/AFR control effectively reduces CO emissions from the proposed project with limited energy demands and represents a technically, economically, and environmentally feasible option.

B. NO_x 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_x emissions from lean burn engines. SCR units can achieve NO_x control efficiencies as high as 90% for lean burn engines that are operated at a constant load. An SCR unit selectively reduces NO_x 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_x, ammonia (NH_3), and Oxygen (O_2) react on the surface of the catalyst to form N_2 and H_2O. 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 desired temperature range will allow the NO_x and NH_3 to pass through the catalyst without reacting. NH_3 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_x emission limit of 0.55 lb/hr, which corresponds to an emission factor of 1.0 g/bhp-hr.

2. Lean-Burn Engine with a SCR Unit and AFR Controller

A lean-burn engine with a SCR unit and an AFR controller will achieve equivalently the same NO_x emissions control as a lean-burn engine with only a SCR unit. However, the AFR controller will ensure that the engine operates at the appropriate air-to-fuel ratio resulting in more efficient engine operation and control.

3. Rich-Burn Engine with a NSCR Unit and AFR Controller

A rich-burn engine with an NSCR Unit and an AFR Controller can achieve NO_x emissions comparable to a lean-burn engine with or without additional controls. A full description of this technology is contained in Section III.A.1 of this permit analysis. A rich-burn engine with a NSCR unit and AFR controller is capable of achieving a NO_x emission limit of 0.55 lb/hr, which corresponds to an emission factor of 1.0 g/bhp-hr.

4. Rich-Burn Engine with a NSCR Unit

   A rich-burn engine with a NSCR is capable of achieving the same control as a rich-burn engine with a NSCR and AFR controller. However, the AFR controller maintains the proper air-to-fuel ratio, which increases fuel efficiency, optimizes the use of reducing agents, and minimizes agents that can poison the catalyst.

5. Lean-Burn Engine with an AFR Controller

   A lean-burn engine with an AFR Controller is capable of achieving a NO_x emission limit of 0.55 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.

6. Rich-Burn Engine with an AFR Controller

   Use of an AFR controller to adjust the engine to operate at the crossover point results in a reasonable reduction of NO_x emissions. However, a rich-burn engine operated with an AFR controller alone cannot achieve the NO_x emissions reductions that a rich-burn engine equipped with NSCR, a rich-burn engine equipped with NSCR and an AFR controller, a lean-burn engine with SCR, or a lean-burn engine with no controls can achieve. A full description of this technology is contained in Section III.A.6 of this permit analysis.

7. Lean-Burn Engine with No Additional Controls

   A lean-burn engine with no additional controls is capable of achieving a NO_x emission limit of 0.55 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.9 of this permit analysis.

8. Rich-Burn Engine with No Additional Controls

   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_x emissions. NO_x emissions from a rich-burn engine with no additional controls are significantly higher than a rich-burn engine with controls, a lean-burn engine with controls, or a lean-burn engine with no additional controls.

9. Rich-Burn Engine with a SCR Unit

   A rich-burn engine equipped with a SCR unit is technically infeasible because the oxygen concentration from rich-burn engines is not high enough for an SCR unit to operate properly.

10. Lean-Burn Engine with a NSCR Unit

    NSCR is not generally considered a technically feasible control option on a lean-burn engine because the engine must burn rich fuel mixture for optimum emissions control.

11. Summary

    While no additional controls would have no energy or economic impacts on WBI, 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 engine.
The Department determined that an NSCR unit with an AFR controller constitutes BACT for the reduction of NO_x emissions resulting from the operation of the proposed rich burn natural gas compressor engine. NSCR/AFR control typically constitutes BACT for rich burn compressor engines. Further, in this case the proposed rich-burn engine operating with NSCR and an AFR controller is capable of meeting the emission limits normally prescribed as BACT for the top lean burn technology. NSCR/AFR control effectively reduces NO_x emissions from the proposed project with limited energy demands and represents a technically, economically, and environmentally feasible option.

