

AIR QUALITY PERMIT

Issued To: Genesis Energy, Inc. Permit: #2739-05
P.O. Box 488 Application Complete: 01/19/06
Cut Bank, Montana 59427 Preliminary Determination Issued: 02/09/06
Department's Decision Issued: 02/27/06
Permit Final: 03/15/06
AFS: #073-0003

An air quality permit, with conditions, is hereby granted to Genesis Energy, Inc. (Genesis), 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

Genesis owns and operates a natural gas compressor station and associated equipment located in the NE ¼ of the NE ¼ of Section 2, Township 29 North, Range 4 West, in Pondera County, Montana. The facility is known as the Shelby Williams Field, Station 041-1.

B. Current Permit Action

On January 5, 2006, the Department of Environmental Quality (Department) received a permit application to add a natural gas-fired 4-stroke rich-burn compressor engine up to 86-Horsepower (Hp), with an air-fuel ratio (AFR) controller and a non-selective catalytic reduction (NSCR) unit. Montana Air Quality Permit (MAQP) #2739-05 replaces MAQP #2739-04.

SECTION II: Conditions and Limitations

A. Emission Limitations

1. Emissions from the 360-Hp White Superior Compressor Engine (Compressor Unit #01) shall not exceed the following limits (ARM 17.8.752):

Oxides of Nitrogen (NO _x ¹):	8.73 lb/hr
Carbon Monoxide (CO):	1.59 lb/hr
Volatile Organic Compounds (VOC):	3.96 lb/hr
2. The maximum rated design capacity of Compressor Unit #02 shall not exceed 86-Hp (ARM 17.8.749).
3. Compressor Unit #02 shall be a natural gas-fired rich-burn engine fitted with a NSCR unit and AFR controller. Emissions from Unit #02 shall not exceed the pound per hour (lb/hr) emission limits as calculated using the following equation and the pollutant specific gram per brake horsepower-hour (g/bhp-hr) emission factors (ARM 17.8.752).

¹NO_x reported as NO₂.

Emission Limit Equation:

$$\text{lb/hr} = \text{emission factor (g/bhp-hr)} * \text{maximum rated design capacity of engine (Hp)} * 0.002205 \text{ lb/g}$$

Emission Factors:

NO_x: 1.0 g/bhp-hr
CO: 1.0 g/bhp-hr
VOC: 1.0 g/bhp-hr

4. Genesis 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. Genesis 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. Genesis 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.5 (ARM 17.8.749).
7. Genesis shall operate all equipment as designed to provide the maximum control of air pollutants (ARM 17.8.752).

B. Testing Requirements

1. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).
2. The Department may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. Genesis 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.
 - a. 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. Genesis shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745(1), that would include a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit.

The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).

3. All records compiled in accordance with this permit must be maintained by Genesis 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. Genesis shall provide the Department with written notification of the actual installation date of Compressor Unit #02 within 30 days after the actual installation date.
2. Genesis shall provide the Department with written notification of the actual start-up date of Compressor Unit #02 within 15 days after the actual start-up date.

SECTION III: General Conditions

- A. Inspection – Genesis shall allow the Department’s representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.
- B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if Genesis fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving Genesis 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.*, (Montana Code Annotated) MCA.
- E. Appeals – Any person or persons jointly or severally adversely affected by the Department’s decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The Department’s decision on the application is not final unless 15 days have elapsed and there is no request for a hearing under this section. The filing of a request for a hearing postpones the effective date of the Department’s decision until conclusion of the hearing and issuance of a final decision by the Board.
- F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy 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 Genesis 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 three 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
Genesis Energy, Inc.
Permit #2739-05

I. Introduction/Process Description

A. Permitted Equipment

Genesis Energy, Inc. (Genesis) owns and operates a natural gas compressor station and associated equipment located in the NE ¼ of the NE ¼ of Section 2, Township 29 North, Range 4 West, in Pondera County, Montana. The facility is known as the Shelby Williams Field, Station 041-1 and consists of the following equipment:

- One 360-horsepower (Hp) White Superior Compressor Engine (installed 1979)
- One 75-thousand British thermal unit per hour (MBtu/hr) BS&B glycol dehydrator
- One 4-stroke natural gas-fired rich-burn compressor engine, up to 86 Hp.

