Montana Department of
ENVIRONMENTAL QUALITY
Brian Schweitzer, Governor
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February 17, 2010

Mr. Gary Cox
Highline Exploration, Inc.
Hardin Compressor Station
PO Box 20057
Tuscaloosa, AL 35402

Dear Mr. Cox:

Montana Air Quality Permit #4161-01 is deemed final as of February 17, 2010, by the Department of Environmental Quality (Department). This permit is for a natural gas compressor engine and triethylene glycol dehydration unit. All conditions of the Department's Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For the Department,

Vickie Walsh
Air Permitting Program Supervisor
Air Resources Management Bureau
(406) 444-9741

Shawn Juers
Environmental Engineer
Air Resources Management Bureau
(406) 444-2049

VW:SJ
Enclosure

Montana Department of Environmental Quality
Permitting and Compliance Division

Montana Air Quality Permit #4161-01

Highline Exploration, Inc.
Hardin Compressor Station
PO Box 20057
Tuscaloosa, AL 35402

February 17, 2010

MONTANA AIR QUALITY PERMIT

Issued To: Highline Exploration, Inc.
Hardin Compressor Station
PO Box 20057
Tuscaloosa, AL 35402

MAQP: #4161-01
Application Complete: 12/8/2009
Preliminary Determination Issued: 1/13/2010
Department's Decision Issued: 1/29/2010
Permit Final: 2/17/2010
AFS #: 003-0037

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Highline Exploration, Inc. (Highline), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq*., as amended, for the following:

SECTION I: Permitted Facilities

A. Plant Location

Highline's Hardin Compressor Station is located in the SW ¼ of the NW ¼ of Section 17, Township 1 South, Range 33 East in Big Horn County, Montana.

B. Current Permit Action

On December 8, 2009, Highline submitted a complete application to replace the 1,340 brake horsepower (bhp) lean-burn compressor engine installed at the Hardin Compressor Station with an 830-bhp rich-burn compressor engine. Highline also proposes to remove equipment from MAQP #4161-00 including the second permitted 1,340 bhp lean-burn engine and one of two triethylene glycol (TEG) dehydration units. The permitting action also quantifies plant vent, blowdown, produced water tank, and TEG dehydration related emissions in the emissions inventory.

SECTION II: Conditions and Limitations

A. Emission Limitations

1. Highline shall not operate more than one natural gas compressor engine at any time and the maximum rated design capacity shall be 830 bhp. The engine shall be of a 4-stroke rich-burn engine class (ARM 17.8.749).

2. Highline shall properly operate and maintain the compressor engine and associated control equipment. The engine shall be equipped and operated with an air-to-fuel ratio (AFR) controller and a Non-Selective Catalytic Reduction (NSCR) unit (ARM 17.8.752).

3. The pound per hour (lb/hr) emission limits shall be determined using the following equation and pollutant-specific grams per brake horsepower-hour (g/bhp-hr) emission factors (ARM 17.8.752):

<u>Equation</u>:

Emission Limit (lb/hr) = Emission Factor (g/bhp-hr) * maximum rated design capacity of engine (bhp) * 0.002205 lb/g

Emission Factors:

Oxides of Nitrogen (NO_x):	1.0 g/bhp-hr
Carbon Monoxide (CO):	2.0 g/bhp-hr
Volatile Organic Carbon (VOC):	0.48 g/bhp-hr

4. Highline 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).

5. Highline shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).

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

B. Testing Requirements

1. The compressor engine shall be tested for NO_x and CO, concurrently, within 180 days of the initial start-up date of the compressor engine (ARM 17.8.105 and ARM 17.8.749).

2. The compressor engine shall be tested for NO_x and CO, concurrently, on an every 4-year basis, or according to another testing/monitoring schedule as may be approved by the Department of Environmental Quality (Department) (ARM 17.8.105 and ARM 17.8.749).

3. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

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

C. Operational Reporting Requirements

1. Highline 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. Highline shall notify the Department of any construction or improvement project conducted, pursuant to ARM 17.8.745, that would include ***the addition of a new emissions unit***, 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. The notice must be submitted to the Department, in writing, 10 days prior to startup 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(l)(d) (ARM 17.8.745).

3. All records compiled in accordance with this permit must be maintained by Highline 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

1. Highline shall provide the Department with written notification of the commencement of installation of the new compressor engine postmarked within 30 days of the installation (ARM 17.8.749).

2. Highline shall provide the Department with written notification of the actual startup date of the compressor engine postmarked within 15 days after the actual start-up date (ARM 17.8.749).

SECTION III: General Conditions

A. Inspection – Highline 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 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 Highline fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving Highline 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 filing of a request for a hearing does not stay the Department's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department's decision on the application is final 16 days after the Department's decision is made.

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, failure to pay the annual operation fee by Highline may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

H. Duration of Permit – Construction or installation must begin or contractual obligations entered into that would constitute substantial loss within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall expire (ARM 17.8.762).

Permit Analysis
Highline Exploration, Inc
Montana Air Quality Permit (MAQP) #4161-01

I. Introduction/Process Description

Highline Exploration, Inc (Highline) is permitted for the construction and operation of the Hardin Compressor Station. The facility is located approximately 3 miles west of Hardin, Montana. The legal description is the SW ¼ of the NW ¼ of Section 17, Township 1 South, Range 33 East in Big Horn County, Montana.

A. Permitted Equipment

- One 830 brake horsepower (bhp) rich-burn compressor engine with air-to-fuel ratio controller (AFR) and non-selective catalytic reduction (NSCR) unit (currently a 1982 Caterpillar Model G399TA with Miratech Model EQ701 NSCR Unit).
- One triethylene glycol (TEG) dehydration unit
- Miscellaneous support equipment and materials including a produced water tank

B. Source Description

The purpose of the equipment above is to dehydrate and transmit pipeline natural gas.

