

## AIR QUALITY PERMIT

Issued To: Aloe Joint Ventures  
P.O. Box 766  
103 Teton Avenue  
Shelby, Montana 59474

Permit: #2969-04  
Administrative Amendment (AA)  
Request Received: 10/02/06  
Department Decision on AA: 10/12/06  
Permit Final: 10/28/06  
AFS #: 101-0018

An air quality permit, with conditions, is hereby granted to Aloe Joint Ventures (Aloe), 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

Aloe operates a natural gas compressor station and associated equipment located in the Southwest ¼ of the Northwest ¼ of Section 25, Township 34 North, Range 3 West in Toole County, Montana. The facility is known as the Aloe Ventures Gathering System. A complete list of permitted equipment is contained in Section I.A of the permit analysis.

#### B. Current Permit Action

On October 2, 2006, Aloe submitted a letter to the Department of Environmental Quality (Department) requesting an administrative amendment to Permit #2969-03. Aloe requested that the Department require a non-selective catalytic reduction (NSCR) unit on the 800-horsepower (hp) Superior natural gas compressor engine. In addition, Aloe requested that the Department adjust the oxides of nitrogen (NO<sub>x</sub>), carbon monoxide (CO), and volatile organic compounds (VOC) emission limits for the engine to reflect the addition of the NSCR unit and to limit the facility's NO<sub>x</sub> emissions below the Title V operating permit threshold of 100 tons per year. The current permit action incorporates Aloe's requests into the permit according to the provisions of ARM 17.8.745(2). In addition, the 95-hp Caterpillar natural gas compressor engine that was added under the provisions of ARM 17.8.745(1) was identified in the permit analysis and the permit was updated to reflect current Department rule references, format, and language.

### SECTION II: Conditions and Limitations

#### A. Emission Limitations

1. Emissions from the 800-hp Superior natural gas compressor engine shall be controlled with an NSCR unit and shall not exceed the following limits (ARM 17.8.749 and ARM 17.8.1204):

NO <sub>x</sub> :	1.76 pounds per hour (lb/hr)	(ARM 17.8.749 ARM 17.8.1204)
CO:	1.76 lb/hr	(ARM 17.8.749)
VOC:	0.88 lb/hr	(ARM 17.8.749)

2. Aloe shall direct emissions from the ethylene glycol (EG) dehydration unit still column to a drip tank in order to capture liquids. The drip tank shall be equipped with a vent line and shall have a minimum height of ten feet above ground level (ARM 17.8.749).

3. Aloe shall operate all equipment to provide the maximum air pollution control for which it was designed (ARM 17.8.752).
4. Aloe 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 six consecutive minutes (ARM 17.8.304).
5. Aloe 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. Aloe 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).

B. Testing Requirements

1. Aloe shall test the 800-hp Superior natural gas compressor engine for NO<sub>x</sub> and CO, concurrently, and demonstrate compliance with the NO<sub>x</sub> and CO emission limits contained in Section II.A.1 of the permit, within 180 days of the date that Permit #2969-04 becomes final. 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 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. Aloe 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. Aloe 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, ten 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 Aloe as a permanent business record for at least five 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).
4. Aloe shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit as required by ARM 17.8.1204(3)(b). The annual certification shall comply with the certification requirements of ARM 17.8.1207. The annual certification shall be submitted along with the annual emission inventory information (ARM 17.8.749 and ARM 17.8.1204).

D. Notification

Aloe shall notify the Department of the installation date of the NSCR unit within 15 days of the actual installation date or within 15 days of the date that Permit #2969-04 becomes final, whichever is later.

SECTION III: General Conditions

- A. Inspection – Aloe shall allow the Department’s representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.
- B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if Aloe fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving Aloe 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 Aloe may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

Permit Analysis  
Aloe Joint Ventures  
Aloe Ventures Gathering System  
Permit #2969-04

I. Introduction/Process Description

A. Permitted Equipment

1. One 800-horsepower (hp) Superior 8G-825 natural gas compressor engine
2. One 1.70-million British thermal unit per hour (MMBtu/hr) natural gas ethylene glycol (EG) dehydration unit
3. One 95-hp Caterpillar 3304 natural gas compressor engine
4. One 10,000-gallon condensate storage tank
5. Associated equipment

B. Source Description

The facility is a natural gas compressor station and is located approximately 12 miles northwest of Shelby, in the Southwest ¼ of the Northwest ¼ of Section 25, Township 34 North, Range 3 West, in Toole County, Montana. The facility is known as the Aloe Ventures Gathering System. The station is designed to gather, compress, and dehydrate sweet natural gas and provide pipeline quality gas to the transmission pipeline.

