

AIR QUALITY PERMIT

Issued To: NorthWestern Corporation
Big Sandy #100
40 East Broadway Street
Butte, MT 59701

Permit: #3156-02
Application Complete: 10/15/04
Preliminary Determination Issued: 11/09/04
Department's Decision Issued: 11/29/04
Permit Final: 12/15/04
AFS #: 015-0002

An air quality permit, with conditions, is hereby granted to NorthWestern Corporation (NorthWestern), 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

NorthWestern is permitted to operate a natural gas compressor station and associated equipment located in the SW $\frac{1}{4}$ of the SE $\frac{1}{4}$ of Section 27, Township 27 North, Range 13 East, in Chouteau County, Montana, approximately 9 miles southeast of Big Sandy. The facility is known as the Big Sandy #100 Compressor Station. A list of permitted equipment is included in Section I.A of the Permit Analysis.

B. Current Permit Action

On October 15, 2004, NorthWestern submitted a Montana Air Quality Permit Application for a modification to Permit #3156-01. Under the authority of ARM 17.8.762(2), Section III.G of Permit #3156-00 required that construction begin within 3 years of permit issuance and proceed with due diligence until the project was complete or the permit would be revoked. NorthWestern requested that the Department of Environmental Quality (Department) modify Permit #3156-01 to extend the 3-year construction commencement requirement. NorthWestern's application included a Best Available Control Technology (BACT) analysis to ensure that current BACT requirements are applied to the facility.

SECTION II. Conditions and Limitations

A. Emission Limitations

1. Emissions from each of the two 1600-horsepower (hp) Solar Saturn turbine-driven natural gas compressor engines shall not exceed the following limits (ARM 17.8.752):

Oxides of nitrogen (NO _x)	6.39 pounds per hour (lb/hr)
Carbon monoxide (CO)	1.94 lb/hr
Volatile Organic Compounds (VOC)	0.57 lb/hr

2. NorthWestern 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).
3. NorthWestern 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).

4. NorthWestern 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.3 (ARM 17.8.749).
5. NorthWestern shall operate all equipment to provide the maximum air pollution control for which it was designed (ARM 17.8.749).

B. Testing Requirements

1. NorthWestern shall test each of the two 1600-hp Solar Saturn turbine-driven natural gas compressors for NO_x and CO, concurrently, and demonstrate compliance with the NO_x and CO emission limits contained in Section II.A.1 within 180 days of initial start-up of the engine(s). Further testing shall continue on an every 4-year basis or according to another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105 and ARM 17.8.749).
2. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).
3. The Department may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. NorthWestern 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. NorthWestern shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745, that would include a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit. The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).
3. All records compiled in accordance with this permit must be maintained by NorthWestern 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. NorthWestern shall provide the Department with written notification of commencement of construction of the Big Sandy #100 Compressor Station within 30 days after commencement of construction.
2. NorthWestern shall provide the Department with written notification of the actual start-up date of each of the two 1600-hp Solar Saturn turbine-driven natural gas compressors within 15 days after the actual start-up date(s) of each respective engine.

SECTION III: General Conditions

- A. Inspection – NorthWestern 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 NorthWestern fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving NorthWestern of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).
- D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties or other enforcement action as specified in Section 75-2-401, *et seq.*, MCA.
- E. Appeals – Any person or persons jointly or severally adversely affected by the Department’s decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department’s decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department’s decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department’s decision on the application is final 16 days after the Department’s decision is made.
- F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by the Department at the location of the source.
- G. Permit Fee – Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by NorthWestern 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
NorthWestern Corporation
Big Sandy #100 Compressor Station
Permit #3156-02

I. Introduction/Process Description

NorthWestern Corporation (NorthWestern) is permitted for the construction and operation of the Big Sandy #100 Compressor Station located approximately 9 miles southeast of Big Sandy in the SW¼ of the SE¼ of Section 27, Township 27 North, Range 13 East in Chouteau County, Montana.

A. Permitted Equipment

NorthWestern's Big Sandy #100 Compressor Station consists of the following equipment:

- (2) 1600-horsepower (hp) Solar Saturn Turbine-driven Compressors
- (1) Latoka Dehydrator
 - Still Vent
 - Reboiler
 - Flash Tank
- Miscellaneous support equipment and materials including, but not limited to, building heaters

B. Source Description

The primary purpose of the facility is to boost pressure for transmitting natural gas through the pipeline. The pressure boost will be accomplished by using two 1600-hp natural gas-fired turbines to drive the compressors. The dehydration unit will remove moisture from the natural gas before transmitting the gas downstream for further processing.

C. Permit History

On July 17, 2001, Montana Power Company (MPC) was issued Permit **#3156-00** for the construction and operation of the Big Sandy #100 Compressor Station, to be located in the SW¼ of the SE¼ of Section 27, Township 27 North, Range 13 East, in Chouteau County, Montana.

On March 5, 2002, MPC notified the Montana Department of Environmental Quality (Department) of a pending merger of MPC with and into Montana Power, L.C.C. (MPC LCC). Due to questions regarding the length of time the new company name would be valid, the Department decided to delay the name change pending further information. On October 18, 2002, the Department received a request to change the permit from MPC LLC to NorthWestern. This permit action changed the name on this permit from MPC to NorthWestern. On February 21, 2003, Permit **#3156-01** replaced Permit #3156-00.