C. Permit History

The Department of Environmental Quality (Department) considered an application from Highline complete on November 29, 2007. **MAQP #4161-00** was issued final on January 30, 2008 for the construction and operation of two four-stroke lean-burn compressor engines rated for a design capacity of 1,340 bhp, two TEG dehydration units, and miscellaneous support equipment and materials.

D. Current Permit Action

On December 8, 2009, the Department received a complete application from Highline proposing to replace one installed 1,340 brake horsepower (bhp) lean-burn compressor engine located at the Hardin Compressor Station with an 830 bhp rich-burn compressor engine. Highline also proposes to remove equipment from MAQP #4161-00 including the second permitted 1,340 bhp lean-burn engine and one of two triethylene glycol (TEG) dehydration units. **MAQP #4161-01** replaces MAQP #4161-00.

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).

   Highline 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 of the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

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

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

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

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

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, Highline shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.

4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.

5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. (4) Commencing July 1, 1972, no person shall burn liquid or solid fuels containing sulfur in excess of 1 pound of sulfur per million Btu fired. (5) Commencing July 1, 1971, no person shall burn any gaseous fuel containing sulfur compounds in excess of 50 grains per 100 cubic feet of gaseous fuel, calculated as hydrogen sulfide at standard conditions. Highline will use natural gas as the fuel for the compressor engine, which is expected to meet this limitation.

6. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.

7. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). Highline is not currently considered an NSPS affected facility under 40 CFR Part 60.

   a. 40 CFR 60, Subpart A – General Provisions apply to all equipment or facilities subject to a NSPS Subpart as listed below:

   b. 40 CFR 60, Subpart JJJJ – Standard of Performance for Stationary Spark Ignition Internal Combustion Engines. Pursuant to 40 CFR 60.4230, owners and operators of stationary spark ignition internal combustion engines (SI ICE) that commence construction after June 12, 2006, where the stationary SI ICE are manufactured on or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 horsepower (hp) (except lean burn engines with a maximum engine power greater than or equal to 500 hp and less than 1,350 hp), are subject to this subpart.

      Highline has proposed to install an 830 bhp compressor engine with a manufacture year of 1992. Furthermore, the application indicated that review of maintenance records verified the engine has not had modification or reconstruction after June 12, 2006. Therefore, this subpart does not apply to the engine in the application. However, as this permit is written in a de minimis friendly manner, future changes may trigger the applicability of this subpart.

8. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR Part 63, shall comply with the requirements of 40 CFR Part 63, as listed below:

   a. 40 CFR 63, Subpart A – General Provisions apply to all equipment or facilities subject to a NESHAP Subpart as listed below:

   b. 40 CFR 63, Subpart HH - National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities. This source is an area source of Hazardous Air Pollutants (HAPs) with respect to this subpart. In order for a natural gas production facility to be subject to 40 CFR 63, Subpart HH requirements, certain criteria must be met. First, a facility must either process, upgrade, or store natural gas prior to the point at which natural gas is delivered to a final end user. Second, the facility must also contain an affected source as specified in paragraphs (b)(1) through

(b)(4) of 40 CFR 63, Subpart HH. For area sources, the affected source includes each TEG dehydration unit. Finally, if the criteria are met, and the exemptions contained in paragraphs (e)(1) and (e)(2) of 40 CFR 63, Subpart HH do not apply, the facility is subject to the applicable provisions of 40 CFR 63, Subpart HH. Therefore, Highline is subject to this subpart.

c. 40 CFR 63, Subpart HHH - National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities. This subpart applies to owners and operators of natural gas transmission and storage facilities that transport or store natural gas prior to entering the pipeline to a local distribution company or to a final end user (if there is no local distribution company), and that are major sources of hazardous air pollutants emissions as defined in §63.1271. The proposed changes to Highline's Hardin Compressor Station indicate it would be a minor source of HAPs as applicable to this subpart. Therefore, this subpart does not apply. However, should this facility become a major source of HAPs as applicable to this subpart, these provisions may apply.

d. 40 CFR 63, Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. Pursuant to 40 CFR 63.6585, a stationary reciprocating internal combustion engine (RICE) at a major or area source of HAPs is subject to this subpart.

Pursuant to 40 CFR 63.2, the term *Construction* means the on-site fabrication, erection, or installation of an affected source. *Construction does not include the removal of all equipment comprising an affected source from an existing location and reinstallation of such equipment at a new location*. The owner or operator of an existing affected source that is relocated may elect not to reinstall minor ancillary equipment including, but not limited to, piping, ductwork, and valves. However, removal and reinstallation of an affected source will be construed as reconstruction *if it satisfies the criteria for reconstruction as defined in this section*. The costs of replacing minor ancillary equipment must be considered in determining whether the existing affected source is reconstructed.

The application has indicated the source does not fit the definition of a reconstructed source, based on fixed capital costs, and review of maintenance records.

Therefore, the engine in the application is currently subject to this rule as an existing unit. Pursuant to 40 CFR 63.6590(b)(3), a stationary RICE which is an existing spark ignition 4 stroke rich burn (4SRB) stationary RICE located at an area source does not have to meet the requirements of this Subpart and of Subpart A of this Part. No initial notification is necessary.

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

1. ARM 17.8.401 Definitions. This rule includes a list of definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.402 Requirements. Highline must demonstrate compliance with the ambient air quality standards with a stack height that does not exceed Good Engineering Practices (GEP). The proposed height of the new or modified stack for Highline is below the allowable 65-meter GEP stack height.

