AIR QUALITY PERMIT

Issued To: Hiland Partners, LP
Bakken Gathering Plant
P.O. Box 5103
Enid, Oklahoma 73702

Permit: #3331-05
Application Complete: 5/25/07
Preliminary Determination Issued: 6/26/07
Department Decision Issued: 07/12/07
Permit Final: 07/28/07
AFS: #083-0038

An air quality permit, with conditions, is hereby granted to Hiland Partners, LP (HPL), 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

The facility is located approximately 8 miles northwest of Sidney, Montana, in the NE ¼ of the NW ¼ of Section 3, Township 23 North, Range 58 East, in Richland County, Montana. The facility is known as the Bakken Gathering Plant.

B. Current Permit Action

On May 25, 2007, the Department of Environmental Quality (Department) received a complete application from HPL for the installation and operation of a 44.82 million British thermal unit per hour (MMBtu/hr) capacity natural gas-fired hot oil heater and the removal of an existing 25 MMBtu/hr capacity hot oil heater from permitted operations. The proposed natural gas-fired hot oil heater is an affected facility as defined in 40 Code of Federal Regulations (CFR) 60, Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. Further, HPL requested an administrative permit amendment to reduce the permitted maximum rated design capacity of the Unit #7 natural gas-fired compressor engine from 930 horsepower (hp) to 740 hp.

SECTION II. Conditions and Limitations

A. Emission Limitations

1. HPL shall not operate more than seven natural gas compressor engines at any given time. The maximum rated design capacities shall not exceed (ARM 17.8.749):

Unit 1	912 hp
Unit 2	912 hp
Unit 3	912 hp
Unit 4	185 hp
Unit 5	500 hp
Unit 6	185 hp
Unit 7	740 hp

2. The Units 1 – 5 compressor engines shall each be a rich-burn engine controlled with non-selective catalytic reduction (NSCR) units and air-to-fuel ratio (AFR) controllers. The pound per hour (PPH) emission limits for each of the engines shall be determined using the following equation and pollutant specific grams per horsepower-hour (g/hp-hr) emission factors (ARM 17.8.752):

   Equation

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

Emission Factors	Units 1 – 5
Nitrogen Oxides (NO_x)	1.0 g/hp-hr
Carbon Monoxide (CO)	2.0 g/hp-hr
Volatile Organic Compounds (VOC)	1.0 g/hp-hr

3. The Units 6 and 7 compressor engines shall both be four-stroke rich-burn engines controlled with NSCR units and AFR controllers. The PPH emission limits for each of the engines shall be determined using the following equation and pollutant specific g/hp-hr emission factors (ARM 17.8.752):

   Equation

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

Emission Factors	Units 6 & 7
NO_x	1.0 g/hp-hr
CO	1.0 g/hp-hr
VOC	1.0 g/hp-hr

4. The natural gas-fired hot oil heater shall be limited to a maximum heat input capacity of 44.82 MMBtu/hr (ARM 17.8.749).

5. The natural gas-fired hot oil heater shall be limited to the following emission limits (ARM 17.8.752):

NO_x	0.112 lb/MMBtu
CO	0.045 lb/MMBtu

6. HPL 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).

7. HPL 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).

8. HPL shall treat all unpaved portions of the haul roads, access roads, parking lots, or general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.7 (ARM 17.8.749).

9. Loading tank trucks shall be restricted to the use of submerged fill and dedicated normal service (ARM 17.8.749).

10. HPL shall control VOC emitted from tank trucks during loading through use of a vapor return line (ARM 17.8.749 and 17.8.752).

11. The 1,135-hp emergency/backup generator shall be limited to 500 hours of operation during any rolling 12-month time period (ARM 17.8.749).

12. HPL shall only burn diesel fuel with a sulfur content less than 0.5% in the 1,135-hp emergency/backup generator (ARM 17.8.752).

13. HPL shall limit the use of the emergency flare to 35 million standard cubic feet per year (MMScf/yr) of gas, on a 12-month rolling basis. Any calculations used to establish emissions shall be based on the most recent AP-42 factors, unless otherwise allowed by the Department (ARM 17.8.749, 17.8.1204).

14. HPL shall comply with all applicable standards, limitations, reporting, record keeping, and notification requirements contained in 40 CFR 60, Subpart A and Subpart KKK (ARM 17.8.340 and 40 CFR 60, Subpart A and Subpart KKK).

15. HPL shall comply with all applicable standards, limitations, reporting, record keeping, and notification requirements contained in 40 CFR 60, Subpart Dc (ARM 17.8.340 and 40 CFR 60, Subpart Dc).

B. Inspection and Repair Requirements

1. Each calendar month, all new fugitive piping components (valves, flanges, pump seals, open-ended lines) installed as part of permitting action #3331-04 shall be inspected for leaks. For purposes of this requirement, detection methods incorporating sight, sound, or smell are acceptable (ARM 17.8.105 and ARM 17.8.752).

2. HPL shall (ARM 17.8.105 and ARM 17.8.752):

   a. Make a first attempt at repair for any leak not later than 5 calendar days after the leak is detected; and

   b. Repair any leak as soon as practicable, but no later than 15 calendar days after it is detected, except as provided in Section II.B.3.

3. Delay of repair of equipment for which a leak has been detected will be allowed if repair is technically infeasible without a source shutdown. Such equipment shall be repaired before the end of the first source shutdown after detection of the leak (ARM 17.8.752).

C. Testing Requirements

1. HPL shall test the compressor engines for NO_X and CO, concurrently, to demonstrate compliance with the emission limits as calculated in Section II.A.2 and II.A.3. The testing shall be conducted an every 4-year basis or according to another testing/ monitoring schedule as may be approved by the Department in writing (ARM 17.8.105 and ARM 17.8.749).

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

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

D. Operational Reporting Requirements

1. HPL 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. HPL shall document, by month, the hours of operation of the 1,135-hp emergency/ backup generator. By the 25th day of each month, HPL shall calculate the total hours of operation of the 1,135-hp emergency/backup generator for the previous month. The monthly information shall be used to verify compliance with the rolling 12-month limitation in Section II.A.11. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

3. HPL shall document, by month, the amount of natural gas controlled by the emergency flare, in MMScf. By the 25th day of each month, HPL shall calculate the total amount of gas combusted by the flare for the previous month. The monthly information shall be used to verify compliance with the rolling 12-month limitation in Section II.A.13. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

4. HPL 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).

5. HPL shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit as required by ARM 17.8.1204(3)(b). The annual certification shall comply with the certification requirements of ARM 17.8.1207. The annual certification shall be submitted along with the annual emission inventory information (ARM 17.8.749 and ARM 17.8.1204).

E. Notification

1. Prior to installation, HPL shall provide the Department with written notification of the maximum rated design capacities of each compressor engine identified in Section II.A.1 (ARM 17.8.749).

2. HPL shall provide the Department with written notification of the actual start-up date of each compressor engine identified in Section II.A.1 within 15 days after the actual start-up date of the affected unit (ARM 17.8.749).

3. Within 30 days of commencement of construction of the 44.82 MMBtu/hr heat input capacity natural gas-fired hot oil heater identified in Section II.A.4, HPL shall provide the Department with written notification of commencement of construction of the affected unit (ARM 17.8.749 and 40 CFR 60, Subpart Dc).

4. Within 15 days after the actual start-up date of the 44.82 MMBtu/hr heat input capacity natural gas-fired hot oil heater identified in Section II.A.4, HPL shall provide the Department with written notification of the actual start-up date of the affected unit (ARM 17.8.749 and 40 CFR 60, Subpart Dc).

F. Recordkeeping Requirements

1. HPL shall maintain a record that only diesel fuel with a sulfur content less than 0.5% was burned in the 1,135-hp emergency/backup generator, for use in verifying compliance with the limitation in Section II.A.12 (ARM 17.8.749).

