

## Air Quality Permit

Issued To: Devon Energy Corp./Havre Pipeline Co.	Permit #2923-03
Herron Compressor Station	Application Complete: 05/24/04
Hill County #2	Preliminary Determination Issued: 06/22/04
P.O. Box 2606	Department Decision Issued: 07/08/04
Clear Creek Road	Permit Final: 7/24/04
Havre, Montana 59501	AFS #041-0004

An air quality permit, with conditions, is hereby granted to Devon Energy Corporation/Havre Pipeline Company – Herron Compressor Station, Hill County #2 (HPC), pursuant to Sections 75-2-204 and 211, 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. Plant Location

A natural gas compressor station and associated equipment located in the SE<sup>1</sup>/<sub>4</sub> of the NW<sup>1</sup>/<sub>4</sub> of Section 34, Township 31 North, Range 15 East, in Hill County, Montana. A complete list of equipment is included in Section I of the permit analysis.

#### B. Current Permit Action

On May 4, 2004, the Montana Department of Environmental Quality (Department) received an application from HPC for modification of Montana Air Quality Permit #2923-02. Specifically, the current permit action accounts for the replacement of the previously permitted 625 horsepower (hp) Caterpillar G398 TALE compressor engine with a 325 hp Caterpillar G3406 TA compressor engine.

### Section II: Limitations and Conditions

#### A. Emission Limitations

1. The 325-hp Caterpillar G3406 TA rich-burn natural gas compressor engine shall be equipped with non-selective catalytic reduction (NSCR) and an air-to-fuel ratio (AFR) controller. Emissions from the compressor engine shall not exceed the following limits (ARM 17.8.752):

NOx <sup>1</sup>	0.72 lb/hr
CO	0.36 lb/hr
VOC	0.72 lb/hr

2. HPC shall operate all equipment to provide the maximum air pollution control for which it was designed (ARM 17.8.752).
3. HPC shall not cause or authorize emissions from the Herron compressor station 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 (ARM 17.8.304).
4. HPC shall not cause or authorize emissions to be discharged into the atmosphere from

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

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).

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

B. Testing Requirements

1. HPC shall test the 325 hp Caterpillar G3406TA natural gas compressor engine for NO<sub>x</sub> and CO, concurrently, to demonstrate compliance with the NO<sub>x</sub> and CO emission limits contained in Section II.A.1. After the initial source test, testing shall continue on an every 4-year basis or according to another testing/monitoring schedule as approved by the Department (ARM 17.8.105 and ARM 17.8.749).
2. During each test, HPC shall monitor the compressor engine intake manifold temperature and pressure, exhaust temperature, manifold pressure, rotations per minute (rpm), and all parameters necessary to calculate horsepower. This data shall be submitted to the Department with the source test report (ARM 17.8.105).
3. All compliance source tests shall be conducted in accordance with 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. HPC 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. HPC 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 HPC 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:

HPC shall follow all notification requirements as stated in the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

### SECTION III: General Conditions

- A. Inspection – HPC 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 HPC fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving HPC 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 HPC 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  
Devon Energy Corporation/Havre Pipeline Company, LLC  
Herron Compressor Station – Hill County #2  
Permit #2923-03

I. Introduction/Process Description

A. Site Location

Devon Energy Corporation/Havre Pipeline Company – Herron Compressor Station, Hill County #2 (HPC), is located in the SE¼ of the NW¼ of Section 34, Township 31 North, Range 15 East, in Hill County, Montana. This facility is located approximately 11 miles southwest of Havre and 6 miles north of the Rocky Boy Indian Reservation. It is located on three rural acres that are fenced to restrict access.

B. Permitted Equipment

HPC operates the following equipment at the site:

- (1) 325 horsepower (hp) Caterpillar G3406TA rich-burn compressor station with non-selective catalytic reduction (NSCR) and an air-to-fuel ratio (AFR) controller.

C. Permit History

On March 13, 1996, the Department of Environmental Quality (Department) received an application from HPC requesting the installation and operation of a 625-hp Caterpillar "low-emission" compressor engine at the Herron compressor station. This facility gathered, compressed and sold pipeline quality natural gas for further transportation to major market areas. Permit # **2923-00** was issued on June 27, 1996, to HPC.

On June 3, 1999, the Department received notification that UMC Petroleum Corp was merged with Ocean Energy, Inc. The permit ownership was changed to reflect that the HPC compressor operates as a subsidiary of Ocean Energy, Inc. Also, rule references were updated. On June 27, 1999, Permit # **2923-01** replaced Permit #2923-00.

