



Montana Department of  
**ENVIRONMENTAL QUALITY**

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March 4, 2013

Ross Whelchel – Operations Engineer, Gas Transmission and Storage  
NorthWestern Energy  
40 East Broadway Street  
Butte, MT 59701

Dear Mr. Whelchel:

Montana Air Quality Permit #3345-04 is deemed final as of March 2, 2013, 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,

Julie Merkel  
Air Permitting Supervisor  
Air Resources Management Bureau  
(406) 444-3626

Ed Warner  
Environmental Engineer  
Air Resources Management Bureau  
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JM:EW  
Enclosure

Montana Department of Environmental Quality  
Permitting and Compliance Division

Montana Air Quality Permit #3345-04

NorthWestern Energy – Signal Butte Compressor Station  
40 East Broadway Street  
Butte, Montana 59701

March 2, 2013



## MONTANA AIR QUALITY PERMIT

Issued To: NorthWestern Energy  
Signal Butte Compressor Station  
40 East Broadway  
Butte, MT 59701

MAQP: #3345-04  
Administrative Amendment (AA) Request  
Received: 01/28/2013  
Department's Decision on AA: 2/14/13  
Permit Final: 03/02/2013  
AFS: # 041-0010

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to NorthWestern Energy (NWE) – Signal Butte Compressor Station, 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

NWE owns and operates a natural gas compressor station located near Havre, Montana. This facility is known as the Signal Butte Compressor Station. The legal description of the facility is the SE<sup>1</sup>/<sub>4</sub> of the SW<sup>1</sup>/<sub>4</sub> of Section 35, Township 37 North, Range 15 East, in Hill County, Montana.

#### B. Current Permit Action

On January 22, 2013, the Department of Environmental Quality - Air Resources Management Bureau (Department) received correspondence from NFR Energy LLC, the former owner of Lodge Creek Pipelines LLC, providing notification of the transfer of ownership of the Signal Butte Compressor Station to NWE. On January 28, 2013, NWE provided correspondence confirming the change in ownership of the Signal Butte Compressor Station. The current permitting action updates the name and address associated with the MAQP to NWE in accordance with ARM 17.8.765(2).

### SECTION II: Conditions and Limitations

#### A. Emission Limitations

1. NWE shall not operate more than four rich-burn compressor engines with a maximum rated design capacity equal to or less than 380 bhp each at any given time (ARM 17.8.749).
2. NWE shall not operate more than three rich-burn compressor engines with a maximum rated design capacity equal to or less than 188 bhp each at any given time (ARM 17.8.749).
3. Emissions from each of the 380 bhp rich-burn engines shall be controlled with a non-selective catalytic reduction (NSCR) unit and an AFR controller and emissions from each of the engines shall not exceed the following limits (ARM 17.8.752):

Emission Limit (pounds per hour (lb/hr)) = Emission Factor (grams per brake horsepower-hour (g/bhp-hr)) \* maximum rated capacity of engine (bhp) \* 0.002205 pounds per gram (lb/g).

Emission Factors

Nitrogen Oxides (NO <sub>x</sub> ) <sup>1</sup>	1.0 g/bhp-hr
Carbon Monoxide (CO)	1.0 g/bhp-hr
Volatile Organic Compound (VOC)	0.5 g/bhp-hr

4. Emissions from each of the 188 bhp rich-burn engines shall be controlled with a non-selective catalytic reduction (NSCR) unit and an AFR controller and emissions from each of the engines shall not exceed the following limits (ARM 17.8.752):

Emission Limit (pounds per hour (lb/hr)) = Emission Factor (grams per brake horsepower-hour (g/bhp-hr)) \* maximum rated capacity of engine (bhp) \* 0.002205 pounds per gram (lb/g).

Emission Factors

Nitrogen Oxides (NO <sub>x</sub> )	1.0 g/bhp-hr
Carbon Monoxide (CO)	1.0 g/bhp-hr
Volatile Organic Compound (VOC)	1.0 g/bhp-hr

5. NWE shall operate all equipment to provide the maximum air pollution control for which it was designed (ARM 17.8.752).
6. NWE shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).
7. NWE shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).
8. NWE shall treat all unpaved portions of the haul roads, access roads, parking lots, or general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.7 (ARM 17.8.749).
9. If the permitted equipment is used in conjunction with any other equipment owned or operated by NWE, at the same site, production shall be limited to correspond with an emission level that does not exceed 250 tons of emissions during any rolling 12-month time period. Any calculations used to establish production levels shall be approved by the Department (ARM 17.8.749).

