

**MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
OPERATING PERMIT TECHNICAL REVIEW DOCUMENT**

**Permitting and Compliance Division
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Helena, Montana 59620-0901**

**NorthWestern Energy
Mainline #1 Field Station
South ½ of Section 22, Township 33 North, Range 5 West in Glacier County
40 East Broadway
Butte, MT 59701**

The following table summarizes the air quality programs testing, monitoring, and reporting requirements applicable to this facility.

| Facility Compliance Requirements | Yes | No | Comments |
|---|------------|-----------|---|
| Source Tests Required | X | | NO _x , CO, Method 9 |
| Ambient Monitoring Required | | X | |
| COMS (Continuous Opacity Monitoring System) Required | | X | |
| Continuous Emission Monitoring System (CEMS) Required | | X | |
| Schedule of Compliance Required | | X | |
| Annual Compliance Certification and Semiannual Reporting Required | X | | As Applicable |
| Monthly Reporting Required | | X | |
| Quarterly Reporting Required | | X | |
| Applicable Air Quality Programs | | | |
| Administrative Rules of Montana (ARM) Subchapter 7 – Montana Air Quality Permit (MAQP) | X | | MAQP #2428-12 |
| New Source Performance Standards (NSPS) | X | | 40 CFR 60, Subpart KKK and Subpart JJJJ |
| National Emission Standards for Hazardous Air Pollutants (NESHAPS) | | X | Except for 40 CFR 61, Subpart M |
| Maximum Achievable Control Technology (MACT) | X | | 40 CFR 63, Subpart ZZZZ |
| Major New Source Review (NSR) – includes Prevention of Significant Deterioration (PSD) and/or Non-attainment Area (NAA) NSR | | X | |
| Risk Management Plan Required (RMP) | X | | See Section V.C of this Technical Review Document |
| Acid Rain Title IV | | X | |
| Compliance Assurance Monitoring (CAM) | | X | |
| State Implementation Plan (SIP) | X | | General SIP |

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SECTION I. GENERAL INFORMATION

A. Purpose

This document establishes the basis for the decisions made regarding the applicable requirements, monitoring plan, and compliance status of emissions units affected by the operating permit proposed for this facility. The document is intended for reference during review of the proposed permit by the Environmental Protection Agency (EPA) and the public. It is also intended to provide background information not included in the operating permit and to document issues that may become important during modifications or renewals of the permit. Conclusions in this document are based on information provided in the renewal and modification applications submitted by Bison Engineering, Inc, on behalf of NorthWestern Energy (NWE), received on October 20, 2009, and February 9, 2010, respectively. Additional information was submitted on February 26, 2010, March 3, 2010, and in the administrative amendment requests received August 22, 2011, and September 7, 2011.

B. Facility Location

NWE owns and operates the Mainline #1 facility near Cut Bank, Montana. This facility is located in the South ½ of Section 22, Township 33 North, Range 5 West in Glacier County, Montana. The general UTM coordinates are Zone 12, Easting: 408.3 km, Northing: 5353.8 km, and at an elevation of 3,840 feet above sea level. Glacier County is designated as an unclassifiable / attainment area for National Ambient Air Quality Standards (NAAQS) for all criteria pollutants. The Mainline #1 Station is located on a 28-acre site approximately 4.5 miles southeast of Cut Bank along Highway 2.

The area near the facility can be characterized as flat to gently rolling terrain. About 3 to 4 miles north and east of the plant, the terrain drops approximately 400 feet. Rolling terrain is generally present along all other vectors for about 10 kilometers. Cut Bank Creek runs north/south a few miles west of the plant site. The creek bed forms a relatively narrow valley (below the plant site elevation) along this corridor and the elevation drops about 200 feet to the creek bottom. The area surrounding the facility is mainly used for agriculture and livestock grazing. Also, the town of Cut Bank is located 4.5 miles to the northwest of the plant and is located at approximately the same elevation as the plant. The nearest Class I area is Glacier National Park located about 45 miles west of the facility.

The climatology of the area is considered semi-arid. Rainfall is approximately 11 inches per year with the majority of the precipitation occurring in May, June, August, and September. The annual temperature is about 44 °Fahrenheit (°F) with maximum temperatures occasionally exceeding 100°F. Low temperatures are typical of continental air masses and can be well below 32°F.

C. Facility Background Information

Montana Air Quality Permit (MAQP)

On March 23, 1988, **MAQP #2428** was approved for Montana Power Company (MPC) to operate six natural gas compressor engines along with the three existing 660-horsepower (hp) Ingersoll-Rand compressor engines. On December 21, 1990, MAQP #2428 was altered for the facility to undergo a New Source Review (NSR) - Prevention of Significant Deterioration (PSD) review for previous permitting actions. Through the permitting action, PSD significance levels were triggered for oxides of nitrogen (NO_x), volatile organic compounds (VOC), and carbon monoxide (CO). **MAQP #2428A** replaced MAQP #2428.