C. VOC BACT

Summary

The Department determined that a VOC emission limit of 0.55 lb/hr, which corresponds to an emission factor of 1.0 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, WBI's proposal to use a rich-burn engine with NSCR/AFR control technology and good combustion practices and engineering design to effectively reduce VOC emissions is an economically and environmentally feasible option.

D. SO_2/PM_{10} BACT

Summary

The combustion of natural gas in the proposed rich-burn compressor engine produces very low PM_{10} and SO_2 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. WBI's proposal to utilize good combustion practices and engineering design is an economically and environmentally feasible option.

The control options selected have controls and control costs comparable to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

IV. Emission Inventory

		Tons/Year				
Source #	Source	PM_{10}	NO_x	CO	VOC	SO_x
08	440-Hp Ingersoll-Rand	0.19	106.24	67.99	0.59	0.0116
09	880-Hp Ingersoll-Rand	0.37	25.50	25.50	8.50	0.0220
10	1,100-Hp Superior	0.34	21.25	31.87	10.62	0.0205
11	190-Hp Waukesha	0.07	36.70	1.84	0.26	0.0041
12	Misc. Heaters and Boilers	0.03	1.11	0.22	0.06	0.0067
13	TEG Dehydration Still Vent	----------	----------	----------	1.45	----------
14	Misc. VOC Sources	----------	----------	----------	0.65	----------
15	1,680-Hp Waukesha compressor Engine	0.55	16.22	19.47	8.11	0.03
16	1,680-Hp Waukesha Compressor Engine	0.55	16.22	19.47	8.11	0.03
Totals		2.10	223.24	166.36	38.35	0.1294

(SOURCE #08)

440 Hp Ingersoll Rand Compressor Engine

Brake Horse Power: 440 Hp
Hours of Operation: 8,760 hr/year
Max Fuel Combustion Rate: 4.40 MMBtu/hr
Fuel Heating Value: 1,000 Btu/Scf or 0.0010 MMScf/MMBtu (Natural Gas)

PM_{10} Emissions
Emission Factor: 10.0 lb/MMScf {FIRE - PC Version, 1/95, 2-02-002-02}
Calculations: 10.0 lb/MMScf * 0.001 MMScf/MMBtu * 4.40 MMBtu/hr = 0.04 lb/hr
0.04 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.19 ton/yr

NO_x Emissions
Emission Factor: 25.0 gram/Hp-hr {WBI Source Test Data}
Calculations: 25.0 gram/Hp-hr * 440 Hp * 0.002205 lb/gram = 24.26 lb/hr
24.26 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 106.24 ton/yr

CO Emissions
Emission Factor: 16.0 gram/Hp-hr {WBI Source Test Data}
Calculations: 16.0 gram/Hp-hr * 440 Hp * 0.002205 lb/gram = 15.52 lb/hr
15.52 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 67.99 ton/yr

VOC Emissions
Emission Factor: 0.14 gram/Hp-hr {Table 3.2-1, AP-42, 7/93}
Calculations: 0.14 gram/Hp-hr * 440 Hp * 0.002205 lb/gram = 0.14 lb/hr
0.14 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.59 ton/yr

SOx Emissions
Emission Factor: 0.60 lb/MMScf {FIRE - PC Version, 1/95, 2-02-002-02}
Calculations: 0.60 lb/MMScf * 0.001 MMScf/MMBtu * 4.40 MMBtu/hr = 0.0026 lb/hr
0.0026 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.0116 ton/yr

(SOURCE #09)

880 Hp Ingersoll Rand Compressor Engine

Brake Horse Power: 880 Hp
Hours of Operation: 8,760 hr/year
Max Fuel Combustion Rate: 8.36 MMBtu/hr
Fuel Heating Value: 1,000 Btu/Scf or 0.0010 MMScf/MMBtu (Natural Gas)

PM_{10} Emissions
Emission Factor: 10.0 lb/MMScf {FIRE - PC Version, 1/95, 2-02-002-02}
Calculations: 10.0 lb/MMScf * 0.001 MMScf/MMBtu * 8.36 MMBtu/hr = 0.08 lb/hr
0.08 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.37 ton/yr