B. Testing Requirements

1. Each of the relocated 188-bhp rich-burn compressor engines shall be tested for NO<sub>x</sub> and CO, concurrently, to demonstrate compliance with the emission limits in Sections II.A.3 and II.A.4 within 180 days of the initial startup date of the compressor engines at this new location. Further testing shall continue on an every five-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).

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

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

C. Operational Reporting Requirements

1. NWE 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. NWE 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(l)(d) (ARM 17.8.745).
3. All records compiled in accordance with this permit must be maintained by NWE 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

NWE shall provide the Department with written notification of the actual start-up date(s) of the relocated 188-bhp compressor engines within 15 days after the actual start-up date(s). The notification shall include the engine model and maximum rated design capacity (ARM 17.8.749).

SECTION III: General Conditions

- A. Inspection – NWE 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 such as continuous emission monitoring systems (CEMS) or continuous emission rate monitoring systems (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 NWE fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving NWE 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 therefor, 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. Air Quality Operation Fees – Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by NWE may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.
- H. 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 Analysis  
NorthWestern Energy  
Signal Butte Compressor Station  
MAQP #3345-04

I. Introduction/Process Description

NorthWestern Energy (NWE) owns and operates the Signal Butte Compressor Station. The facility is a natural gas compressor station located near the town of Havre, in the SE<sup>1</sup>/<sub>4</sub> of the SW<sup>1</sup>/<sub>4</sub> of Section 35, Township 37 North, Range 15 East, in Hill County, Montana.

A. Permitted Equipment

The facility consists of up to four rich-burn engines each having a maximum rated design capacity equal to or less than 380 brake horsepower (bhp), and up to three rich-burn engines each having a maximum rated design capacity equal to or less than 188 bhp. Emissions from each of the rich-burn engines will be controlled with a non-selective catalytic reduction (NSCR) unit and an air-fuel ratio (AFR) controller.

B. Source Description

The NWE – Signal Butte Compressor Station compresses and transports natural gas from the nearby gas field for transmission through the natural gas pipeline.

C. Permit History

On September 14, 2004, Lodge Creek Pipelines, LLC (LCP) was issued air quality **MAQP #3345-00** for a compressor station including up to four rich-burn compressor engines, each with a maximum rated design capacity of 380 bhp equipped with a NSCR unit and an AFR controller and associated equipment.

On July 19, 2005, the Department of Environmental Quality-Air Resources Management Bureau (Department) received a complete application from LCP requesting a change to air quality MAQP #3345-00. The proposed change included adding a lean-burn compressor engine equal to or less than 1,341 bhp equipped with an oxidation catalyst and an AFR controller. **MAQP #3345-01** replaced MAQP #3345-00.

On June 9, 2006, the Department received an application for the addition of a lean-burn compressor engine up to 1,341 bhp equipped with an oxidation catalyst and an AFR controller. In addition, LCP requested to modify the nitrogen oxide (NO<sub>x</sub>) limit for both the new and the existing lean-burn engine to 1.5 grams per brake horsepower-hour (g/bhp-hr) to reflect the limit guaranteed by the compressor manufacturer. However, in the Department's opinion, the previous NO<sub>x</sub> limit of 1.0 g/bhp-hr represents the Best Available Control Technology (BACT) limit, and was not revised. **MAQP #3345-02** replaced MAQP #3345-01.

On August 26, 2011, the Department received a request for an amendment to MAQP #3345-02 to remove the two existing 1,341 bhp lean-burn compressor engines from the Signal Butte Compressor Station. The request also included a request to relocate compressor engines #3, #6 and #9 from MAQPs #3844-00, #3842-00, and # 3841-00 respectively, to the Signal Butte Compressor Station. The three relocated engines are each 188 bhp 4-stroke rich-burn engines controlled by non-selective catalytic reduction (NSCR) units and air-to-fuel (AFR) controllers. The permit action removed the two 1,341 bhp compressor engines and included the three relocated 188 bhp compressor engines and their associated conditions and limitations. **MAQP #3345-03** replaced MAQP #3345-02.

#### D. Current Permit Action

On January 22, 2013, the Department received correspondence from NFR Energy LLC, the former owner of LCP, providing notification of the transfer of ownership of the Signal Butte Compressor Station to NWE. On January 28, 2013, NWE provided correspondence confirming the change in ownership of the Signal Butte Compressor Station. The current permitting action updates the name and address associated with the MAQP to NWE. **MAQP #3345-04** replaces MAQP #3345-03.