On July 18, 1991, MPC received an alteration to MAQP #2428A. The alteration allowed MPC to add three 1,100-hp compressor engines to the Cut Bank Compressor Station. Offsets for control of existing emissions were calculated as part of the permit alteration. Changes to the facility included installing catalytic converters on the three existing 660-hp Ingersoll Rand compressor engines.

MAQP #2428B replaced MAQP #2428A.

MPC applied for a permit modification to delete the three compressor engines that were previously proposed and to extend the time frame for installing the catalytic converters on the three existing 660-hp Ingersoll-Rand compressor engines at the Cut Bank compressor station. At the end of this permit action, MPC had CO emissions that exceeded the NSR major source threshold of 250 tons per year (tpy). **MAQP #2428-03** replaced MAQP #2428B.

On February 22, 1998, MPC received a modification to MAQP #2428-03. MPC requested that the total hours of operation of the three 660-hp Ingersoll-Rand compressor engines be limited to 24,495 hours per year and that emissions from minor combustion sources be added to the emission inventory. MPC also requested that the auxiliary electrical generator powered by a diesel-fired engine be limited to 720 hours of operation per year. The limitations on the compressor engines and the auxiliary generator ensured that the facility's emissions would remain below 250 TPY of any pollutant so that MPC would not be defined as a major source under the NSR permit program. **MAQP #2428-04** replaced MAQP #2428-03.

On April 3, 1998, MPC received an alteration to MAQP #2428-04. MPC requested that two existing 1,100-hp Cooper-Superior compressor engines be removed from the permit and two 2,000-hp Cooper-Superior compressor engines be added to the permit. MPC requested to limit the two new engines to the manufacture's guarantee for NO_x, CO, and VOC emissions. In addition, MPC requested that the Smart Ash Burner, used to incinerate oily rags, be included in this permit alteration. The end result of the permit action was a decrease in the CO emissions from the facility and minor increases in all other criteria pollutants. MPC remained a minor source under the NSR permit program. **MAQP #2428-05** replaced MAQP #2428-04.

On February 15, 2001, MPC received a modification to MAQP #2428-05 to remove testing requirements for the three 660-hp Ingersoll-Rand compressor engines, the four 1,100-hp Cooper superior compressor engines, and the two 2,000-hp compressor engines. Since MPC had a final Title V Permit (#OP2428-00) that required a minimum of semiannual emission testing for the above described compressor engines, testing requirements of every 4 years were removed from MAQP #2428-05. Emission limitations for the compressor engines as provided in Section II.A of the permit remained applicable. **MAQP #2428-06** replaced MAQP #2428-05.

On August 10, 2001, the Department of Environmental Quality (Department) received a request from MPC to alter MAQP #2428-06 for the addition of a 2,370-hp Caterpillar compressor engine. On October 24, 2001, the application was deemed complete upon submittal of additional information by MPC. The addition of the 2,370-hp Caterpillar compressor engine did not trigger the NSR program because the potential emissions from the engine are less than the NSR threshold level of 250 ton/yr. However, the next permit action at the facility with potential emissions above PSD significance levels would potentially trigger the NSR program. **MAQP #2428-07** replaced MAQP #2428-06.

On November 23, 2001, MPC notified the Department of a pending merger of MPC with and into Montana Power, L.L.C. (MPC LLC). Due to questions regarding the length of time the new company name would be valid, the Department decided to wait on the name change for the permit. On October 18, 2002, the Department received a request to change the permit from MPC LLC to NorthWestern Corporation. This permit action incorporated the name change from MPC LLC to NorthWestern Corporation. On December 15, 2002, **MAQP #2428-08** replaced MAQP #2428-07.

On April 11, 2005, the Department received an e-mail from NorthWestern Corporation. NorthWestern Corporation notified the Department that the 2,370-hp Caterpillar compressor engine would not be installed at the NorthWestern Corporation - Mainline #1 compressor station. The

permit action removed the 2,370-hp Caterpillar compressor engine and updated the permit to reflect current permit language and rule references used by the Department on MAQP #2428-08. **MAQP #2428-09** replaced MAQP #2428-08.

On February 7, 2008, the Department received a request from NorthWestern Corporation to change the name on MAQP #2783-07 from NorthWestern Corporation – Mainline #1 to NWE – Mainline #1. The permit action incorporated the requested name change as well as updated the permit format and language to reflect the Department’s current permit format and language. **MAQP #2428-10** replaced MAQP #2428-09.

On January 15, 2010, the Department received a letter from NWE, in conjunction with Bison Engineering Inc., requesting that the applicant-accepted permit conditions for the Silver Bow Generation Project and associated pipeline construction activities, located in Section II Limitations and Conditions, D.1 through D.15 of MAQP #2428-10, be removed. Through the Montana Environmental Policy Act (MEPA) process, the applicant proposed mitigation measures, and conditions were accepted on March 12, 2002. The Department incorporated a portion of those mitigation measures in the MAQP for Mainline #1.

