Montana Department of
ENVIRONMENTAL QUALITY
Brian Schweitzer, Governor
P. O. Box 200901 Helena, MT 59620-0901 (406) 444-2544 Website: www.deq.mt.gov

April 19, 2012

Bill Thompson
NorthWestern Energy
40 East Broadway St.
Butte, MT 59701

Dear Mr. Thompson:

Montana Air Quality Permit #4255-03 is deemed final as of April 19, 2012, by the Department of Environmental Quality (Department). This permit is for the Dave Gates Generating Station at Mill Creek. 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

Jenny O'Mara
Environmental Engineer
Air Resources Management Bureau
(406) 444-1452

VW:JO

Montana Department of Environmental Quality
Permitting and Compliance Division

Montana Air Quality Permit #4255-03

NorthWestern Energy
Dave Gates Generating Station
40 East Broadway St.
Butte, MT 59701

April 19, 2012

MONTANA AIR QUALITY PERMIT

Issued To: NorthWestern Energy
40 East Broadway St.
Butte, MT 59701

MAQP: #4255-03
Application Complete: 01/24/2012
Preliminary Determination Issued: 03/02/2012
Department Decision: 04/03/2012
Permit Final: 04/19/2012
AFS #: 023-0002

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to NorthWestern Energy (NWE), 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's facility also known as the Dave Gates Generating Station at Mill Creek (DGGS) is located near the intersection of MT-1 and county road 273 approximately 3 miles southeast of Anaconda, Montana. The property lies within a 50-acre parcel in the NW¼ of Section 17 and the SW ¼ of Section 8, Township 4 North, Range 10 West in Deer Lodge County, Montana.

B. Current Permit Action

On April 7, 2011, NWE contacted the Department of Environmental Quality-Air Resources Management Bureau (Department) to notify that the facility's name had changed from Mill Creek Generating Station (MCGS) to DGGS at Mill Creek. The information submitted also included a request to change the designated responsible official from Dave Gates to William T. Rhoads.

On January 20, 2012, NWE submitted a permit application to request an extension for the construction of Unit #4. Originally, MAQP #4255-02 allowed NWE phased in construction of up to four simple-cycle, dual fuel powered generating units each rated at 49.6 megawatts (MW). MAQP's are issued with a three years construction period. Because NWE chose not to construct the fourth unit within three years, NWE is requesting an extension on the construction of the fourth unit. In addition, the permit action updates the current rule references, permit format, and the emissions inventory.

SECTION II: Conditions and Limitations

A. Operational and Emission Limitations

1. NWE shall operate up to four, simple-cycle, dual fuel powered generating units each rated at 49.6 MW. Each generating unit consists of two combustion turbines and a common generator (ARM 17.8.749 and ARM 17.8.752).

2. NWE shall only combust pipeline quality natural gas or ultra-low sulfur (#2) fuel oil in the generating units (ARM 17.8.749, ARM 17.8.752 and 40 Code of Federal Regulations (CFR) 60, Subpart KKKK).

3. Each combustion turbine may only combust ultra-low fuel oil (#2) for up to 720 hours per year based on a 12-month rolling average (ARM 17.8.752).

4. Each simple-cycle generating unit shall have a minimum stack exhaust height of at least 90-feet from final grade (ARM 17.8.749).

5. NWE shall install, operate and maintain water injection, selective catalytic reduction unit (SCR), and catalytic oxidation on each generating unit to control oxides of nitrogen (NOx), carbon monoxide (CO) and volatile organic compounds (VOCs) (ARM 17.8.752).

6. NWE shall control particulate matter (PM), PM with an aerodynamic diameter of 10 microns or less (PM_{10}), PM with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$) and sulfur dioxide (SO_2) emissions from each of the generating units by utilizing good combustion practices and only combusting low sulfur fuels (ARM 17.8.752).

7. Emissions of NOx from each generating unit shall not exceed 11.07 pounds per hour (lb/hr) using natural gas and 10.09 lb/hr based on a 30-day rolling average using ultra low sulfur fuel oil (#2) based on a 30-day rolling average, effective during all periods of operation, including startup and shutdown (ARM 17.8.752).