D. Current Permit Action

On October 15, 2004, NorthWestern submitted a Montana Air Quality Permit Application for a modification to Permit #3156-01. Under the authority of the Administrative Rules of Montana (ARM) 17.8.762(2), Section III.G of Permit #3156-00 required that construction begin within 3 years of permit issuance and proceed with due diligence until the project was complete or the permit would be revoked. NorthWestern requested that the Department modify Permit #3156-

01 to extend the 3-year construction commencement requirement. NorthWestern's application included a Best Available Control Technology (BACT) analysis to ensure that current BACT requirements are applied to the facility.

E. Additional Information

Additional information, such as applicable rules and regulations, 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 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).

NorthWestern 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
10. ARM 17.8.223 Ambient Air Quality Standard for PM₁₀

NorthWestern 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, NorthWestern 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 British thermal unit (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. NorthWestern will comply with this limitation by burning pipeline-quality natural gas in the dehydration unit reboiler and the compressor turbines.
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 Code of Federal Regulations (CFR) 60, Standards of Performance for New Stationary Sources (NSPS).

40 CFR 60, Subpart KKK, Standards of Performance for Equipment Leaks of VOC From Onshore Natural Gas Processing Plants. Owners or operators of onshore natural gas processing plants, as defined and applied in 40 CFR Part 60, shall comply with standards and provisions of 40 CFR Part 60, Subpart KKK. Subpart KKK does not apply to NorthWestern's Big Sandy #100 Compressor Station because the facility does not meet the definition of a natural gas processing plant as defined in 40 CFR Part 60, Subpart KKK.

40 CFR 60, Subpart GG, Standards of Performance for Stationary Gas Turbines. This subpart shall apply to all stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules per hour, based on the lower heating value of the fuel fired for which construction, reconstruction, or modification commenced after October 3, 1977. This subpart does not apply to the NorthWestern Big Sandy #100 Compressor Station because each of the turbine-driven compressors has a heat input of 4.29 gigajoules per hour at peak load.

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:

Subpart A – General Provisions apply to all equipment or facilities subject to a National Emission Standards for Hazardous Air Pollutants (NESHAP) Subpart as listed below:

40 CFR 63, Subpart HH - National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities. Owners or operators of oil and natural gas production facilities, as defined and applied in 40 CFR Part 63, shall comply with the applicable provisions of 40 CFR Part 63, Subpart HH. In order for a natural gas production facility to be subject to 40 CFR Part 63, Subpart HH requirements, certain criteria must be met. First, the facility must be a major source of Hazardous Air Pollutants (HAP) as determined according to paragraphs (a)(1)(i) through (a)(1)(iii) of 40 CFR 63, Subpart HH. Second, a facility that is determined to be major for HAPs must also either process, upgrade, or store hydrocarbon liquids prior to the point of custody transfer, or process, upgrade, or store natural gas prior to the point at which natural gas enters the natural gas transmission and storage source category or is delivered to a final end user. Third, the facility must also contain an affected source as specified in paragraphs (b)(1) through (b)(4) of 40 CFR Part 63, Subpart HH. Finally, if the first three criteria are met, and the exemptions contained in paragraphs (e)(1) and (e)(2) of 40 CFR Part 63, Subpart HH do not apply, the facility is subject to the applicable provisions of 40 CFR Part 63, Subpart HH. Based on the information submitted by NorthWestern, the Big Sandy #100 Compressor Station is not subject to the provisions of 40 CFR Part 63, Subpart HH because the facility is not a major source of HAPs.

40 CFR 63, Subpart HHH National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities. Owners or operators of natural gas transmission or storage facilities, as defined and applied in 40 CFR Part 63, shall comply with the standards and provisions of 40 CFR Part 63, Subpart HHH. In order for a natural gas transmission and storage facility to be subject to 40 CFR Part 63, Subpart HHH requirements, certain criteria must be met. First, the facility must transport or store natural gas prior to the gas entering the pipeline to a local distribution company or to a final end user if there is no local distribution company. In addition, the facility must be a major source of HAPs as determined using the maximum natural gas throughput as calculated in either paragraphs (a)(1) and (a)(2) or paragraphs (a)(2) and (a)(3) of 40 CFR Part 63, Subpart HHH. Second, a facility must contain an affected source (glycol dehydration unit) as defined in paragraph (b) of 40 CFR Part 63, Subpart HHH. Finally, if the first two criteria are met, and the exemptions contained in paragraph (f) of 40 CFR Part 63, Subpart HHH, do not apply, the facility is subject to the applicable provisions of 40 CFR Part 63, Subpart HHH. Based on the information submitted by NorthWestern, the Big Sandy #100 Compressor Station is not subject to the provisions of 40 CFR 63, Subpart HHH because the facility is not a major source of HAPs.

D. ARM 17.8, Subchapter 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. NorthWestern must demonstrate compliance with the ambient air quality standards with a stack height that does not exceed Good Engineering Practices (GEP). The proposed height of the new or altered stack for NorthWestern is below the allowable 65-meter GEP stack height.

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

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. NorthWestern submitted the appropriate permit application fee for the current permit action.
2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

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

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

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit alteration to construct, alter or use any air contaminant sources that have the Potential to Emit (PTE) greater than 25 tons per year (ton/yr) of any pollutant. NorthWestern has a PTE greater than 25 tons/year of oxides of nitrogen (NO_x); therefore, an air quality permit is required.
3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.
4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, alteration or use of a source. NorthWestern 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. NorthWestern submitted an affidavit of publication of public notice for the October 20, 2004, issue of the *Great Falls Tribune*, a newspaper of general circulation in the Town of Great Falls in Cascade 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 NorthWestern 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 17.8.760 Additional Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those applications that require an environmental impact statement.
12. 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.
13. 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).