NO_x Emissions
Emission Factor: 3.00 gram/Hp-hr {WBI Permit Application}
Calculations: 3.00 gram/Hp-hr * 880 Hp * 0.002205 lb/gram = 5.82 lb/hr
5.82 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 25.50 ton/yr

CO Emissions
Emission Factor: 3.00 gram/Hp-hr {WBI Permit Application}
Calculations: 3.00 gram/Hp-hr * 880 Hp * 0.002205 lb/gram = 5.82 lb/hr
5.82 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 25.50 ton/yr

VOC Emissions
Emission Factor: 1.00 gram/Hp-hr {WBI Permit Application}
Calculations: 1.00 gram/Hp-hr * 880 Hp * 0.002205 lb/gram = 1.94 lb/hr
1.94 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 8.50 ton/yr

SO_x Emissions
Emission Factor: 0.60 lb/MMScf {FIRE - PC Version, 1/95, 2-02-002-02}
Calculations: 0.60 lb/MMScf * 0.001 MMScf/MMBtu * 8.36 MMBtu/hr = 0.0050 lb/hr
0.0050 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.0220 ton/yr

(SOURCE #10)
1,100 hp Superior Compressor Engine
Brake Horse Power: 1,100 Hp @ 900 rpm
Hours of Operation: 8,760 hr/year
Max Fuel Combustion Rate: 7.81 MMBtu/hr
Fuel Heating Value: 1,000 Btu/Scf or 0.0010 MMScf/MMBtu (Natural Gas)

PM_{10} Emissions
Emission Factor: 10.0 lb/MMScf {FIRE - PC Version, 1/95, 2-02-002-02}
Calculations: 10.0 lb/MMScf * 0.001 MMScf/MMBtu * 7.81 MMBtu/hr = 0.08 lb/hr
0.08 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.34 ton/yr

NO_x Emissions
Emission Factor: 2.00 gram/Hp-hr {BACT Determination}
Calculations: 2.00 gram/Hp-hr * 1,100 Hp * 0.002205 lb/gram = 4.85 lb/hr
4.85 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 21.25 ton/yr

CO Emissions
Emission Factor: 3.00 gram/Hp-hr {BACT Determination}
Calculations: 3.00 gram/Hp-hr * 1,100 Hp * 0.002205 lb/gram = 7.28 lb/hr
7.28 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 31.87 ton/yr

VOC Emissions
Emission Factor: 1.00 gram/Hp-hr {BACT Determination}
Calculations: 1.00 gram/Hp-hr * 1,100 Hp * 0.002205 lb/gram = 2.43 lb/hr
2.43 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 10.62 ton/yr

SO_x Emissions
Emission Factor: 0.60 lb/MMScf {FIRE - PC Version, 1/95, 2-02-002-02}
Calculations: 0.60 lb/MMScf * 0.001 MMScf/MMBtu * 7.81 MMBtu/hr = 0.0047 lb/hr
0.0047 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.0205 ton/yr

(SOURCE #11)
190 Hp Waukesha Generator Engine
Brake Horse Power: 190 Hp
Hours of Operation: 8,760 Hr/year
Max Fuel Combustion Rate: 1.57 MMBtu/hr
Fuel Heating Value: 1,000 Btu/Scf or 0.0010 MMScf/MMBtu (Natural Gas)

PM_{10} Emissions
Emission Factor: 10.0 lb/MMScf {FIRE - PC Version, 1/95, 2-02-002-02}
Calculations: 10.0 lb/MMScf * 0.001 MMScf/MMBtu * 1.57 MMBtu/hr = 0.02 lb/hr
0.02 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.07 ton/yr

NO_x Emissions

Emission Factor:	20.0 gram/Hp-hr	{WBI Source Test Data}
Calculations:	20.0 gram/Hp-hr * 190 Hp * 0.002205 lb/gram = 8.38 lb/hr	
	8.38 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 36.70 ton/yr	