In 1999, the U.S. Environmental Protection Agency (EPA) informed the Department that any condition in an air quality preconstruction permit would be considered a federally enforceable condition. However, there are certain state rules that were never intended to be federally enforceable. The Department notified all facilities holding preconstruction permits that they could request deletion of the conditions based on the Administrative Rules of Montana (ARM) 17.8.717 and ARM 17.8.315. Removing either of these conditions does not relieve the facility from complying with the rule upon which the permit condition was based; removal only ensures that enforcement of that condition remains with the Department. This permit action removed the condition based on ARM 17.8.315 from HPC's permit. Permit #**2923-02** replaced Permit #2923-01.

D. Current Permit Action

On May 4, 2004, the Department received an application from HPC for modification of Montana Air Quality Permit #2923-02. Specifically, the current permit action accounts for the replacement of the previously permitted 625-hp Caterpillar G398 TALE compressor engine with a 325 hp Caterpillar G3406 TA compressor engine. Permit #**2923-03** replaces Permit #2923-02.

E. Additional Information

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

## II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations, which apply to the facility. The complete rules are stated in the ARMs and are available upon request from the Department. Upon request, the Department will provide references for locations 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 17.8.105 Testing Requirements. Any person or persons responsible for the emissions 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.
2. 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).

HPC shall comply with all 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.

3. ARM 17.8.110, Malfunctions. 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 four hours.
4. ARM 17.8.111 Circumvention. No person shall cause or permit the installation or use of any device or any means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant which would otherwise violate an air pollution control regulation. No equipment that may produce emissions shall be operated or maintained in such a manner that a public nuisance is created.

### B. ARM 17.8, Subchapter 2 - Ambient Air Quality, including, but not limited to:

1. ARM 17.8.204 Ambient Air Monitoring Quality Assurance Procedures
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>
11. ARM 17.8.230 Fluoride in Forage

HPC shall 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 to an 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. 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. Under this rule, HPC 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. HPC will consume pipeline quality natural gas, which will meet this limitation, in the compressor engine.
6. ARM 17.8.324(3) Hydrocarbon Emissions--Petroleum Products. 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, or is a pressure tank as described in (1) of this rule.
7. ARM 17.8.340 Standard of Performance for New Stationary Sources. This rule incorporates, by reference, 40 CFR Part 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 NSPS. HPC is not an NSPS affected facility because the facility does not meet any of the definitions for affected facility in 40 CFR Part 60.

Subpart KKK, Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants. This subpart is not applicable to this facility because the facility does not process natural gas.

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 HPC, the 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 HPC, the compressor station is not subject to the provisions of 40 CFR 63, Subpart HHH because the facility is not a major source of HAPs and does not include a glycol dehydration unit.

40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines. Owners or operators of facilities that utilize reciprocating internal combustion engines (RICE) and that are a major source of HAPs, as defined and applied in 40 CFR Part 63, shall comply with the standards and provisions of 40 CFR Part 63, Subpart ZZZZ. In order for a facility that utilizes RICE to be subject to 40 CFR Part 63, Subpart ZZZZ requirements, certain criteria must be met. The RICE must have a maximum rated design capacity greater than 500-hp and the facility must be a major source of HAPs. Based on the information submitted by HPC, the compressor station is not subject to the provisions of 40 CFR 63, Subpart ZZZZ 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. HPC submitted the required 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; and 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, as 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. HPC has a pre-control PTE greater than 25 tons per year of CO; 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. HPC 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. HPC submitted an affidavit of publication of public notice for the May 6, 2004, issue of the *Havre Daily News*, a newspaper of general circulation in the Town of Havre in Hill 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 HPC 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 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).

G. ARM 17.8, Subchapter 12 - Operating Permit Program, 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 or PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule;
  - 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 Applicability. Title V of the FCAA of 1990 requires that all sources, as defined in ARM 17.8.1204 (1), obtain a Title V Operating Permit. The following conclusions were reached in reviewing and issuing Air Quality Permit #2923-03 for HPC:
  - a. The facility's PTE is less than 100 tons per year for any pollutant.
  - b. The facility's PTE is less than 10 tons/year for any 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 HPC is a minor source of emissions as defined under Title V.

