



Montana Department of  
**E**NVIRONMENTAL **Q**UALITY

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January 15, 2010

Julie Swander  
Saga Petroleum, LLC  
600 17<sup>th</sup> Street, Suite 1700N  
Denver, CO 80202

Dear Ms. Swander:

Montana Air Quality Permit #2919-04 is deemed final as of January 15, 2010, by the Department of Environmental Quality (Department). This permit is for a natural gas compressor station. All conditions of the Department's Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For the Department,

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

Karen Gillespie  
Environmental Engineer Intern  
Air Resources Management Bureau  
(406) 782-2689 ext. 207

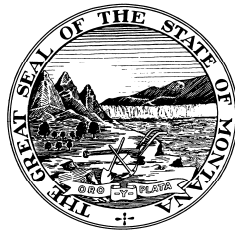
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Montana Department of Environmental Quality  
Permitting and Compliance Division

Montana Air Quality Permit #2919-04

Saga Petroleum, LLC  
600 17<sup>th</sup> Street, Suite 1700N  
Denver, CO 80202

January 15, 2010



## Montana Air Quality Permit

Issued To: Saga Petroleum, LLC  
600 17th Street, Suite 1700N  
Denver, CO 80202

MAQP #2919-04  
Administrative Amendment (AA)  
Request Received: 9/16/2009  
Department Decision on AA: 12/30/2009  
Permit Final: 01/15/2010  
AFS # 095-0004

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Saga Petroleum, LLC (Saga), 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

This permit is for the operation of an existing natural gas compressor station, known as the Lake Basin Compressor Station, located in the NW¼ of the NE¼ of Section 14, Township 1 North, Range 21 East, in Stillwater County, Montana. A complete list of the permitted equipment is contained in the permit analysis.

#### B. Current Permit Action

On September 16, 2009, the Department of Environmental Quality- Air Resources Management Bureau (Department) received a request to change the mailing address for Saga from 410 17<sup>th</sup> Street, Suite 1520 to 600 17<sup>th</sup> Street, Suite 1700N. The current permit action changes the mailing address, and updates the permit to reflect the current format and rule references used by the Department.

### SECTION II: Conditions and Limitations

#### A. Emission Limitations

1. The 600 brake-horsepower (bhp) White Superior 6G-825 compressor engine shall be operated with an electronic air-to-fuel ratio controller and a Non-Selective Catalytic Reduction (NSCR) unit. The engine speed shall not exceed 900 rpm of continuous duty operation. Emissions from the 600 bhp White Superior 6G-825 compressor engine shall not exceed the following (ARM 17.8.752):

Nitric Oxide (NO <sub>x</sub> ) <sup>1</sup>	2.65 pounds per hour (lb/hr)
Carbon Monoxide (CO)	3.97 lb/hr
Volatile Organic Compound (VOC)	1.32 lb/hr

2. Each calendar month, all valves, flanges, pump seals, and open-ended lines in VOC service shall be inspected for total organic liquid or vapor leaks. For purposes of this paragraph, detection methods incorporating sight, sound, or smell are acceptable (ARM 17.8.752).
3. Saga shall (ARM 17.8.752):
  - a. Make a first attempt at repair for any leak not later than 5 calendar days after the leak is detected; and

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<sup>1</sup> NO<sub>x</sub> reported as NO<sub>2</sub>

- b. Repair any leak as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in Section II.B.4 below.
4. Delay of repair of equipment for which a leak has been detected will be allowed if repair is technically infeasible without a process unit shutdown. Such equipment shall be repaired before the end of the first process unit shutdown after detection of the leak (ARM 17.8.752).
5. A record of each monthly leak inspection, required under Section II.A.2 of this MAQP, shall be kept on file at the facility. Inspection records shall include, at a minimum, the following information (ARM 17.8.105):
  - a. Date of inspection;
  - b. Findings (may indicate no leaks discovered or the location, nature, and severity of each leak);
  - c. Leak determination method;
  - d. Corrective action (date when leak repaired and reasons for any repair interval in excess of 15 calendar days); and
  - e. Inspector name and signature.
6. Saga shall direct the dehydrator still column vent emissions to a storage tank and the vent line exit shall be a minimum of 10 feet above ground level (ARM 17.8.749).
7. Saga 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).
8. Saga 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).
9. Saga 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.8 (ARM 17.8.749).
10. Saga shall operate all equipment to provide the maximum air pollution control for which it was designed (ARM 17.8.752).