2. A record of each monthly leak inspection required by Section II.B.1 of this permit shall be kept on file with HPL. Inspection records shall include, at a minimum, the following information (ARM 17.8.749):

   a. Date of inspection;

   b. Findings (may indicate no leaks discovered or location, nature, and severity of each leak);

   c. Leak determination method;

   d. Corrective action (date each leak repaired and reasons for any repair interval in excess of 15 calendar days); and

   e. Inspector's name and signature.

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

SECTION III: General Conditions

A. Inspection – HPL 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 (e.g., 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 HPL fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving HPL 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 the Board does not issue a stay, 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, as amended by the 1991 Legislature, failure to pay the annual operation fee by HPL 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
Hiland Partners, LP
Bakken Gathering Plant
Permit #3331-05

I. Introduction/Process Description

Hiland Partners, LP (HPL), is permitted for the construction and operation of the Bakken Gathering Plant. The facility will extract natural gas liquids from field gas and is located in the NE ¼ of the NW ¼ of Section 3, Township 23 North, Range 58 East, in Richland County, Montana.

A. Permitted Equipment

The facility consists of the following permitted equipment:

ID	Equipment
Unit 1	Natural gas-fired, rich-burn compressor engine with a maximum rated design capacity equal to or less than 912 horsepower (hp)
Unit 2	Natural gas-fired, rich-burn compressor engine with a maximum rated design capacity equal to or less than 912 hp
Unit 3	Natural gas-fired, rich-burn compressor engine with a maximum rated design capacity equal to or less than 912 hp
Unit 4	Natural gas-fired, rich-burn compressor engine with a maximum rated design capacity equal to or less than 185 hp
Unit 5	Natural gas-fired, rich-burn compressor engine with a maximum rated design capacity equal to or less than 500 hp
Unit 6	Natural gas-fired, rich-burn compressor engine with a maximum rated design capacity equal to or less than 185 hp
Unit 7	Natural gas-fired, rich-burn compressor engine with a maximum rated design capacity equal to or less than 740 hp
Hot Oil Heater	40 CFR 60, Subpart Dc, affected Natural gas-fired Hot Oil Heater with a maximum rated heat input capacity of 44.82 million British thermal units per hour (MMBtu/hr)
Fugitive	Fractionation Unit, including new debutanizer and other plant-wide leaks
Dehy Unit #1	Ethylene Glycol (EG) dehydrator and associated still vent (9 million standard cubic feet per day (MMScfd))
Dehy Unit #2	EG dehydrator and associated still vent (11 MMScfd)
Truck Loading	Truck loading @ 3,375 barrels per day (bbl/day); submerged fill and vapor return lines
Tanks #1 & 2	2-400 bbl condensate storage tanks
Tank #3	1-500 gallon diesel storage tank
Emergency Generator	Diesel-fired backup/emergency generator with a maximum rated design capacity equal to or less than 1,135-hp.
Emergency Flare	Emergency Flare with 0.5 MMBtu/hr pilot

B. Source Description

The Bakken Gathering Plant extracts natural gas liquids from field gas. The fractionation unit (including a depropanizer and a debutanizer) consists of a hot oil heater, several reboilers, multiple holding tanks, an electric refrigeration compressor, and a truck loading station. The EG dehydration units remove moisture from the gas prior to transmission.

C. Permit History

On May 4, 2004, the Department of Environmental Quality (Department) received a complete Montana Air Quality Permit Application from Hiland Partners, LLC (HPLLC) for the construction and operation of the Bakken Gathering Plant. **Permit #3331-00** became final and effective on July 3, 2004.

On August 17, 2004, the Department received a complete Montana Air Quality Permit Application from HPLLC for the modification of Permit #3133-00. Specifically, HPLLC requested the following: 1) to add a natural gas compressor engine with a maximum capacity equal to or less than 500-hp; 2) to add a 1,135-hp backup/emergency diesel generator and an associated 500-gallon diesel storage tank; and 3) to remove the 10 MMBtu/hr hot oil heater. **Permit #3331-01** replaced Permit #3331-00.

On June 14, 2005, the Department received a letter from HPLLC for an administrative amendment to Permit #3331-01. Specifically, HPLLC requested to add an 11 MMScfd refrigeration unit, a standby electric compressor, and a dehydrator reboiler and still vent. The potential emissions from the proposed equipment were less than the de minimis threshold of 15 tons per year (tpy). The permit action updated the permit analysis with the new equipment. An emission inventory for HPLLC is contained in Section IV of the permit analysis. **Permit #3331-02** replaced Permit #3331-01.

On November 10, 2005, the Department received a letter from HPL for an administrative amendment to Permit #3331-02. Specifically, HPL requested to change the corporate name on Permit #3331-02 from HPLLC to HPL and update the permit to reflect the current permit language and rule references used by the Department. **Permit #3331-03** replaced Permit #3331-02.

On March 17, 2006, the Department received an application from HPL for a number of process changes to eliminate production bottlenecks and ensure processing capability for 20 MMScfd of natural gas. The project included installation of two natural gas-fired compressor engines up to 185-hp and 930-hp, as well as other process improvements. The application included an administrative amendment request to reduce the maximum rating for Unit #1 from 1,478 hp to 912 hp. HPL submitted further information on April 17, 2006, including a request to reduce the maximum rating for Unit #2 from 1,478 hp to 912 hp, and permit the use of an emergency flare for up to 35 million standard cubic feet per year (MMScf/yr). Permit **#3331-04** replaced Permit #3331-03.

D. Current Permit Action

On May 25, 2007, the Department received a complete application from HPL for the installation and operation of a 44.82 MMBtu/hr capacity natural gas-fired hot oil heater and the removal of an existing 25 MMBtu/hr capacity hot oil heater from permitted operations. The proposed natural gas-fired hot oil heater is an affected facility as defined in 40 CFR 60, Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. Further, HPL requested an administrative permit amendment to reduce the permitted maximum rated design capacity of the Unit #7 natural gas-fired compressor engine from 930 hp to 740 hp. **Permit #3301-05** replaces Permit #3301-04.

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 analysis associated with each change to the permit.

II. Applicable Rules and Regulations

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

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

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq*., Montana Code Annotated (MCA).

   HPL 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 17.8.222 Ambient Air Quality Standard for Lead; and
10. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}.

HPL 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, HPL 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 MMBtu 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. HPL will utilize natural gas for operating its fuel burning equipment, which will meet this limitation.

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

7. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR 60, Standards of Performance for New Stationary Sources (NSPS). This facility is considered an NSPS-affected facility under 40 CFR 60 and is subject to the requirements of the following Subparts.

   a. Subpart A - General Provisions. This subpart applies to all equipment or facilities subject to an NSPS Subpart as listed below.

   b. Subpart KKK - Standards of Performance for Onshore Natural Gas Processing: Sulfur Dioxide (SO_2) Emissions. HPL is an NSPS-affected source because it meets the definition of a natural gas processing plant as defined in 40 CFR 60, Subpart KKK.

c. Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. HPL is an NSPS-affected source because the natural gas-fired hot oil heater with a maximum rated heat input capacity of 44.82 MMBtu/hr meets the definition of an affected source as defined in 40 CFR 60, Subpart Dc.

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:

a. 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. Based on the information submitted by HPL, the facility is not subject to the provisions of 40 CFR Part 63, Subpart HH because the facility is not a major source of Hazardous Air Pollutants (HAP).

b. 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. Based on the information submitted by HPL, the facility is not subject to the provisions of 40 CFR 63, Subpart HHH because the facility is not a major source of HAPs.

c. 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. Based on the information submitted by HPL, the Bakken Gathering Plant is not subject to the provisions of 40 CFR 63, Subpart ZZZZ because although the facility utilizes RICE with a maximum rated design capacity greater than 500-hp, the facility is not a major source of HAPs.

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. HPL must demonstrate compliance with the ambient air quality standards with a stack height that does not exceed Good Engineering Practices (GEP). The proposed heights of the new or altered stacks for HPL are 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. HPL submitted the appropriate permit application and fee for the current permit action.