### III. BACT Determination

#### Introduction:

A BACT determination is required for each new or altered source. HPC 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 analysis was submitted by HPC in Permit Application #2923-03, addressing some available methods of controlling NO<sub>x</sub>, CO, VOC, PM<sub>10</sub>, and SO<sub>x</sub> emissions from the compression of natural gas through the operation of an internal combustion engine. The Department believes that the various pollutant control strategies cited below will result in similar energy impacts but may vary in economic and environmental impacts as discussed throughout the following analyses.

#### A. NO<sub>x</sub> and CO BACT Analysis

For the purposes of this BACT analysis, a combined analysis of NO<sub>x</sub> and CO emissions was conducted because NO<sub>x</sub> and CO emissions from internal combustion engines are generally

inversely proportional to one another. That is, typically a decrease in the emission of NO<sub>x</sub> will result in an increase in the emission of CO, vis-à-vis. Under the NO<sub>x</sub> and CO BACT analysis, the following control technologies, which are ranked in order of the highest control efficiency (lowest emission rate) to the lowest control efficiency, were reviewed:

1. Lean-burn engine with a selective catalytic reduction (SCR) unit and an AFR controller;
2. Rich-burn engine with a non-selective catalytic reduction (NSCR) unit and an AFR controller;
3. Lean-burn engine with a selective catalytic reduction (SCR) unit alone;
4. Lean-burn engine with an air-to-fuel ratio (AFR) controller alone;
5. Rich burn engine with an AFR controller alone;
6. Rich-burn engine with an NSCR unit alone; and
7. Rich-burn or lean-burn engine with no additional controls.

The Department reviewed these methods, as well as previous BACT determinations in order to make the following BACT determination. Under the current permit action, HPC proposed the use of a rich-burn internal combustion engine incorporating NSCR and an AFR controller to reduce NO<sub>x</sub> and CO emissions from the proposed engine used for the purpose of compressing natural gas for transmission.

1. Lean-Burn Engine with SCR and Catalytic Oxidation

SCR, which is a post-combustion emission reduction technology, has been shown to be effective at 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>, NH<sub>3</sub>, and 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 effective temperature range (typically between 450°F and 850°F). The type of catalyst used dictates the effective temperature range. Exhaust gas temperatures greater than the upper limit of the effective temperature range 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. SCR units are only applicable to lean-burn engines because a high oxygen concentration (as found in lean burn engines) is needed for the unit to operate properly. In addition, for engines that typically operate at variable loads, such as engines utilized for natural gas transmission, an SCR unit may not function effectively and may cause either periods of ammonia slip or periods of insufficient ammonia injection.

While an SCR unit can be utilized to effectively reduce NO<sub>x</sub> emissions, as previously described, CO emissions are typically increased with the use of lean-burn technology. An oxidation catalyst may be used in conjunction with an SCR unit to effectively reduce CO emissions. In a catalytic oxidation system, CO passes over a catalyst, usually a noble metal, which oxidizes the CO to CO<sub>2</sub> at efficiencies of 70-90%. Further, as with an SCR unit, oxidation catalysts are only applicable to lean-burn engines because a high oxygen concentration is needed for the unit to operate properly. Therefore, an oxidation catalyst is not typically used on engines that operate at variable loads (such as natural gas compressor engines) due to technical difficulties arising from this type of operation in conjunction with the SCR control technology.

As discussed above, the Department determined that a lean-burn engine operating with an

SCR unit and an oxidation catalyst may lead to technical difficulties when operated for the purpose of natural gas compression and transmission, as proposed under the current permit action. Technical difficulties may include, but are not limited to, periods of ammonia slip or periods of insufficient ammonia injection for engines that typically operate at variable loads. Therefore, due to concerns over technical feasibility and the subsequent potential increase in collateral environmental impact associated with these technical difficulties (ammonia emissions), the Department determined that a lean-burn engine operated with an SCR unit and an oxidation catalyst does not constitute BACT for the 325-hp Caterpillar G3406TA rich-burn compressor engine, in this case.

## 2. Rich Burn Engine with an NSCR unit and an AFR Controller

An NSCR unit controls NO<sub>x</sub> emissions by using available CO and residual hydrocarbons in the exhaust of a rich-burn engine as a NO<sub>x</sub> reducing agent. 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 N<sub>2</sub>, H<sub>2</sub>O, and 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 must burn a rich fuel mixture, causing the engine to operate less efficiently.

In order to provide for 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 thereby increasing fuel efficiency, optimizing the level of reducing agents, and minimizing agents that can poison the catalyst thus providing for the maximum NO<sub>x</sub> and CO emission reduction and limiting technical difficulties such as engine down time.