CO Emissions

Emission Factor:	1.00 gram/Hp-hr	{WBI Source Test Data}
Calculations:	1.00 gram/Hp-hr * 190 Hp * 0.002205 lb/gram = 0.42 lb/hr	
	0.42 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 1.84 ton/yr	

VOC Emissions

Emission Factor:	0.14 gram/Hp-hr	{Table 3.2-1, AP-42, 7/93}
Calculations:	0.14 gram/Hp-hr * 190 Hp * 0.002205 lb/gram = 0.06 lb/hr	
	0.06 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.26 ton/yr	

SO_x Emissions

Emission Factor:	0.60 lb/MMScf	{FIRE - PC Version, 1/95, 2-02-002-02}
Calculations:	0.60 lb/MMScf * 0.001 MMScf/MMBtu * 1.57 MMBtu/hr = 0.0009 lb/hr	
	0.0009 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.0041 ton/yr	

(SOURCE #12)

Miscellaneous Natural Gas Fired Heaters and Boilers

Max Fuel Combustion Rate:

Bryant Steam Boiler =	1.470 MMBtu/hr
Dehydration Unit Reboiler =	0.500 MMBtu/hr
AO Smith Recirculating Water Tank Heater =	0.160 MMBtu/hr
AO Smith Recirculating Water Tank Heater =	0.160 MMBtu/hr
Sterling Space Heater =	0.075 MMBtu/hr
AO Smith Water Tank Heater =	0.065 MMBtu/hr
Carrier Space Heater =	0.060 MMBtu/hr
Empire Space Heater =	0.050 MMBtu/hr
Total =	2.540 MMBtu/hr

Hours of Operation:	8,760 hr/yr
Fuel Heating Value:	1,000 Btu/Scf or 0.0010 MMScf/MMBtu (Natural Gas)

PM_{10} Emissions

Emission Factor:	3.00 lb/MMScf	{FIRE, PC Version 1/95, 1-05-001-06}
Calculations:	3.00 lb/MMScf * 0.001 MMScf/MMBtu * 2.54 MMBtu/hr = 0.01 lb/hr	
	0.01 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.03 ton/yr	

NO_x Emissions

Emission Factor:	100.0 lb/MMScf	{FIRE, PC Version 1/95, 1-05-001-06}
Calculations:	100.0 lb/MMScf * 0.001 MMScf/MMBtu * 2.54 MMBtu/hr = 0.25 lb/hr	
	0.25 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 1.11 ton/yr	

CO Emissions

Emission Factor:	20.0 lb/MMScf	{FIRE, PC Version 1/95, 1-05-001-06}
Calculations:	20.0 lb/MMScf * 0.001 MMScf/MMBtu * 2.54 MMBtu/hr = 0.05 lb/hr	
	0.05 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.22 ton/yr	

VOC Emissions

Emission Factor:	5.3 lb/MMScf	{FIRE, PC Version 1/95, 1-05-001-06}
Calculations:	5.3 lb/MMScf * 0.001 MMScf/MMBtu * 2.54 MMBtu/hr = 0.01 lb/hr	
	0.01 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.06 ton/yr	

SO_X Emissions

Emission Factor:	0.60 lb/MMScf	{FIRE, PC Version 1/95, 1-05-001-06}
Calculations:	0.60 lb/MMScf * 0.001 MMScf/MMBtu * 2.54 MMBtu/hr = 0.0015 lb/hr	
	0.0015 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.0067 ton/yr	

(SOURCE #13)

TEG Dehydration Unit Still Vent

Hours of Operation:	8,760 hr/yr
Average Dry Gas Flow Rate:	5.5 MMSCF/day
Maximum Dry Gas Flow Rate:	4 5.0 MMSCF/day
Control Device:	none
Wet Gas Water Content:	40.0 lb H_2O/MMScf
Dry Gas Dew Point:	3.9 lb H_2O/MMScf
Stripping Gas Flow Rate:	6.0 Scf/min of dry product gas
Temperature:	61.0 ^oF
Pressure:	175.0 psig