2. ARM 17.8.505 When Permit Required--Exclusions. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

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

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

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

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit alteration to construct, alter or use any air contaminant sources that have the Potential to Emit (PTE) greater than 25 tpy of any pollutant. The Bakken Gathering Plant has a PTE greater than 25 tons per year of nitrogen oxides (NO_X), carbon monoxide (CO), and volatile organic compounds (VOC); therefore, an air quality permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.

4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, alteration, or use of a source. HPL 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. HPL submitted an affidavit of publication of public notice for the April 1, 2007, issue of the *Sidney Herald*, a newspaper of general circulation in the Town of Sidney in Richland 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 and determination 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 HPL 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.

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

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

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

This facility is not a major stationary source since this facility is not a listed source and the facility's PTE is below 250 tpy 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 tpy of any pollutant;

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

   c. PTE > 70 tpy 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 Air Quality Permit #3331-04 for HPL, the following conclusions were made:

   a. The facility's allowable PTE is less than 100 tpy for any pollutant.

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

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

   d. This facility is subject to current NSPS (40 CFR 60, Subpart A, Subpart Dc, and Subpart KKK).

   e. This facility is not subject to any current National Emission Standards for Hazardous Air Pollutants (NESHAP) standards.

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

   g. This source is not an Environmental Protection Agency (EPA) designated Title V source.

   h. As allowed by ARM 17.8.1204(3), the Department may exempt a source from the requirement to obtain an air quality operating permit by establishing federally enforceable limitations which limit that source's potential to emit.

      i. In applying for an exemption under this section, the owner or operator of the source shall certify to the Department that the source's potential to emit does not require the source to obtain an air quality operating permit.

      ii. Any source that obtains a federally enforceable limit on potential to emit shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit.

HPL has taken federally enforceable permit limits to keep potential CO emissions below major source permitting thresholds by limiting the amount of natural gas combusted in the emergency flare to less than 35 MMScf per rolling 12-months. Therefore, the facility is not a major source as defined under the Title V program and an operating permit is not required.

The Department determined that the annual reporting requirements contained in the permit are sufficient to satisfy this requirement. However, if minor sources subject to NSPS are required to obtain a Title V Operating Permit, HPL will be required to obtain a Title V Operating Permit.

III. BACT Determination

A BACT determination is required for each new or altered source. HPL shall install on the new or altered source the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. Under the current permit action, HPL submitted a BACT analysis addressing some available methods of controlling NO_x and CO (primary pollutants of concern from natural gas combustion), as well as PM_{10}, VOC, and SO_2 emissions from the proposed natural gas-fired hot oil heater with a maximum rated heat input capacity of 44.82 MMBtu/hr. The Department reviewed these methods, as well as previous BACT determinations for similar permitted sources.

A. NO_x BACT Analysis and Determination

NO_x will be formed during the combustion of natural gas in the natural gas-fired hot oil heater. NO_x formation occurs by three fundamentally different mechanisms. The principal mechanism of NO_x in natural gas combustion is thermal NO_x. The thermal NO_x mechanism occurs through the thermal dissociation and the subsequent reaction of nitrogen (N_2) and oxygen (O_2) molecules in the combustion air. Most NO_x formed through the thermal NO_x mechanism occurs in the high temperature flame zone near the burners. The formation of thermal NO_x is affected by three factors: (1) oxygen concentration, (2) peak temperature, and (3) time of exposure at peak temperature. As these three factors increase, NO_x emission levels increase.

The second mechanism of NO_x formation, called prompt NO_x, occurs through early reaction of nitrogen molecules in the combustion air and hydrocarbon radicals from the fuel. Prompt NO_x reactions occur within the flame and are usually negligible when compared to the amount of NO_x formed through the thermal NO_x mechanism. However, prompt NO_x levels may become significant with the use of ultra-low-NO_x burners.

The third mechanism of NO_x formation, called fuel NO_x, stems from the evolution and reaction of fuel-bound nitrogen compounds with oxygen. Due to the characteristically low fuel nitrogen content of natural gas, NO_x formation through the fuel NO_x mechanism for units fired with natural gas is negligable.

1. Available NO_x Control Technology Identification

NO_x emissions from the natural gas-fired hot oil heater can be reduced by several different methods/technologies. The following NO_x control strategies/technologies were analyzed for application to the natural gas-fired hot oil heater at the HPL facility. These control strategies/technologies can be applied individually or in combination.

a. Selective Catalytic Reduction (SCR);
b. Selective Non-Catalytic Reduction (SNCR);
c. Low Temperature Oxidation (LoTOx);
d. Dry Technologies;
e. Wet Controls;
f. Innovative Catalytic Systems (SCONOX and XONON);
g. Flue Gas Recirculation (FGR); and
h. No Additional Control and Good Combustion Practices.

The following text provides brief explanation and analysis of each control technology/strategy listed above. A complete BACT analysis is contained in the application for Permit #3331-05.

a. SCR

SCR is a post-combustion gas treatment technique for the reduction of nitric oxide (NO) and nitrogen dioxide (NO_2) in the exhaust stream to molecular nitrogen, water, and oxygen. In the SCR process, aqueous or anhydrous ammonia (NH_3) or urea is used as a reducing agent, and is injected into the flue gas upstream of the catalyst bed. NO_x and NH_3 combine at the catalyst surface, forming an ammonium salt intermediate that subsequently decomposes to produce elemental nitrogen and water. The ratio of NH_3 to NOx can be varied to achieve the desired (required) level of NOx reduction; however, increasing the ratio to greater than 1 results in increased un-reacted NH_3 passing through the catalyst and entering the atmosphere (NH_3 "slip"). The basic chemical reactions are:

$$4NH_3 + 4NO + 0_2 \rightarrow 4N_2 + 6H_2O$$
$$8NH_3 + 6NO_2 \rightarrow 7N_2 + 12H_2O$$

Catalysts typically are made up of a noble metal, a base metal oxide (titanium or vanadium), or a zeolite based material. SCR works best for flue gas temperatures between 400°F and 800°F, when a minimum amount of O_2 is present. The use of zeolite catalyst can extend the upper temperature range to a maximum of 1100°F. The catalyst and catalyst housing are relatively large and contain a large amount of surface area for the catalytic reaction to occur. The SCR system is usually operated in conjunction with a wet injection and/or low NO_x combustors to limit NH_3 "slip". The NO_x control efficiency for an SCR system is typically between 60% and 90%. Disposal of spent catalyst can be an issue as base metal catalysts constitute a hazardous waste and must be disposed of accordingly.

b. SNCR

The use of SNCR technology is based on the non-catalytic decomposition of NO_x in the flue gas to nitrogen and water using a reducing agent (e.g., ammonia or urea). The reactions take place at much higher temperatures than in an SCR, typically between 1650°F and 2200°F.

c. LoTOx

With the LoTOx control alternative, oxygen and nitrogen are injected at approximately 380°F to transform NO and NO_2 into N_2O_5 using an ozone generator and a reactor duct. N_2O_5, which is soluble, dissociates into nitrogen and water in a wet scrubber. This system requires oxygen, nitrogen, a cooling water supply, and treatment for the effluent. The estimated control efficiency for the system is 80% to 90%.

d. Dry Technologies

Dry technologies are identified as Dry Low NO_x (DLN), Low NO_x burners, Dry Low Emissions (DLE), or SoLoNOx. These technologies incorporate multiple stage combustors that may include pre-mixing, fuel rich zones that reduce the amount of oxygen available for NO_x formation, fuel lean zones that control NO_x production through lower combustion temperatures, or a combination of these strategies. A quench zone may also be present to control gas temperature. Almost all new process heaters, including the proposed unit, incorporate some form of this control strategy into their design. These systems typically result in 30% to 60% NO_x reduction.

e. Wet Controls

Water or steam injection technology has been well demonstrated in suppressing NO_x emissions from gas turbines but these technologies are not often used to control NO_x emissions from process heaters. The injected fluid increases the thermal mass by dilution and thereby reduces peak temperatures in the flame zone. NO_x reduction efficiency increases as the water-to-fuel ratio increases. For maximum efficiency, the water must be atomized and injected with homogeneous mixing throughout the combustor. This technique reduces the thermal NO_x, but may actually increase the production of fuel NO_x. Both CO and VOC emissions may also increase while using water injection. Depending on the initial NO_x concentrations, wet injection may reduce NO_x by 60% or more.

f. Innovative Catalytic Systems

Innovative catalytic technologies such as SCONOX and XONON integrate catalytic oxidation and absorption technology. In the SCONOX process, CO and NO are catalytically oxidized to CO_2 and NO_x; the NO_2 molecules are subsequently absorbed on the treated surface of the SCONOX catalyst. SCONOX technology is not normally applicable for process heater systems since steam is required in the process. In addition, HAPs may increase from the SCONOX technology.