The Department determined that an NSCR unit with an AFR controller constitutes BACT for the reduction of NO<sub>x</sub> and CO emissions resulting from the operation of the proposed 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 NO<sub>x</sub> and CO emissions and represents a technically, economically, and environmentally feasible option for the control of NO<sub>x</sub> and CO resulting from internal combustion engines such as those proposed for the current permit action. Further, it has been demonstrated that these technologies operated together are capable of achieving the pound per hour BACT emission limits established for the 325-hp Caterpillar G3406TA rich-burn compressor engine (Section II.A.1 of Permit #2923-03). These pound per hour limits were established as BACT by using 1.0 gram per horsepower-hour (g/hp-hr) for NO<sub>x</sub> and 0.5 g/hp-hr for CO.

## 3. Lean-Burn Engine with an SCR Unit

As discussed above, an SCR unit has been shown to be effective at reducing NO<sub>x</sub> emissions from lean burn engines with SCR units achieving NO<sub>x</sub> control efficiencies as high as 90% for lean burn engines that are operated at a constant load. While an SCR

unit can be utilized to effectively reduce NO<sub>x</sub> emissions as previously described, CO emissions are typically increased with lean-burn technology. The potential increase in CO emissions constitutes a negative co-lateral environmental impact resulting from the operation of a lean-burn engine with an SCR unit alone.

Further, the Department determined that a lean-burn engine operating with an SCR unit may lead to technical difficulties when operated for the purpose of natural gas compression, as proposed under the current permit action. Technical difficulties may include, but not be limited to, periods of ammonia slip or periods of insufficient ammonia injection for engines that typically operate at variable loads while the potential increase in CO emissions and the potential for ammonia emissions constitute co-lateral negative environmental impacts. Therefore, due to concerns over technical feasibility, the subsequent potential increase in collateral environmental impact associated with these technical difficulties and the inherent increase in CO emissions, the Department determined that a lean-burn engine operating with an SCR unit does not constitute BACT for the 325-hp Caterpillar G3406TA rich-burn compressor engine, in this case.

4. Lean-Burn Engine with an AFR Controller (NO<sub>x</sub> Control at the Crossover Point)

NO<sub>x</sub> and CO emissions from a lean-burn engine can be stabilized by installing an electronic AFR controller. 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 and a rich-burn engine incorporating an NSCR and AFR achieve approximately the same NO<sub>x</sub> and CO emission rate while the rich-burn engine with an NSCR and AFR controller typically achieves a higher total reduction in potential uncontrolled emissions than the lean burn engine fitted with an AFR controller.

Lean-burn engines with an AFR controller have a higher initial cost when compared to rich-burn engines fitted with an NSCR unit and an AFR controller. However, since there is limited add-on equipment, the lean-burn engine may require less maintenance than a rich-burn engine fitted with an NSCR unit and an AFR controller and thus operation of the lean burn engine may result in less technical difficulty and down-time and lower operating costs.

A lean burn engine with an AFR controller effectively reduces NO<sub>x</sub> and CO emissions and represents a technically, economically, and environmentally feasible option for the control of these emissions resulting from internal combustion engines, such as that proposed for the current permit action. However, since HPC proposed to install a rich-burn engine with an NSCR unit and an AFR controller and because these engines with their respective controls achieve approximately the same NO<sub>x</sub> and CO emission rates, the Department determined that the use of a lean-burn engine with an AFR controller does not constitute BACT for the 325-hp Caterpillar G3406TA rich-burn compressor engine, in this case.

5. Rich-Burn Engine with an AFR Controller (NO<sub>x</sub> 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<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 thereby lowering the exhaust temperature to a point where the concentration of NO<sub>x</sub> decreases and the concentration of CO increases. Conversely, combustion of a lean fuel mixture occurs at higher temperatures accompanied by higher concentration of NO<sub>x</sub> and a lower concentration of

CO.

Internal combustion engines 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. Therefore, the use of an AFR controller with no additional control may present technical difficulties resulting in decreased run time. Further, while the use of an AFR controller to adjust the engine to operate at the crossover point results in a reasonable reduction of both NO<sub>x</sub> and CO emissions, an AFR controller operated without additional control does not provide for a reduction in NO<sub>x</sub> and CO emissions as effectively as other control strategies such as an NSCR unit or an NSCR unit operated in conjunction with an AFR controller. Therefore, due to concerns over technical feasibility resulting in increased engine down-time and the potential for increased NO<sub>x</sub> and CO emissions when compared to other strategies, the Department determined that a rich-burn engine with an AFR controller, operated alone, does not constitute BACT for the 325-hp Caterpillar G3406TA rich-burn compressor engine, in this case.