In reviewing NWE’s request to remove these conditions, the following information was evaluated by the Department:

- The MAQP for the Continental Energy Services, Inc. - Silver Bow Generation Plant, MAQP #3165 (last issued as MAQP #3165-02), was revoked on December 18, 2007. Continental Energy Services, Inc., or any other entity, would be required to obtain a MAQP to construct a similar facility.
- The Natural Gas Pipeline to support the generation project was never installed. In addition, depending on the size of the pipeline, a similar pipeline may be subject to the permitting requirements under the Major Facility Siting Act (the Administrative Rules of Montana (ARM) Title 17, Chapter 20).
- On April 11, 2005, the Department received notice from NWE that the 2,370-hp compressor engine permitted in MAQP #2428-07, required for the additional compression needed for the Silver Bow Generation Project, was not going to be installed. Upon NWE’s request, the Department removed that compressor engine from the permit in MAQP #2428-09. NWE, or any other entity, would be required to obtain a MAQP to install a similar compressor engine.
- If NWE or any other entity were to re-propose construction or installation of any of the above-described facilities or equipment in the future, applicable MEPA requirements would be required to be met at that time.

In consideration of the information above, the Department granted NWE’s request to remove these requirements. The action removed these conditions as an administrative amendment pursuant to ARM 17.8.764(1)(b) – “changes in operation that do not result in an increase in emissions.” **MAQP #2428-11** replaced MAQP #2428-10.

On February 9, 2010, the Department received an MAQP application from Bison Engineering, Inc. on behalf of NWE. The Department received an affidavit of public notice on February 10, 2010, completing the application. The application requested the following modifications:

- Removal of one 1,100-hp Cooper Superior Compressor Engine (previously emitting unit #6)
- Addition of a newly manufactured 2,370-hp natural gas fired lean burn compressor engine with emission controls
- Removal of hourly operation limits for emitting units #1-3 (660-hp compressor engines)

The permit action incorporated these changes into the permit. This action also corrected the auxiliary generator capacity to reflect that of the engine driving the generator rather than the generator itself, updated the emissions from glycol hydration prevention/dehydration to reflect the ethylene glycol unit in operation instead of the triethylene glycol dehydration unit originally assumed, updated emissions factors where appropriate, and updated the emissions inventory to reflect all corresponding changes. Revision to the applicability of federal regulations were also completed to include 40 CFR 63, Subpart ZZZZ– National Emission Standards for Stationary Reciprocating Internal Combustion Engines, as applicable in the permit analysis. The project increased compressor capacity to compensate for projected system growth, and removed requirements associated with the 660-hp engines previously included to keep allowable emissions below the PSD thresholds, which were no longer necessary based on the facility configuration and associated emissions. **MAQP #2428-12** replaced MAQP #2428-11.

Montana Air Quality Operating Permit (Title V)

On July 11, 1995, the Department received an operating permit application from MPC for the Mainline #1 Facility. The application was assigned Operating Permit #OP2428-00. The permit application was deemed administratively complete on August 11, 1995, and the application was deemed technically complete on September 10, 1995. **Operating Permit #OP2428-00** became final and effective on March 11, 2000.

On September 4, 2001, the Department received a request from MPC to modify Permit #OP2428-01 for the addition of a 2,370-hp Caterpillar Compressor Engine. On October 24, 2001, the application was deemed complete upon submittal of additional information by MPC. In addition, MPC agreed to implement several mitigation measures, as described in the Record of Decision for the CES Silver Bow Generation Project and the measures as imposed at the project sponsors' request pursuant to §75-1-202(5)(b), Montana Code Annotated (MCA). This permit action added the new compressor engine to the permit. MPC is now a major stationary source because the facility's Potential to Emit (PTE) of CO is greater than the NSR threshold level of 250 ton/yr. The current permit action does not trigger PSD because the current permit action's PTE is less than the NSR threshold level of 250 ton/yr. However, the next permit action that has a PTE above PSD significance levels may trigger PSD. In addition, the current permit action adds the mitigated measures that were incorporated into MPC's Preconstruction Permit (MAQP #2428-07) into MPC's Title V Operating Permit (#OP2428-01). The mitigation measures are enforceable conditions in the permit and shall remain in the permit for the lifetime of the facility. **Operating Permit #OP2428-01** replaced Operating Permit #OP2428-00.

On November 23, 2001, MPC notified the Department of a pending merger of MPC with and into MPC LLC. Due to questions regarding the length of time the new company name would be valid, the Department decided to wait on the name change for the permit. On October 15, 2002, the Department received a request to change the permit from MPC LLC to NorthWestern Corporation. The permit action incorporated the name change from MPC LLC to NorthWestern Corporation. **Operating Permit #OP2428-02** replaced Operating Permit #OP2428-01.

On February 11, 2003, the Department received a letter from NorthWestern Corporation notifying the Department of a change in the responsible official for all of NorthWestern's Facilities. The permit action updated the permit to reflect the change in the responsible official. **Operating Permit #OP2428-03** replaced Operating Permit #OP2428-02.