14. 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.
 15. 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 tons per year of any pollutant (excluding fugitive emissions).

- H. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:
1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:
 - a. PTE > 100 tons/year of any pollutant;
 - b. PTE > 10 tons/year of any one HAP, PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or
 - c. PTE > 70 tons/year of particulate matter with an aerodynamic diameter of 10 microns or less (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 Air Quality Permit #3156-02 for NorthWestern, the following conclusions were made:
 - a. The facility's PTE is less than 100 tons/year for any pollutant.

- b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year for all HAPs.
- c. The source is not located in a serious PM₁₀ nonattainment area.
- d. The facility is not subject to any current NSPS.
- e. The facility is not subject to any current NESHAP standards.
- f. The source is not a Title IV affected source, nor a solid waste combustion unit.
- g. The source is not an EPA designated Title V source.

Based on these facts, the Department determined that the Big Sandy #100 Compressor Station 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. NorthWestern 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.

A BACT analysis was submitted by NorthWestern in Permit Application #3156-02, addressing some available methods of controlling emissions from the sources to be operated at the Big Sandy #100 Compressor Station. The Department reviewed these methods, as well as previous BACT determinations in order to make the following BACT determination.

A. 1,600-hp Turbines

1. NO_x BACT

As part of the NO_x BACT analysis, the following control technologies were reviewed:

- Diffusion flame turbine with no additional controls;
- Diffusion flame turbine with water/steam injection;
- Diffusion flame turbine with selective catalytic reduction (SCR);
- Diffusion flame turbine with selective non-catalytic reduction (SNCR);
- Diffusion flame turbine with non-selective catalytic reduction (NSCR);
- Diffusion flame turbine with water/steam injection and SCR;
- Lean-premix turbine with no additional controls;
- Lean-premix turbine with water/steam injection;
- Lean-premix turbine with SCR;
- Lean-premix turbine with SNCR; and
- Lean-premix turbine with NSCR.

Lean premix (e.g. SoLoNO_x, dry low NO_x, dry low emissions) turbines are not available in the 1,600-hp range, the horsepower of the proposed turbines. Lean premix turbines are available in the 3,500-hp range; however, the proposed project requires the flexibility of two turbines at the site. Because the proposed project requires two turbines in the 1,600-hp range and because lean premix technology is not available on turbines in this range, the Department determined that all of the control options associated with lean premix turbines are technically infeasible and will not constitute BACT for the proposed compressor

turbines. In addition, SNCR and NSCR on lean premix and/or diffusion flame turbines are technically infeasible. The Department is not aware of any facilities that have demonstrated that SNCR or NSCR are feasible control options. SNCR is typically applied to solid fuel combustion devices and NSCR is typically applied to rich-burn reciprocating internal combustion engines. Therefore, the Department determined that all of the options utilizing SNCR or NSCR are technically infeasible and will not constitute BACT for the proposed compressor turbines.

Technically feasible control options, in order of the highest control efficiency to the lowest control efficiency, include: diffusion flame turbine with water/steam injection and SCR, Diffusion flame turbine with SCR; diffusion flame turbine with water/steam injection; and, diffusion flame turbine with no additional controls.

A diffusion flame turbine can be operated using water/steam injection, as well as water/steam injection combined with an SCR unit. However, the proposed facility is not located near a source of water, which would be required for water/steam injection. In order to provide water for water/steam injection, a water well would need to be drilled, the ground water would need to be pumped to a storage tank, and a water treatment facility would need to be constructed to treat the water before the water could be used for water/steam injection. Extracting ground water and building a water treatment facility would increase environmental and energy impacts from the proposed facility. While NorthWestern did not provide an economic analysis for water/steam injection, due to the relatively small amount of emissions that would be generated from the facility, water/steam injection would be cost prohibitive. Therefore, due to the environmental, energy, and economic impacts associated with water/steam injection, the Department determined that water/steam injection and water/steam injection combined with SCR would not constitute BACT for the proposed compressor turbines.

The remaining control technologies, diffusion flame turbine with SCR and diffusion flame turbine with no additional controls cannot be ruled out based on environmental or energy impacts. As part of the BACT analysis provided in Permit Application #3156-02, NorthWestern provided an economic analysis that was based on the methods outlined in the Environmental Protection Agency (EPA) 452/B-02-001, EPA Control Cost Manual, 6th Edition (OAQPS) (January 2002). The costs were estimated using the OAQPS cost analysis methods for SCR, assuming 90% NO_x removal. The equipment costs were provided by the manufacturer and the emission rates are based on operating 8,760 hours per year. The following table summarizes the cost effectiveness for SCR and no additional controls on one turbine.

Control Technology	Total Annual Cost	Uncontrolled emissions (tpy)	Control Efficiency (%)	Tons Removed (tpy)	Resulting NO_x Emissions (tpy)	Cost Effectiveness (\$/ton)
SCR	\$186,176	28	90	25.2	2.8	\$7,398
No Controls	N/A	28	0	0	28	\$0.00

The above table demonstrates that the cost per ton of NO_x removed by utilizing SCR is well above industry norms. Purchasing an SCR unit would cost approximately \$7,398 per ton of NO_x removed beyond the proposed turbine. Therefore, the Department determined that a diffusion flame turbine with SCR will not constitute BACT for the proposed turbines.