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

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. Highline submitted the appropriate permit 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. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

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

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

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit modification to construct, modify, or use any air contaminant sources that have the potential to emit (PTE) greater than 25 tons per year of any pollutant. Highline has a PTE greater than 25 tons per year of oxides of nitrogen (NO_x); 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, modification, or use of a source. Highline 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. Highline submitted an affidavit of publication of public notice for the December 5, 2009, issue of the *Billings Gazette*, a newspaper of general circulation in Big Horn County, as proof of compliance with the public notice requirements.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving Highline 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 modified 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.

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

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.

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

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

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

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:

   a. PTE > 100 tons/year of any pollutant;

   b. PTE > 10 tons/year of any one HAP, PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or

   c. PTE > 70 tons/year of particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) 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 MAQP #4161-01 for Highline, the following conclusions were made:

   a. The facility's PTE is less than 100 tons/year for any pollutant.

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

   c. This source is not located in a serious PM_{10} nonattainment area.

   d. This facility is potentially subject to a current NSPS (40 CFR 60, Subpart JJJJ).

   e. This facility is subject to area source provisions of current NESHAP standards (40 CFR 63, Subpart HH and Subpart ZZZZ).

   f. This source is not a Title IV affected source, or a solid waste combustion unit.

   g. This source is not an EPA designated Title V source.

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

III. BACT Determination

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

The primary criteria pollutants from natural gas-fired reciprocating engines are NO_x, CO, and volatile organic compounds (VOC). CO and VOC species are primarily the result of incomplete combustion. Particulate matter (PM) emissions include trace amounts of metals, non-combustible inorganic material, and condensable, semi-volatile organics which result from volatized lubricating oil, engine wear, or from products of incomplete combustion. Sulfur oxides (SO_x) are very low since sulfur compounds are removed from natural gas at processing plants. However, trace amounts of sulfur containing odorant are added to natural gas for the purpose of leak detection.

Three generic control techniques have been developed for reciprocating engines: parametric controls (timing and operating at a leaner air-to-fuel ratio); combustion modifications such as advanced engine design (clean-burn cylinder head designs and prestratified charge combustion for rich-burn engines); and post combustion catalytic controls installed on the engine exhaust system. Post-combustion catalytic technologies include selective catalytic reduction (SCR) for lean-burn engines, NSCR for rich-burn engines, and CO oxidation catalysts for lean-burn engines.

The proposed compressor engine is of a 4-stroke rich-burn engine class. These engines may be either naturally aspirated, using the suction from the piston to entrain the air charge, or turbocharged, using an exhaust-driven turbine to pressurize the charge. Rich-burn engines operate near the stoichiometric air-to-fuel ratio with exhaust excess oxygen levels less than 4 percent (typically closer to 1 percent).

NO_x and CO BACT:

The only technically feasible option for control of NOx and CO for the rich-burn 4-stroke compressor engine is NSCR with AFR Control. Selective catalytic reduction and oxidation catalysts require the stoichiometry of a lean-burn engine.

<u>NSCR with AFR</u>

This technique uses the residual hydrocarbons and CO in the rich-burn engine exhaust as a reducing agent for NO_x. In an NSCR, hydrocarbons and CO are oxidized by oxygen (O_2) and NO_x. The excess hydrocarbons, CO, and NO_x pass over a catalyst (usually a noble metal such as platinum, rhodium, or palladium) that oxidizes the excess hydrocarbons and CO to water (H_2O) and carbon dioxide (CO_2), while reducing NO_x to N_2. NO_x reduction efficiencies are usually greater than 90 percent, while CO reduction efficiencies are approximately 90 percent. The NSCR technique is effectively limited to engines with normal exhaust oxygen levels of 4 percent or less. This includes 4-stroke rich-burn naturally aspirated engines and some 4-stroke rich-burn turbocharged engines. Engines operating with NSCR require tight air-to-fuel control to maintain high reduction effectiveness without high hydrocarbon emissions. To achieve effective NOx reduction performance, the engine may need to be run with a richer fuel adjustment than normal. Therefore, because NSCR requires tight air-to-fuel control to maintain high reduction effectiveness, AFR control is usually required for optimized NSCR operation.

As proposed by Highline, the Department determined that properly operated and maintained NSCR and AFR constitutes BACT for NO_x and CO. The resulting BACT limit will be 1.0 g/bhp-hr (based on 90% control efficiency, and prior BACT determinations) and 2.0 g/bhp-hr (based on prior BACT determinations) for NO_x and CO respectively. These limits are comparable to other recently permitted sources.

VOC BACT:

The Department is not aware of any BACT determinations that have required controls for VOC emissions from compressor engines. The uncontrolled potential to emit of VOC emissions is relatively small and any add-on controls would be cost prohibitive.

However, the NSCR technology selected as BACT for NO_x and CO also reduces VOC emissions. The Department determined that no additional controls for control of VOC emissions and the use of best management practices will constitute as BACT for VOC. Best management practices would include operating the equipment, including control equipment, as it was designed to be operated, ensuring proper maintenance of the equipment, and fixing any malfunctions as soon as reasonably practicable.

As proposed by Highline, the BACT limit will be 0.48 g/bhp-hr for VOC. This limit is comparable to other recently permitted sources.

SO_x BACT:

The Department is not aware of any BACT determinations that have required add on controls for SO_x emissions from natural gas fired compressor engines. The uncontrolled potential to emit of SO_x emissions from natural gas fired compressor engines is relatively small due to the low amount of sulfur present in natural gas. Therefore, any add-on controls would be cost prohibitive.