#### II. Applicable Rules and Regulations

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

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

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.
3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, Montana Code Annotated (MCA).

NWE 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 PM<sub>10</sub>

NWE 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 are taken to control emissions of airborne particulate matter (PM). (2) Under this rule, NWE shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne PM.
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 PM 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 PM 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. NWE will burn natural gas in all fuel burning equipment, which will meet this limitation.
6. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.
7. ARM 17.8.340 Standard of Performance for New Stationary Sources. This rule incorporates, by reference, 40 Code of Federal Regulations (CFR) Part 60, Standards of Performance for New Stationary Sources (NSPS).
  - a. 40 CFR 60, Subpart A – General provisions apply to all equipment or facilities subject to an NSPS Subpart as listed below:
  - b. 40 CFR 60, Subpart KKK - Standards of Performance for Equipment Leaks of VOC From Onshore Natural Gas Processing Plants does not apply to the Signal Butte Compressor Station because the Signal Butte Compressor Station only gathers and compresses natural gas and is not a natural gas processing plant that either engages in

the extraction of natural gas liquids or processes sour gas; therefore, the Signal Butte Compressor Station does not meet the definition of a natural gas processing plant as defined in 40 CFR 60, Subpart KKK.

- c. 40 CFR 60, Subpart LLL – Standards of Performance for Onshore Natural Gas Processing: SO<sub>2</sub> Emissions does not apply to the Signal Butte Compressor Station because the Signal Butte Compressor Station does not utilize a sweetening unit to process sour gas and is not a natural gas processing plant.
  - d. 40 CFR 60, Subpart JJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines contains NSPS requirements that apply to owners or operators of stationary spark ignition (SI) internal combustion engine (ICE) that commence construction, modification, or reconstruction after June 12, 2006, where the stationary ICE is manufactured after July 1, 2007, for engines greater than 500 bhp, or after January 1, 2008, for engines less than 500 bhp. This NSPS applies to any stationary engine that meets these criteria.
8. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR Part 63, shall comply with the requirements of 40 CFR Part 63, as listed below:
- a. 40 CFR 63, Subpart A – General Provisions apply to all equipment or facilities subject to a 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 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, 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) or (b)(2) of 40 CFR Part 63, Subpart HH. Finally if the 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. The facility can be either a major or area source of HAPs.

Based on previous information provided during initial permit issuance, the Signal Butte Compressor Station does not process, upgrade, or store natural gas, and as such, does not meet the definition of a natural gas production facility as defined in 40 CFR Part 63, nor does the compressor engines meet the definition of an affected source at an area source of HAPs as defined in paragraph (b)(2). Therefore, the facility is not subject to the provisions of 40 CFR 63, Subpart HH

- c. 40 CFR 63, Subpart HHH National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities. This subpart applies to owners and operators of natural gas transmission and storage facilities that transport or store natural gas prior to entering the pipeline to a local distribution company or to a final end user (if there is no local distribution company), and that are major sources of hazardous air pollutants (HAP) emissions as defined in §63.1271. Because the Signal Butte compressor station is not a major source of HAPs, the facility is not subject to the provisions of 40 CFR 63, Subpart HHH.

- d. 40 CFR 63, Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines. This rule establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. The Signal Butte Compressor Station is an area source of HAP emissions; therefore, this subpart applies.

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. A permit fee is not required for the current permit action because the permit action is considered an administrative permit change
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.

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. NWE has a PTE greater than 25 tons per year of NO<sub>x</sub> and carbon monoxide (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. NWE was not required to submit a permit application because the current permit action is considered an administrative amendment. (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. NWE was not required to post a public notice because the current permit action is considered an administrative amendment. Therefore, publication was not required.

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 NWE 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 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.
12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).
13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.
14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of intent to transfer, including the names of the transferor and the transferee, is sent to the Department.

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

This facility is not a major stationary source 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 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 (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 MAQP #3345-04 for NWE, 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. 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 subject to a current NESHAP: 40 CFR 63, Subpart ZZZZ.
    - f. This source is not a Title IV affected source, nor a solid waste combustion unit.
    - g. This source is not an EPA designated Title V source.

Based on these facts, the Department determined that Signal Butte Compressor Station would be a minor source of emissions as defined under Title V.