The XONON system is applicable to diffusion and lean-premix combustors. XONON utilizes a flameless combustion system where fuel and air react on a catalyst surface, preventing the formation of NO_x while achieving low CO levels. The overall combustion system consists of the partial combustion of the fuel in the catalyst module followed by completion of combustion downstream of the catalyst. Initial partial combustion produces no NO_x and downstream combustion occurs in a flameless homogeneous reaction that produces almost no NO_x. The system is totally contained within the combustor and is not an add-on process. These systems are not well demonstrated for application to process heaters such as that proposed.

g. Flue Gas Recirculation (FGR)

FGR reduces NO_x emissions by re-circulating a portion of the exhaust flue gas into the main combustion chamber of the process heater. This process reduces the peak combustion temperature and lowers the percentage of oxygen in the combustion air/flue gas mixture, thereby reducing the formation of thermal NO_x caused by high flame temperature. However, as the formation of NO_x is reduced the formation of CO increases thereby creating a negative environmental impact.

h. No Additional Control/Good Combustion Practices

Natural gas fired process heaters are inherently low emitters of air pollution due to characteristics of the natural gas fuel fired to operate the boiler. The proposed natural gas-fired hot oil heater with a maximum heat input capacity of 44.82 MMBtu/hr has the PTE 21.99 tons of NO_x per year.

2. Technical Feasibility Analysis

The following available control technologies are considered technically infeasible, in this case:

- LoTOx requires a cooling water source and a waste water effluent treatment process which is not readily available at the existing facility.
- Wet control systems are generally used for the control of NO_x emissions from combustion turbines and are not sufficiently proven as a practical and feasible means of controlling emissions from process heaters such as that proposed.
- Innovative catalytic systems are not normally applicable for process heaters such as that proposed since steam is required for proper operation and/or these systems are not well demonstrated for application to process heaters such as that proposed.

3. Ranking of Remaining Control Technologies

The following table ranks the remaining technically feasible control technologies by control efficiency;

Control Technology	**Control Efficiency (NOx % reduction)**
SCR	60-90%
SNCR	30-60%
Dry Technologies (DLN)	30-60%
FGR	~50%
No Additional Control/Good Combustion Practices	---

4. Evaluation of Remaining Control Technologies

The following table provides an analysis of the cost-effectiveness (dollars per ton of NO_x reduced) for the remaining available and technically feasible NO_x control technologies.

Control Technology	Cost-Effectiveness ($/ton NOx reduced)
SCR	$6952
SNCR	$4152
Dry Technologies (DLN)	$4059
FGR	$4822
Process Limitations and Good Combustion Practices	Variable
No Additional Control	---
A complete economic analysis of the available and technically feasible control options is contained in the application for Permit #3331-05 and is on file with the Department.	

Based on the information contained in the above table, the Department determined that the cost-effectiveness for the available and technically feasible add-on NO_x controls is above industry norms making these technologies economically infeasible for the proposed project.

5. Select NO_x BACT

In summary, the Department analyzed the use of SCR, SNCR, LoTox, Wet Controls, Innovative Catalytic Systems, and FGR as possible NO_x control strategies/technologies for the proposed 44.82 MMBtu/hr heat input capacity natural gas-fired hot oil heater at the HPL facility. Due to various technical and economic feasibility factors associated with these control strategies/technologies and the relatively low NO_x emissions resulting from the proposed process heater, as previously discussed, the Department determined that combustion of pipeline quality natural gas only and proper operation and maintenance of the proposed 44.82 MMBtu/hr heat input capacity natural gas-fired hot oil heater with no additional control and an emission limit of 0.112 lb NO_x/MMBtu constitutes BACT, in this case.

B. CO BACT Analysis and Determination

CO emissions in a combustion process are the result of incomplete fuel combustion.

1. Available CO control Technologies

This BACT analysis considers the use of the following control strategies/technologies for the reduction of CO from the proposed 44.82 MMBtu/hr heat input capacity natural gas-fired hot oil heater:

a. Catalytic and Thermal Oxidizers; and

b. Proper Design and Good Combustion Practices.

The following text provides brief explanation and analysis of each control technology/strategy listed above. A complete BACT analysis is contained in the application for Permit #3331-05.

a. Catalytic and Thermal Oxidation

Oxidation of CO in post combustion gases may be accomplished through thermal oxidation with or without the assistance of a catalyst. Oxidizers or incinerators use heat to destroy CO in the gas stream. Incineration is an oxidation process that

ideally breaks down the molecular structure of an organic compound into carbon dioxide and water vapor. Temperature, residence time, and turbulence of the system affect CO control efficiency. A thermal oxidizer/incinerator generally operates at temperatures between 1450°F and 1600°F.

Catalytic oxidation/incineration is similar to thermal oxidation/incineration; however, catalytic incineration allows for oxidation at temperatures ranging from 600°F to 1000°F. The catalyst systems that are used are typically metal oxides such as nickel oxide, copper oxide, manganese dioxide, or chromium oxide. Noble metals such as platinum and palladium may also be used. Because the catalytic reaction happens at a decreased temperature (600-1000ºF), exhaust stream re-heat would not be required for this application. Due to exhaust stream re-heat, thermal oxidation would be less economical than catalytic oxidation for the proposed process heater. Catalytic and thermal oxidation CO control technologies typically achieve 80% to 90% CO control efficiency.

b. Proper Design and Good Combustion Practices.

Good combustion practices including the control of combustion temperature, residence time, and available oxygen as well as the proper design and operation of the affected equipment can significantly minimize CO emissions without additional control. The proposed natural gas-fired hot oil heater with a maximum heat input capacity of 44.82 MMBtu/hr has the PTE 8.83 tons of CO per year.

2. Technical Feasibility Analysis

All previously listed and available CO control strategies/technologies are technically feasible for the proposed 44.82 MMBtu/hr heat input capacity natural gas-fired hot oil heater.

3. Ranking of Remaining Control Technologies

Control Technology	**Control Efficiency (NO_x % reduction)**
Catalytic Oxidation	80-90%
Thermal Oxidation	80-90%
No Additional Control/Good Combustion Practices	---

4. Evaluation of Remaining Control Technologies

The following table provides an analysis of the cost-effectiveness (dollars per ton of CO reduced) for the available and technically feasible CO control technologies.

Control Technology	**Cost-Effectiveness ($/ton NO_x reduced)**
Catalytic Oxidation	$34,629
Thermal Oxidation	$33,334
No Additional Control/Good Combustion Practices	---
• A complete economic analysis of the available and technically feasible control options is contained in the application for Permit #3331-05 and is on file with the Department. • Assume 90% control for catalytic and thermal oxidation technologies	

Based on the information contained in the above table, the Department determined that the cost-effectiveness for the available and technically feasible CO controls is well above industry norms making these technologies economically infeasible for the proposed project.

5. Select CO BACT

In summary, the Department analyzed the use of catalytic and thermal oxidation and no additional control with good combustion practices as possible CO control strategies/technologies for the proposed 44.82 MMBtu/hr heat input capacity natural gas-fired hot oil heater at the HPL facility. Due to the economic infeasibility associated with these control strategies/technologies and the relatively low CO emissions resulting from the proposed process heater, as previously discussed, the Department determined that combustion of pipeline quality natural gas and proper operation and maintenance of the proposed 44.82 MMBtu/hr heat input capacity natural gas-fired hot oil heater with no additional control and an emission limit of 0.045 lb CO/MMBtu constitutes BACT, in this case.