C. Permit History

Construction of the Aloe Ventures Gathering System began in 1978 and was completed in early 1979. On August 26, 1996, the Department of Environmental Quality (Department) received an application from Aloe Joint Ventures (Aloe) requesting a permit for the operation of the Aloe Ventures Gathering System, including one 800-hp Superior natural gas compressor engine, one 1.70-MMBtu/hr natural gas EG dehydration unit, and one 10,000-gallon condensate storage tank. Permit #2969-00 became final on January 23, 1997.

On June 21, 2000, the Department received a request to administratively amend Permit #2969-00. In 1999, the EPA informed the Department that any condition in a Montana Air Quality Permit would be considered a federally enforceable condition. However, there are certain state rules that were never intended to be federally enforceable. The Department notified all facilities holding Montana Air Quality Permits that they could request deletion of those conditions based on Administrative Rules of Montana (ARM) 17.8.717 and ARM 17.8.315. Removing either of these conditions did not relieve the facility from complying with the rule upon which the permit condition was based; removal only ensured that enforcement of the condition would remain solely with the Department. Aloe requested that ARM 17.8.717 and ARM 17.8.315 be removed from the permit. This permit action removed the conditions from the permit and on June 21, 2000, Permit #2969-01 replaced Permit #2969-00.

On May 17, 2001, Aloe submitted a complete permit application to increase permitted allowable operating hours for the facility from 6120 hours per year to 7500 hours per year. The increase in allowable operating time did not increase potential emissions to a level above the Title V permitting threshold of 100 tons per year. On July 19, 2001, Permit #2969-02 replaced Permit #2969-01.

On October 11, 2001, Aloe submitted a letter to the Department requesting an increase in permitted allowable operating hours from 7500 hours per year to 8760 hours per year. The estimated oxides of nitrogen (NO<sub>x</sub>) emissions in Permit #2969-02 were used to establish the

7500 hours per year operating limit to keep emissions below the Title V operating permit threshold of 100 tons per year. Oasis Emission Consultants, Inc., on behalf of Aloe, conducted source testing on the 800-hp Superior natural gas compressor engine and discovered that the NO<sub>x</sub> emission factor used to establish the operating limit was over-estimated. The source test conducted demonstrated that potential NO<sub>x</sub> emissions from the source operating continuously throughout the year (8760 hours) are less than 100 tons. Therefore, at the request of Aloe, this permit action removed the annual operating limit and established a new NO<sub>x</sub> emission limit.

Because the increase in allowable operating hours did not result in an increase in actual or potential NO<sub>x</sub> emissions, this permit action was accomplished in accordance with ARM 17.8.745. On November 16, 2001, Permit #2969-03 replaced Permit #2969-02.

#### D. Current Permit Action

On October 2, 2006, Aloe submitted a letter to the Department requesting an administrative amendment to Permit #2969-03. Aloe requested that the Department require a non-selective catalytic reduction (NSCR) unit on the 800-hp Superior natural gas compressor engine. In addition, Aloe requested that the Department adjust the NO<sub>x</sub>, carbon monoxide (CO), and volatile organic compounds (VOC) emission limits for the engine to reflect the addition of the NSCR unit and to limit the facility's NO<sub>x</sub> emissions below the Title V operating permit threshold of 100 tons per year. The current permit action incorporates Aloe's requests into the permit according to the provisions of ARM 17.8.745(2). In addition, the 95-hp Caterpillar natural gas compressor engine that was added under the provisions of ARM 17.8.745(1) was identified in the permit analysis and the permit was updated to reflect current Department rule references, format, and language. Permit #2969-04 replaces Permit #2969-03.

#### 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 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).

Aloe 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 four 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 PM<sub>10</sub>

Aloe 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 six 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 (PM). (2) Under this rule, Aloe 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 one 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. Aloe will burn natural gas in its fuel burning equipment, which will meet this limitation.
6. 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.
7. 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:
  - 40 CFR 63, Subpart HH - National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities.
  - 40 CFR 63, Subpart HHH National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities.
  - 40 CFR 63, Subpart ZZZZ National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines.