### III. BACT Determination

A BACT determination is required for each new or modified source. NWE 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	Ton/year						
	PM	PM <sub>10</sub> =PM <sub>2.5</sub>	NO <sub>x</sub>	CO	VOC	SO <sub>2</sub>	HAP
380-bhp Compressor Engine (EU1)	0.133	0.128	3.67	3.67	1.84	0.008	1.384
380-bhp Compressor Engine (EU2)	0.133	0.128	3.67	3.67	1.84	0.008	1.384
380-bhp Compressor Engine (EU3)	0.133	0.128	3.67	3.67	1.84	0.008	1.384
380-bhp Compressor Engine (EU4)	0.133	0.128	3.67	3.67	1.84	0.008	1.384
188-bhp Compressor Engine (#3)	0.070	0.067	1.82	1.82	1.82	0.004	0.73
188-bhp Compressor Engine (#6)	0.070	0.067	1.82	1.82	1.82	0.004	0.73
188-bhp Compressor Engine (#9)	0.070	0.067	1.82	1.82	1.82	0.004	0.73
<b>Total</b>	<b>0.74</b>	<b>0.71</b>	<b>20.13</b>	<b>20.13</b>	<b>12.79</b>	<b>0.04</b>	<b>7.72</b>

\*\* CO = carbon monoxide  
 HAPs = hazardous air pollutants  
 bhp = brake-horsepower  
 lb = pound  
 N/A = not applicable  
 NO<sub>x</sub> = oxides of nitrogen  
 PM = particulate matter  
 PM<sub>10</sub> = particulate matter with an aerodynamic diameter of 10 microns or less  
 PM<sub>2.5</sub> = particulate matter with an aerodynamic diameter of 2.5 microns or less  
 SO<sub>x</sub> = oxides of sulfur  
 TPH = tons per hour  
 TPY = tons per year  
 VOC = volatile organic compounds  
 yr = year  
 MMBTU=Million British Thermal Units

#### 380-bhp Rich-Burn Compressor Engines (4 Engines, EU1-EU4)

Brake Horsepower: 380 bhp  
 Hours of operation: 8,760 hr/yr

#### PM Emissions

Emission Factor: 0.00991 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)  
 Fuel Consumption: 3.07 MMBtu/hr (Maximum Design)  
 Calculations: 3.07 MMBtu/hr \* 0.0091 lb/MMBtu \* 8,760 hr/yr \* 0.0005 ton/lb = 0.133 ton/yr

#### PM<sub>10</sub> Emissions = PM<sub>2.5</sub> Emissions

Emission Factor: 0.0095 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)  
 Fuel Consumption: 3.07 MMBtu/hr (Maximum Design)  
 Calculations: 3.07 MMBtu/hr \* 0.0095 lb/MMBtu \* 8,760 hr/yr \* 0.0005 ton/lb = 0.128 ton/yr

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

Emission factor: 1.00 gram/bhp-hour (BACT Determination)  
 Calculations: 1.00 gram/bhp-hour \* 380 bhp \* 0.002205 lb/gram = 0.84 lb/hr  
 0.84 lb/hr \* 8,760 hr/yr \* 0.0005 ton/lb = 3.67 ton/yr

#### VOC Emissions

Emission factor: 0.50 gram/bhp-hour (BACT Determination)  
 Calculations: 0.50 gram/bhp-hour \* 380 bhp \* 0.002205 lb/gram = 0.42 lb/hr  
 0.42 lb/hr \* 8,760 hr/yr \* 0.0005 ton/lb = 1.84 ton/yr

CO Emissions

Emission factor: 1.00 gram/bhp-hour (BACT Determination)  
Calculations: 1.00 gram/bhp-hour \* 380 bhp \* 0.002205 lb/gram = 0.84 lb/hr  
0.84 lb/hr \* 8,760 hr/yr \* 0.0005 ton/lb = 3.67 ton/yr

SO<sub>2</sub> Emission

Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)  
Fuel Consumption: 3.07 MMBtu/hr (Maximum Design)  
Calculations: 3.07 MMBtu/hr \* 5.88E-04 lb/MMBtu = 0.002 lb/hr  
0.002 lb/hr \* 8,760 hr/yr \* 0.0005 ton/lb = 0.008 ton/yr