C. PM_{10}, VOC, and SO_2 BACT Analysis and Determination

Natural gas-fired process heaters are inherently low emitters of air pollution due to characteristics of the natural gas fuel fired to operate the boiler. Potential PM_{10}, VOC, and SO_2 emissions resulting from the operation of the proposed 44.82 MMBtu/hr heat input capacity natural gas-fired hot oil heater are less than 2 tpy, respectively. Because potential emissions of these regulated pollutants are low, incorporation of available pollutant-specific control technologies would result in high cost-effective ($/ton removed) values thereby making pollutant-specific add-on controls for PM_{10}, VOCs, and SO_2 economically infeasible in this case. Therefore, the Department determined that combustion of pipeline quality natural gas and proper operation and maintenance of the 44.82 MMBtu/hr heat input capacity natural gas-fired hot oil heater with no additional control constitutes BACT for these pollutants, 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 appropriate emission standards.

IV. Emission Inventory

Tons/year					
Source	**PM_{10}**	**NO_X**	**VOC**	**CO**	**SO_X**
912-hp Waukesha Compressor Engine Unit 1	0.60	8.81	8.81	17.62	0.02
912-hp Waukesha Compressor Engine Unit 2	0.60	8.81	8.81	17.62	0.02
912-hp Waukesha Compressor Engine Unit 3	0.60	8.81	8.81	17.62	0.02
185-hp Caterpillar Compressor Engine Unit 4	0.13	1.79	1.79	3.57	0.00
500-hp Caterpillar Compressor Engine Unit 5	0.31	4.83	4.83	9.66	0.01
185-hp Caterpillar Compressor Engine Unit 6	0.13	1.79	1.79	1.79	0.00
740-hp Waukesha Compressor Engine Unit 7	0.48	7.15	7.15	7.15	0.01
44.82-MMBtu/hr Natural Gas-ired Hot Oil Heater	1.24	21.99	0.90	8.83	0.10
Dehydration Unit #1--Still Vent (9 MMSCFD)	0.00	0.00	7.27	0.00	0.00
Dehydration Unit #2--Still Vent (11 MMSCFD)	0.00	0.00	13.14	0.00	0.00
Fractionation Unit (included in fugitives)					
Fugitive Leaks (valves, flanges, etc.)	*0.00*	*0.00*	*8.72*	*0.00*	*0.00*
Truck Loading (3775 bbl/day) – *fugitive* (controlled by submerged filling and VRU)	*0.00*	*0.00*	*21.00*	*0.00*	*0.00*
400-bbl Condensate Storage Tank #1					
--Working & Breathing Loss	0.00	0.00	0.86	0.00	0.00
--Flashing Loss	0.00	0.00	6.70	0.00	0.00
400-bbl Condensate Storage Tank #2					
--Working & Breathing Loss	0.00	0.00	0.86	0.00	0.00
--Flashing Loss	0.00	0.00	6.70	0.00	0.00
500-Gallon Diesel Storage Tank	0.00	0.00	0.00	0.00	0.00
Emergency/Backup Generator @ 1135-hp	0.19	7.95	0.31	3.07	0.08
Emergency Flare (restricted to 35 MMSCF/yr) including 0.5MMBtu/hr pilot	0.15	1.61	1.28	7.92	0.01
Total	**4.43**	**73.54**	**109.73**	**94.85**	**0.27**
Total Title V (non-Fugitive)	**4.43**	**73.54**	**80.01**	**94.85**	**0.27**

Units #1-3: 912-bhp Compressor Engines (3 Engines)

Brake Horsepower: 912 bhp
Hours of operation: 8760 hr/yr

PM_{10} Emissions (filterable & condensable)
Emission Factor: 1.94E-02 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Fuel Consumption: 7.11 MMBtu/hr (Maximum Design)
Calculations: 7.11 MMBtu/hr * 1.94E-02 lb/MMBtu = 0.138 lb/hr
0.138 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.60 ton/yr

NO_X Emissions
Emission factor: 1.00 gram/bhp-hr (BACT Determination)
Calculations: 1.00 gram/bhp-hr * 912 bhp * 0.002205 lb/gram = 2.011 lb/hr
2.011 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 8.81 ton/yr

VOC Emissions
Emission factor: 1.00 gram/bhp-hr (BACT Determination)
Calculations: 1.00 gram/bhp-hr * 912 bhp * 0.002205 lb/gram = 2.011 lb/hr
2.011 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 8.81 ton/yr

CO Emissions
Emission factor: 2.00 gram/bhp-hr (BACT Determination)
Calculations: 2.00 gram/bhp-hr * 912 bhp * 0.002205 lb/gram = 4.022 lb/hr
4.022 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 17.62 ton/yr

SO_2 Emission
Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Fuel Consumption: 7.11 MMBtu/hr (Maximum Design)
Calculations: 7.11 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.004 lb/hr
0.004 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.02 ton/yr

Units #4 and 5: 185-bhp Compressor Engines (2 Engines)

Brake Horsepower: 185 bhp
Hours of operation: 8760 hr/yr

PM_{10} Emissions (filterable & condensable)
Emission Factor: 1.94E-02 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Fuel Consumption: 1.48 MMBtu/hr (Maximum Design)
Calculations: 1.48 MMBtu/hr * 1.94E-02 lb/MMBtu = 0.029 lb/hr
0.029 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.13 ton/yr

NO_X Emissions
Emission factor: 1.00 gram/bhp-hr (BACT Determination)
Calculations: 1.00 gram/bhp-hr * 185 bhp * 0.002205 lb/gram = 0.41 lb/hr
0.41 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 1.79 ton/yr

VOC Emissions
Emission factor: 1.00 gram/bhp-hr (BACT Determination)
Calculations: 1.00 gram/bhp-hr * 185 bhp * 0.002205 lb/gram = 0.41 lb/hr
0.41 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 1.79 ton/yr

CO Emissions (Unit #4)
Emission factor: 2.00 gram/bhp-hr (BACT Determination)
Calculations: 2.00 gram/bhp-hr * 185 bhp * 0.002205 lb/gram = 0.82 lb/hr
0.82 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 3.57 ton/yr

CO Emissions (Unit #6)
Emission factor: 1.00 gram/bhp-hr (BACT Determination - 2006)
Calculations: 1.00 gram/bhp-hr * 185 bhp * 0.002205 lb/gram = 0.41 lb/hr
0.41 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 1.79 ton/yr

SO_2 Emission
Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Fuel Consumption: 1.48 MMBtu/hr (Maximum Design)
Calculations: 1.48 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.0009 lb/hr
0.0009 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.004 ton/yr

Unit #6: 500-bhp Compressor Engine

Brake Horsepower: 500 bhp
Hours of operation: 8760 hr/yr

PM_{10} Emissions (filterable & condensable)
Emission Factor: 1.94E-02 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Fuel Consumption: 3.60MMBtu/hr (Maximum Design)
Calculations: 3.60 MMBtu/hr * 1.94E-02 lb/MMBtu = 0.07 lb/hr
0.07 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.31 ton/yr

NO_X Emissions
Emission factor: 1.00 gram/bhp-hr (BACT Determination)
Calculations: 1.00 gram/bhp-hr * 500 bhp * 0.002205 lb/gram = 1.103 lb/hr
1.103 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 4.83 ton/yr

VOC Emissions
Emission factor: 1.00 gram/bhp-hr (BACT Determination)
Calculations: 1.00 gram/bhp-hr * 500 bhp * 0.002205 lb/gram = 1.103 lb/hr
1.103 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 4.83 ton/yr

CO Emissions
Emission factor: 2.00 gram/bhp-hr (BACT Determination)
Calculations: 2.00 gram/bhp-hr * 500 bhp * 0.002205 lb/gram = 2.205 lb/hr
2.205 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 9.66 ton/yr

SO_2 Emission
Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Fuel Consumption: 3.60 MMBtu/hr (Maximum Design)
Calculations: 3.60 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.002 lb/hr
0.002 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.01 ton/yr