**B. Testing Requirements:**

1. Saga shall test the 600 bhp White Superior 6G-825 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. Testing shall occur on an every 4-year basis from the initial testing date or according to another testing/ monitoring schedule as may be approved by the Department (ARM 17.8.105 and ARM 17.8.749).
2. During each test, Saga shall monitor the engine intake manifold temperature and pressure, the exhaust temperature, engine rpm, and all parameters necessary to calculate horsepower. This information shall be submitted to the Department along with the Source Test Report (ARM 17.8.105).

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

C. Operational Reporting Requirement

1. Saga 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).

Saga shall submit the following information annually to the Department by March 1 of each year; the information may be submitted along with the annual emission inventory (ARM 17.8.505).

- a. Amount of fuel consumed by the compressor engine (corrected to 14.7 psia and 60°F),
  - b. Hours of operation for the compressor engine,
  - c. Estimated amount of fuel consumed by the water heater and glycol heater, and
  - d. Hours of operation of the dehydrator.
2. Saga shall notify the Department of any construction or improvement project conducted, pursuant to ARM 17.8.745 that would include *the addition of a new emissions unit*, change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation. The notice must be submitted to the Department, in writing, 10 days prior to startup or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).
  3. All records compiled in accordance with this permit must be maintained by Saga as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

SECTION III: General Conditions

- A. Inspection - Saga 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 (Continuous Emission Monitoring System (CEMS), Continuous Emission Rate Monitoring System (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 Saga fails to appeal as indicated below.

- C. Compliance with Statutes and Regulations - Nothing in this permit shall be construed as relieving Saga 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.
- H. Permit Fees - Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by Saga may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.
- G. Duration of Permit - Construction or installation must begin or contractual obligations entered into that would constitute substantial loss within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall expire (ARM 17.8.762)

Montana Air Quality Permit (MAQP) Analysis  
Saga Petroleum, LLC  
MAQP #2919-04

I. Introduction/Process Description

Saga Petroleum, LLC (Saga) owns and operates a natural gas compressor station. The facility is located in the NW $\frac{1}{4}$  of the NE $\frac{1}{4}$  of Section 14, Township 1 North, Range 21 East, in Stillwater County, Montana, and is known as the Lake Basin Compressor Station.

A. Permitted Equipment

Saga Petroleum LLC (Saga) owns the Lake Basin Compressor Station, which consists of one 600 brake-horsepower (bhp) White Superior 6G-825 compressor engine, a 1.47 million British thermal unit per hour (MMBtu/hr) water heater, a 250,000-Btu/hr glycol reboiler with a still vent, and miscellaneous Volatile Organic Compound (VOC) emissions from the following points; propane refrigeration unit, product tank vent, compressor blowdown vent, and blowdown/drain tank vent.

B. Source Description

The Lake Basin Compressor Station is located in the NW $\frac{1}{4}$  of the NE $\frac{1}{4}$  of Section 14, Township 1 North, Range 21 East, in Stillwater County, Montana. The facility processes approximately 1.2 million cubic feet (MMcf) of gas per day and the primary purpose of the facility is to compress low pressure produced gas to a sales pipeline pressure of 700 psi. The facility has been designed for a maximum capacity of 1.8 MMcf of gas per day. Additionally the facility includes equipment to remove water and natural gas liquids from the gas to achieve pipeline specifications.

The gas is dehydrated through the glycol treating system to reduce the moisture content and to meet sales gas specifications for water dew point. The gas stream, which is relatively saturated with water vapor, is passed through a liquid desiccant, ethylene glycol (EG), prior to flowing to the refrigeration unit. The glycol dehydration unit is used to remove water from produced natural gas streams to prevent hydrate formation and corrosion in pipelines. EG is used because of its high affinity for water and low cost. The moisture rich EG leaving the absorption dehydration contact tower is cycled through the regenerator. The heat produced by the glycol reboiler boils off the absorbed moisture in the EG which is vented from the stripper column as water vapor.

EG also has a high affinity for aromatic compounds. In the absorption step of the dehydration process, EG removes, in addition to water, some benzene, toluene, ethylbenzene, and xylene (BTEX) from the natural gas. The absorbed BTEX is then separated from the glycol in the regenerator and emitted directly to the atmosphere unless a control device is used. No add-on BTEX controls were proposed for this facility.