NorthWestern proposed the use of a diffusion flame turbine with no additional controls to meet an emission limit of 1.81 grams per brake horsepower-hour (g/bhp-hr) as BACT. A diffusion flame turbine is the only option that was not eliminated from further consideration due to technical infeasibility or due to additional environmental, energy, and economic impacts. Therefore, the use of the proposed diffusion flame turbine with no additional controls is the most cost-effective method to control NO_x emissions from the proposed turbines and the Department agrees with NorthWestern's proposal and determined that the diffusion flame turbines with an emission limit of 1.81 g/bhp-hr per turbine is BACT. A diffusion flame turbine within the size range proposed for this project, with no additional controls, is frequently used in the natural gas compression industry and the BACT determination is consistent, or more stringent than, other recently permitted similar sources.

2. CO BACT

As part of the carbon monoxide (CO) BACT analysis, the following control technologies were reviewed:

- Diffusion flame turbine with no additional controls;
- Diffusion flame turbine with catalytic oxidizer;
- Diffusion flame turbine with NSCR;
- Lean-premix turbine with no additional controls;
- Lean-premix turbine with catalytic oxidizer; and
- Lean-premix turbine with NSCR.

Lean premix turbines are not available in the 1,600-hp range, the horsepower of the proposed turbines. Lean premix turbines are available in the 3,500-hp range; however, the proposed project requires the flexibility of two turbines at the site. Because the proposed project requires two turbines in the 1,600-hp range and because lean premix technology is not available on turbines in this range, the Department determined that all of the control options associated with lean premix turbines are technically infeasible and will not constitute BACT for the proposed compressor turbines. In addition, NSCR on lean premix and/or diffusion flame turbines is technically infeasible. The Department is not aware of any facilities that have demonstrated that NSCR is a feasible control option. NSCR is typically applied to rich-burn reciprocating internal combustion engines. Therefore, the Department determined that all of the options utilizing NSCR are technically infeasible and will not constitute BACT for the proposed compressor turbines.

Technically feasible control options, in order of the highest control efficiency to the lowest control efficiency, include diffusion flame turbine with catalytic oxidation and diffusion flame turbine with no additional controls. A diffusion flame turbine with catalytic oxidation and a diffusion flame turbine with no additional controls cannot be ruled out based on environmental or energy impacts. As part of the BACT analysis provided in Permit Application #3156-02, NorthWestern provided an economic analysis that was based on the methods outlined in the EPA 452/B-02-001, EPA Control Cost Manual, 6th Edition (OAQPS) (January 2002). The costs were estimated using the OAQPS cost analysis methods for catalytic oxidation, assuming 90% CO removal. The equipment costs were provided by the manufacturer and the emission rates are based on operating 8,760 hours per year. The following table summarizes the cost effectiveness for catalytic oxidation and no additional controls on one turbine.

Control Technology	Total Annual Cost	Uncontrolled emissions (tpy)	Control Efficiency (%)	Tons Removed (tpy)	Resulting CO Emissions (tpy)	Cost Effectiveness (\$/ton)
Catalytic oxidation	\$104,512	8.51	90	7.7	0.81	\$13,573
No Controls	N/A	8.51	0	0	8.51	\$0.00

The above table demonstrates that the cost per ton of CO removed by utilizing catalytic oxidation is well above industry norms. Purchasing catalytic oxidation unit would cost approximately \$13,573 per ton of CO removed beyond the proposed turbine. Therefore, the Department determined that a diffusion flame turbine with catalytic oxidation will not constitute BACT for the proposed turbines.

NorthWestern proposed the use of a diffusion flame turbine with no additional controls to meet an emission limit of 0.55 g/bhp-hr as BACT. A diffusion flame turbine is the only option that was not eliminated from further consideration due to technical infeasibility or due to excessive economic impacts. Therefore, the use of the proposed diffusion flame turbine with no additional controls is the most cost-effective method to control CO emissions from the proposed turbines and the Department agrees with NorthWestern's proposal and determined that the diffusion flame turbines with an emission limit of 0.55 g/bhp-hr per turbine is BACT. A diffusion flame turbine within the size range proposed for this project, with no additional controls, is frequently used in the natural gas compression industry and the BACT determination is consistent, or more stringent than, other recently permitted similar sources.

3. VOC BACT

The Department is not aware of any BACT determinations that have required add-on controls for Volatile Organic Compound (VOC) emissions from natural gas fired turbines around the size of the proposed turbines. NorthWestern proposed the use of diffusion flame turbine with no additional controls with an emission limit of 0.16 g/hp-hr per turbine as BACT. The Department agrees with NorthWestern's proposal and determined that a diffusion flame turbine with no additional controls with an emission limit of 0.16 g/hp-hr constitutes BACT for the proposed turbines.

4. SO₂ BACT

The Department is not aware of any BACT determinations that have required add-on controls for sulfur dioxide (SO₂) emissions from natural gas fired turbines around the size of the proposed turbines. NorthWestern proposed burning pipeline quality natural gas in the proposed turbines as BACT. The Department agrees with NorthWestern's proposal and determined that burning pipeline quality natural gas constitutes BACT for SO₂ emissions from the proposed turbines.