Unit #7: 740-bhp Compressor Engine

Brake Horsepower: 740 bhp
Hours of operation: 8760 hr/yr

PM_{10} Emissions (filterable & condensable)
Emission Factor: 1.94E-02 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Fuel Consumption: 5.62 MMBtu/hr (Maximum Design)
Calculations: 5.62 MMBtu/hr * 1.94E-02 lb/MMBtu = 0.109 lb/hr
0.109 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.48 ton/yr

NO_X Emissions
Emission factor: 1.00 gram/bhp-hr (BACT Determination)
Calculations: 1.00 gram/bhp-hr * 740 bhp * 0.002205 lb/gram = 1.63 lb/hr
1.63 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 7.15 ton/yr

VOC Emissions
Emission factor: 1.00 gram/bhp-hr (BACT Determination)
Calculations: 1.00 gram/bhp-hr * 740 bhp * 0.002205 lb/gram = 1.63 lb/hr
1.63 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 7.15 ton/yr

CO Emissions
Emission factor: 1.00 gram/bhp-hr (BACT Determination)
Calculations: 1.00 gram/bhp-hr * 740 bhp * 0.002205 lb/gram = 1.63 lb/hr
1.63 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 7.15 ton/yr

SO_2 Emission
Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Fuel Consumption: 5.62 MMBtu/hr (Maximum Design)
Calculations: 5.62 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.003 lb/hr
0.003 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.01 ton/yr

44.82-MMBtu/hr Hot Oil Heater H-1
Hours of operation: 8760 hr/yr

Fuel Heating Value: 1200 MMBtu/MMScf (Company Information)
Fuel Consumption: 44.82 MMBtu/hr (Maximum Design)

PM_{10} Emissions
Emission Factor: 7.6 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)
Calculations: 7.6 lb/MMScf * 44.82 MMBtu/hr / 1200 MMBtu/MMScf = 0.28 lb/hr
0.28 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 1.24 ton/yr

NO_X Emissions
Emission factor: 0.112 lb/MMBtu (BACT Limit)
Calculations: 0.112 lb/MMBtu * 44.82 MMBtu/hr = 5.02 lb/hr
5.02 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 21.99 ton/yr

VOC Emissions
Emission Factor: 5.5 lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)
Calculations: 5.5 lb/MMScf * 44.82 MMBtu/hr / 1200 MMBtu/MMScf = 0.21 lb/hr
0.21 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.90 ton/yr

CO Emissions
Emission factor: 0.045 lb/MMBtu (BACT Limit)
Calculations: 0.045 lb/MMBtu * 44.82 MMBtu/hr = 2.02 lb/hr
2.02 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 8.83 ton/yr

SO_2 Emissions
Emission Factor: 0.6 lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)
Calculations: 0.6 lb/MMScf * 44.82 MMBtu/hr / 1200 MMBtu/MMScf = 0.02 lb/hr
0.02 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.10 ton/yr

Dehydration Unit #1 (9 MMSCFD)
Hours of operation: 8760 hr/yr

Dehydrator Still Vent

VOC Emissions

Emission Factor: 1.66 lb/hr (GRI GlyCalc, Version 4.0)
Calculations: 1.66 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 7.27 ton/yr

Dehydration Unit #2 (11 MMSCFD)
Hours of operation: 8760 hr/yr

Dehydrator Still Vent

VOC Emissions

Emission Factor: 3.00 lb/hr (GRI GlyCalc, Version 4.0)
Calculations: 3.00 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 13.14 ton/yr

Fugitive Emissions

VOC Emissions

Basis for Emission Factors: EPA Protocol for Equipment Leak Emission Estimates, November 1995 (EPA-453/R-95-017)

Inlet/Fuel Gas Stream
Hours of operation: 8760 hr/yr
VOC Fraction: 0.4325

Valves, Relief valves, Flanges, and Connectors

Subtotal: 2.94 ton/yr previous + 16.41 ton/yr new = 19.35 ton/yr HC
19.35 ton/yr *0.4325 = 8.37 ton/yr VOC

Condensate Stream
Hours of operation: 8760 hr/yr
VOC Fraction: 0.98

Valves, Relief valves, Flanges, and Connectors

Subtotals: 0.36 ton/yr *0.98 = 0.35 ton/yr

Total: 8.37 tpy + 0.35 tpy = 8.72 tpy

Truck Loading: Submerged Fill: (Dedicated Normal Service) with VRU Control
Formula 1 of Section 5.2 of EPA's "Compilation of Air Pollutant Emission Factors – AP-42 (1/95)"

$L_L = 12.46^{SPM}v/T$

L_L = loading loss; pounds per 1000 gallons loaded
S= saturation factor = 0.60 (Table 5-2.1)
P = true vapor pressure of liquid loaded; pounds per square inch absolute
M_V = molecular weight of vapors; pound per pound-mole (Table 7.1-2)
T = temperature of bulk liquid loaded; degrees Rankin (degrees Fahrenheit + 460)

Inputs

T = 70 degrees Fahrenheit
S= Submerged loading dedicated normal service
P = Gasoline RVP 13

L_L = 7.26 lb/10^3 gal

VRU - Controlled loading efficiency 90% (based on annual truck leak testing)

L_{Lcor} = (1-90/100) * 7.26/10^3 = 0.726 lb/10^3 gal

3,775 Bbl/day x 42 gal/bbl x 365 days/yr = 57.87 MM gal/yr
57.87 MM gal/yr x 0.726 lb/10^3 gal = 42,007 lb/yr
42,007 lb/yr x 0.0005 ton/lb = 21.00 ton/yr (fugitive emissions)

400-bbl Condensate Storage Tanks (2 Tanks)
Hours of operation: 8760 hr/yr

VOC Emissions

Working & Breathing Loss:

Emission Factor: 1714.34 lb/yr (EPA Tanks, Version 4.0)
Calculations: 1714.34 lb/yr * 0.0005 ton/lb = 0.86 ton/yr

Flashing Loss:

Emissions: 6.70 ton/yr (Vasquez-Beggs Solution Gas/Oil Ration Correlation Method)

500-Gallon Diesel Storage Tank (1 Tank)
Hours of operation: 8760 hr/yr

VOC - Working and Breathing Losses

Emission Factor: 0.32 lb/yr (EPA Tanks, Version 4.0)
Calculations: 0.32 lb/yr * 0.0005 ton/lb = 0.000160 ton/yr

1135-hp Emergency/Backup Diesel Generator (1 Generator)

Brake Horsepower: 1135 bhp
Hours of operation: 500 hr/yr

PM_{10} Emissions
Emission factor: 0.30 gram/bhp-hr (BACT Determination)
Calculations: 0.30 gram/bhp-hr * 1135 bhp * 0.002205 lb/gram = 0.75 lb/hr
0.75 lb/hr * 500 hr/yr * 0.0005 ton/lb = 0.19 ton/yr

NO_X Emissions
Emission factor: 12.7 gram/bhp-hr (BACT Determination)
Calculations: 12.7 gram/bhp-hr * 1135 bhp * 0.002205 lb/gram = 31.78 lb/hr
31.78 lb/hr * 500 hr/yr * 0.0005 ton/lb = 7.95 ton/yr

VOC Emissions
Emission factor: 0.5 gram/bhp-hr (BACT Determination)
Calculations: 0.5 gram/bhp-hr * 1135 bhp * 0.002205 lb/gram = 1.25 lb/hr
1.25 lb/hr * 500 hr/yr * 0.0005 ton/lb = 0.31 ton/yr

CO Emissions
Emission factor: 4.9 gram/bhp-hour (BACT Determination)
Calculations: 4.9 gram/bhp-hour * 1135 bhp * 0.002205 lb/gram = 12.26 lb/hr
12.26 lb/hr * 500 hr/yr * 0.0005 ton/lb = 3.07 ton/yr

SO_2 Emission
Emission factor: 0.13 gram/bhp-hour (BACT Determination)
Calculations: 0.13 gram/bhp-hour * 1135 bhp * 0.002205 lb/gram = 0.33 lb/hr
0.33 lb/hr * 500 hr/yr * 0.0005 ton/lb = 0.08 ton/yr