C. Permit History

The original Lake Basin facility was constructed in 1974 by Williston Basin Pipeline Company, Inc.'s (WBI) predecessor, the Montana-Dakota Utilities Company (MDU). Equitable Resources Energy Company (EREC) leased the facility from WBI in 1991. The current compressor was installed in late 1992 and replaced an Ajax DP 360 unit. WBI sold the property and associated pipeline facilities to INTERENERGY Corporation. At that time, it appeared EREC's lease would be terminated. Consequently, EREC initiated work on a permit application for moving the compressor facility to another location. Since no previous permit information could be found, EREC requested a permit for the existing equipment and location. EREC negotiated an agreement with INTERENERGY, which would allow EREC

to continue the current operation without relocating the facility. EREC proposed Best Available Control Technology (BACT) controls in the form of an electronic air/fuel ratio controller and a Non-Selective Catalytic Reduction (NSCR) unit.

**MAQP #2919-00** was issued to EREC on May 23, 1996, to operate an existing natural gas compressor station consisting of one 600 bhp White Superior 6G-825 compressor engine, a 1.47-MMBtu/hr water heater, a 250,000-Btu/hr glycol reboiler with a still vent, and miscellaneous VOC emissions from the following points; propane refrigeration unit, product tank vent, compressor blowdown vent, and blowdown/drain tank vent.

On December 4, 1997, MAQP #2919-01 was issued. The permit change reflected a name change from EREC to Big West Oil & Gas, Inc. Also, the rule references were updated. **MAQP #2919-01** replaced MAQP #2919-00.

On January 22, 2001, the Department of Environmental Quality (Department) was informed that Big West Oil & Gas, Inc. sold the Lake Basin Compressor Station to Blackstone. The modification transferred the permit to Blackstone. In addition, the permit format and rule references were updated. Furthermore, in 1999, the U.S. Environmental Protection Agency (EPA) informed the Department that any condition in an air quality preconstruction permit would be considered a federally enforceable condition. However, there are certain state rules that were never intended to be federally enforceable (ARM 17.8.315 and ARM 17.8.756). Removing either of these conditions does not relieve the facility from complying with the rule upon which the permit condition was based; removal only ensures that enforcement of the condition remains solely with the Department. The current permit action removes the condition, based on ARM 17.8.315, from Blackstone's permit. **MAQP #2919-02** replaced MAQP #2919-01.

On February 23, 2006, the Department received a request to change the ownership for the Lake Basin Compressor Station on MAQP #2919-02 from Blackstone Operating Inc to Saga. The current permit action changed the name, and updated the permit to reflect the current format and rule references used by the Department. **MAQP #2919-03** replaced MAQP #2919-02.

#### D. Current Permit Action

On September 16, 2009, the Department received a request to change the mailing address for Saga from 410 17<sup>th</sup> Street, Suite 1520 to 600 17<sup>th</sup> Street, Suite 1700N. The current permit action changes the mailing address, and updates the permit to reflect the current format and rule references used by the Department. **MAQP #2919-04** replaces MAQP #2919-03.

#### 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 Administrative Rules of Montana (ARM) and are available, upon request, from the Department. Upon request, the Department will provide references for the 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).

Saga shall comply with all 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 Standard for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standard for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standard 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 Lean
10. ARM 17.8.223 Ambient Air Quality Standard for PM<sub>10</sub>

Saga 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 to 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.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.
4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.
5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. (4) Commencing July 1, 1972, no person shall burn liquid or solid fuels containing sulfur in excess of 1 pound of sulfur per million Btu fired. (5) Commencing July 1, 1971, no person shall burn any gaseous fuel containing sulfur compounds in excess of 50 grains per 100 cubic feet of gaseous fuel, calculated as hydrogen sulfide at standard conditions. Saga will consume pipeline-quality natural gas in the engine, 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 Part 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 a natural gas processing plant as defined in 40 CFR Part 60, Subpart KKK.
7. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. This rule incorporates, by reference, 40 CFR Part 63, Emission Standards for Hazardous Air Pollutants for Source Categories. The owner or operator of any affected source, as defined and applied in 40 CFR Part 63, shall comply with the requirements of 40 CFR Part 63.
  - a. 40 CFR 63, 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:
  - b. 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 63, Subpart HH. In order for a natural gas production facility to be subject to 40 CFR 63, Subpart HH requirements, certain criteria must be met. First, a facility must either process, upgrade, or store natural gas prior to the point at which natural gas enters the natural gas transmission and storage source category or is delivered to a final end user. Second, the facility must also contain an affected source as specified in paragraphs (b)(1) through (b)(4) of 40 CFR 63, Subpart HH. Finally if the criteria are met, and the exemptions contained in paragraphs (e)(1) and (e)(2) of 40 CFR 63, Subpart HH do not apply, the facility is subject to the applicable provisions of 40 CFR 63, Subpart HH. The facility can be either a major or area source of HAPs. Based on information provided by Saga, the Lake Basin Compressor Station is not considered an area source of HAPs subject to 40 CFR 63, Subpart HH, because it does not include an affected source. For area sources, the affected source includes each TEG dehydration unit.
  - c. 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 63, Subpart HHH. In order for a natural gas transmission and