5. PM/PM₁₀ BACT

The Department is not aware of any BACT determinations that have required add-on controls for Particulate Matter (PM)/PM₁₀ emissions from natural gas fired turbines around the size of the proposed turbines. NorthWestern proposed burning pipeline quality natural gas in the proposed turbines as BACT. The Department agrees with NorthWestern's proposal and determined that burning pipeline quality natural gas constitutes BACT for PM/PM₁₀ emissions from the proposed turbines.

B. Latoka Dehydration Unit Reboiler

NO_x, CO, SO₂, VOC, and PM/PM₁₀ BACT

The Department is not aware of any BACT determinations that have required add-on controls for NO_x, CO, SO₂, VOC, or PM/PM₁₀ emissions from natural gas fired dehydration unit reboilers around the size of the proposed reboiler. NorthWestern proposed burning pipeline quality natural gas in the proposed reboiler as BACT. The Department agrees with NorthWestern's proposal and determined that burning pipeline quality natural gas constitutes BACT for NO_x, CO, SO₂, VOC, and PM/PM₁₀ emissions from the proposed reboiler.

C. Dehydration Unit Still Vent and Flash Tank

VOC BACT

The Department is not aware of any BACT determinations that have required add-on controls for VOC emissions from dehydration unit still vents or flash tanks. NorthWestern proposed the use of best management practices as BACT for the dehydration unit still vent and flash tank. Best management practices would include operating the equipment as it was designed to be operated and fixing any malfunctions as soon as reasonably practical after the malfunction is detected. The Department agrees with NorthWestern's proposal and determined that best management practices constitutes BACT for VOC emissions from the proposed dehydration unit still vent and flash tank.

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

Source	Ton/year				
	PM ₁₀	NO _x	VOC	CO	SO _x
1600-hp Solar Saturn Turbine-driven compressor #1	0.46	27.97	2.47	8.50	0.42
1600-hp Solar Saturn Turbine-driven compressor #2	0.46	27.97	2.47	8.50	0.42
Latoka Dehydrator Reboiler	0.01	0.08	0.00	0.06	0.00
-Still Vent	0.00	0.00	0.33	0.00	0.00
-Flash Tank	0.00	0.00	0.02	0.00	0.00
Miscellaneous Building Heaters	0.03	0.41	0.02	0.34	0.00
Total	0.96	56.43	5.31	17.40	0.84

Solar Saturn Compressor Turbines (2 Turbines)

Brake Horsepower: 1,600 bhp
 Hours of operation: 8760 hr/yr
 Max fuel Consumption: 16.03 MMBtu/hr
 Fuel Heating Value: 0.001 MMScf/MMBtu

PM₁₀ Emissions

Emission Factor: 6.60 lb/MMScf (AP-42, Chapter 3, Table 3.1-2a, 7/00)
Calculations: $6.60 \text{ lb/MMScf} * 0.001 \text{ MMScf/MMBtu} * 16.03 \text{ MMBtu/hr} = 0.1058 \text{ lb/hr}$
 $0.1058 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.46 \text{ ton/yr}$

NO_x Emissions

Emission factor: 1.81 gram/bhp-hour (BACT Determination)
Calculations: $1.81 \text{ gram/bhp-hour} * 1600 \text{ bhp} * 0.002205 \text{ lbs/gram} = 6.3857 \text{ lb/hr}$
 $6.3857 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 14.28 \text{ ton/yr}$

VOC Emissions

Emission factor: 0.16 gram/bhp-hour (BACT Determination)
Calculations: $0.16 \text{ gram/bhp-hour} * 1600 \text{ bhp} * 0.002205 \text{ lb/gram} = 0.5645 \text{ lb/hr}$
 $0.5645 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 2.47 \text{ ton/yr}$

CO Emissions

Emission factor: 0.55 gram/bhp-hour (BACT Determination)
Calculations: $0.55 \text{ gram/bhp-hour} * 1600 \text{ bhp} * 0.002205 \text{ lb/gram} = 1.9404 \text{ lb/hr}$
 $1.9404 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 8.50 \text{ ton/yr}$

SO₂ Emission

Emission Factor: 0.60 lb/MMScf (AP-42, Chapter 3, Table 3.1-2a, 7/00)
Calculations: $0.60 \text{ lb/MMScf} * 0.001 \text{ MMScf/MMBtu} * 16.03 \text{ MMBtu/hr} = 0.0096 \text{ lb/hr}$
 $0.0096 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.42 \text{ ton/yr}$

Latoka Dehydration Unit

Reboiler

Heat Output: 0.175MMBtu/hr
Hours of Operation: 8760 hr/yr
Max Fuel Consumption: 0.175 MMBtu/hr
Fuel Heating Value: 0.001 MMScf/MMBtu

PM₁₀ Emissions

Emission Factor: 7.6 lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/00)
Calculations: $7.6 \text{ lb/MMScf} * 0.001 \text{ MMScf/MMBtu} * 0.175 \text{ MMBtu/hr} = 0.0013 \text{ lb/hr}$
 $0.0013 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.01 \text{ ton/yr}$

NO_x Emissions

Emission factor: 100 lb/MMScf (AP-42, Chapter 3, Table 1.4-1, 7/00)
Calculations: $100 \text{ lb/MMScf} * 0.001 \text{ MMScf/MMBtu} * 0.175 \text{ MMBtu/hr} = 0.0175 \text{ lb/hr}$
 $0.0175 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.08 \text{ ton/yr}$

VOC Emissions

Emission Factor: 5.5 lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/00)
Calculations: $5.5 \text{ lb/MMScf} * 0.001 \text{ MMScf/MMBtu} * 0.175 \text{ MMBtu/hr} = 0.0010 \text{ lb/hr}$
 $0.0010 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.00 \text{ ton/yr}$