B. Source Description

The complex has two primary purposes. The first is to boost the field gas to the natural gas transmission system. This initial compression of the gas is accomplished with the 360-HP White Superior compressor engine. In late 2005, Genesis began construction of a 3.5 mile gas gathering line to allow the new Lake Frances Gas production field to be gathered separately from the Williams Gas Field. In 2006, Genesis proposed to add a smaller booster compressor to accommodate the expanded gathering system. The compressor is a 4-stroke natural gas-fired rich-burn compressor engine, up to 86 Hp, with an air-fuel ratio (AFR) controller and a non-selective catalytic reduction (NSCR) unit.

The second purpose of the complex is to "dry" the gas as it is being processed. The gas contains some moisture, which must be removed from the system prior to being sent into the transmission system. This is accomplished with the BS & B 75 MBtu/hr dehydrator, also commonly called a reboiler or glycol unit. The gas stream is "dried" by contacting the water-saturated gas with the Triethylene Glycol (TEG), also known as lean glycol. The TEG-to-water ratio (how many gallons of TEG are required to absorb 1 pound of water) varies between 2 and 5 gallons of TEG per pound of water; the industry accepted rule-of-thumb is 3 gallons of TEG per pound of water removed.

The rich glycol stream, laden with moisture, methane, and Volatile Organic Compound (VOC), is processed in the TEG regenerator, also known as the reboiler, to remove the absorbed water, remaining methane and VOC. The glycol is heated to about 300 degrees Fahrenheit (°F) in order to drive off the water in the form of steam. The heat that is necessary for this is generated by burning natural gas in the dehydrator reboiler. The TEG regenerator off gas, including VOC, will be directly emitted from the still vent. Emissions are related to the glycol recirculation rate.

C. Permit History

On April 13, 1993, the Montana Power Company (MPC) was issued Montana Air Quality Permit (MAQP) #2739-00 for the operation of a natural gas compressor station. The compressor station was constructed in 1979 and was identified as the Williams Field, Station 041-1.

On December 17, 1993, MPC requested an administrative amendment to MAQP #2739-00. The administrative amendment revised the emission limitations from a gram per brake horsepower-hour (g/Bhp-hr) limit to a pound per hour (lb/hr) limit. Rather than limit the engines to a g/Bhp-hr limit, an hourly emission limit allowed for operational flexibility. The modification allowed MPC to account for varying parameters such as engine revolutions per minute (RPM), operating load (Hp) ambient air temperature, gas temperature, site elevation, fuel gas quality, air-to-fuel ratio, field gas conditions, and etc.

In addition, to clarify NO_x mass emission calculations, NO_x emission limitations were identified as NO₂. Furthermore, as requested by MPC on July 30, 1993, the derating information was corrected to use a more accurate altitude derating curve. MAQP #2739-01 replaced MAQP #2739-00 on March 1, 1994.

On September 4, 1998, MPC requested an administrative amendment to MAQP #2739-00 to remove the testing requirements for the 360-Hp White Superior Compressor Engine. The Department of Environmental Quality (Department) agreed to remove the testing requirements for the 360-Hp White Superior Compressor Engine because the action was consistent with the Department's testing policy. In addition, the permit format, language, and rule references were updated. MAQP #2739-02 replaced MAQP #2739-01 on November 22, 1998.

On March 4, 1999, the Department received written notice from MPC and Montalban Oil and Gas Operations, Inc. (MOGO) requesting the Department to transfer MAQP #2739-02 from MPC to MOGO. MAQP #2739-03 replaced MAQP #2739-02 on April 4, 1999.

On April 28, 2003, the Department received written notice from MOGO and Genesis requesting the Department to transfer MAQP #2739-03 from MOGO to Genesis. The current permit action transfers MAQP #2739-03 from MOGO to Genesis. In addition, the permit format, language, and rule references were updated to reflect current Department permit format, language, and rule references. MAQP #2739-04 replaces MAQP #2739-03.

D. Current Permit Action

On January 5, 2006, the Department received a permit application to add a natural gas-fired 4-stroke rich-burn compressor engine up to 86-Hp, with an air-fuel ratio (AFR) controller and a non-selective catalytic reduction (NSCR) unit. In addition, on February 22, 2006, the Department received a de minimis notification, requesting the addition of VOC emissions from the existing glycol dehydrator to the emission inventory. MAQP #2739-05 replaces MAQP #2739-04.

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).