storage facility to be subject to 40 CFR 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 63, Subpart HHH. Second, a facility must contain an affected source (glycol dehydration unit) as defined in paragraph (b) of 40 CFR 63, Subpart HHH. Finally, if the first two criteria are met, and the exemptions in paragraph (f) of 40 CFR 63, Subpart HHH, do not apply, the facility is subject to the applicable provisions of 40 CFR 63, Subpart HHH. Based on previous information submitted by Saga, the Lake Basin 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 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. Saga was not required to submit an application fee for the current permitting action since it is an Administrative Amendment.
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 which prorate the required fee amount.

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

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit modification to construct, modify or use any air contaminant sources that have the potential to emit (PTE) greater than 25 tons per year of any pollutant. Saga has an uncontrolled PTE greater than 25 tons per year for 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, modification or use of a source. Saga was not required to submit a permit application for this current administrative 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. Saga was not required to submit an affidavit of publication for this current administrative action.
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 Saga 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 modified source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.
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.

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

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.
2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

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

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

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any stationary source having:
  - a. Potential To Emit (PTE) greater than 100 tons/year of any pollutant;
  - b. PTE greater than 10 tons/year of any one hazardous air pollutant (HAP), PTE greater than 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or
  - c. PTE greater than 70 tons/year of particulate matter with an aerodynamic diameter or 10 microns or less (PM<sub>10</sub>) in a serious PM<sub>10</sub> nonattainment area.
2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. (1) Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204 (1), obtain a Title V Operating Permit. In reviewing and issuing MAQP#2919-04 for Saga, 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 of any one HAP and less than 25 tons/year of 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 not a Title IV affected source, or a solid waste combustion unit.
  - g. This source is not an EPA designated Title V source.

Based on these facts, the Department has determined that the Lake Basin Compressor Station will be minor source of emissions as defined under Title V.

### III. BACT Determination

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

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-10	NO <sub>x</sub>	VOC	CO	SO <sub>x</sub>	
600 bhp White Superior 6G-825		0.22	11.59	5.79	17.38	0.01
Plant Boiler	0.08	0.63	0.04	0.13	0.00	
Dehydrator Reboiler		0.01	0.10	0.01	0.02	0.00
Dehydrator Still Vent				5.92		
Miscellaneous VOC sources include:				negl.		
<b>Total</b>	<b>0.31</b>	<b>12.32</b>	<b>11.76</b>	<b>17.53</b>	<b>0.01</b>	

#### 600 bhp White Superior 6G-825

Brake Horsepower: 600 bhp @ 900 rpm  
 Hours of operation: 8760 hr/yr

#### PM-10 Emissions:

Emission Factor: 10 lb/10<sup>6</sup> ft<sup>3</sup> gas {2-02-002-02, AFSEF page 32}  
 Fuel Consumption: 8500 Btu/hp-hr  
 Calculations: 8500 Btu/hp-hr \* 0.001 ft<sup>3</sup>/btu \* 600 bhp \* 8760 hr/yr = 44676000 ft<sup>3</sup>/yr  
 44676000 ft<sup>3</sup>/yr \* 10 lb/10<sup>6</sup> ft<sup>3</sup> gas \* 0.0005 tons/lb = 0.22 tons/yr

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

Emission factor: 2.00 grams/bhp-hr (BACT Determination)  
 Calculations: 2.00 grams/bhp-hr \* 600 bhp \* 0.002205 lb/gram = 2.65 lb/hr  
 2.65 lb/hr \* 8760 hr/yr \* 0.0005 tons/lb = 11.59 tons/yr