On June 12, 2003, the Department received a letter from NorthWestern Corporation notifying the Department of a change in the responsible official for this facility. The permit was updated to reflect the change in the responsible official. **Operating Permit #OP2428-04** replaced Operating Permit #OP2428-03.

On October 16, 2003, the Department received a request from NorthWestern Corporation for an administrative amendment of Permit #OP2428-04 to update Section V.B.3 of the General Conditions incorporating changes to federal Title V rules 40 CFR 70.6(c)(5)(iii)(B) and 70.6(c)(5)(iii)(C) (to be incorporated into Montana's Title V rules at ARM 17.8.1213) regarding Title V annual compliance certifications. **Operating Permit #OP2428-05** replaced Operating Permit #OP2428-04.

On January 13, 2004, the Department received a Title V Renewal Application from NorthWestern Corporation. The application was deemed administratively complete on January 18, 2004, and technically complete on February 18, 2004. The Department added conditions to Sections III.B, III.C, III.D, III.G, and III.J of Operating Permit #OP2428-06 requiring NorthWestern Corporation to comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements contained in 40 CFR Part 63, Subpart ZZZZ. **Operating Permit #OP2428-06** replaced Operating Permit #OP2428-05.

On April 11, 2005, the Department received an e-mail from NorthWestern Corporation. NorthWestern Corporation notified the Department that the 2,370 hp Caterpillar compressor engine will not be installed at the NorthWestern Corporation - Mainline #1 compressor station. The permit action removed the 2,370-hp Caterpillar compressor engine and updated the permit to reflect current permit language and rule references used by the Department. **Operating Permit #OP2428-07** replaced Operating Permit #OP2428-06.

On March 24, 2008, the Department received a request from NorthWestern Corporation to change the name on Operating Permit #OP2428-07 to NWE. The permit action incorporated the name change from NorthWestern Corporation to NWE. **Operating Permit #OP2428-08** replaced Operating Permit #OP2428-07.

The Department received a renewal Title V application for NWE's Mainline #1 facility on October 20, 2009. A Title V significant modification application was received by the Department on February 9, 2010, received with the MAQP #2428-12 application, to remove one 1,100-hp compressor engine (previously emitting unit #6), for the addition of a 2,370-hp compressor engine, and for the removal of hourly operation limits for the three 660-hp compressor engines which are no longer needed to keep potential emissions below the 250 TPY PSD threshold. The Department addressed both applications in this permitting action. Therefore, the Title V permit was assigned Operating Permit #OP2428-10, skipping #OP2428-09 to account for the two separate applications being considered in this action. **Operating Permit #OP2428-10** replaced Operating Permit #OP2428-08.

On September 7, 2011, the Department received an administrative amendment request to change the name of the responsible official from Dave Gates to Michael R. Cashell. The current permit action is an administrative amendment to change the name of the responsible official. In accordance with ARM 17.8.1228 (1)(a), the Department also updated permit conditions for the engine units based on 40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines which was revised in 2010 with applicable requirements for existing engines at area sources of hazardous air pollutants (HAP). **Operating Permit #OP2428-11** replaced Operating Permit #OP2428-10.

D. Current Permit Action

On August 22, 2011, the Department received an administrative amendment request related to changes that had occurred at the NWE Mainline #1 facility. Notification indicated the replacement of insignificant emission unit (IEU01), identified as Process Gas Plant Heater (Volcano), with a new unit identified as Process Gas Plant Heater (Phoenix). **Operating Permit #OP2428-12** replaces Operating Permit #OP2428-11.

E. Taking and Damaging Analysis

HB 311, the Montana Private Property Assessment Act, requires analysis of every proposed state agency administrative rule, policy, permit condition or permit denial, pertaining to an environmental matter, to determine whether the state action constitutes a taking or damaging of private real property that requires compensation under the Montana or U.S. Constitution. As part of issuing an operating permit, the Department is required to complete a Taking and Damaging Checklist. As required by 2-10-101 through 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? |
| | 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.

F. Compliance Designation

On June 27, 2011, the facility was inspected by the Department. The Department also completed a Full Compliance Evaluation (FCE) for the period of May 10, 2010, to July 8, 2011. Based on the conditions observed during the inspection and file review, NWE appeared to be materially compliant with the conditions and limitations of MAQP #2428-12 and Operating Permit #OP2428-10; with the exception of source testing results on June 27, 2011, that indicated a violation of the applicable carbon monoxide (CO) emissions limit. A violation letter was issued by the Department on September 8, 2011.

SECTION II. SUMMARY OF EMISSIONS UNITS

A. Facility Process Description

Field gas is piped to the station and is brought up to the required pressure (approximately 540 pounds per square inch (psi)) for the system. This is typically accomplished with two 660-hp compressor engines, with a third engine available. The liquids plant at the facility separates propane, butane, gasoline, and water from the incoming gas lines before pressurizing the gas for distribution. The field gas is cooled to -30°F in the process recovery area using electrical refrigerating units to condense out hydrocarbons larger than C₂. The condensed liquid is distilled to separate out propane steam. The final condensate stream is stored as natural gasoline. The plant processes sweet gas exclusively.