6. Rich-Burn Engine with NSCR

Similar to the use of an AFR controller alone, the use of an NSCR unit alone can be used to effectively reduce NO<sub>x</sub> and CO emissions. However, to effectively reduce these pollutants in the gas stream when operated as the only control, the engine must burn a rich fuel mixture to achieve maximum performance thereby resulting in lower engine operating efficiency and increased fuel use. Subsequently, an NSCR unit operated alone does not provide as high of a reduction in NO<sub>x</sub> and CO emissions as an NSCR unit with an AFR controller where engine efficiency is increased. Therefore, due to concerns over technical feasibility resulting in lowered engine efficiency and the subsequent potential for increased NO<sub>x</sub> and CO emissions when compared to other strategies, the Department determined that a rich-burn engine with an NSCR unit, operated alone, does not constitute BACT for the 325-hp Caterpillar G3406TA rich-burn compressor engine, in this case.

7. No Additional Controls

This practice would consist of operating technically available natural gas compressor engines without any add-on pollution control equipment.

Internal combustion engine operation with no additional controls is a technically feasible option for the compression and transmission of natural gas, as proposed by HPC. This approach would result in no additional energy or economic impacts on HPC; however, no additional controls would result in negative impacts on air quality due to increased NO<sub>x</sub> and CO emissions when compared to other existing and technically feasible control options. Therefore, after consideration of all potential impacts including, but not limited to, energy impacts, impacts to the environment, and economic impacts and other costs, the Department determined that no additional control does not constitute BACT for the 325-hp Caterpillar G3406TA rich-burn compressor engine, in this case.

B. VOC BACT Analysis

The Department is not aware of any BACT determinations that have required controls for VOC emissions from natural gas fired compressor engines comparable to the proposed 325-hp Caterpillar G3406TA rich-burn compressor engine. Further, the BACT determined controls for NO<sub>x</sub> and CO (NSCR and an AFR controller) will result in a co-benefit control of VOCs. Therefore, the Department determined that no additional VOC specific controls and the lb/hr emission limit contained in Section II.A.1 of Permit #2923-03, constitutes BACT for VOC emissions from the proposed 325-hp Caterpillar G3406TA rich-burn compressor engine, in this case.

C. PM<sub>10</sub> BACT Analysis

The Department is not aware of any BACT determinations that have required controls for PM<sub>10</sub> emissions from natural gas fired compressor engines comparable to the 325-hp Caterpillar G3406TA rich-burn compressor engine. Due to the relatively small amount of PM<sub>10</sub> emissions from the proposed engine, any add-on controls would be cost prohibitive and likely would not result in a great deal of environmental benefit. Therefore, the Department determined that no additional controls will constitute BACT for PM<sub>10</sub> emissions from the proposed 325-hp Caterpillar G3406TA rich-burn compressor engine, in this case.

D. SO<sub>x</sub> BACT Analysis

The Department is not aware of any BACT determinations that have required controls for SO<sub>x</sub> emissions from natural gas fired compressor engines comparable to the 325-hp Caterpillar G3406TA rich-burn compressor engine. Due to the relatively small amount of SO<sub>x</sub> emissions from the proposed engine, any add-on controls would be cost prohibitive and likely would not result in a great deal of environmental benefit. Therefore, the Department determined that no additional controls will constitute BACT for SO<sub>x</sub> emissions from the proposed 325-hp Caterpillar G3406TA rich-burn compressor engine, in this case.

BACT Summary:

After consideration of potential impacts including, but not limited to, energy impacts, impacts to the environment, economic impacts and other costs, and taking into consideration previous BACT analysis and other BACT determinations for similar source internal combustion engines, the Department determined that the pound per hour (lb/hr) emission limits contained in Section II.A.1 of Permit #2923-03 constitute BACT for the proposed project. The basis for these lb/hr limits is the BACT emission rate of 1.0 g/bhp for both NO<sub>x</sub> and VOC emissions and 0.5 g/bhp for CO emissions. The Department believes that the proposed 325-hp Caterpillar G3406TA rich-burn compressor engine, operating with NSCR and an AFR controller, is capable of meeting these applicable BACT emission limits. In addition, the Department does not believe that any environmental, energy, or economic impacts preclude the use of a rich-burn engine with an NSCR and an AFR controller. Therefore, the Department determined that this control strategy constitutes BACT for the 325-hp Caterpillar G3406TA rich-burn compressor engine, in this case.