#### VOC Emissions:

Emission factor: 1.00 grams/bhp-hr (BACT Determination)  
 Calculations: 1.00 grams/bhp-hr \* 600 bhp \* 0.002205 lb/gram = 1.32 lb/hr  
 1.32 lb/hr \* 8760 hr/yr \* 0.0005 tons/lb = 5.79 tons/yr

#### CO Emissions:

Emission factor: 3.00 grams/bhp-hr (BACT Determination)  
 Calculations: 3.00 grams/bhp-hr \* 600 bhp \* 0.002205 lb/gram = 3.97 lb/hr  
 3.97 lb/hr \* 8760 hr/yr \* 0.0005 tons/lb = 17.38 tons/yr

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

Emission factor: 0.002 grams/hp-hr {AP-42, Table 3.2-1, 9/85}  
 Calculations: 0.002 grams/hp-hr \* 600 bhp \* 0.002205 lb/gram = 0.003 lb/hr  
 0.003 lb/hr \* 8760 hr/yr \* 0.0005 tons/lb = 0.01 tons/yr

#### Plant Boiler

Fuel Consumption: 1470000 Btu/hr {Information from company}  
 1470000 Btu/hr \* 0.001 scf/Btu \* 8760 hrs/yr = 12.5025E6 ft<sup>3</sup>/yr

#### PM-10 Emissions:

Emission Factor: 12 lb/10<sup>6</sup> ft<sup>3</sup> gas {AP-42, 1.4-1, 7/93}  
 Fuel Consumption: 12.5025E6 ft<sup>3</sup>/yr  
 Calculations: 12.5025E6 ft<sup>3</sup>/yr \* 12 lb/10<sup>6</sup> ft<sup>3</sup> gas \* 0.0005 tons/lb = 0.08 tons/yr

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

Emission Factor: 100 lb/10<sup>6</sup> ft<sup>3</sup> gas {AP-42, 1.4-2, 7/93}  
 Fuel Consumption: 12.5025E6 ft<sup>3</sup>/yr  
 Calculations: 12.5025E6 ft<sup>3</sup>/yr \* 100 lb/10<sup>6</sup> ft<sup>3</sup> gas \* 0.0005 tons/lb = 0.63 tons/yr

VOC Emissions:

Emission Factor: 5.80 lb/10<sup>6</sup> ft<sup>3</sup> gas {AP-42, 1.4-3, 7/93}  
Fuel Consumption: 12.502E6 ft<sup>3</sup>/yr  
Calculations: 12.502E6 ft<sup>3</sup>/yr \* 5.80 lb/10<sup>6</sup> ft<sup>3</sup> gas \* 0.0005 tons/lb = 0.04 tons/yr

CO Emissions:

Emission Factor: 21 lb/10<sup>6</sup> ft<sup>3</sup> gas {AP-42, 1.4-2, 7/93}  
Fuel Consumption: 12.502E6 ft<sup>3</sup>/yr  
Calculations: 12.502E6 ft<sup>3</sup>/yr \* 21 lb/10<sup>6</sup> ft<sup>3</sup> gas \* 0.0005 tons/lb = 0.13 tons/yr

SO<sub>x</sub> Emissions:

Emission Factor: 0.60 lb/10<sup>6</sup> ft<sup>3</sup> gas {AP-42, 1.4-2, 7/93}  
Fuel Consumption: 12.502E6 ft<sup>3</sup>/yr  
Calculations: 12.502E6 ft<sup>3</sup>/yr \* 0.60 lb/10<sup>6</sup> ft<sup>3</sup> gas \* 0.0005 tons/lb = 0.00 tons/yr

Dehydrator Reboiler

Fuel Consumption: 250000 Btu/hr {Information from company}  
250000 Btu/hr \* 0.001 scf/Btu \* 8760 hrs/yr = 2.1263E6 ft<sup>3</sup>/yr

PM-10 Emissions:

Emission Factor: 12 lb/10<sup>6</sup> ft<sup>3</sup> gas {AP-42, 1.4-1, 7/93}  
Fuel Consumption: 2.126E6 ft<sup>3</sup>/yr  
Calculations: 2.126E6 ft<sup>3</sup>/yr \* 12 lb/10<sup>6</sup> ft<sup>3</sup> gas \* 0.0005 tons/lb = 0.01 tons/yr