CO Emissions

Emission factor: 84 lb/MMScf (AP-42, Chapter 3, Table 1.4-1, 7/00)
Calculations: $84 \text{ lb/MMScf} * 0.001 \text{ MMScf/MMBtu} * 0.175 \text{ MMBtu/hr} = 0.0147 \text{ lb/hr}$
 $0.0147 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.06 \text{ ton/yr}$

SO₂ Emission

Emission Factor: 0.6 lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/00)
Calculations: $0.6 \text{ lb/MMScf} * 0.001 \text{ MMScf/MMBtu} * 0.175 \text{ MMBtu/hr} = 0.0001 \text{ lb/hr}$
 $0.0001 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.00 \text{ ton/yr}$

Still Vent

Hours of Operation: 8760 hr/yr

VOC Emissions

Emission Factor: 0.0744 lb/hr (GRI-GLYcalc, v3.0, EPA Approved Emission Estimation Program)
Calculations: 0.0744 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.33 ton/yr

HAP Emissions

Emission Factor: 0.0744 lb/hr (GRI-GLYcalc, v3.0, EPA Approved Emission Estimation Program)
Calculations: 0.0744 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.33 ton/yr

Flash Tank

VOC Emissions

Emission Factor: 0.0036 lb/hr (GRI-GLYcalc, v3.0, EPA Approved Emission Estimation Program)
Calculations: 0.0036 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.02 ton/yr

HAP Emissions

Emission Factor: 0.0036 lb/hr (GRI-GLYcalc, v3.0, EPA Approved Emission Estimation Program)
Calculations: 0.0036 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.02 ton/yr

Miscellaneous Building Heaters

Heat Output: 1.00 MMBtu/hr
Hours of Operation: 8760 hr/yr
Max Fuel Consumption: 0.93 MMBtu/hr
Fuel Heating Value: 0.001 MMScf/MMBtu

PM₁₀ Emissions

Emission Factor: 7.6 lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/00)
Calculations: 7.6 lb/MMScf * 0.001 MMScf/MMBtu * 0.93 MMBtu/hr = 0.0071 lb/hr
0.0071 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.03 ton/yr

NO_x Emissions

Emission factor: 100 lb/MMScf (AP-42, Chapter 3, Table 1.4-1, 7/00)
Calculations: 100 lb/MMScf * 0.001 MMScf/MMBtu * 0.93 MMBtu/hr = 0.0930 lb/hr
0.0930 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.41 ton/yr

VOC Emissions

Emission Factor: 5.5 lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/00)
Calculations: 5.5 lb/MMScf * 0.001 MMScf/MMBtu * 0.93 MMBtu/hr = 0.0051 lb/hr
0.0051 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.02 ton/yr

CO Emissions

Emission factor: 84 lb/MMScf (AP-42, Chapter 3, Table 1.4-1, 7/00)
Calculations: 84 lb/MMScf * 0.001 MMScf/MMBtu * 0.93 MMBtu/hr = 0.0781 lb/hr
0.0781 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.34 ton/yr

SO₂ Emission

Emission Factor: 0.6 lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/00)
Calculations: 0.6 lb/MMScf * 0.001 MMScf/MMBtu * 0.93 MMBtu/hr = 0.0006 lb/hr
0.0006 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.00 ton/yr

V. Existing Air Quality

The air quality classification for the area is "Better than National Standards" or unclassifiable/attainment for the National Ambient Air Quality Standards for criteria pollutants.

VI. Ambient Air Impact Analysis

Because controlled emissions from this permitting action would exhibit good dispersion characteristics and would not exceed any Montana ambient air quality modeling threshold, the Department determined that controlled emissions from the source 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.

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: NorthWestern Corporation
Big Sandy #100 Compressor Station
40 East Broadway Street
Butte, MT 59701

Air Quality Permit Number: 3156-02

Preliminary Determination Issued: November 9, 2004

Department Decision Issued: November 29, 2004

Permit Final: December 15, 2004

1. *Legal Description of Site:* The Big Sandy #100 Compressor Station would be located approximately 9 miles Southeast of Big Sandy in the SW¼ of the SE¼ of Section 27, Township 27 North, Range 13 East in Chouteau County, Montana.
2. *Description of Project:* On October 15, 2004, NorthWestern submitted a Montana Air Quality Permit Application for a modification to Permit #3156-01. Under the authority of ARM 17.8.762(2), Section III.G of Permit #3156-00 required that construction begin within 3 years of permit issuance and proceed with due diligence until the project was complete or the permit would be revoked. NorthWestern requested that the Department modify Permit #3156-01 to extend the 3-year construction commencement requirement. NorthWestern's application included a BACT analysis to ensure that current BACT requirements are applied to the facility.
3. *Objectives of Project:* The project would allow NorthWestern to construct and operate a previously permitted natural gas compressor station in order to provide additional capacity to transmit natural gas for NorthWestern.
4. *Alternatives Considered:* In addition to the proposed action, the Department also considered the "no-action" alternative. The "no-action" alternative would deny issuance of the air quality preconstruction permit to the proposed facility. However, the Department does not consider the "no-action" alternative to be appropriate because NorthWestern demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the "no-action" alternative was eliminated from further consideration.
5. *A Listing of Mitigation, Stipulations, and Other Controls:* A list of enforceable conditions, including a BACT analysis, would be included in Permit #3156-02.
6. *Regulatory Effects on Private Property:* The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and do not unduly restrict private property rights.