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

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

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

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM₁₀

Genesis 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 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, Genesis 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. Genesis will burn pipeline quality natural gas in its compressor engine and dehydration unit, which will meet this limitation.
6. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.
7. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR 60, Standards of Performance for New Stationary Sources (NSPS). This facility is not an NSPS affected source because it does not meet the definition of any NSPS subpart defined in 40 CFR 60.

Genesis is not an NSPS affected source because it does not meet the definition of a natural gas processing plant defined in 40 CFR 60, Subpart KKK, nor does it process sweet gas as regulated by Subpart LLL.

8. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. A major Hazardous Air Pollutant (HAP) source, as defined and applied in 40 CFR 63, shall comply with the requirements of 40 CFR 63, as applicable, including the following subparts:
 - Subpart HH - National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities.
 - Subpart HHH –National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities
 - Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (Internal Combustion engines > 500 hp)

Based on the information submitted by Genesis, the Shelby Williams Compressor Station is not subject to the provisions of 40 CFR Part 63, because the facility is not a major source of HAPs.

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

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. The current permit action is an administrative action and Genesis was not required to submit a permit application fee.
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.

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

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a facility to obtain a MAQP or permit modification if they construct, modify or use any air contaminant sources that have the Potential to Emit (PTE) greater than 25 tons per year of any pollutant. Genesis has the PTE more than 25 tons per year of 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 are not subject to 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. Genesis 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. Genesis submitted an affidavit of publication of public notice for the January 12, 2006, issue of the *Valerian*, a newspaper of general circulation in Valier, in Pondera 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 Genesis of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.*
10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.
11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.
12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).
13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.
14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.

- F. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:
1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.
 2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

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

- G. ARM 17.8, Subchapter 12 – Operating Permit Program 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 PM₁₀ in a serious PM₁₀ 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 #2739-05 for Genesis, the following conclusions were made:
 - a. The facility's PTE is less than 100 tons/year for any pollutant.
 - b. The facility's PTE is less than 10 tons/year for and one HAP and less than 25 tons/year for all HAPs.
 - c. This source is not located in a serious PM₁₀ nonattainment area.
 - d. This facility is not subject to any current NSPS.
 - e. This facility is not subject to any current NESHAP standards.
 - f. This source is not a Title IV affected source, nor a solid waste combustion unit.
 - g. This source is not an EPA designated Title V source.

Based on these facts, the Department determined that the Genesis facility will be a minor source of emissions as defined under Title V.

III. BACT Determination

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

1. CO BACT

A. Identification of CO Control Options:

CO is a product of incomplete combustion. Reciprocating engines have the following types of CO control options:

1. Parametric controls (timing and operating at a leaner AFR)
2. Postcombustion catalytic controls:
 - Lean-burn – oxidation catalysts
 - Rich-burn – nonselective catalytic reduction (NSCR)

B. Eliminate Technically Infeasible CO Options:

Catalytic oxidation applied to a rich-burn is technically infeasible because the oxygen concentration from a rich-burn engine is not high enough for a catalytic oxidizer to operate properly. Excess oxygen is needed by the catalytic oxidizers to efficiently oxidize CO to CO₂.

An NSCR unit applied to a lean-burn or lean-burn retrofit engine is also technically infeasible because the NSCR unit needs a rich fuel-to-air ratio to operate effectively.

According to manufacturer's information, lean-burn compressor engines under 400 hp are not produced. Therefore, lean-burn and lean-burn with control are technically infeasible.

C. Rank Feasible CO Control Options:

Technically feasible CO control options:

Control Technology	% Control	CO Emission Rate (g/bhp-hr)
Rich-burn with NSCR and AFR	80% - 90%	1.0
Rich-burn without Control	--	42.0

D. Select CO BACT:

Use of a NSCR with AFR controller on a rich-burn engine has been determined to be economically feasible with little potential for adverse environmental and energy impacts. Because Genesis has selected this control technology, which offers the highest available control, no further analysis was necessary.

The BACT limit will be 1.0 g/bhp-hr for CO.

2. NO_x BACT

A. Identification of NO_x Control Options:

Essentially all NO_x formed in natural gas-fired reciprocating engines occurs through the thermal NO_x mechanism, which is mostly formed in high-temperature regions in the cylinder where combustion air has mixed sufficiently with the fuel. Maximum NO_x formation occurs near the stoichiometric air-to-fuel mixture ratio. Lean-burn engines typically have lower NO_x emissions than rich-burn engines.