The Department determined that the burning of natural gas constitutes BACT for SO_x.

PM BACT:

The Department is not aware of any BACT determinations that have required controls for PM emissions from natural gas fired compressor engines. The uncontrolled potential to emit of PM emissions from natural gas fired compressor engines is relatively small. Therefore, any add-on controls would be cost prohibitive.

The Department determined that no additional controls, the burning of natural gas, and the use of best management practices will constitute as BACT for PM emissions. Best management practices would include operating the equipment as it was designed to be operated, ensuring proper maintenance of the equipment, and fixing any malfunctions as soon as reasonably practicable.

Permit conditions require Highline to adhere to these best management practices based on this BACT analysis.

All 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*

Highline Exploration, Inc - Hardin Compressor Station
MAQP #4161-01

Source	TPY					
	PM_{10}	NO_X	CO	VOC	SO_X	HAPs
830 hp Cat G399TA	0.29	8.02	16.03	3.85	0.02	1.19
Plant Vent Emissions and Maintenance Emissions	ND	ND	ND	0.01	ND	0.00
Reboiler Fuel Consumption Emissions	0.00	0.06	0.05	0.00	0.00	0.01
TEG Regenerator Vent Emissions	ND	0.00	0.00	1.40	0.00	0.14
Produced Water Tank Emissions	ND	ND	ND	0.02	ND	0.00
TOTAL	**0.30**	**8.08**	**16.08**	**5.28**	**0.02**	**1.34**

Note: Some emissions show zero due to rounding. See calculations below.

*Emissions Inventory and Calculations Notes:

PTE = potential to emit
PM_{10} = particulate matter with an aerodynamic diameter of 10 microns and less
NO_X= oxides of nitrogen
CO = carbon monoxide
VOC = volatile organic compound
SO_X = oxides of sulfur
SO_2 = sulfur dioxide
H_2S = hydrogen sulfide
N_2=nitrogen
HAPs = Hazardous Air Pollutants
g = grams
bhp = brake horsepower
hr = hour
lb = pound
lbmol = pound mole
MW = Molecular Weight
Btu = British thermal units
scf = standard cubic feet
'M' denotes 10^3, 'MM' denotes 10^6
R = Rankine, a measure of temperature
psia = actual pounds per square inch
C# = number of carbons in molecule
n-C# denotes the unbranched isomer
i-C# denotes branched isomers
TPY = tons per year

CAT G339TA

Rated bhp: 830 bhp
Hours Operation: 8760 hr/yr

NO_x Emissions

Emissions Factor:	1.0	g/bhp-hr	(BACT - AFR and NSCR - MAQP 4161-01)		
Calculations:	1 g/bhp-hr * 830 bhp * 8760 hr/yr * 0.002205 lb/g. =			16032.11	lb/yr
				8.02	**ton/yr**

CO Emissions

Emissions Factor:	2.0	g/bhp-hr	(BACT - AFR and NSCR MAQP 4161-01)		
Calculations:	2 g/bhp-hr * 830 bhp * 8760 hr/yr * 0.002205 lb/g. =			32064.23	lb/yr
				16.03	**ton/yr**

VOC Emissions

Emissions Factor:	0.48	g/bhp-hr	(BACT - MAQP 4161-01)		
Calculations:	0.48 g/bhp-hr * 830 bhp * 8760 hr/yr * 0.002205 lb/g =			7695.41	lb/yr
				3.85	**ton/yr**

HAPs Emissions

Emisisons Factor:	0.040	lb/MMBtu	Highline - based on AP-42 Table 3.2-2 (07/2000) and GRI Field Test Data		
Max Fuel Rate:	8444	Btu/bhp-hr	(CAT G3306TA Info)		
Calculations:	0.04 lb/MMBtu * 10^-6 MMBtu/Btu * 8444 Btu/bhp-hr =			0.0003	lb/bhp-hr
	0.00033776 lb/bhp-hr * 830 bhp * 8760hr/yr =			2456	lb/yr
				1.23	**ton/yr**

PM_{10} Emissions

Emissions Factor:	0.0095	lb/MMBtu	(AP-42 Table 3.2-3 (07/2000))		
Max Fuel Rate:	8444	Btu/bhp-hr	(CAT G3306TA Info)		
Calculations:	0.0095 lb/MMBtu * 10^-6 MMBtu/Btu * 8444 Btu/bhp-hr =			0.0001	lb/bhp-hr
	0.000080218 lb/bhp-hr * 830 bhp * 8760hr/yr =			583.25	lb/yr
				0.29	**ton/yr**

SO_2 Emissions

Emissions Factor:	0.000588	lb/MMBtu	(AP-42 Table 3.2-3 (07/2000))		
Max Fuel Rate:	8444	Btu/bhp-hr	(CAT G3306TA Info)		
Calculations:	0.0006 lb/MMBtu * 10^-6 MMBtu/Btu * 8444 Btu/bhp-hr =			0.00000497	lb/bhp-hr
	0.000004965072 lb/bhp-hr * 830 bhp * 8760hr/yr =			36.10	lb/yr
				0.0181	**ton/yr**

Plant Vent Emissions

Max Potential Vent Flow	0.05787037	Mscfs	(Highline, based on design capacity)
Max Release time/event	12	seconds	(Highline)
Plant Vent Events per year	20	events/yr	(Highline)
Maintenance Events per year	43	events/yr	(Highline)
Gas Constant	10.73	ft3-psi/R-lbmol	(Perry's Chemical Engineers' Handbook, 7th edition)
Standard Temp	520	R	(Defined Standard Temp for Natural Gas Measurement)
Standard Pressure	14.7	psia	(Defined Standard Pressure)