VOC Emissions

Still Vent: Emission Factor:	0.33 lb/hr	{GRI GLYCalc Program}
Calculations:	0.33 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 1.45 ton/yr	

(SOURCE #14)

Miscellaneous VOC Sources

Tanks:

1,000 gal Gasoline =	278 lb/yr	{Tanks 2.0 Program}
1,000 gal Slop Oil =	41 lb/yr	{Tanks 2.0 Program}
300 gal Solvent =	14 lb/yr	{Tanks 2.0 Program}
300 gal Alcohol =	4 lb/yr	{Tanks 2.0 Program}
300 gal TEG =	2 lb/yr	{Tanks 2.0 Program}
300 gal TEG =	2 lb/yr	{Tanks 2.0 Program}
300 gal diesel =	0 lb/yr	{Tanks 2.0 Program}
Tank Total =	284 lb/yr * 0.0005 ton/lb = 0.14 ton/yr	

Fugitives:

Source	Quantity	*	AP-42 Emission Factor	=	TOC (lb/hr)
Valves =	93	*	0.0440	=	4.09
Connections =	312	*	0.0024	=	0.75
Seals =	26	*	0.4500	=	11.70
Open ended lines =	17	*	0.0490	=	0.83
psv's =	16	*	0.414	=	6.62
Fugitive Total =					24.00

Fugitive VOC = TOC - methane - ethane = 100 - 95.75 - 3.77 = 0.49% {WBI Gas Analysis}
Fugitive VOC = 24.00 lb/hr * 0.49% * 8760 hr/yr * 0.0005 ton/lb = 0.51 ton/yr

Total Miscellaneous VOC = Tanks + Fugitives = 0.14 + 0.51 = 0.65 ton/yr

(SOURCE #15 and SOURCE #16)

1680 Hp Compressor Engines (2 Engines)

Brake Horse Power:	1680 bhp
Hours of Operation:	8,760 hr/yr

PM_{10} Emissions

Emission Factor:	9.50E-3 lb/MMBtu	{AP-42, Chapter 3, Table 3.2-3, 7/00)
Fuel Consumption	13.23 MMBtu/hr	(Maximum Design)
Calculations:	13.23 MMBtu/hr * 9.5E-3 lb/MMBtu = 0.14 lb/hr	
	0.14 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.55 ton/yr	

NO_x Emissions

Emission Factor:	1 gram/bhp-hr	{BACT Determination}
Calculations:	1.0 gram/bhp-hr * 1680 bhp * 0.002205 lb/gram = 3.70 lb/hr	
	3.7 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 16.22 ton/yr	

CO Emissions

Emission Factor:	1.2 gram/bhp-hr	{Permit Limit}
Calculations:	1.2.0 gram/bhp-hr * 1680 Hp * 0.002205 lb/gram = 4.44 lb/hr	
	4.44 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 19.47 ton/yr/engine	

VOC Emissions

Emission Factor:	0.5 gram/bhp-hr	{BACT Determination}
Calculations:	0.5 gram/bhp-hr * 1680bhp * 0.002205 lb/gram = 1.85 lb/hr	
	1.85 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 8.10 ton/yr/engine	

SO_x Emissions

Emission Factor:	5.88E-04 lb/MMBtu	{AP-42, Chapter 3, Table 3.2-3, 7/00)
Fuel Consumption	13.23 MMBtu/hr	
Calculations:	13.23 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.01 lb/hr	
	0.01 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.03 ton/yr	

V. Existing Air Quality

The facility is located in the Northeast ¼ of Section 19, Township 4 North, Range 26 East in a remote part of Fallon County, Montana. The air quality of the area is classified as either Better than National Standards or unclassifiable/attainment for the National Ambient Air Quality Standards (NAAQS) for criteria pollutants.