NO<sub>x</sub> Emissions:

Emission Factor: 94 lb/10<sup>6</sup> ft<sup>3</sup> gas {AP-42, 1.4-2, 7/93}  
Fuel Consumption: 2.126E6 ft<sup>3</sup>/yr  
Calculations: 2.126E6 ft<sup>3</sup>/yr \* 94 lb/10<sup>6</sup> ft<sup>3</sup> gas \* 0.0005 tons/lb = 0.10 tons/yr

VOC Emissions:

Emission Factor: 5.80 lb/10<sup>6</sup> ft<sup>3</sup> gas {AP-42, 1.4-3, 7/93}  
Fuel Consumption: 2.126E6 ft<sup>3</sup>/yr  
Calculations: 2.126E6 ft<sup>3</sup>/yr \* 5.80 lb/10<sup>6</sup> ft<sup>3</sup> gas \* 0.0005 tons/lb = 0.01 tons/yr

CO Emissions:

Emission Factor: 21 lb/10<sup>6</sup> ft<sup>3</sup> gas {AP-42, 1.4-2, 7/93}  
Fuel Consumption: 2.126E6 ft<sup>3</sup>/yr  
Calculations: 2.126E6 ft<sup>3</sup>/yr \* 21 lb/10<sup>6</sup> ft<sup>3</sup> gas \* 0.0005 tons/lb = 0.02 tons/yr

SO<sub>x</sub> Emissions:

Emission Factor: 0.60 lb/10<sup>6</sup> ft<sup>3</sup> gas {AP-42, 1.4-2, 7/93}  
Fuel Consumption: 2.126E6 ft<sup>3</sup>/yr  
Calculations: 2.126E6 ft<sup>3</sup>/yr \* 0.60 lb/10<sup>6</sup> ft<sup>3</sup> gas \* 0.0005 tons/lb = 0.00 tons/yr

Dehydrator Still Vent

The following emission summary has been estimated using the GRI-GLYCalc program.  
For the detailed input parameters refer to the permit application.

Regenerator Vent

Glycol Type: Ethylene Glycol (EG)  
Annual Hours of Operation: 8760  
Dry Gas Flow Rate: 1.80 MMscf/day (maximum)  
Control Device: Storage tank  
Control Efficiency: 30%  
Flash Separator: N/A

Uncontrolled Regenerator Emissions	lb/hr	tons/yr
Total VOC Emissions	1.93	8.45
Total HAP Emissions	1.42	6.22
Controlled Regenerator Emissions	lb/hr	tons/yr
Total VOC Emissions	1.35	5.92
Total HAP Emissions	0.99	4.35

Miscellaneous VOC sources include: Refrigeration Unit, Product Tank Vent, Compressor Blowdown Vent, and Blowdown/Drain Tank Vent

V. Existing Air Quality

The plant is located in a rural area of Stillwater County, Montana, in the NW¼ of the NE¼ of Section 14, Township 1 North, Range 21 East. This facility is approximately 9 miles west of Molt, Montana, approximately 6 miles southeast of the Halfbreed Lake National Wildlife Refuge, and approximately 12 miles southeast of the Hailstone National Wildlife Refuge. The facility is in a generally rolling, wheat-field terrain at an elevation of 4,038 feet and is remote from any sensitive areas such as schools, hospitals, parks, or residential developments.

Stillwater County is designated as unclassified for the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants. The facility previously operated with a potential to emit 87 tons/yr from each engine. A previous permitting action required the installation of BACT controls in the form of an electronic air-to-fuel ratio controller and a NSCR unit. The allowable emissions, after application of controls were reduced to 13 tons/year of NO<sub>x</sub>. Based on the required control technology and allowable emission limits for NO<sub>x</sub>, no air quality modeling or monitoring was required. No air quality modeling or monitoring was required for the current permitting action because there was no change in emissions and the action is considered to be administrative.

VI. Ambient Air Impact Analysis

Ambient air modeling was not required for the current permit action because the permit change is considered an administrative permit change.

VII. Taking or Damaging Implication Analysis

As required by 2-10-101 through 105, MCA, the Department has conducted the following private property taking and damaging assessment.

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

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



## VIII. Environmental Assessment

This permitting action will not result in an increase of emissions from the facility and is considered an administrative action; therefore, an Environmental Assessment is not required.

MAQP Analysis prepared by: Karen Gillespie  
Date: December 28, 2009