Natural Gas Composition From 3/12/09 sample *(italic = VOC* **, bold = HAP)**

Component	MW	Mol%	MW*Mol%		
H2S	34.8	0.00	0		
O2	32	0.00	0		
CO2	44.01	0.24	0.105624		
N2	28.01	2.52	0.705852		
C1 (i.e. - CH4 - methane)	16.04	96.77	15.52191		
C2	30.07	0.39	0.117273		MW*Mol%*588.0554
C3	*44.1*	*0.06*	*0.02646*		15.55995
i-C4	*58.12*	*0.01*	*0.005812*		3.417778
n-C4	*58.12*	*0.01*	*0.005812*		3.417778
i-C5	*72.15*	*<0.01*	*0.7215*	=72.15 g/mol * 0.01 mol %	4.24282
n-C5	*72.15*	*<0.01*	*0.7215*	=72.15 g/mol * 0.01 mol %	4.24282
C6	*86.16*	*<0.01*	*0.8616*	=86.16 g/mol * 0.01 mol %	5.066685
C7	*100.2*	*<0.01*	*1.002*	=100.2 g/mol * 0.01 mol %	5.892315
C8	*114.23*	*<0.01*	*1.1423*	=114.23 g/mol * 0.01 mol %	6.717357
C9	*128.28*	*<0.01*	*1.2828*	=128.28 g/mol * 0.01 mol %	7.543575
C10+	*137.89*	*<0.01*	*1.3789*	=137.89 g/mol * 0.01 mol %	8.108696
Benzene	***78.11***	***0.000016***	***1.25E-05***		0.007349
Toluene	***92.13***	***0.000013***	***1.2E-05***		0.007043
E-Benzene	***106.17***	***0.000012***	***1.27E-05***		0.007492
Xylenes	***106.17***	***0.000011***	***1.17E-05***		0.006868
n-C6	***86.18***	***<0.01***	***0.007215***	=86.18 g/mol * 0.01 mol %	5.067862
224 Trimethylp	***114.24***	***<0.01***	***0.007215***	=114.24 g/mol * 0.01 mol %	6.717945

Total: *76.0* = conservative MW of VOC of gas stream

Total: 23.6 = Conservative MW (MW of the Natural Gas including the <0.01 values)
(= sum of MW*Mol%)

0.170052 588.0554

Calculations:

Total Release Time: 12 sec * (20 Plant Events + 43 Maintenance Events) = 756.00 seconds/yr
12.60 min/yr

Total Natural Gas Released: 756 sec/yr * 0.0578703703703704 Mscfs = 43.75 Mscf/yr released

43.75Mscf/yr *1000 *0.0931966449207828 R-lbmol/ft3-psi *
14.7psi *520^-1R = 115.26 lbmols/yr Natural Gas released

115.263638970536 lb-mols/yr * VOC mol fraction = 0.20 lbmols/yr VOC released

0.196008123342175 lbmols/yr * 76.0243299696563lb/lbmol = **14.9 lbs VOC/yr**

14.9013862456986 lbs VOC/yr * 0.0005 ton/lb = **0.007 ton VOC/yr**

MW of HAP components of gas stream

	=MW*mol%
Benzene	0.007349281
Toluene	0.007043081
E-Benzene	0.007492061
Xylenes	0.006867723
n-C6	5.067861595
224 Trimethy	6.717945099
SUM:	11.81455884 = conservative MW of combined HAPs

Calculations:

115.263638970536 lbmols/yr Natural Gas Released * HAP mol fraction = 0.02 lbmols/yr HAPs released
0.0231126648863718lbmols/yr HAPs * 11.8145588408252 lb/lbmol HAPs = **0.27 lbs HAPs/yr**
0.273065939268313lbs HAPs/yr * 0.0005 ton/lb = **0.0001 ton HAPs/yr**

TEG Reboiler Fuel Consumption Emissions

Capacity Rating	0.125	MMBtu/hr	(Highline)
Fuel Heat Content Rating	900	Btu/scf	(Highline - conservative)
Operating Hours	8760	hours/yr	

NO_X

Emissions Factor: 100 lb/MMscf (AP-42 Table 1.4-1, June 1998)

Calculations: 100 lb/MMscf * 0.125 MMBtu/hr * 900^-1 scf/Btu * 8760 hr/yr * 10^6 Btu/MMBtu * 10^-6 MMscf/scf = 121.67 lb/yr

121.666666666667 lb/yr * 0.0005 ton/lb = **0.06 ton/yr**

CO

Emissions Factor: 84 lb/MMscf (AP-42 Table 1.4-1, June 1998)

Calculations: 84 lb/MMscf * 0.125 MMBtu/hr * 900^-1 scf/Btu * 8760 hr/yr * 10^6 Btu/MMBtu * 10^-6 MMscf/scf = 102.20 lb/yr

102.2 lb/yr * 0.0005 ton/lb = **0.05 ton/yr**

PM_{10}

Emissions Factor: 7.6 lb/MMscf (AP-42 Table 1.4-2, June 1998)

Calculations: 7.6 lb/MMscf * 0.125 MMBtu/hr * 900^-1 scf/Btu * 8760 hr/yr * 10^6 Btu/MMBtu * 10^-6 MMscf/scf = 9.25 lb/yr

9.24666666666667 lb/yr * 0.0005 ton/lb = **0.005 ton/yr**

VOC

Emissions Factor: 5.5 lb/MMscf (AP-42 Table 1.4-2, June 1998)

Calculations: 5.5 lb/MMscf * 0.125 MMBtu/hr * 900^-1 scf/Btu * 8760 hr/yr * 10^6 Btu/MMBtu * 10^-6 MMscf/scf = 6.69 lb/yr