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

IV. Emission Inventory

Emission Source	Criteria Pollutant Emissions				
	ton/year				
	PM <sub>10</sub>	NO <sub>x</sub>	CO	VOC	SO <sub>x</sub>
Caterpillar G3406TA Compressor Engine	0.10	3.14	1.57	3.14	0.01

Hazardous Air Pollutant (HAP) emissions for this source are negligible at 0.30 ton/yr. A complete HAP emission inventory is on file with the Department.

Caterpillar G3406TA Compressor Engine

Heat Input Capacity: 2.3 MMBtu/hr (Company Information)  
 Annual Operation: 8760 hr/yr  
 Engine Power Output: 325 hp

PM<sub>10</sub> Emissions:

Emission Factor: 9.91E-03 lb/MMBtu (AP-42, Section 3.2, Table 3.2-3, 07/00)  
 Calculations: 9.91E-03 lb/MMBtu \* 2.3 MMBtu/hr = 0.023 lb/hr  
 0.023 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 0.10 ton/yr

NO<sub>x</sub> Emissions:

Emission Factor: 1.0 g/hp-hr (Department BACT Determination)  
 Calculations: 1.0 g/hp-hr \* 325 hp \* 0.002205 lb/g = 0.72 lb/hr  
 0.72 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 3.14 ton/yr

CO Emissions:

Emission Factor: 0.5 g/hp-hr (Department BACT Determination)  
 Calculations: 0.5 g/hp-hr \* 325 hp \* 0.002205 lb/g = 0.36 lb/hr  
 0.36 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 1.57 ton/yr

VOC Emissions:

Emission Factor: 1.0 g/hp-hr (Department BACT Determination)  
 Calculations: 1.0 g/hp-hr \* 325 hp \* 0.002205 lb/g = 0.72 lb/hr  
 0.72 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 3.14 ton/yr

SO<sub>x</sub> Emissions:

Emission Factor: 5.88E-04 lb/MMBtu (AP-42, Section 3.2, Table 3.2-3, 07/00)  
 Calculations: 5.88E-04 lb/MMBtu \* 2.3 MMBtu/hr = 0.001 lb/hr  
 0.001 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 0.01 ton/yr

V. Air Quality Impacts

The facility is located in the SE¼ of the NW¼ of Section 34, Township 31 North, Range 15 East, in Hill County, Montana. Hill County is considered unclassifiable/attainment for the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants. Because potential emissions from HPC will be reduced through installation and operation of an NSCR and an AFR controller and because controlled emissions of all regulated pollutants from the proposed engine are relatively minor, the Department believes that the current permit action will not cause or contribute to any exceedance of the NAAQS.

VI. 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 there are no taking or damaging implications.

VII. 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:* Devon Energy Corp./Havre Pipeline Co.  
Herron Compressor Station  
Hill County #2  
P.O. Box 2606  
Clear Creek Road  
Havre, Montana 59501

*Air Quality Permit Number:* 2923-03

*Preliminary Determination Issued:* June 22, 2004

*Department Decision Issued:* July 8, 2004

*Permit Final:* July 24, 2004

1. *Legal Description of Site:* The modified HPC station would be located in the SE¼ of the NW¼ of Section 34, Township 31 North, Range 15 East, in Hill County, Montana.
2. *Description of Project:* Under the current permit action HPC proposed the replacement of the previously permitted 625 horsepower (hp) Caterpillar G398 TALE lean-burn compressor engine with a 325 hp Caterpillar G3406 TA rich-burn compressor engine.
3. *Objectives of Project:* Since initial permitting of the HPC compressor station, HPC's plans, objectives, and engine requirements at this compressor station location have changed thereby allowing for the installation and operation of a smaller unit for normal operations. The current permit action would facilitate these needs.
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 air quality preconstruction permit to the proposed facility. However, the Department does not consider the "no-action" alternative to be appropriate because HPC 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 #2923-03.
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 are reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and do not unduly restrict private property rights.

7. 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 to 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 that any impacts from deposition would be minor. The potential impact of air pollutant emissions after this permit change would result in less impact to terrestrials and aquatic life and habits than the potential emissions currently permitted because the proposed compressor engine would generate fewer emissions. Overall, any impacts to terrestrial and aquatic life and habitats 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. No direct 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. In addition, 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 any impacts from deposition would be minor. The potential impact of air pollutant emissions after this permit change would result in less impact to water quality, quantity, and distribution than the potential emissions currently permitted because the proposed compressor engine would generate fewer emissions.