Field gas is dehydrated at the field stations. A small amount of the gas is for internal use on site and has the water content controlled via an ethylene glycol unit.

The second purpose of the complex is to send the field gas from the complex to the transmission network. In addition, gas from the Aden Line, Carway and Cobb Storage Field is added to the Cut Bank gas for transmission. The pumping of this gas is accomplished with six 1,100-hp compressors.

Y-grade gas is brought to the facility for processing through the LPG Plant to extract propane, butane, and natural gasoline. Propane and butane compose about 80% of y-grade gas. The y-grade is stored in a tank on site until the tank is full. Y-grade is processed a few days every few weeks. The propane and butane products collected from the LPG process are stored in tanks on site until they are trucked off site.

There are two propane tanks and two butane tanks, each 60,000 gallons and 250 psi in size. The propane and butane tanks are under pressure and are vented to the flare on site in case of an emergency.

Maximum possible production from the plant was estimated using gas analysis data as shown below.

Propane - 0.205 gallons per thousand cubic feet (gal/MCF) * 20,000 MCF/day * 365 days/yr = 1,500,000 gal/yr

Butane - 0.043 gal/MCF (isobutane) + 0.056 gal/MCF (N-butane) * 20,000 MCF/day * 365 day/yr = 723,000 gallon/yr

The liquid gas is removed from the plant via trucks. The trucks are under pressure and have a capacity of 12,000 gallons each. Trucks coming to load propane or butane gas are first cleaned of residual gas. Butane from the trucks is vented to the flare; propane trucks are vented to the atmosphere because of the high pressure in the trucks. An estimated maximum of 60 butane trucks and 125 propane trucks would be loaded in a year. During loading of the propane and butane gases, the trucks are vented back to the tanks in a closed system.

Natural gasoline collected during the separation process is stored on-site in a 9,000-gallon tank and then trucked off-site. The natural gasoline tank is vertical and at atmospheric pressure. There are no vapor controls during the filling of gas trucks for shipment off-site.

Gas blow downs and purging is the release of process gas from the facility during maintenance and emergency shutdowns. The natural gas in the gas line is released to allow work on the compressor lines. Blow downs are normally associated with starting and stopping of the Cooper-Superior compressors.

B. Emission Units and Pollution Control Device Identification

The emission units regulated by this permit are the following (ARM 17.8.1211):

| Emissions Unit ID | Description | Pollution Control Device/Practice |
|-------------------|---|-------------------------------------|
| EU001 | 660-hp Ingersoll-Rand Compressor Engine | DeNOx catalytic converters with AFR |
| EU002 | 660-hp Ingersoll-Rand Compressor Engine | DeNOx catalytic converters with AFR |
| EU003 | 660-hp Ingersoll-Rand Compressor Engine | DeNOx catalytic converters with AFR |
| EU004 | 1,100-hp Cooper Superior Compressor Engine | Lean Burn Combustion Design |
| EU005 | 2,000-hp Copper Superior Compressor Engine | Lean Burn Combustion Design |
| EU006 | 2,370-hp Caterpillar Engine | Oxidation Catalyst with AFR |
| EU007 | 1,100-hp Cooper Superior Compressor Engine | Lean Burn Combustion Design |
| EU008 | 2,000-hp Cooper Superior Compressor Engine | Lean Burn Combustion Design |
| EU009 | 1,100-hp Cooper Superior Compressor Engine | Lean Burn Combustion Design |
| EU010 | Ethylene Glycol Unit and Associated Equipment (piping, valves, flanges, etc.) | None |
| EU011 | Two Natural Gas Storage Tanks with Vents | None |
| EU012 | 600-hp Auxiliary Generator Engine | None |
| EU013 | Smart Ash Burner | None |
| EU014 | Emergency Shutdown Flare | None |

C. Categorically Insignificant Sources/Activities

ARM 17.8.1201(22)(a) defines an insignificant emissions unit as one that emits less than 5 tpy of any regulated pollutant, has the potential to emit less than 500 pounds per year of lead or any hazardous air pollutant, and is not regulated by an applicable requirement other than a generally applicable requirement. The list of insignificant emitting units identified by NWE includes the following:

| Insignificant Emissions Unit ID | Description |
|---------------------------------|--|
| IEU01 | Process Gas Plant Heater (Phoenix) |
| IEU02 | All Building Heaters |
| IEU03 | Fuel Gas Heater |
| IEU04 | Propane Truck Venting |
| IEU05 | Process Valves, Non-NSPS |
| IEU06 | Gas Blow Down |
| IEU07 | Fugitive Emissions from In-Plant Vehicle Traffic |
| IEU08 | Molecular Sieve Regeneration Heater |
| IEU09 | Non-Vented Propane Tank #1 |
| IEU10 | Non-Vented Propane Tank #2 |
| IEU11 | Non-Vented Butane Tank #1 |
| IEU12 | Non-Vented Butane Tank #2 |
| IEU13 | Non-Vented Y-Grade Tank #2 |

SECTION III. PERMIT CONDITIONS

A. Emission Limits and Standards

The liquids plant is subject to NSPS standards. In particular, the liquids plant is subject to 40 CFR 60, Subpart KKK – Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants.