VI. Air Quality Impacts

Although the proposed project would result in lowering emissions of NO_x by 341.7 ton/yr, the Department requested a SCREEN model be submitted to demonstrate compliance with the National Ambient Air Quality Standards (NAAQS) and the Montana Ambient Air Quality Standards (MAAQS). Permit #2741-02 included the addition of a Superior 1,100-Hp compressor engine. Because the facility had the potential of violating the NAAQS and MAAQS, federally enforceable conditions were placed in the permit requiring minimum stack heights. Based on this information, regardless of compressor engines being removed, and emissions being reduced, the Department required WBI to conduct modeling to demonstrate that the proposed project would not cause or contribute to a violation of any NAAQS and MAAQS.

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

Aspen, on behalf of WBI, conducted air dispersion modeling for the proposed WBI Little Beaver Compressor Station modification. Aspen performed a modeling analysis for nitrogen dioxide (NO_2) utilizing the SCREEN3 air dispersion model to demonstrate compliance with the NAAQS and MAAQS. SCREEN modeling provides conservative results that eliminate the need for more refined modeling analysis should the ambient air quality standards be met.
SCREEN3 only allows one stack to be modeled at a time. Therefore, each engine type with their respective stack parameters and total NO_x emission rates were run and the maximum NO_x

concentration determined. Once each engine type's maximum NO_x concentration is established, the concentrations are added together to determine the overall worst-case maximum NO_x concentrations as allowed by guidance.

SCREEN3 also estimates only 1-hour average concentrations. To determine annual averages, Aspen used a factor of 0.08 times the 1-hour average concentration to calculate the annual average concentration. This methodology is consistent with the guidance provided in the "Montana Modeling Guidelines for Air Quality Permits". Once total maximum 1-hour and annual NO_x concentrations were determined, ratio methods were employed to determine NO_2 maximum concentrations as allowed by guidance.

The Ozone Limiting Method (OLM) was applied to the 1-hour NO_x maximum concentration to determine the NO_2 maximum concentration. As defined in the guidance, the OLM NO_2 concentration is equal to 0.1 times the 1-hour NO_x modeled concentration, plus the minimum of 0.9 times the NO_x modeled concentration or 46/48ths of the ozone background concentration, plus the background NO_x concentration.

The Ambient Ratio Method (ARM) was applied to the annual NO_x maximum concentration to determine the NO_2 maximum concentration. Per the guidance, the ARM NO_2 concentration is 0.75 times the NO_x modeled concentration.

As shown in Table 1 the modeled concentrations are well below the NAAQS/MAAQS. The ARM and OLM methods were applied to the NO_x emissions to convert the modeled concentrations to NO_2 for comparison to the NAAQS/MAAQS. The model results for NO_2 are summarized in Table 1.

Table 1 – Ambient Modeling Results

Pollutant	Avg. Period	NO_x Modeled conc. ($\mu g/m^3$)	OLM/ARM Adjusted to NO_2 ($\mu g/m^3$)	Background Conc. ($\mu g/m^3$)	Ambient Conc. ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	MAAQS ($\mu g/m^3$)	% of NAAQS/ MAAQS
NO_2	1-hr	345.7	297.4	75	290	------	564	NA/51
	Annual	27.65	20.74	6	12	100	94	12/13

VII. Taking or Damaging Implication Analysis

As required by 2-10-101 through 105, MCA, the Department conducted a private property taking and damaging assessment and determined that 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
(406) 444-3490

FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: Williston Basin Interstate Pipeline Company
Little Beaver Compressor Station
P.O. Box 131
Glendive, MT 59330

Air Quality Permit Number: 2741-03

Preliminary Determination Issued: 07/01/04
Department Decision Issued: 07/19/04
Permit Final: 08/04/04

1. *Legal Description of Site*: The WBI Little Beaver Compressor Station is located in a remote area approximately 20 miles southeast of Baker, Montana and one mile from the Montana/North Dakota border. The station is in the NE¼ of Section 19, Township 4 North, Range 62 East in Fallon County.

2. *Description of Project*: WBI proposed to install and operate two 1,680 horsepower Waukesha compressor engines at the Little Beaver facility. In addition, WBI would remove existing Little Beaver Units #1, 2, 3, 4, 5, 6, and 7. The proposed engine-compressor units would be able to pull suction on production and/or storage pipelines and would be able to discharge into gathering and/or transmission pipelines.