Emergency Flare

Pilot
Pilot: 0.5 MMBTU/hr
Fuel Heating Value: 1200 MMBtu/MMScf (Company Information)

PM_{10} Emissions
Emission Factor: 7.6 lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)
Calculations: 7.6 lb/MMScf * 0.50 MMBtu/hr / 1200 MMBtu/MMScf = 0.003 lb/hr
0.003 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.014 ton/yr

NO_X Emissions
Emission factor: 100 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)
Calculations: 100 lb/MMScf * 0.50 MMBtu/hr / 1200 MMBtu/MMScf = 0.042 lb/hr
0.042 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.18 ton/yr

VOC Emissions
Emission Factor: 5.5 lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)
Calculations: 5.5 lb/MMScf * 0.50 MMBtu/hr / 1200 MMBtu/MMScf = 0.002 lb/hr
0.002 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.01 ton/yr

CO Emissions
Emission factor: 84 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)
Calculations: 84 lb/MMScf * 0.50 MMBtu/hr / 1200 MMBtu/MMScf = 0.035 lb/hr
0.035 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.15 ton/yr

SO_2 Emissions
Emission Factor: 0.6 lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)
Calculations: 0.6 lb/MMScf * 0.50 MMBtu/hr / 1200 MMBtu/MMScf = 0.0003 lb/hr
0.0003 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.001 ton/yr

Emergency Gas Combustion
Plant Gas: 32 MMScf/year – RESTRICTION
Fuel Heating Value: 1200 MMBtu/MMScf (Company Information)

PM_{10} Emissions
Emission Factor: 7.6 lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)
Calculations: 7.6 lb/MMScf * 35 MMScf/yr / 2000 lb/ton = 0.13

NO_X Emissions
Emission factor: 0.068 lb/MMBtu (AP-42, Chapter 13, Table 13.5-1, 1/95)
Calculations: 0.068 lb/MMBtu * 1200 MMBtu/MMScf * 35 MMScf/yr / 2000 lb/ton = 1.43 ton/yr

VOC Emissions
Emission Factor: 0.14 lb HC/MMBtu * 43.25% VOC = 0.06055 (AP-42, Chapter 13, Table 13.5-1, 1/95)
Calculations: 0.06055 lb/MMScf * 1200 MMBtu/MMScf * 35 MMScf/yr / 2000 lb/ton = 1.27 ton/yr

CO Emissions
Emission factor: 0.37 lb/MMBtu (AP-42, Chapter 13, Table 13.5-1, 1/95)
Calculations: 0.37 lb/MMBtu * 1200 MMBtu/MMScf * 35 MMScf/yr / 2000 lb/ton = 7.77 ton/yr

SO_2 Emissions
Emission Factor: 0.6 lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)
Calculations: 0.6 lb/MMScf * 35 MMScf/yr / 2000 lb/ton = 0.01

V. Existing Air Quality

The facility is located in the NE ¼ of the NW ¼ of Section 3, Township 23 North, Range 58 East in Richland County, Montana. The air quality of this area is classified as either better than National Standards or unclassifiable/attainment for the National Ambient Air Quality Standards (NAAQS) for criteria pollutants.

VI. Ambient Air Impact Analysis

The Department determined that the impact from this permitting action will be minor. Based on the relatively low level of allowable emissions added to the facility under the current permit action, the Department believes that the facility 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 a private property taking and damaging assessment and determined there are no taking or damaging implications.

VIII. Environmental Assessment

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

Permit Analysis Prepared By: M. Eric Merchant
Date: June 15, 2007

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*:** Hiland Partners, LP
Bakken Gathering Plant
P.O. Box 5103
Enid, Oklahoma 73702-5103

Air Quality Permit Number: 3331-05

Preliminary Determination Issued: June 26, 2007
Department Decision Issued: July 12, 2007
Permit Final: June 28, 2007

1. *Legal Description of Site:* The facility is located approximately 8 miles northwest of Sidney, Montana, in the NE ¼ of the NW ¼ of Section 3, Township 23 North, Range 58 East, in Richland County, Montana. The facility is known as the Bakken Gathering Plant**.**

2. *Description of Project:* The HPL Bakken Gathering Plant is an existing natural gas processing plant that extracts natural gas liquids from field gas. Under the current permit action, HPL proposed the installation and operation of a 40 CFR 60, Subpart Dc, affected 44.82 MMBtu/hr heat input capacity natural gas-fired hot oil heater, the removal of an existing 25 MMBtu/hr heat input capacity natural gas-fired hot oil heater, and the de-rating of a previously permitted 930 brake horsepower (bhp) capacity compressor engine to a 740 bhp capacity engine.

3. *Objectives of Project*: The proposed project would increase business, revenue, and operational flexibility for the company and the permitted facility.

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 Montana Air Quality Permit to the proposed facility. However, the Department does not consider the "no-action" alternative to be appropriate because HPL 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, is included in Permit #3331-05.

6. *Regulatory Effects on Private Property*: The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions would be reasonably necessary to ensure compliance with applicable requirements and to demonstrate compliance with those requirements and would 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 Department has prepared the following comments.

A. Terrestrial and Aquatic Life and Habitats

Emissions from the proposed project may have a minor impact on terrestrial and aquatic life and habitats in the proposed project area. However, as stated in Section V and Section VI of the permit analysis and Section 7.F of this EA, any emissions and resulting impacts from the project would be minor due to the low concentration of those pollutants emitted.

Further, the proposed project is within an existing facility and no new construction or ground disturbance to the area would be required. Overall, any impact to the terrestrial and aquatic life and habitats of the proposed project area would be minor.

B. Water Quality, Quantity, and Distribution

The proposed project would not affect water quantity or distribution in the proposed project area. The proposed project is within an existing facility and no new construction or ground disturbance to the area would be required. Further, the project would not discharge or use water as part of normal operations.

Emissions from the proposed project may have a minor impact on water quality in the proposed project area. However, as detailed in Section V and Section VI of the permit analysis and Section 7.F of this EA, any emissions and resulting deposition impacts from the project would be minor due to the low concentration of those pollutants emitted. Overall, any impacts to the water quality, quantity, and distribution of the project area would be minor.

C. Geology and Soil Quality, Stability, and Moisture

The proposed project would not impact the geology, soil quality, stability, and moisture of the proposed project area. The proposed project is within an existing facility and no new construction or ground disturbance to the area would be required.

Further, as described in Section V and Section VI of the permit analysis, and Section 7.F of this EA, the project would result in a minor increase in air pollution emissions to the outside ambient environment. These pollutants may deposit on the soils in the surrounding area. Any impact from deposition of these pollutants would be minor due to dispersion characteristics and the low concentration of those pollutants emitted. Overall, any impacts to the geology and soil quality, stability, and moisture of the project area would be minor

D. Vegetation Cover, Quantity, and Quality

Emissions from the proposed project may have a minor impact on vegetation cover, quantity, and quality in the proposed project area. However, as detailed in Section V and Section VI of the permit analysis and 7.F of this EA, any emissions and resulting impacts from the project would be minor due to dispersion characteristics of pollutants and the atmosphere, and the low concentration and magnitude of those pollutants emitted.

Further, the proposed project is within an existing facility and no new construction or ground disturbance to the area would be required. Overall, any impact to the vegetation cover, quantity, and quality of the proposed project area would be extremely minor.

E. Aesthetics

No impacts would result on the aesthetic value of the area from this project because the facility is an existing facility. The proposed project would not impact the industrial nature of the facility; therefore, the aesthetics of the area would remain the same.

F. Air Quality

The air quality of the area would realize minor impacts from the proposed project because of a minor increase in the emission of regulated air pollutants. However, the Department believes that the emissions would exhibit good dispersion characteristics resulting in relatively low deposition impacts. The impacts from deposition of pollutants would be minor due to dispersion characteristics of pollutants (stack height, stack temperature, etc.) and atmosphere (wind speed, wind direction, ambient temperature, etc.). The amount of air concentration of pollutants would be relatively small, and the corresponding deposition of those air pollutants would be minor.