HAPs Emissions	lb/MMBtu
1,1,2,2-Tetrachloroethanel	2.53E-05
1,1,2-Trichloroethanel	1.53E-05
1,1-Dichloroethane	1.13E-05
1,2-Dichloroethane	1.13E-05
1,2-Dichloropropane	1.30E-05
1,3-Butadienel	6.63E-04
1,3-Dichloropropenel	1.27E-05
Acetaldehydel,m	2.79E-03
Acroleinl,m	2.63E-03
Benzenel	1.58E-03
Butyr/isobutyraldehyde	4.86E-05
Carbon Tetrachloridel	1.77E-05
Chlorobenzenel	1.29E-05
Chloroforml	1.37E-05
Ethanen	7.04E-02
Ethylbenzenel	2.48E-05
Ethylene Dibromidel	2.13E-05
Formaldehydel,m	2.05E-02
Methanoll	3.06E-03
Methylene Chloridel	4.12E-05
Naphthalenel	9.71E-05
PAHl	1.41E-04
Styrenel	1.19E-05
Toluenel	5.58E-04
Vinyl Chloridel	7.18E-06
Xylenel	1.95E-04
<b>TOTAL</b>	<b>0.1029</b>

2.53E-05

1.53E-05

HAPs Emissions

Emission factor: 0.1029 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)  
Fuel Consumption: 3.07 MMBtu/hr (Maximum Design)  
Calculations: 3.07 MMBtu/hr \* 0.1029 lb/MMBtu \* 8,760 hr/yr \* 0.0005 ton/lb = 1.384 ton/yr

**188-bhp Rich-Burn Compressor Engines (3 Engines)**

Brake Horsepower: 188 bhp  
Hours of operation: 8,760 hr/yr

PM Emissions

Emission Factor: 0.00991 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)  
Fuel Consumption: 1.62 MMBtu/hr (Maximum Design)  
Calculations: 1.62 MMBtu/hr \* 0.0091 lb/MMBtu \* 8,760 hr/yr \* 0.0005 ton/lb = 0.070 ton/yr

PM<sub>10</sub> Emissions

Emission Factor: 0.0095 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)  
Fuel Consumption: 1.62 MMBtu/hr (Maximum Design)  
Calculations: 1.62 MMBtu/hr \* 0.0095 lb/MMBtu \* 8,760 hr/yr \* 0.0005 ton/lb = 0.067 ton/yr

PM<sub>2.5</sub> Emissions

Emission Factor: 0.0095 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)  
Fuel Consumption: 1.62 MMBtu/hr (Maximum Design)  
Calculations: 1.62 MMBtu/hr \* 0.0095 lb/MMBtu \* 8,760 hr/yr \* 0.0005 ton/lb = 0.067 ton/yr

NO<sub>x</sub> Emissions

Emission factor: 1.00 gram/bhp-hour (BACT Determination)  
Calculations: 1.00 gram/bhp-hour \* 188 bhp \* 0.002205 lb/gram = 0.84 lb/hr  
0.84 lb/hr \* 8,760 hr/yr \* 0.0005 ton/lb = 1.82 ton/yr

VOC Emissions

Emission factor: 1.00 gram/bhp-hour (BACT Determination)  
Calculations: 1.00 gram/bhp-hour \* 188 bhp \* 0.002205 lb/gram = 0.84 lb/hr  
0.84 lb/hr \* 8,760 hr/yr \* 0.0005 ton/lb = 1.82 ton/yr

CO Emissions

Emission factor: 1.00 gram/bhp-hour (BACT Determination)  
Calculations: 1.00 gram/bhp-hour \* 188 bhp \* 0.002205 lb/gram = 0.84 lb/hr  
0.84 lb/hr \* 8,760 hr/yr \* 0.0005 ton/lb = 1.82 ton/yr

SO<sub>2</sub> Emissions

Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)  
Fuel Consumption: 1.62 MMBtu/hr (Maximum Design)  
Calculations: 1.62 MMBtu/hr \* 0.000588 lb/MMBtu \* 8,760 hr/yr \* 0.0005 ton/lb = 0.004 ton/yr

HAPs Emissions

Emission factor: 0.1029 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)  
Fuel Consumption: 1.62 MMBtu/hr (Maximum Design)  
Calculations: 1.62 MMBtu/hr \* 0.1029 lb/MMBtu \* 8,760 hr/yr \* 0.0005 ton/lb = 0.729 ton/yr

V. Existing Air Quality

The NWE Signal Butte Compressor Station is located near the town of Havre, in the SE¼ of the SW¼ of Section 35, Township 37 North, Range 15 East, in Hill County, Montana. Hill County is unclassifiable/attainment for the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants.

VI. Ambient Air Impact Analysis

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

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department 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?



YES	NO	
	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.

Analysis Prepared By: Ed Warner

Date: January 29, 2013