Based on the information submitted by Aloe, the facility 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 4 – Stack Height and Dispersion Techniques, including, but not limited to:

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

- 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. The current permit action is considered an administrative action and does not require an application or application fee.
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 of any pollutant. Aloe has a PTE greater than 25 tons per year of NO<sub>x</sub> and CO; therefore, an air quality permit is required.
  3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.
  4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.
  5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, alteration, or use of a source. (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. The current permit action is an administrative action; therefore, Aloe was not required to submit a permit application or serve a public notice.
  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 BACT analysis is discussed 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 Aloe 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 one year after the permit is issued.
  12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).
  13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.
  14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.
- G. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:
1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.
  2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.
 

The Aloe 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 per year of any pollutant;

- b. PTE > 10 tons per year of any one HAP, PTE > 25 tons per year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or
  - c. PTE > 70 tons pr year of PM<sub>10</sub> in a serious PM<sub>10</sub> nonattainment area.
2. ARM 17.8.1204 Air Quality Operating Permit Program. (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 #2969-04 for Aloe, the following conclusions were made:
- a. The permit includes federally enforceable conditions limiting the facility's NO<sub>x</sub> emissions below the Title V operating permit threshold of 100 tons per year.
  - b. The facility's PTE is less than 10 tons per year for any one HAP and less than 25 tons per year for all HAPs.
  - c. This source is not located in a serious PM<sub>10</sub> nonattainment area.
  - d. This facility is not subject to any current NSPS.
  - e. This facility is not subject to any current NESHAP standards.
  - f. This source is neither a Title IV affected source or a solid waste combustion unit.
  - g. This source is not an EPA designated Title V source.
  - h. As allowed by ARM 17.8.1204(3), the Department may exempt a source from the requirement to obtain an air quality operating permit by establishing federally enforceable limitations which limit that source's potential to emit.
    - i. In applying for an exemption under this section, the owner or operator of the source shall certify to the Department that the source's potential to emit does not require the source to obtain an air quality operating permit.
    - ii. Any source that obtains a federally enforceable limit on potential to emit shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit.

The Department determined that the annual reporting requirements contained in the permit are sufficient to satisfy this requirement.

Because Aloe has taken federally enforceable permit limits to keep potential emissions below major source permitting thresholds, the facility is not a major source; thus, a Title V operating permit is not required.

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

### III. BACT Determination

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

A BACT analysis was not required for the current permit action because the current permit action is considered an administrative permit action.

### IV. Emission Inventory

Source	Tons/year				
	PM <sub>10</sub>	NO <sub>x</sub>	VOC	CO	SO <sub>x</sub>
800-hp Superior 8G-825 Compressor Engine	0.27	7.71	3.86	7.71	0.02
EG Dehydration Unit Still Column	----	----	15.42	----	----
EG Dehydration Unit Reboiler	0.06	0.75	0.04	0.63	0.00
95-hp Caterpillar 3304 natural gas compressor engine	0.03	7.60	0.10	12.39	0.00
<b>Total</b>	<b>0.36</b>	<b>16.06</b>	<b>19.42</b>	<b>20.73</b>	<b>0.02</b>

#### 800-hp Superior 8G-825 Compressor Engine

Brake Horse Power: 800 bhp  
 Hours of Operation: 8760 hr/yr  
 Max Fuel Combustion Rate: 7.75 MBtu/bhp-hr \* 800 bhp \* 1 MMBtu/1,000 MBtu/hr = 6.20 MMBtu/hr  
 Fuel Heating Value: 1,000 Btu/SCF or 0.0010 MMSCF/MMBtu (Natural Gas)

#### PM<sub>10</sub> Emissions

Emission Factor: 10.0 lb/MMSCF {FIRE - PC Version, 1/95, 2-02-002-02}  
 Calculations: 10.00 lb/MMSCF \* 0.001 MMSCF/MMBtu \* 6.20 MMBtu/hr = 0.06lb/hr  
 0.06 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 0.27 ton/yr

#### NO<sub>x</sub> Emissions

Emission Factor: 1.00 gram/bhp-hr {Company Request}  
 Calculations: 1.00 gram/bhp-hr \* 800 bhp \* 0.002205 lb/gram = 1.76 lb/hr  
 1.76 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 7.71 ton/yr

#### CO Emissions

Emission Factor: 1.00 gram/bhp-hr {Company Request}  
 Calculations: 1.00 gram/bhp-hr \* 800 bhp \* 0.002205 lb/gram = 1.76 lb/hr  
 1.76 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 7.71 ton/yr