7. The following table summarizes the potential physical and biological effects of the proposed project on the human environment. The “no-action” alternative was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Terrestrial and Aquatic Life and Habitats			X			Yes
B	Water Quality, Quantity, and Distribution			X			Yes
C	Geology and Soil Quality, Stability and Moisture			X			Yes
D	Vegetation Cover, Quantity, and Quality			X			Yes
E	Aesthetics			X			Yes
F	Air Quality			X			Yes
G	Unique Endangered, Fragile, or Limited Environmental Resources			X			Yes
H	Demands on Environmental Resource of Water, Air and Energy			X			Yes
I	Historical and Archaeological Sites			X			Yes
J	Cumulative and Secondary Impacts				X		Yes

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

A. Terrestrial and Aquatic life and Habitats

Minor impacts to terrestrial and aquatic life and habitats would be expected from the proposed project because deer, antelope, coyotes, and other terrestrials would potentially use the area around the facility and because the facility would be a source of air pollutants. The facility would emit air pollutants and corresponding deposition of pollutants would occur; however, as described in Section 7.F. of this EA, the Department determined that any impacts from deposition would be minor. The potential impacts from the proposed project would result in less impact to terrestrials and aquatic life and habitats because the facility would generate fewer emissions after implementing the proposed project. Overall, any impacts to terrestrial and aquatic life and habitats would be minor.

B. Water Quality, Quantity, and Distribution

Minor impacts would be expected on water quality, quantity, and distribution from the proposed project because the facility would be a source of air pollutants. No direct discharges into surface water would occur from operating the facility. However, minor amounts of water may be required to control fugitive dust emissions from the access roads and the general facility property. In addition, the facility would emit air pollutants and corresponding deposition of pollutants would occur. However, as described in Section 7.F. of this EA, the Department determined that any impacts from deposition would be minor. The potential impacts from the proposed project would result in less impact to water quality, quantity, and distribution because the facility would generate fewer emissions after implementing the proposed project.

C. Geology and Soil Quality, Stability, and Moisture

Minor impacts would occur on the geology and soil quality, stability, and moisture from the proposed project because deposition of pollutants would occur. However, as described in Section 7.F of this EA, the Department determined that any impacts from deposition would be minor. The potential impacts from the proposed project would result in less impacts to the geology and soil quality, stability, and moisture because the facility would generate fewer emissions after implementing the proposed project. Overall, any impacts to the geology and soil quality, stability, and moisture would be minor.

D. Vegetation Cover, Quantity, and Quality

Minor impacts would occur to vegetation cover, quantity, and quality because the facility would be a source of air pollutants and corresponding deposition of pollutants would occur. However, as described in Section 7.F of this EA, the Department determined that any impacts from deposition would be minor. The potential impacts from the proposed project would result in less impacts to the vegetation cover, quantity, and quality because the proposed project would generate fewer emissions after implementing the proposed project. Overall, any impacts to vegetation cover, quantity, and quality would be minor.

E. Aesthetics

The proposed project would result in minor impacts to the aesthetic nature of the area because the proposed project would be visible and would be an additional source of noise. Small buildings would be constructed to house the engines, natural gas pipelines would be installed, and an access road would be developed. However, any visual or auditory aesthetic impacts would be minor because natural gas compressor stations are relatively small industrial facilities.

F. Air Quality

The air quality of the area would realize minor impacts from the proposed project because the facility would continue to be permitted to emit the following air pollutants: PM₁₀; NO_x; CO; VOCs, including HAPs; and oxides of sulfur (SO_x). The Department determined that any impacts from emissions would be minor due to the relatively small amount of pollutants that would be emitted. The potential impacts on air quality from the proposed project would decrease because the facility would generate fewer emissions after implementing the proposed project. Also, air emissions from the facility would be minimized by limitations and conditions that would be included in Permit #3156-02. Conditions would include, but would not be limited to, BACT emission limits and opacity limitations on the proposed turbines and/or the general facility. The emission limits established as BACT for NO_x, CO, and VOCs for the proposed project would be lower than the allowable emissions under the existing permit, which would result in lower allowable emission rates. Although emissions from the facility would be less after implementing the proposed project, deposition of pollutants would continue to occur. However, the Department determined that any air quality impacts from deposition of pollutants would be minor due to dispersion characteristics of pollutants (stack height, stack temperature, etc.), the atmosphere (wind speed, wind direction, ambient temperature, etc.), and conditions that would be placed in Permit #3156-02. The Department believes that the emissions resulting from the proposed project would be well dispersed, resulting in lower deposition impacts to the affected area.

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 researched its files. As part of the EA for Permit #3156-00, the Department contacted the Montana Natural Heritage Program, Natural Resource Information System (NRIS). The NRIS search did not identify any 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 amounts of construction that would be required, the relatively low levels of pollutants that would be emitted, and because the NRIS search did not identify any species of special concern in the area of the proposed facility, the Department determined that it would be unlikely that the proposed project would impact any species of special concern and that any potential impacts would be minor.

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

The proposed project would have minor impacts on the demands for the environmental resources of air and water because the facility would be a source of air pollutants. Deposition of pollutants would occur as a result of operating the facility; however, as explained in Section 7.F of this EA, the Department determined that any impacts from deposition would be minor.