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 deposition of pollutants would occur. However, as described in Section 7.F of this EA, the Department determined that any impacts from deposition would be minor. The potential impact from air pollutant emissions after this permit change would result in less impact to the geology and soil quality, stability, and moisture than the potential emissions currently permitted because the proposed compressor engine would generate fewer emissions. Overall, any impacts to the geology and soil quality, stability, and moisture would be minor.

D. Vegetation Cover, Quantity, and Quality

Minor impacts would occur to vegetation cover, quantity, and quality because 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 that any impacts from deposition would be minor. The potential impact from air pollutant emissions after this permit change would result in less impact to the vegetation cover, quantity, and quality than the potential emissions currently permitted because the proposed compressor engine would generate fewer emissions. Overall, any impacts to vegetation cover, quantity, and quality would be minor.

E. Aesthetics

The proposed project would not result in any impact to the aesthetic nature of the area because the proposed project would not change the current industrial use of the area or the appearance of the facility. HPC would be replacing an existing internal combustion compressor engine located within an existing building with a new internal combustion compressor engine to be located within the same existing building.

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; VOCs, including HAPs; and SO<sub>x</sub>. Further, the Department determined that any impacts from emissions would be minor. The potential impact from air pollutant emissions after this permit change would result in less impact to air quality than the potential emissions currently permitted because the proposed compressor engine would generate fewer emissions. Also, air emissions from the facility would be minimized by limitations and conditions that would be included in Permit #2923-03. Conditions would include, but would not be limited to, BACT emission limits and opacity limitations on the proposed engines and the general facility. The emission limits established as BACT for NO<sub>x</sub>, CO, and VOCs under the current permit action would be lower than the allowable emissions under the existing permitted facility thereby resulting in a lower allowable emission rate in addition to the inherently lower emissions resulting from the smaller engine. Further, based on previous analysis of similar sources operating under similar conditions, the Department believes that the emissions resulting from the proposed engines would exhibit good dispersion characteristics resulting in lower deposition impacts to the affected area.

In addition, the Department believes that emissions from the existing and larger compressor engine are in compliance with all applicable air quality standards, as permitted under the existing permit. Therefore, since controlled potential emissions from the proposed smaller engine would be lower than current emissions and because the engine emissions would continue to exhibit good dispersion characteristics, the Department determined that the proposed project would maintain compliance with all applicable ambient air quality standards. Therefore, any impacts to air quality from the proposed project would be minor.

#### G. Unique Endangered, Fragile, or Limited Environmental Resources

The proposed project includes the installation and operation of equipment that would result in air pollutant emissions. However, as discussed in Section 7.F of this EA, the project would result in a reduction in potential pollutant emissions from source operations. Since the proposed changes would result in a reduction in pollutant emissions, the Department determined that any impacts to any existing unique endangered, fragile, or limited environmental resource due to the deposition of air pollutants would be minor and less than current impacts under the existing permit. Overall, any impact to any existing unique endangered, fragile, or limited environmental resource in the proposed project area 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 from deposition would be minor and less than existing impacts due to the reduction in potential emissions resulting from the current permit action.

The proposed project would have minor impacts on the demand for the environmental resource of energy because power would be required at the site. However, the impact on the demand for the environmental resource of energy would be minor because the current permit action would replace the existing compressor engine with a smaller, less energy consumptive, engine. Overall, the impacts for the demands on the environmental resources of water, air, and energy would be minor.

#### I. Historical and Archaeological Sites

The proposed project would not result in any impact to any existing historical and archaeological sites in the proposed project area because the proposed new equipment would operate within an existing industrial area and would not require any additional construction. According to previous correspondence from the Montana State Historic Preservation Office, there is low likelihood of any disturbance to any known archaeological or historic site, given previous industrial disturbance within a given area. Therefore, the Department determined that the proposed project would not impact any existing historical or archaeological site.

#### J. Cumulative and Secondary Impacts

Overall, cumulative and secondary impacts from the proposed project on the physical and biological resources of the human environment in the immediate area would be minor because the predominant use of the surrounding area would not change as a result of the proposed project. In addition, the proposed project would result in lower air pollutant emissions due to newly established and lower BACT limits for the proposed engine and the inherently lower emissions resulting from the replacement of a larger engine with a smaller engine. Therefore, because the proposed compressor engine would generate fewer emissions, the potential impact from air pollutant emissions after this permit change would result in less cumulative and secondary impact to the area than the potential emissions currently permitted. Overall, the proposed replacement of the existing engine with a new smaller engine would maintain the operating status quo for the facility and the area at large; therefore, no additional cumulative or secondary impacts would be expected as a result of the current permit action. 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 #2923-03.