The Department determined that controlled emissions from the source will not cause or contribute to a violation of any ambient air quality standard. Therefore, any impacts to air quality from the proposed project would be minor.

G. Unique Endangered, Fragile, or Limited Environmental Resources

In an effort to identify any unique endangered, fragile, or limited environmental resources in the area, the Department previously contacted (initial and subsequent permit actions) the Montana Natural Heritage Program, Natural Resource Information System (NRIS). The NRIS search did not identify any known species of special concern located within the proposed project area. In this case, the project area was defined by the section, township, and range of the proposed location with an additional 1-mile buffer zone.

Due to the minor amount of construction that would be required and the fact that the project is limited to the existing facility, and due to the relatively low levels of pollutants that would be emitted, the Department determined that the proposed project would not impact any species of special concern that may inhabit the area.

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

The proposed project would have minor impacts on the demands for the environmental resources of air due to the minor increase in the potential to emit regulated air pollutants. However, the proposed project would not be expected to have any impacts on the demand for the environmental resources of water and energy. Overall, any impacts on the demands for the environmental resources of water, air, and energy would be minor.

I. Historical and Archaeological Sites

In an effort to identify any historical and archaeological sites near the proposed project area, the Department previously contacted (initial and subsequent permit actions) the Montana Historical Society, SHPO. According to SHPO records, there have not been any previously recorded historic or archaeological sites within the proposed area. In addition, SHPO records indicated that no previous cultural resource inventories have been conducted in the area. SHPO recommended that a cultural resource inventory be conducted to determine if cultural or historic sites exist and if they would be impacted. However, neither the Department nor SHPO have the authority to require HPL to conduct a cultural resource inventory. The Department determined that since this project is confined to the existing facility's site, there is no potential impact on historical or archaeological sites.

J. Cumulative and Secondary Impacts

Overall, the cumulative and secondary impacts on the physical and biological aspects of the human environment in the immediate area would be minor due to the relatively small size of the project and the existing industrial nature of the site. The Department believes that the facility can be expected to operate in compliance with all applicable rules and regulations as would be outlined in Permit #3331-05.

Additional facilities (compressor stations, gas plants, etc.) could locate in the area to withdraw natural gas from the nearby area and/or to separate the components of natural gas. However, any future facility would be required to apply for and receive the appropriate permits from the appropriate regulating authority. Environmental impacts from any future facilities would be assessed through the appropriate permitting process. Overall, any cumulative and secondary impacts on the physical and biological aspects of the human environment in the immediate area of operations would 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				X		Yes
B	Cultural Uniqueness and Diversity			X	X		Yes
C	Local and State Tax Base and Tax Revenue			X			Yes
D	Agricultural or Industrial Production			X			Yes
E	Human Health			X			Yes
F	Access to and Quality of Recreational and Wilderness Activities				X		Yes
G	Quantity and Distribution of Employment			X			Yes
H	Distribution of Population				X		Yes
I	Demands for Government Services			X			Yes
J	Industrial and Commercial Activity			X			Yes
K	Locally Adopted Environmental Plans and Goals			X			Yes
L	Cumulative and Secondary Impacts			X			Yes

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

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

The proposed project would cause minor, if any, impacts to the social structures and mores and cultural uniqueness and diversity of the area because the proposed project would take place in a relatively remote location currently used for such industrial purposes. Further, the operation of a compressor station of this type, including the proposed project, necessitates relatively few employees for normal operations and would likely not result in any, or very little, immigration of new people to the area for employment purposes. Therefore, the proposed project would have little, if any, impact on the social structures and mores and cultural uniqueness and diversity in the area.

Additional activity (vehicle traffic, construction equipment, etc.) would be noticeable during construction activities associated with the proposed project; however, compressor stations, including the proposed new equipment, typically do not require day-to-day employees and once the project is constructed, activities associated with the operation of the facility would be minor. Overall, any impacts to the above social and economic resources in the area would be minor.

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 because relatively few or no new employees would be needed as a result of the proposed project. Further, the proposed project would necessitate relatively little construction and typically would not require an extended period of time for completion;

therefore, any construction related jobs would be temporary and any corresponding impacts on the tax base/revenue of a given area would be minor. Overall, any impacts to the local and state tax base and tax revenue would be minor.

D. Agricultural or Industrial Production

The land surrounding the proposed location is rural agricultural grazing land; however, the proposed site itself is currently used for industrial purposes consistent with the proposed project. Therefore, the proposed project would result in only minor, if any, impacts to agricultural production in the area. The proposed project would have minor impacts to industrial production in the area because the proposed project would add new equipment to an existing industrial source locating in an existing industrial area. However, because the proposed project would be relatively small by industrial standards, the project would likely not result in additional industrial sources (not directly associated with operations) moving to a given area.

Increased additional associated facilities (production field facilities) may locate in the area. However, any future facility would be required to apply for and receive the appropriate permits from the appropriate regulating authority. Impacts from any future facilities would be assessed through the appropriate permitting process. Overall, any impacts to agricultural or industrial production of the area would be minor.

E. Human Health

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

F. Access to and Quality of Recreational and Wilderness Activities

The proposed project would not impact any access to recreational and wilderness activities because the proposed project would occur at an existing industrial facility used for such purposes.

G. Quantity and Distribution of Employment
H. Distribution of Population

The proposed project would have minor, if any, impacts on the quantity and distribution of employment and the distribution of population in the area because relatively few, if any, additional employees would be required for modified operations at the facility thereby resulting in relatively little, if any, new immigration into or emigration out of the area. In addition, temporary construction-related positions would result from this project but any impacts to the quantity and distribution of employment from construction related employment would be minor due to the relatively small size of the facility and the relatively short time period that would be required for constructing the proposed facility changes. Overall, any impacts to the quantity and distribution of employment and the distribution of population in the area would be minor.

I. Demands for Government Services

The project would result in minor impacts on the demands for government services because additional time would be required by government agencies to issue Permit #3331-05 and to assure compliance with applicable rules, standards, and conditions contained in Permit #3331-05. In addition, there would be minor impacts on the demands for government services to regulate the minor increase in vehicle traffic that would be associated with constructing and operating the proposed new equipment. The increase in vehicle traffic would be primarily during facility construction because compressor stations typically do not require day-to-day employees. Overall, any demands for government services to regulate the facility or activities associated with the facility would be minor due to the relatively small size and existing industrial nature of the facility.

J. Industrial and Commercial Activity

Only minor impacts would be expected on the local industrial and commercial activity because the proposed project only represents a minor increase in industrial activity, for a short period of time, at an existing facility.

K. Locally Adopted Environmental Plans and Goals

The Department is unaware of any locally adopted environmental plans or goals in the area. The permit would ensure compliance with state standards and goals. The state standards would protect the proposed site and the environment surrounding the site.

L. Cumulative and Secondary Impacts

Cumulative and secondary impacts from the proposed project would result in minor impacts to the economic and social aspects of the human environment in the immediate area of operations. Due to the relatively small size of the project, there would be relatively little foreseeable change in the industrial production, employment, and tax revenue (etc.) impacts resulting from the proposed project. In addition, 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 #3331-05. Overall, any cumulative and secondary impacts on the economic and social aspects of the human environment in the immediate area of operations would be minor.

Recommendation: An EIS is not required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: There are no significant impacts resulting from the project; therefore, an EIS is not required.

Other groups or agencies contacted or which may have overlapping jurisdiction: Department of Environmental Quality - Permitting and Compliance Division (Air Resources Management Bureau and Industrial and Energy Minerals Bureau); Montana Natural Heritage Program; and the State Historic Preservation Office (Montana Historical Society).

Individuals or groups contributing to this EA: Department of Environmental Quality (Air Resources Management Bureau and Industrial and Energy Minerals Bureau), Montana Natural Heritage Program, and State Historic Preservation Office (Montana Historical Society).

EA prepared by: M. Eric Merchant
Date: June 15, 2007