3. *Objectives of Project*: The proposed project would continue to provide business and revenue for WBI by allowing the company to efficiently gather and sell natural gas. Natural gas would be pulled from production and/or storage pipelines and would be able to discharge into gathering and/or transmission pipelines. The natural gas flowing through the Little Beaver Compressor Station would ultimately be transported via long haul pipelines for delivery to end-users of natural gas.

4. *Alternatives Considered*: In addition to the proposed action, the Department considered the "no-action" alternative. The "no-action" alternative would deny issuance of the Montana Air Quality Permit to the proposed facility. However, the Department does not consider the "no-action" alternative to be appropriate because WBI 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 #2741-03.

6. *Regulatory Effects on Private Property*: The Department considered alternatives to the conditions imposed in the 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 demonstrate compliance with those requirements and would 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, 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 Montana State 36 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
B. Water Quality, Quantity, and Distribution
C. Geology and Soil Quality, Stability, and Moisture
D. Vegetation Cover, Quantity, and Quality

The impacts on terrestrial and aquatic life and habitats, water quality, quantity, and distribution, geology and soil quality, stability and moisture, and vegetation cover, quantity and quality would be less than impacts that are currently affecting the area because the emissions from the proposed project would decrease the potential current emissions by 341.7 tons/year of NO_x and 200.5 tons/year of CO. The proposed project would include the removal of 7 older model compressor engines and the addition of 2 newer, more efficient model compressor engines. The

more efficient engines would emit much less emissions (as stated above), which would result in less impact to the environment. In addition, the proposed project would occur at an existing facility and therefore little, if any, disruption of the surrounding area would occur.

E. Aesthetics

Minor, if any aesthetic impacts would result because the proposed project would include the removal of 7 compressor engines and the addition of 2 new engines to the facility. Small buildings would be constructed to house the new engines. In addition, the horsepower would increase, which may increase the noise in the area. Overall, there would be minor aesthetic impacts from the proposed project.

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_{10}, NO_x, CO, VOC, and SO_x. 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 #2741-03. Conditions would include, but would not be limited to BACT emission limits and opacity limitations. In addition, potential NO_x emissions would be reduced by 341.7 ton/yr and potential CO emissions would be reduced by 200.5 ton/yr at the conclusion of the project. 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). In this case, the area was defined by the section, township, and range of the proposed location with an additional 1-mile buffer zone. The NRIS search did not find any unique, endangered, fragile, or limited environmental resources near the proposed site. The facility would be located in a previously disturbed area. Therefore, due to the minor amounts of construction that would be required and the decreased 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, 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). Past correspondence with SHPO indicates that 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 has been conducted. Overall, 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 because the proposed project would take place at a previously disturbed site.

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. 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 #2741-03 and any impacts to the physical and biological environment 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 or mores) in the area because the proposed project would take place in a relatively remote location. The facility would be located at an existing site, and operation of the facility would be similar to current operations. 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 no additional employees would be hired for the proposed project. 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 and minor.

D. Agricultural or Industrial Production

The land at the proposed location is rural agricultural grazing land. Because the facility would be relatively small, the proposed project would take place at an existing site, and the potential emissions would decrease, the impacts to agricultural or industrial production would decrease. While emissions of air pollutants and corresponding deposition of pollutants would occur, the potential emissions would decrease and the Department determined that the chance of deposition of pollutants impacting agricultural or industrial production in the area surrounding the site would not occur.

E. Human Health

The proposed project would result in only minor, if any, impacts to human health. 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 one half-time employee would be hired for the proposed project. In addition, temporary construction-related positions may result from this project. 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 not require additional employees to operate the facility. 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 #2741-03 and to assure compliance with applicable rules, standards, and Permit #2741-03. 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 # 2741-03. 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 WBI 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. Impacts from any future facilities would be assessed through the appropriate permitting process.

Recommendation: No EIS is required.

The current permitting action is for the construction and operation of a natural gas compressor station. Permit #2741-03 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.

Analysis Prepared By: Julie Merkel
Date: June 28, 2004