Reciprocating engines have the following types of NO_x control options:

1. Parametric controls (timing and operating at a leaner AFR)
2. Postcombustion catalytic controls:
 - Lean-burn – selective catalytic reduction (SCR)
 - Rich-burn – NSCR

B. Eliminate Technically Infeasible Options:

SCR is not applied to rich-burn engines because oxygen in the exhaust is not high enough for an SCR to operate properly. Additionally, an SCR is not designed to operate on compressor engines that can expect variable load demands and rapid start and stop operation. Typical compressor engines operate at variable loads, thereby creating technical difficulties for SCR operation such as periods of ammonia skip or periods of insufficient ammonia injection. SCR units have not been installed on lean-burn compressor engines in Montana.

An NSCR unit applied to a lean-burn or lean-burn retrofit engine is also technically infeasible because the NSCR unit needs a rich fuel-to-air ratio to operate effectively.

According to manufacturer's information, lean-burn compressor engines under 400 hp are not produced. Therefore, lean-burn and lean-burn with control are technically infeasible.

C. Rank Feasible NO_x Control Options:

Technically feasible NO_x control options:

Control Technology	% Control	NO _x Emission Rate (g/bhp-hr)
Rich-burn with NSCR and AFR	80% - 90%	1.0
Rich-burn without Control	--	7.0

D. Select NO_x BACT:

Use of a NSCR with AFR controller on a rich-burn engine has been determined to be economically feasible with little potential for adverse environmental and energy impacts. Because Genesis has selected this control technology, which offers the highest available control, no further analysis was necessary.

The BACT limit will be 1.0 g/bhp-hr for NO_x.

3. VOC BACT

VOC top-down BACT is essentially identical to the CO BACT. The BACT limit will be 1.0 g/bhp-hr for VOC.

4. PM₁₀ and SO₂ BACT

The Department is not aware of any BACT determinations that have required controls for PM₁₀ or sulfur dioxide (SO₂) emissions from natural gas fired compressor engines. Genesis proposed no additional controls and burning pipeline quality natural gas as BACT for PM₁₀ and SO₂ emissions from the proposed compressor engine. Due to the relatively small amount of PM₁₀ and SO₂ emissions from the proposed engine, any add-on controls would be cost prohibitive. Therefore, the Department concurred with Genesis's BACT proposal and determined that no additional controls and burning pipeline quality natural gas will constitute BACT for PM₁₀ and SO₂ emissions from the compressor engine.

IV. Emission Inventory

Source	Tons/year				
	PM ₁₀	NO _x	VOC	CO	SO _x
360-Hp White Superior Compressor Engine	0.13	38.24	17.38	6.96	0.01
75 MBtu/hr BS & B Glycol Dehydrator	0.00	0.03	3.09	0.03	0.00
86-Hp Natural-gas fired Compressor Engine	0.07	0.83	0.83	0.83	0.00
Total	0.20	39.10	21.30	7.82	0.01

Updated emission calculations:

86-Hp Natural Gas-Fired Rich Burn Engine

Brake Horsepower: 86 bhp
 Fuel Consumption: 0.81 MMBtu/hr
 Hours of operation: 8760 hr/yr

PM₁₀ Emissions (condensable & filterable)

Emission Factor: 1.94E-02 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
 Calculations: 0.81 MMBtu/hr * 1.94E-02 lb/MMBtu = 0.016 lb/hr
 0.016 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.069 ton/yr

NO_x Emissions

Emission factor: 1.00 gram/bhp-hour (BACT Determination)
 Calculations: 1.00 gram/bhp-hour * 86 bhp * 0.002205 lbs/gram = 0.19 lb/hr
 0.19 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.83 ton/yr

VOC Emissions

Emission factor: 1.00 gram/bhp-hour (BACT Determination)
 Calculations: 1.00 gram/bhp-hour * 86 bhp * 0.002205 lbs/gram = 0.19 lb/hr
 0.19 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.83 ton/yr

CO Emissions

Emission factor: 1.00 gram/bhp-hour (BACT Determination)
 Calculations: 1.00 gram/bhp-hour * 86 bhp * 0.002205 lbs/gram = 0.19 lb/hr
 0.19 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.83 ton/yr

SO₂ Emission

Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
 Calculations: 0.81 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.0005 lb/hr
 0.0005 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.002 ton/yr