8. 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 ECENOMIC 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 not impact the social structures and mores or the cultural uniqueness and diversity of the proposed area of operation because the project would include replacing equipment at the permitted facility to facilitate operations similar to existing operations at the HPC facility. The predominant use of the surrounding area would not change as a result of the proposed project.

- C. Local and State Tax Base and Tax Revenue

The proposed project would result in only a minor impact on the local and state tax base and tax revenue because the project would only slightly change current operations at the facility. Any economic impact to the area would be minor because the proposed project would not change typical operations at the facility. Further, the project would not require any new construction and only a limited number of existing employees/operators and likely no new employees would be required for normal operations of the proposed equipment. Overall, any impact to local and state tax base and tax revenue would be minor as a result of the installation and operation of the proposed new equipment at the facility.

- D. Agricultural or Industrial Production

The proposed project would not result in any impact to agricultural production or land use because the proposed project would operate within the existing HPC site and no additional construction or land disturbance would be required to accommodate the project. Further, the nature of the project

would not result in additional industrial production. Overall, the proposed project would not result in any impact to agricultural or industrial production at HPC or in the area surrounding HPC.

E. Human Health

The Clean Air Act (CAA), which was last amended in 1990, requires EPA to set NAAQS for pollutants considered harmful to public health and the environment. The federal CAA established two types of NAAQS, Primary and Secondary. Primary Standards are limits set to protect public health, including, but not limited to, the health of “sensitive” populations such as asthmatics, children, and the elderly. Secondary Standards are limits set to protect public welfare, including, but not limited to, protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

Permit #2923-03 would include conditions and limitations that would require compliance with all applicable national and state air quality standards, including the federal primary and secondary standards. Further, the Department believes that the existing HPC operations maintain compliance with applicable ambient air quality standards; therefore, because the proposed project would result in a decrease in potential emissions when compared to the existing HPC operations, the Department determined that the project would maintain compliance with the NAAQS/MAAQS. Any impact to human health would be minor because the potential impact of air pollutant emissions after this permit change would result in less impact to human health than the potential emissions currently permitted because the proposed compressor engine would generate fewer emissions.

F. Access to and Quality of Recreational and Wilderness Activities

The project would not impact any access to or quality of any recreation or wilderness activities in the area because the proposed project would operate within the existing HPC site.

G. Quantity and Distribution of Employment

H. Distribution of Population

The installation and operation of the proposed new equipment at the HPC site would require the use of existing HPC personnel for operations and would likely not require any new employees. Therefore, the proposed project would have little or no impact on the quantity and distribution of employment and population in the area.

I. Demands for Government Services

Government services would be required for acquiring the appropriate permits from government agencies. In addition, the permitted source of emissions would be subject to periodic inspections by government personnel. Demands for government services would be minor and consistent with current demands.

J. Industrial and Commercial Activity

The proposed project would result in only minor impacts on local industrial and commercial activity because the proposed project would be similar to existing activity at the HPC facility and would operate within the existing HPC site. Further, the proposed project would require only a small amount of new construction and would not result in additional industrial production.

K. Locally Adopted Environmental Plans and Goals

The Department is not aware of any locally adopted environmental plans or goals in the immediate area affected by the proposed project. The state standards would be protective of the proposed project area.

L. Cumulative and Secondary Impacts

Overall, cumulative and secondary impacts from the proposed project on the economic and social resources of the human environment in the immediate area would be minor due to the fact that the predominant use of the surrounding area would not change as a result of the proposed project. Further, the proposed project would maintain similar operations to the existing site operations thereby not requiring new employment or additional employment or immigration to the area. Overall, the proposed replacement of the existing engine with a new smaller engine would maintain the operating status quo for the facility and the area at large; therefore, no additional cumulative or secondary impacts would be expected as a result of the current permit action. 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 #2923-03.

*Recommendation:* No EIS is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permit action is for the replacement of existing equipment at the HPC compressor station. Permit #2923-03 would include conditions and limitations to ensure the facility would operate in compliance with all applicable rules and regulations. In addition, as detailed in the above EA there are no significant impacts associated with the proposed project.

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.

EA prepared by: M. Eric Merchant, MPH

Date: June 14, 2004