Each of the three 660-hp Ingersoll-Rand compressor engines shall be limited to 2.91 pounds per hour (lbs/hr) for NO_x, 4.37 lbs/hr for CO, and 1.09 lbs/hr for VOC. The NO_x and CO limits are based on Best Available Control Technology (BACT) determinations that have been established by the Department. The VOC limit is based on manufacturer's data. The hours of operation of the three 660-hp Ingersoll-Rand compressor engines was limited in order to stay below the NSR permitting threshold. The combined total hours of operation of the three 660-hp Ingersoll-Rand compressor engines is limited to 24,495 hours per any rolling 12-month time period. The hourly operational limit on the three 660-hp Ingersoll-Rand compressor engines cannot be removed. NWE is also required to operate and maintain catalytic DeNO_x silencers on the three 660-hp Ingersoll-Rand compressor engines.

Each of the three 1,100-hp Cooper-Superior compressor engines shall be limited to 4.85 lbs/hr for NO_x, 7.28 lbs/hr for CO, and 1.82 lbs/hr for VOC. The NO_x and CO limits are based on BACT determinations that have been established by the Department. The VOC limit is based on manufacturer's data.

Each of the two 2,000-hp Cooper-Superior compressor engines shall be limited to 6.61 lbs/hr for NO_x, 7.05 lbs/hr for CO, and 2.65 lbs/hr for VOC. The emission limits for NO_x, CO, and VOC are all based on manufacturer's data.

The 2,370-hp compressor engine received limits based on a BACT determination requiring 89% control of the CO emissions through use of an air-to-fuel ratio controller and catalytic converter. The staging of the combustion inherent to this lean-burn engine allows for burning a leaner fuel mixture that results in lower peak flame temperatures, therefore a low NO_x emissions rate of 1.0 grams per brake hp-hr (g/bhp-hr) is achieved. As the control technology used for CO emissions reduction also reduces VOC emissions, proper operation and maintenance of the engine and the control technology, as required by the CO BACT, resulted in an emissions limit of 0.5 g/bhp-hr of VOC emissions.

The auxiliary generator is limited to a maximum of 720 hours of operation during any rolling 12-month time period. This limit was originally established to help keep the facility below the NSR permitting threshold.

A limit has also been placed on the type of material that can be incinerated by the Smart Ash Burner. NWE is not allowed to incinerate any material other than oil soaked rags, oil absorbents, and filters. This material is what NWE applied to burn in the Smart Ash Burner, and was used as the basis for performing the risk assessment.

Discharge of fugitive emissions from haul roads, access roads, parking lots, and the general plant property is required to be controlled. NWE must take reasonable precautions to control emissions of airborne particulate matter.

B. Monitoring Requirements

ARM 17.8.1212(1) requires that all monitoring and analysis procedures or test methods required under applicable requirements are contained in operating permits. In addition, when the applicable requirement does not require periodic testing or monitoring, periodic monitoring must be prescribed that is sufficient to yield reliable data from the relevant time period that is representative of the source's compliance with the permit.

The requirements for testing, monitoring, recordkeeping, reporting, and compliance certification sufficient to assure compliance do not require the permit to impose the same level of rigor for all emission units. Furthermore, they do not require extensive testing or monitoring to assure compliance with the applicable requirements for emission units that do not have significant potential to violate emissions limitations or other requirements under normal operating conditions. When compliance with the underlying applicable requirement for an insignificant emissions unit is not threatened by lack of regular monitoring and when periodic testing or monitoring is not otherwise required by the applicable requirement, the status quo (**i.e., no monitoring**) will meet the requirements of ARM 17.8.1212(1). Therefore, the permit does not include monitoring for insignificant emissions units.

The permit includes periodic monitoring or recordkeeping for each applicable requirement. The information obtained from the monitoring and recordkeeping will be used by the permittee to periodically certify compliance with the emission limits and standards. However, the Department may request additional testing to determine compliance with the emission limits and standards.

C. Test Methods and Procedures

The operating permit may not require testing for all sources if routine monitoring is used to determine compliance, but the Department has the authority to require testing if deemed necessary to determine compliance with an emission limit or standard. In addition, the permittee may elect to voluntarily conduct compliance testing to confirm its compliance status.

D. Recordkeeping Requirements

The permittee is required to keep all records listed in the operating permit as a permanent business record for at least 5 years following the date of the generation of the record.

E. Reporting Requirements

Reporting requirements are included in the permit for each emissions unit and Section V of the operating permit "General Conditions" explains the reporting requirements. However, the permittee is required to submit semi-annual and annual monitoring reports to the Department and to annually certify compliance with the applicable requirements contained in the permit. The reports must include a list of all emission limits and monitoring deviations, the reason for any deviation, and the corrective action taken as a result of any deviation.