The proposed project would have minor impacts on the demand for the environmental resource of energy because power would be required at the site. However, the impact on the demand for the environmental resource of energy would be minor because the facility is relatively small by industrial standards. Overall, the impacts for the demands on the environmental resources of water, air, and energy would be minor.

I. Historical and Archaeological Sites

In an effort to identify any historical and archaeological sites in the area, the Department researched its files. As part of the EA for Permit #3156-00, the Department contacted the Montana Historical Society, Historic Preservation Office (SHPO). SHPO indicated there are currently no previously recorded cultural properties within the area of the proposed project. Because SHPO records indicate that a cultural resource inventory has never been done for the proposed project site, SHPO believes the project may have the potential to impact unknown or unrecorded cultural properties. Therefore, SHPO recommended that a cultural resource inventory occur prior to project initiation. However, neither the Department nor SHPO has the authority to require NorthWestern to conduct a cultural resource inventory. Because the facility is relatively small by industrial standards and only minor land disturbance would occur, the Department determined that the chance of the proposed project impacting any historical or archaeological sites would be minor.

J. Cumulative and Secondary Impacts

Overall, cumulative and secondary impacts from the proposed project on the physical and biological resources of the human environment in the immediate area would be minor because the predominant use of the surrounding area would not change and because any cumulative and secondary impacts from the proposed project would be less than is currently permitted. In addition, the proposed project would result in lower air pollutant emissions due to newly established and lower BACT limits for the proposed turbines. Therefore, because the proposed project would result in fewer emissions, the potential impacts from air pollutant emissions after implementing the proposed project would result in less cumulative and secondary impacts to the

area. Overall, the proposed project would maintain the operating status quo for the facility and the area at large; therefore, no additional cumulative or secondary impacts would be expected as a result of implementing the proposed project. 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 #3156-02.

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
- B. Cultural Uniqueness and Diversity

The proposed project would cause minor, if any, impacts to the social structures and mores or the cultural uniqueness and diversity in the area because the proposed project would take place in a relatively remote location. Further, the operation of a compressor station of this type 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; thereby, having little, if any impact on the social structures and mores or the cultural uniqueness and diversity of the area.

Additional activity (vehicle traffic, construction equipment, etc.) would be noticeable during facility construction; however, compressor stations typically do not require day-to-day employees and once the facility is constructed, activities associated with the operation of the facility would be minor. Overall, any impacts to the 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 new employees would be expected as a result of constructing the facility. 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 in the area would be minor. Overall, any impacts to the local and state tax base would be minor.

D. Agricultural or Industrial Production

The land at the proposed location is rural agriculture grazing land; however, because the facility would be relatively small, the proposed project would result in only minor impacts to agricultural production. The proposed project would have minor impacts to industrial production because the proposed project would be a new industrial source locating in the proposed area. However, because the facility would be relatively small by industrial standards, the project would likely not result in additional industrial sources, thereby resulting in relatively minor impact to industrial production of the area.

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 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. The Department determined that the proposed project would comply with all applicable air quality rules, regulations, and standards. These rules, regulations, and standards are designed to be protective of human health.

F. Access to and Quality of Recreational and Wilderness Activities

The proposed project would have minor, if any, impacts on access to recreational and wilderness activities because of the relatively remote location and the relatively small size of the facility. The proposed project would have minor impacts on the quality of recreational and wilderness activities in the area because the facility, while relatively small by industrial standards, would be visible and would produce noise. Overall any impacts to the access to and quality of recreational and wilderness activities in the area would be minor.

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 or the distribution of population because relatively few permanent employees would be required for normal operations thereby resulting in relatively few, if any, new immigration to 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 facility. Overall, any impacts to the quantity and distribution of employment or the distribution of population in the area would be minor.

I. Demands for Government Services

There would be minor impacts on the demands for government services because additional time would be required by government agencies to issue Permit #3156-02 and to assure compliance with applicable rules, standards, and conditions that would be contained in Permit #3156-02. In addition,

there would be minor impacts on the demands for government services to regulate the increase in vehicle traffic that would be associated with constructing and operating the facility. The increase in vehicle traffic would be primarily during facility construction because compressor stations typically do not require day-to-day employees. Therefore, vehicle traffic would be relatively minor due to the relatively short time period that would be required to construct the facility. Overall, any demands for government services to regulate the facility or activities associated with the facility would be minor due to the relatively small size of the facility.

J. Industrial and Commercial Activity

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. The proposed project would be relatively small and would take place at a relatively remote location.

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 impacts to the local industrial and commercial activity of the area would be minor.

K. Locally Adopted Environmental Plans and Goals

The Department is unaware of any locally adopted environmental plans or goals. The permit would ensure compliance with state standards and goals and only minor, if any, impacts would be expected.

L. Cumulative and Secondary Impacts

Overall, cumulative and secondary impacts from this project would result in minor impacts to the economic and social aspects of the human environment in the immediate area. Due to the relatively small size of the project, the industrial production, employment, and tax revenue (etc.), impacts resulting from the proposed project would be minor. 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 #3156-02.

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.

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 previously permitted natural gas compressor station. Permit #3156-02 includes conditions and limitations to ensure the facility will operate in compliance with all applicable rules and regulations. In addition, there are no significant impacts associated with this proposal.

Other groups or agencies contacted or which may have overlapping jurisdiction: SHPO, NRIS

Individuals or groups contributing to this EA: Department – Air Resources Management Bureau, SHPO, NRIS

EA prepared by: Dave Aguirre

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