6.69166666666667 lb/yr * 0.0005 ton/lb = **0.003 ton/yr**

Pb

Emissions Factor: 0.0005 lb/MMscf (AP-42 Table 1.4-2, June 1998)

Calculations: 0.0005 lb/MMscf * 0.125 MMBtu/hr * 900^-1 scf/Btu * 8760 hr/yr * 10^6 Btu/MMBtu * 10^-6 MMscf/scf = 0.00 lb/yr

0.000608333333333333 lb/yr * 0.0005 ton/lb = **0.0000003 ton/yr**

SO_X

Emissions Factor: 0.6 lb/MMscf (AP-42 Table 1.4-2, June 1998)

Calculations: 0.6 lb/MMscf * 0.125 MMBtu/hr * 900^-1 scf/Btu * 8760 hr/yr * 10^6 Btu/MMBtu * 10^-6 MMscf/scf = 0.73 lb/yr

0.73 lb/yr * 0.0005 ton/lb = **0.0004 ton/yr**

HAPs

Emissions Factor: 1.8879582 lb/MMscf (sum of HAPs denoted in AP-42 Table 1.4-3 and 1.4-4, June 1998)

Calculations: 1.8879582 lb/MMscf * 0.125 MMBtu/hr * 900^-1 scf/Btu * 8760 hr/yr * 10^6 Btu/MMBtu * 10^-6 MMscf/scf = 2.30 lb/yr

2.29701581 lb/yr * 0.0005 ton/lb = **0.001 ton/yr**

As calculated in the application, using a combination of Field Data and EPA data: **0.008 ton/yr**

Produced Water Tank Emissions

Wastewater Tank Capacity: 200bbl (Highline)
Potential Throughput 170bbl/yr (Highline, based on operating data)

VOC
Emissions Factor: 0.262lb/bbl (Colorado Air Pollution Control Division (CAPCD) - most conservative developed EF)

Calculations: 0.262 lb/bbl * 170 bbl/yr = 44.54lb/yr
44.54 lb/yr * 0.0005 ton/lb = **0.022ton/yr**

HAPs
Emissions Factor: 0.029lb/bbl (CAPCD - sum of emission factors for benzene and n-hexane. No other data available)
Calculations: 0.029 lb/bbl * 170 bbl/yr = 4.93lb/yr
4.93 lb/yr * 0.0005 ton/lb = **0.002ton/yr**

GRI-GLYCalc VERSION 4.0 - SUMMARY OF INPUT VALUES –
Case Name: Hardin Compressor Station - Permit #4161-01
File Name: G:\ARMB\Shawn\Hardin Design GLYCalc.ddf

Description: AFS: #003-0037
TEG Dehydration Unit 3481-3
J.W. Williams manufactured 1997
Installed: 2/20/2008
March 12, 2009 gas sample
Annual Hours of Operation: 8760.0 hours/yr

WET GAS: *(report altered to show precision not displayed by input report)*

Temperature: 60.00 deg. F
Pressure: 615.00 psig
Wet Gas Water Content: Saturated

Component	Conc. (vol %)
Carbon Dioxide	0.2400
Nitrogen	2.5200
Methane	96.7700
Ethane	0.3900
Propane	0.0600
Isobutane	0.0100
n-Butane	0.0100
Isopentane	0.0100
n-Pentane	0.0100
n-Hexane	0.0100
Other Hexanes	0.0100
Heptanes	0.0100
Benzene	1.6E-5
Toluene	1.3E-5
Ethylbenzene	1.2E-5
Xylenes	1.1E-5
C8+ Heavies	0.0100

DRY GAS:

Flow Rate: 5.0 MMSCF/day
Water Content: 1.0 lbs. H2O/MMSCF

LEAN GLYCOL:

Glycol Type: TEG
Water Content: 2.0 wt% H2O
Flow Rate: 0.66 gpm

PUMP:

Glycol Pump Type: Electric/Pneumatic

GRI-GLYCalc VERSION 4.0 - EMISSIONS SUMMARY
Case Name: Hardin Compressor Station - Permit #4161-01
File Name: G:\ARMB\Shawn\Hardin Design GLYCalc.ddf

UNCONTROLLED REGENERATOR EMISSIONS

Component	lbs/hr	lbs/day	tons/yr
Methane	0.7639	18.333	3.3458
Ethane	0.0225	0.539	0.0984
Propane	0.0100	0.241	0.0440
Isobutane	0.0035	0.085	0.0155
n-Butane	0.0049	0.118	0.0215
Isopentane	0.0068	0.164	0.0299
n-Pentane	0.0092	0.222	0.0405
n-Hexane	0.0213	0.510	0.0931
Other Hexanes	0.0154	0.370	0.0675
Heptanes	0.0529	1.270	0.2318
Benzene	0.0014	0.034	0.0063
Toluene	0.0022	0.052	0.0095
Ethylbenzene	0.0032	0.078	0.0142
Xylenes	0.0038	0.091	0.0166
C8+ Heavies	0.1830	4.392	0.8015
Total Emissions	1.1041	26.498	4.8360
Total Hydrocarbon Emissions	1.1041	26.498	4.8360
Total VOC Emissions	0.3178	7.627	1.3919
Total HAP Emissions	0.0319	0.766	0.1397
Total BTEX Emissions	0.0106	0.255	0.0466

V. Existing Air Quality

The area in which the compressor engine is to be located is currently designated as attainment/unclassifiable for the National Ambient Air Quality Standards for all criteria pollutants.