SECTION IV. NON-APPLICABLE REQUIREMENT ANALYSIS

Section IV of the Operating Permit, “Non-applicable Requirements”, contains the requirements that the Department determined were non-applicable. The following table summarizes the requirements that Bison Engineering, Inc, on behalf of NWE, identified as non-applicable and contains the reasons that the Department did not include these requirements as non-applicable in the permit.

| Rule Citation | | Reason |
|---------------|--|---|
| State | Federal | |
| ARM 17.8.310 | | This rule involves particulate matter emissions from industrial processes. The Department does not shield sources with particulate matter emissions from this rule. |
| ARM 17.8.316 | | ARM 17.8.316 (6) states that ARM 17.8.316 does not apply to incinerators for which a Montana air quality permit has been issued under 75-2-215, MCA, and ARM 17.8.770. However, the Department does not shield sources with incinerators from these rules. |
| ARM 17.8.828 | | This rule has specific requirements that may become relevant to a major source during the permit span. |
| | 40 CFR 68 | The application indicated that the facility is required to maintain a Risk Management Plan due to the amount of butane stored onsite. Therefore, a shield from this rule is not provided. |
| | 40 CFR 60, Subpart E | The provisions of this subpart are applicable to each incinerator of more than 45 metric tons per day charging rate (50 tons/day), which is the affected facility. However, as the facility does have an incinerator, and is therefore in this source category, Department policy excludes providing a shield from this rule. |
| | 40 CFR 60, Subpart III | <p>The provisions of this subpart are applicable to owners and operators of stationary combustion ignition internal combustion engines (CI ICE) that commence construction after July 11, 2005 where the stationary CI ICE are manufactured after April 1, 2006 and are not fire pump engines, are manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006, or to owners and operators of stationary CI ICE that modify or reconstruct their stationary CI ICE after July 11, 2005.</p> <p>As NWE could potentially modify or reconstruct the currently on-site stationary CI ICE during the permit timeframe, the Department is excluding a shield from this rule. As the facility does have a CI ICE, and is therefore in this source category, Department policy excludes providing a shield from this rule.</p> |
| | 40 CFR 60, Subpart LLL | The provisions of this subpart are applicable to the following affected facilities that process natural gas: each sweetening unit, and each sweetening unit followed by a sulfur recovery unit. The NWE Mainline #1 facility does not have a sweetening unit. However, as the facility does process natural gas, and is therefore in this source category, Department policy excludes providing a shield from this rule. |
| | 40 CFR 63 Subpart SS 40 CFR 63 Subpart TT 40 CFR 63, Subpart UU 40 CFR 63, Subpart WW | These provisions apply when another subpart references the use of this subpart for such air emission control. Therefore, the Department determined a shield from these rules to be inappropriate. |

| Rule Citation | | Reason |
|---------------|--------------------------|---|
| State | Federal | |
| | 40 CFR 63, Subpart HHH | 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. Based on information submitted by NWE, this facility is not a major source of HAP as calculated for this rule. However, as this facility is in the source category for which the rule potentially could apply, Department policy excludes providing a shield from this rule. |
| | 40 CFR 63, Subpart DDDDD | This subpart applies to owners and operators of an industrial, commercial, or institutional boiler or process heater as defined in §63.7575 that is located at, or is part of, a major source of HAP as defined in §63.2 or §63.761 (40 CFR part 63, subpart HH, National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities), except as specified in §63.7491. Based on the information submitted by NWE, this facility is not a major source of HAP as calculated for this rule. However, as this facility is in the source category for which the rule potentially could apply, Department policy excludes providing a shield from this rule. The current subpart was vacated; however, new standards for this source category have been proposed. |
| | 40 CFR 89 40 CFR 90 | These rules have specific requirements that may or may not be relevant to a major source. |

SECTION V. FUTURE PERMIT CONSIDERATIONS

A. MACT Standards (Part 63)

The Department determined that the facility is subject to 40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines because the facility utilizes several natural gas compressor engines with a maximum rated design capacity greater than 500-hp and the facility is a major source of hazardous air pollutants, as calculated in Subpart ZZZZ. New and existing engines would likely be subject to this rule.

As of the draft issuance date of Operating Permit #OP2428-12, National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities (40 CFR 63, Subpart HHH) is not applicable to the facility because the facility is currently not a major source of hazardous air pollutants, as calculated in Subpart HHH. However, this facility is currently considered an area source of HAPs, and therefore, potentially subject to National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities (40 CFR 63, Subpart HH) should a tri-ethylene glycol dehydration unit be utilized.

B. NESHAP Standards (Part 61)

The provisions of 40 CFR 61, Subpart V —National Emission Standard for Equipment Leaks (Fugitive Emission Sources) apply to each of the following sources that are intended to operate in volatile hazardous air pollutant (VHAP) service: pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, and control devices or systems required by this subpart.

“In VHAP service” is defined by this subpart as a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 10 percent by weight a volatile hazardous air pollutant (VHAP) as determined according to the provisions of §61.245(d). The provisions of §61.245(d) also specify how to determine that a piece of equipment is not in VHAP service.