Dehydrator Still Vent

Dry Gas Flow: 1 MM scf/day
Glycol Flow Rate: 15 gpm
% VOC: 7.9%

Emissions based on GRI-GLYCalc Version 4.0

Uncontrolled regenerator emissions	2.208 tpy
Flash Tank off gas	0.883 tpy
TOTAL	3.091 tpy

V. Existing Air Quality

The Genesis Shelby Williams Field, Station 041-1 is located in the NE¹/₄ of the NE¹/₄ of Section 2, Township 29 North, Range 4 West, in Pondera County, Montana. Pondera County is unclassifiable/attainment for the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants.

VI. Ambient Air Impact Analysis

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

When the Shelby Williams Field, Station 041-1 was owned and operated by MPC, MPC performed an inclusive modeling study in Liberty, Toole, Glacier, and Pondera Counties. The purpose of the modeling was to provide a single analysis to evaluate impacts from MPC's compressor station network.

Bison Engineering, Inc. (Bison) was contracted by MPC to complete the modeling. Modeling protocol was reviewed and approved by the Department and MPC prior to conducting the modeling. The ISC2 and ComplexI models were used to conduct the model. Five years of meteorological data from the National Weather Station in Great Falls, Montana were utilized in the model. The modeling domain covered all of the MPC sites and the ozone limiting method was used to adjust the predicted 1-hr impacts, assuming an ozone level of 0.04 parts per million (ppm).

The modeling showed that MPC's compressor station network would not violate the Montana Ambient Air Quality Standards (MAAQS) or the NAAQS. The Shelby Williams Field Station 041-1 was modeled at 53 tons of NO_x emissions per year and the facility is currently permitted to emit 39.07 tons of NO_x emissions per year; therefore, the modeling still demonstrates that the facility will not cause or contribute to a violation of the MAAQS or NAAQS. The Department expects the Genesis Shelby Williams Field Station 041-1 to continue to operate in compliance with all applicable ambient air quality Standards.

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.

Analysis Prepared By: Christine Weaver
Date: January 25, 2006

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: Genesis Energy, Inc.
P.O. Box 488
Cut Bank, MT 59427

Air Quality Permit Number: 2739-05

Preliminary Determination Issued: February 9, 2006

Department Decision Issued: February 27, 2006

Permit Final: March 15, 2006

1. *Legal Description of Site:* Genesis owns and operates a natural gas compressor station and associated equipment located in the NE ¼ of the NE ¼ of Section 2, Township 29 North, Range 4 West, in Pondera County, Montana. The facility is known as the Shelby Williams Field, Station 041-1.
2. *Description of Project:* Genesis plans to construct a 3.5 mile natural gas gathering line from the new Lake Frances Field to the existing Williams Gas Plant. This pipeline, which will route gas from Section 21 through Section 15, 11, and 2, will allow the Lake Frances Gas production to be gathered separately from the Williams Gas Field. The pipeline will run northeast approximately 3 miles east of Lake Frances, through the Winginaw Valley. Since there are no sources of air emissions from the pipeline, this was not considered as part of the project reviewed for this EA.

The project reviewed for MAQP #2739-05 is a proposed natural gas-driven 4-stroke, rich-burn compressor engine, up to 86 hp, equipped with an AFR controller and a non-selective catalytic reduction (NSCR) unit.

3. *Objectives of Project:* The proposed booster compressor engine will enhance the Williams Gas Field production, and allow co-mingling of production from both that field and the new Lake Frances Field before it is compressed in the existing Williams Gas Plant.
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 Genesis 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 #2739-05.

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 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 following comments have been prepared by the Department.

A. Terrestrial and Aquatic Life and Habitats

Slight increases in NO_x, CO, and VOC emissions may be expected as a result of this project, but would have only a minor impact, if any, on existing terrestrial and aquatic life and habitats of the area because the proposed project would occur on industrial property that has already been disturbed. Where the facility would emit air pollutants and corresponding deposition of pollutants would occur, the Department determined that any impacts from deposition would be minor due to dispersion characteristics of pollutants and the atmosphere and conditions that would be placed in MAQP #2739-05.