VI. Ambient Air Impact Analysis

The Department determined, based on the ambient air quality modeling submitted with the application for MAQP #4161-00, that the equipment to be operated as applied in MAQP #4161-00 would not cause or contribute to a violation of any ambient air quality standard.

Cirrus Consulting performed the modeling using the AMS/EPA Regulatory Model (AERMOD). The Department re-ran the AERMOD modeling files to verify the modeling results.

Emissions of NO_X and CO were modeled to demonstrate compliance with the Montana Ambient Air Quality Standards, the National Ambient Air Quality Standards, and the Class I and Class II Prevention of Significant Deterioration increments. The modeling demonstrated that the proposed compressor station as applied for in MAQP #4461-00 would not cause or contribute to a violation of the ambient CO or NO_X standards.

As shown in the table below, no significant increase in any criteria pollutants would occur as a result of this permitting action.

Facility Wide Emissions Change

		tons/yr				
		PM_{10}	NO_X	CO	VOC	SO_2
MAQP 4161-01	TOTAL:	0.30	8.08	16.08	5.28	0.02
MAQP 4161-00	TOTAL:	0.01	38.85	25.89	8.44	0.05
	Difference:	0.28	-30.78	-9.81	-3.16	-0.03

** Note: results rounded to two decimal places. Some calculations were carried with more precision than shown.

This permitting action would be expected to result in a decrease of all criteria pollutants except for a minute increase in $PM_{10.}$ Therefore, the Department determined that the impacts from this permitting action will be minor. The Department believes this permitting action will not cause or contribute to a violation of any ambient air quality standard.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted the following private property taking and damaging assessment.

YES	NO	
XX		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	XX	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	XX	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	XX	4. Does the action deprive the owner of all economically viable uses of the property?
	XX	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	XX	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	XX	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	XX	7a. Is the impact of government action direct, peculiar, and significant?
	XX	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	XX	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	XX	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

Based on this analysis, the Department determined there are no taking or damaging implications associated with this permit action.

VIII. Environmental Assessment

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

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

FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: Highline Exploration, Inc
Hardin Compressor Station
P.O. Box 20057
Tuscaloosa, AL 35402

Montana Air Quality Permit Number: 4161-01

Preliminary Determination Issued: 1/13/2010
Department Decision Issued: 1/29/2010
Permit Final: 2/17/2010

1. *Legal Description of Site*: The legal description of the site is the SW ¼ of the NW ¼ of Section 17, Township 1 South, Range 33 East in Big Horn County, Montana. This is near the town of Hardin, MT.

2. *Description of Project*: Highline is proposing to replace the currently installed 1,340 bhp compressor engine with an 830 bhp compressor engine, remove one of two permitted TEG dehydration units, and include additional de-minimis emissions of plant vent, blowdown emissions, produced water tank emissions, and revised emissions from TEG reboiler and regenerator vents.

3. *Objectives of Project*: The objective of the project is to reduce the capacity of the compressor station.

4. *Alternatives Considered*: In addition to the proposed action, the Department also considered the "no-action" alternative. The "no-action" alternative would deny issuance of the air quality preconstruction permit to the proposed facility. However, the Department does not consider the "no-action" alternative to be appropriate because Highline 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 MAQP #4161-01.

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			XX			Yes
B	Water Quality, Quantity, and Distribution			XX			Yes
C	Geology and Soil Quality, Stability and Moisture			XX			Yes
D	Vegetation Cover, Quantity, and Quality			XX			Yes
E	Aesthetics			XX			Yes
F	Air Quality			XX			Yes
G	Unique Endangered, Fragile, or Limited Environmental Resources			XX			Yes
H	Demands on Environmental Resource of Water, Air and Energy			XX			Yes
I	Historical and Archaeological Sites			XX			Yes
J	Cumulative and Secondary Impacts			XX			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

As shown in the Emissions Inventory of the Permit Analysis, allowable emissions as a result of conditions that would be placed in MAQP #4161-01 would be small on an industrial scale. Impacts to terrestrial and aquatic life and habitats would be expected to be minor.

B. Water Quality, Quantity and Distribution

The proposed project would not result in water usage or onsite wastewater discharge as a part of normal operations of the compressor engine. A produced water tank stores wastewater to be hauled off-site. Small amounts of water may be required for fugitive dust control of the access roads and the general facility property. Any impacts to the water quality, quantity, and distribution in the area would be expected to be minor.

C. Geology and Soil Quality, Stability and Moisture

Small amounts of water may be required for fugitive dust control of the access roads and the general facility property. Deposition of pollutants would be expected to be very minor due to the small amount of emissions as a result of the control requirements that would be in MAQP #4161-01 and the dispersion of those emissions. Impacts to geology and soil quality, stability, and moisture would be expected to be minor.

D. Vegetation Cover, Quantity, and Quality

Deposition of pollutants would be expected to be very minor due to the small amount of emissions as a result of the control requirements that would be in MAQP #4161-01. Furthermore, fugitive dust control would be required of the access roads and the general facility property. Therefore, any impacts to vegetation cover, quantity, and quality would be expected to be minor.

E. Aesthetics

The proposed project is to install a compressor engine in an already existing site. Therefore, a minor impact, if any, to aesthetics may be expected.

F. Air Quality

MAQP #4161-01 would require AFR and NSCR controls. These controls would greatly reduce the potential NO_x and CO emissions from this source. Conditions and limitations that would be placed in MAQP #4161-01 would ensure all emissions are small on an industrial scale. Therefore, impacts to the air quality would be expected to be minor.

G. Unique Endangered, Fragile, or Limited Environmental Resources

As described in Section 7.F above, conditions and limitations that would be placed in MAQP #4161-01 would ensure all emissions are controlled and results in emissions that are small on an industrial scale.