C. NSPS Standards (Part 60)

The provisions of 40 CFR 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines, apply to the 2,370-hp compressor engine. Any new engines would likely be subject to this rule.

The provisions of 40 CFR 60, Subpart KKK - Standards of Performance of Equipment Leaks of VOC From Onshore Natural Gas Processing Plants, are applicable to this facility.

D. Risk Management Plan

If a facility has more than a threshold quantity of a regulated substance in a process, the facility must comply with 40 CFR 68 requirements no later than 3 years after the date on which a regulated substance is first listed under 40 CFR 68.130; or the date on which a regulated substance is first present in more than a threshold quantity in a process, whichever is later.

NWE’s Mainline #1 facility stores butane in amounts greater than the threshold quantity that triggers the requirement for a Risk Management Plan. This plan must meet the requirements of 40 CFR 68.95.

E. CAM Applicability

Under the federal regulations located in 40 CFR 64.5, an applicant holding an operating permit under 40 CFR 70 must submit, upon application for renewal of the operating permit, a Compliance Assurance Monitoring (CAM) plan. An emitting unit located at a Title V facility that meets the following criteria listed in ARM 17.8.1503 is subject to Subchapter 15 and a CAM Plan must be developed for that unit:

- The emitting unit is subject to an emission limitation or standard for the applicable regulated air pollutant (unless the limitation or standard that is exempt under ARM 17.8.1503(2));
- The emitting unit uses a control device to achieve compliance with such limit; and
- The emitting unit has potential pre-control device emission of the applicable regulated air pollutant that is greater than major source thresholds.

ARM 17.8.1503, regarding applicability of the CAM rules, requires that an emissions unit have a pre-control device emissions of an applicable regulated air pollutant that are equal to or greater than 100% of the amount, in tpy, required for a source to be classified as a major source. 'Potential precontrol device emissions' has the same meaning as "potential to emit", as defined in ARM 17.8.1501(16), except that emission reductions achieved by the applicable control device shall not be taken into account. The three 660-hp Ingersoll-Rand compressor engines which are controlled by the DeNO_x technology have a pre-controlled potential to emit of less than 100 tpy of NO_x, CO, and VOC. Therefore, CAM does not apply to these engines because the uncontrolled potential to emit is less than the 100 ton per year threshold.

The three 1,100-hp Cooper Superior engines, and the 2,000-hp Cooper Superior engine, are not equipped with a control device; therefore, these engines are not subject to CAM requirements.

The 2,370-hp compressor engine is equipped with an air-to-fuel ratio controller and a catalytic oxidation unit. The uncontrolled potential to emit of this engine is greater than 100 tpy of CO, therefore, NWE, upon application for renewal of this operating permit, will be required to submit a CAM plan for this engine.

F. PSD and Title V Greenhouse Gas Tailoring Rule

On May 7, 2010, EPA published the "light duty vehicle rule" (Docket # EPA-HQ-OAR- 2009-0472, 75 FR 25324) controlling greenhouse gas (GHG) emissions from mobile sources, whereby GHG became a pollutant subject to regulation under the Federal and Montana Clean Air Act(s). On June 3, 2010, EPA promulgated the GHG "Tailoring Rule" (Docket # EPA-HQ-OAR-2009-0517, 75 FR 31514) which modified 40 CFR Parts 51, 52, 70, and 71 to specify which facilities are subject to GHG permitting requirements and when such facilities become subject to regulation for GHG under the PSD and Title V programs.

Under the Tailoring Rule, any PSD action (either a new major stationary source or a major modification at a major stationary source) taken for a pollutant or pollutants other than GHG that would become final on or after January 2, 2011, would be subject to PSD permitting requirements for GHG if the GHG increases associated with that action were at or above 75,000 tpy of carbon dioxide equivalent (CO₂e) and greater than 0 tpy on a mass basis. Similarly, if such action were taken, any resulting requirements would be subject to inclusion in the Title V Operating Permit. Facilities which hold Title V permits due to criteria pollutant emissions over 100 tpy would need to incorporate any GHG applicable requirements into their operating permits for any Title V action that would have a final decision occurring on or after January 2, 2011.

Starting on July 1, 2011, PSD permitting requirements would be triggered for modifications that were determined to be major under PSD based on GHG emissions alone, even if no other pollutant triggered a major modification. In addition, sources that are not considered PSD major sources based on criteria pollutant emissions would become subject to PSD review if their facility-wide potential emissions equaled or exceeded 100,000 tpy of CO₂e and 100 or 250 tpy of GHG on a mass basis depending on their listed status in ARM 17.8.801(22) and they undertook a permitting action with increases of 75,000 tpy or more of CO₂e and greater than 0 tpy of GHG on a mass basis. With respect to Title V, sources not currently holding a Title V permit that have potential facility-wide emissions equal to or exceeding 100,000 tpy of CO₂e and 100 tpy of GHG on a mass basis would be required to obtain a Title V Operating Permit.