B. Water Quality, Quantity, and Distribution

This permitting action would have little or no effect on the water quality, water quantity, and distribution, as there would be no discharges to groundwater or surface water associated with this project, the proposed project would not require any additional water usage by the facility, and because the proposed project would occur on industrial property that has already been disturbed. Where the facility would emit air pollutants and corresponding deposition of pollutants would occur, the Department determined that any impacts from deposition would be minor due to dispersion characteristics of pollutants and the atmosphere and conditions that would be placed in MAQP #2739-05.

C. Geology and Soil Quality, Stability, and Moisture

This permitting action would have a minor effect on geology and soil quality, stability, and moisture, as the proposed project would affect an existing industrial property that has already been disturbed. No additional land would be disturbed for the project. The slight increase in NO_x, CO, and VOC emissions for this project may have a minor effect on the soil stability and moisture; however, the air quality permit associated with this project would contain limitations to minimize the effect of the emissions on the surrounding environment. Where the facility would emit air pollutants and corresponding deposition of pollutants would occur, the Department determined that any impacts from deposition would be minor due to dispersion characteristics of pollutants and the atmosphere and conditions that would be placed in MAQP #2739-05. (See Section 7.F of this EA).

D. Vegetation Cover, Quantity, and Quality

This permitting action would have a minor effect on vegetation cover, quantity, and quality. The proposed installation of the compressor would affect an existing industrial property that has already been disturbed. No additional vegetation on the site would be disturbed for the project. The slight increase in NO_x, CO, and VOC emissions for this project may have a minor effect on the surrounding vegetation; however, the air quality permit associated with this project would contain limitations to minimize the effect of the emissions on the surrounding environment. Where the facility would emit air pollutants and corresponding deposition of pollutants would occur, the Department determined that any impacts from deposition would be minor due to dispersion characteristics of pollutants and the atmosphere and conditions that would be placed in MAQP #2739-05.

E. Aesthetics

There will be no additional impacts to the aesthetics of the area from this permitting action as there will be no physical modification of the existing facility beyond adding the 86 Hp compressor within the facility boundary.

F. Air Quality

The air quality of the area would realize minor impacts from the proposed project because the new compressor would emit small amounts of NO_x, CO, and VOC, and very small amounts of HAPs, PM₁₀, and SO₂. In addition, air emissions from the facility would be minimized by conditions that would be placed in MAQP #2739-05. Conditions would include, but would not be limited to, the requirement to operate BACT. MAQP #2739-05 would also include conditions requiring Genesis to use reasonable precautions to control fugitive dust emissions.

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 facility would be minor.

G. Unique Endangered, Fragile, or Limited Environmental Resources

There may be an increase in emissions in the area where the facility is located, which may result in minor impacts to existing unique endangered, fragile, or limited environmental resources in the area. However, the proposed project will take place at an existing facility. Due to the fact that the facility would not expand, there will be an extremely small increase in pollutants that would be emitted, and conditions would be placed in MAQP #2739-05, the Department determined that any impacts to unique endangered, fragile, or limited environmental resources would be minor.

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

The proposed project would have an insignificant impact on the resources of air and water because the new compressor would have a small increase in emissions. While deposition of pollutants would occur, as explained in Sections 7.B and 7.F of this EA, the Department determined that the chance of the proposed project impacting demands on air and water resources would be minor due to dispersion characteristics of pollutants and the atmosphere and conditions that would be placed in MAQP #2739-05. The proposed project would have minor impacts on the demand on the environmental resource of energy. Overall, any impacts on the demands on the environmental resources of air, water, and energy would be minor.

I. Historical and Archaeological Sites

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

J. Cumulative and Secondary Impacts

The proposed project would cause minor effects on the physical and biological aspects of the human environment because the project would increase emissions of NO_x, CO & VOC. Conditions that would be placed in MAQP #2739-05 would ensure that no air quality impacts, other than minor air quality impacts, would occur. Limitations would be established in MAQP #2739-05 to minimize air pollution. Overall, any impacts to the physical and biological environment 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		Yes
C	Local and State Tax Base and Tax Revenue			X			Yes
D	Agricultural or Industrial Production			X			Yes
E	Human Health			X			Yes
F	Access to and Quality of Recreational and Wilderness Activities				X		Yes
G	Quantity and Distribution of Employment			X			Yes
H	Distribution of Population				X		Yes
I	Demands for Government Services			X			Yes
J	Industrial and Commercial Activity			X			Yes
K	Locally Adopted Environmental Plans and Goals				X		Yes
L	Cumulative and Secondary Impacts			X			Yes

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

A. Social Structures and Mores

The proposed project would not cause a disruption to any native or traditional lifestyles or communities (social structures or mores) in the area because the proposed project would take place in a remote location in which oil and gas exploration and extraction activities are present. The proposed project would not change the predominant use of the surrounding area and the facility would be relatively small by industrial standards.