As depicted in the table below, the net emissions change from MAQP #4161-00 to #4161-01 is mostly a reduction of emissions. Any affect to endangered, fragile, or limited environmental resources as a result of the very slight increase in PM_{10} emissions would be expected to be very minor, if any discernable amount at all.

Facility Wide Emissions Change

		tons/yr				
		PM_{10}	NO_X	CO	VOC	SO_2
MAQP 4161-01	TOTAL:	0.30	8.08	16.08	5.28	0.02
MAQP 4161-00	TOTAL:	0.01	38.85	25.89	8.44	0.05
	Difference:	0.28	-30.78	-9.81	-3.16	-0.03

Furthermore, the Department determined that minor, if any, disturbance to endangered, fragile, or limited environmental resources would result from the issuance of MAQP #4161-00. Therefore, minor, if any, disturbance to endangered, fragile, or limited environmental resources would result from the issuance of MAQP #4161-01.

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

The project is to install a natural gas compressor engine. This engine would be fired on Natural Gas. However, the engine is required to ensure proper distribution of natural gas through the pipeline.

As described in Section 7.B above, the proposed project would not result in water usage or onsite wastewater discharge as a part of normal operations of the compressor engine. However, small amounts of water may be required for fugitive dust control of the access roads and the general facility property.

As described in Section 7.F above, impacts to the air quality would be expected to be minor.

Overall, the demands on the environmental resources of water, air and energy would be expected to be minor.

I. Historical and Archaeological Sites

The Department contacted the Montana Historical Society, State Historical Preservation Office (SHPO), in an effort to identify any historical and archaeological sites that may be present in the proposed area of construction and operation for MAQP #4161-00. The search results showed no previously recorded historical or archaeological resources of concern within the area. The current project would take place within an already developed compressor station site. Therefore, with no historical or archaeological resources of concern recorded or discovered during installation of this station, no impacts would be expected.

J. Cumulative and Secondary Impacts

Potential physical and biological effects of any individual considerations above would be expected to be minor. Collectively, the potential cumulative and secondary impacts would be expected to be minor.

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			XX			Yes
B	Cultural Uniqueness and Diversity			XX			Yes
C	Local and State Tax Base and Tax Revenue			XX			Yes
D	Agricultural or Industrial Production			XX			Yes
E	Human Health			XX			Yes
F	Access to and Quality of Recreational and Wilderness Activities			XX			Yes
G	Quantity and Distribution of Employment			XX			Yes
H	Distribution of Population			XX			Yes
I	Demands for Government Services			XX			Yes
J	Industrial and Commercial Activity			XX			Yes
K	Locally Adopted Environmental Plans and Goals					XX	Yes
L	Cumulative and Secondary Impacts			XX			Yes

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

A. Social Structures and Mores

The proposed project would not be expected to cause disruption to any social structures or mores in the area. The project would not be expected to change the predominate use of the land in the surrounding area and the project is replacing a compressor engine at an already existing site. Impacts to social structures and mores, if any, would be expected to be minor.

B. Cultural Uniqueness and Diversity

The predominant use of the area would be expected to remain the same. No significant employment would be expected as a result of this project. The cultural uniqueness and diversity of the area would be expected to have only minor, if any, affects imparted by this project.

C. Local and State Tax Base and Tax Revenue

The proposed project would result in minor impacts to the local and state tax base and tax revenue. The proposed project would require temporary construction activities. Overall, any impacts to the local and state tax base and tax revenue would be expected to be minor.

D. Agricultural or Industrial Production

Deposition of pollutants would be expected as a result of this project. However, potential emissions would be small on an industrial scale. Furthermore, MAQP #4461-00 would require control of fugitive dust emissions from the general facility area. The project is replacing an engine at an already established site. Agricultural impacts would be expected to be minor.

E. Human Health

MAQP #4161-01 contains limitations and conditions derived from rules designed to protect human health. Overall, any impacts to human health would be expected to be minor.

F. Access to and Quality of Recreational and Wilderness Activities

This project is replacing a compressor engine at an already existing site. Therefore, any impacts to the access and quality of recreational and wilderness activities would be expected to be minor.

G. Quantity and Distribution of Employment

It is not expected that any more than a negligible affect to the quantity and distribution of employment would result from this project. Impacts, if any, would be expected to be minor.

H. Distribution of Population

It is not expected that any more than a negligible affect to the quantity and distribution of employment would result from this project. No other factors affecting distribution of population is apparent. Impacts, if any, would be expected to be minor.

I. Demands for Government Services

It would be expected that there would be demand for government services associated with compliance activities and acquiring the proper permits related to this project. Overall, demands for government services would be minor due to the size/classification of this facility.

J. Industrial and Commercial Activity

Only minor impacts would be expected from industrial and commercial activity because the compressor engine would replace an already existing engine at an established site. There may be a slight increase in activity during installation of the compressor station; however, this would be temporary.

K. Locally Adopted Environmental Plans and Goals

The Department is not aware of any locally adopted environmental plans and goals affected by issuing MAQP #4161-01. The MAQP would contain limits for protecting air quality and keeping facility emissions in compliance with air quality standards.

L. Cumulative and Secondary Impacts

Potential economic and social effects of any individual considerations above would be expected to be minor. The Department has determined that collectively, the potential cumulative and secondary impacts would be expected to be minor.

Recommendation: No Environmental Impact Statement (EIS) is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permitting action is for the installation and operation of a natural gas compressor engine at an existing station. MAQP #4161-01 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, and previous information obtained from the Montana Historical Society – State Historic Preservation Office, and the Natural Resource Information System – Montana Natural Heritage Program

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