#### VOC Emissions

Emission Factor: 0.50 gram/bhp-hr {Company Request}  
 Calculations: 0.50 gram/bhp-hr \* 800 bhp \* 0.002205 lb/gram = 0.88 lb/hr  
 0.88 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 3.86 ton/yr

#### SO<sub>x</sub> Emissions

Emission Factor: 0.60 lb/MMSCF {FIRE - PC Version, 1/95, 2-02-002-02}  
 Calculations: 0.60 lb/MMSCF \* 0.001 MMSCF/MMBtu \* 6.20 MMBtu/hr = 0.004 lb/hr  
 0.004 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 0.02 ton/yr

#### EG Dehydration Unit Still Column

Hours of Operation: 8760 hr/yr

#### VOC Emissions

Emission Factor: 3.52 lb/hr {GRI GLYCalc Program}  
 Calculations: 3.52 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 15.42 ton/yr

#### EG Dehydration Unit Reboiler

Max Fuel Combustion Rate: 1.70 MMBtu/hr  
 Hours of Operation: 8760 hr/yr  
 Fuel Heating Value: 1,000 Btu/SCF or 0.0010 MMSCF/MMBtu (Natural Gas)  
 Fuel Consumption: 1.70 MMBtu/hr \* 0.001 MMscf/MMBtu \* 8760 hr/yr = 14.90 MMscf/yr

PM<sub>10</sub> Emissions

Emission Factor: 7.6 lb/MMSCF {AP-42, Chapter 1, Table 1.4-2, 3/98}  
Calculations: 7.6 lb/MMSCF \* 14.90 MMscf/yr \* 0.0005 ton/lb = 0.06 ton/yr

NO<sub>x</sub> Emissions

Emission Factor: 100 lb/MMSCF {AP-42, Chapter 1, Table 1.4-2, 3/98}  
Calculations: 100 lb/MMSCF \* 14.90 MMscf/yr \* 0.0005 ton/lb = 0.75 ton/yr

CO Emissions

Emission Factor: 84 lb/MMSCF {AP-42, Chapter 1, Table 1.4-2, 3/98}  
Calculations: 84 lb/MMSCF \* 14.90 MMscf/yr \* 0.0005 ton/lb = 0.63 ton/yr

VOC Emissions

Emission Factor: 5.5 lb/MMSCF {AP-42, Chapter 1, Table 1.4-2, 3/98}  
Calculations: 5.5 lb/MMSCF \* 14.90 MMscf/yr \* 0.0005 ton/lb = 0.04ton/yr

SO<sub>x</sub> Emissions

Emission Factor: 0.6 lb/MMSCF {AP-42, Chapter 1, Table 1.4-2, 3/98}  
Calculations: 0.6 lb/MMSCF \* 14.90 MMscf/yr \* 0.0005 ton/lb = 0.005 ton/yr

**95-hp Caterpillar 3304 Compressor Engine**

Brake Horse Power: 95 bhp  
Hours of Operation: 8760 hr/yr  
Max Fuel Combustion Rate: 0.76 MMBtu/hr  
Fuel Heating Value: 1,000 Btu/SCF or 0.0010 MMSCF/MMBtu (Natural Gas)

PM<sub>10</sub> Emissions

Emission Factor: 9.91E-03 lb/MMBtu (heat Input) {AP-42, Chapter 3, Table 3.2-3}  
Calculations: 9.91E-03 lb/MMBtu \* 0.76 MMBtu/hr \* 1/95 hp = 0.0001 lb/hp-hr  
0.0001 lb/hp-hr \* 95 bhp = 0.008 lb/hr  
0.008 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 0.03 ton/yr

NO<sub>x</sub> Emissions

Emission Factor: 2.27 lb/MMBtu (heat Input) {AP-42, Chapter 3, Table 3.2-3}  
Calculations: 2.27 lb/MMBtu \* 0.76 MMBtu/hr \* 1/95 hp = 0.02 lb/hp-hr  
0.02 lb/hp-hr \* 95 bhp = 1.73 lb/hr  
1.73 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 7.6 ton/yr

CO Emissions

Emission Factor: 3.72 lb/MMBtu (heat Input) {AP-42, Chapter 3, Table 3.2-3}  
Calculations: 3.72 lb/MMBtu \* 0.76 MMBtu/hr \* 1/95 hp = 0.03 lb/hp-hr  
0.03 lb/hp-hr \* 95 bhp = 2.83 lb/hr  
2.83 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 12.39 ton/yr