B. Cultural Uniqueness and Diversity

The cultural uniqueness and diversity of the area would remain unchanged from the proposed project (no impact) because the proposed project would take place in a remote location in which oil and gas exploration and extraction activities are present. The proposed project would not change the predominant use of the surrounding area and the facility would be relatively small by industrial standards.

C. Local and State Tax Base and Tax Revenue

The proposed project would result in minor, if any, impacts to the local and state tax base and tax revenue because the proposed project would not require new permanent employees to be hired. In addition, only minor amounts of construction would be needed to complete the project.

D. Agricultural or Industrial Production

The current land use of the area surrounding the facility is dry land farming. Since the new compressor will be installed within the existing facility boundary, the proposed project would not impact agricultural production. The compressor station may promote future industrial production in the area. Overall, any impacts to agricultural or industrial production would be minor.

E. Human Health

The proposed project would result in only minor, if any, impacts to human health because of the relatively small quantity of potential emissions. As explained in Section 7.F of this EA, deposition of pollutants would occur. However, the Department determined that the proposed project, permitted by MAQP #2739-05, would comply with all applicable air quality rules, regulations, and standards. These rules, regulations, and standards are designed to be protective of human health.

F. Access to and Quality of Recreational and Wilderness Activities

The proposed project would not have any impacts on access to recreational and wilderness activities since the compressor will be installed within an existing facility. The proposed project would not have impacts on the quality of recreational and wilderness activities in the area.

G. Quantity and Distribution of Employment

The proposed project would not affect the quantity and distribution of employment because no permanent employees would be hired as a result of the proposed project. However, temporary construction-related positions could result from this project. Any impacts to the quantity and distribution of employment would be minor due to the relatively small size of the facility.

H. Distribution of Population

The proposed project would not affect distribution of population in the area because the facility would be located in a relatively remote location. The proposed project would not create any new permanent employment that would cause an increase in population in the area. In addition, the proposed project would not have impacts that would cause a decrease in the distribution of population in the surrounding area because the facility would be relatively small by industrial standards and the facility would only emit relatively small amounts of emissions.

I. Demands for Government Services

There would be minor impacts on demands of government services because additional time would be required by government agencies to issue MAQP #2739-05 and to monitor compliance with applicable rules and standards. In addition, the roads in the area may realize a minor increase in vehicle traffic. However, any impacts on government services to regulate the minor increase in traffic would be minor due to the overall small size of the operation. Overall, any impacts on the demands for government services would be minor.

J. Industrial and Commercial Activity

Only minor impacts would be expected on the local industrial and commercial activity because the proposed project would represent only a minor increase in the industrial and commercial activity in the area. However, any new oil & gas well facilities with a PTE greater than 25 tons per year of any regulated air pollutant would be required to obtain a Montana Air Quality Permit and the Department would perform an EA for each permit application, evaluating impacts to industrial and commercial activity for each proposed project.

K. Locally Adopted Environmental Plans and Goals

The Department is not aware of any locally adopted environmental plans and goals affected by issuing MAQP #2739-05. The state standards would protect the proposed site and the environment surrounding the site.

L. Cumulative and Secondary Impacts

Overall, cumulative and secondary impacts from the proposed project would result in minor impacts to the economic and social aspects of the human environment in the immediate area due to the relatively small size of the facility. Due to the relatively small size of the project, the industrial production, employment, and tax revenue (etc.) would not be significantly impacted by the proposed project. The Department would not expect other industries to be impacted by the proposed project and the Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as would be outlined in MAQP #2739-05. In addition, further cumulative impacts may result from other companies actively drilling in the natural gas field. The companies would likely apply for air quality permits for additional facilities. However, impacts from additional facilities that require air quality permits would be evaluated upon the Department's receipt of any future permit applications.

Recommendation: No 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 construction and operation of a small booster compressor (natural-gas fired engine). MAQP #2739-05 would include conditions and limitations to ensure the facility would 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.

EA prepared by: Christine Weaver
Date: January 25, 2006