VOC Emissions

Emission Factor: 2.96E-02 lb/MMBtu \* 0.76 MMBtu/hr \* 1/95 hp = 0.0002 lb/hp-hr  
0.0002 lb/hp-hr \* 95 bhp = 0.02 lb/hr  
0.02 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 0.10 ton/yr

SO<sub>x</sub> Emissions

Emission Factor: 5.88E-04 lb/MMBtu \* 0.76 MMBtu/hr \* 1/95 hp = 4.70E-06 lb/hp-hr  
4.70E-06 lb/hp-hr \* 95 bhp = 0.0004 lb/hr  
0.0004 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 0.002 ton/yr

V. Existing Air Quality

The surrounding area is considered attainment/unclassified for the National Ambient Air Quality Standards (NAAQS)

VI. Ambient Air Impact Analysis

As part of the permitting process for Permit #2969-00, Aloe was required to demonstrate, through dispersion modeling, that the facility was in compliance with the federal and Montana NO<sub>2</sub> standards. The Department performed ambient air quality modeling using SCREEN3.

This modeling used an input emission rate of 3.33 gram/sec (26.46 lb/hr) for NO<sub>x</sub>, based on the manufacturer's emission estimate of 15 gram/bhp-hr NO<sub>x</sub> for an 800-hp Superior 8G-825 operating at 900 rpm. A stack height of 21 feet (6.40 m) was used. Results of the SCREEN3 model showed a 1-hour ambient concentration of 3,448 ug/m<sup>3</sup>.

The Ozone Limiting Method assumed that only 10% of NO<sub>x</sub> is actually NO<sub>2</sub> and that Ozone (O<sub>3</sub>) is converted at a 1 to 1 ratio. O<sub>3</sub> was assumed to be 0.04 parts per million (ppm) (0.04 ppm \* 1880 ug/m<sup>3</sup> = 75.2 ug/m<sup>3</sup>), which is representative of the area. When this method was applied, the predicted-modeled NO<sub>x</sub> concentration was reduced to 344.8 ug/m<sup>3</sup>, plus the O<sub>3</sub> of 75.2 ug/m<sup>3</sup>, equated to 420.0 ug/m<sup>3</sup>. When the NO<sub>2</sub> 1-hour background concentration of 75 ug/m<sup>3</sup>, which is representative of the area, was added to this concentration, it resulted in a predicted ambient concentration of 495.0 ug/m<sup>3</sup>. This predicted ambient concentration was less than the Montana NO<sub>2</sub> 1-hr standard of 564 ug/m<sup>3</sup>.

The hourly concentration was converted to an annual estimate by using a 0.08 ratio. This conversion resulted in a predicted annual concentration of 39.60 ug/m<sup>3</sup>, which was less than the Montana NO<sub>2</sub> annual standard of 94 ug/m<sup>3</sup>. This modeling did not show violations with the hourly or annual ambient standards.

The plant is located in the SW<sup>1</sup>/<sub>4</sub> of the NW<sup>1</sup>/<sub>4</sub> of Section 25, Township 34 North, Range 3 West in Toole County. This remote site is 12 miles northwest of Shelby, Montana. The elevation at the facility is 3,417 feet above sea level. There are no schools, hospitals, residential areas, parks or any other sensitive areas near the plant. The land around the plant is used primarily for grazing, grain crops, and oil/gas production. The area is considered semi-arid with an average rainfall of about 10 inches per year. The annual average temperature is 43 degrees Fahrenheit (°F) with summer maximums from 90-100 °F and winter minimums well below zero °F. The modeling analysis demonstrated that this facility would not cause a violation or exceedance of any federal or Montana ambient air standard if the exhaust stack were 21 feet above ground level. No ambient monitoring will be required since NO<sub>x</sub> emissions from the facility will not significantly affect the ambient air concentrations.

For the current permit action, the NO<sub>x</sub> emission rate decreased from the limit permitted in Permit #2969-00, #2969-01, #2969-02, and 2969-03. Therefore, the modeling conducted for Permit #2969-00 is more conservative than the current permitted NO<sub>x</sub> emissions from the source and no additional modeling is required.

## 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

This permitting action results in a decrease in emissions from the facility and is considered an administrative action; therefore, an Environmental Assessment is not required.

Analysis Prepared By: Dave Aguirre

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