8. Emissions of CO from each generating unit shall not exceed 10.78 lb/hr using natural gas and 9.83 lb/hr based on a 30-day rolling average using ultra low sulfur fuel oil (#2) based on a 30-day rolling average, effective during all periods of operation, including startup and shutdown (ARM 17.8.752).

9. Emissions of VOCs from each generating unit shall not exceed 2.47 lb/hr using natural gas and 18.98 lb/hr based on a 30-day rolling average using ultra low sulfur fuel oil (#2) based on a 30-day rolling average, effective during all periods of operation, including startup and shutdown (ARM 17.8.752).

10. Emissions of $PM/PM_{10}/PM_{2.5}$ from each generating unit shall not exceed 7.30 lb/hr based on a 30-day rolling average using natural gas and 19.30 lb/hr using ultra low sulfur fuel oil (#2) based on a 30-day rolling average, effective during all periods of operation, including startup and shutdown (ARM 17.8.752).

11. Emissions of SO_2 from each generating unit shall not exceed 0.83 lb/hr based on a 30-day rolling average using natural gas and 0.80 lb/hr using ultra low sulfur fuel oil (#2) based on a 30-day rolling average, effective during all periods of operation, including startup and shutdown (ARM 17.8.752).

12. NWE shall limit the hours of operation of the 1,528 brake-horsepower (bhp) (10.61 million British thermal units per hour (MMBtu/hr)) diesel-fired emergency generator and the 262 bhp (1.90 MMBtu/hr)) water pump to no more than 500 hours per unit for a rolling 12-month period (ARM 17.8.749 and ARM 17.8.752).

13. NWE shall install, calibrate, maintain and operate a NO_x Continuous Emission Monitoring System (CEMS) to monitor compliance with each generating unit's NO_x emission limit. The applicable NOx CEMS shall be certified within 180 days of initial startup (ARM 17.8.752 and 40 CFR 60 Subpart KKKK).

14. NWE shall install, calibrate, maintain and operate a CO CEMS to monitor compliance with each generating unit's CO emission limits. The applicable CO CEMS shall be installed and certified within 180 days of initial startup (ARM 17.8.752).

15. NWE shall operate and maintain the generating units, monitoring equipment, and ancillary equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including startup, shutdown and malfunction (ARM 17.8.340 and 40 CFR 60, Subpart KKKK).

16. 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).

17. 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).

18. 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.17 (ARM 17.8.749).

19. NWE shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements contained in 40 CFR 60, Subpart KKKK (ARM 17.8.340 and 40 CFR 60, Subpart KKKK).

20. NWE shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements of the Acid Rain Program contained in 40 CFR Parts 72-78 (40 CFR Part 72 through 40 CFR Part 78).

21. NWE shall comply with Section III, Conditions and Limitations during Commissioning Period, of this permit for a period of 16 weeks from initial startup of the each generating unit (ARM 17.8.749).

B. Testing Requirements

1. NWE shall test each of the 49.6 MW simple cycle generating unit using natural gas to demonstrate compliance with the steady-state NO_x and CO emission limits contained in Section II.A.7 and II.A.8. Testing shall be conducted concurrently for NO_x and CO within 180 days of initial start-up of each of the simple cycle generating unit, and shall conform with the requirements contained in 40 CFR 60, Subpart KKKK. After the initial testing, each generating unit shall be tested annually, and the time between tests shall not exceed 14 months since the previous performance test (ARM 17.8.105, ARM 17.8.749, and 40 CFR 60, Subpart KKKK).

2. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

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

C. Continuous Emissions Monitoring Systems (CEMS)

1. NWE shall install, operate, calibrate, and maintain CEMS as follows:

   a. NWE shall operate a CEMS for the measurement of NO_X on each generating unit stack, and use the data to monitor compliance with the NO_x emission limits contained in Section II.A.7 (ARM 17.8.105; ARM 17.8.749; 40 CFR 60, Subpart KKKK; and 40 CFR Parts 72-78).

b. NWE shall operate a CEMS for the measurement of CO on each generating unit stack, and use the data to monitor compliance with the CO emission limits contained in Section II.A.8 (ARM 17.8.105, ARM 17.8.749, and 40 CFR Parts 72-78).

c. A CEMS for the measurement of oxygen (O_2) or carbon dioxide (CO_2) content shall be operated on each generating unit stack (ARM 17.8.105; ARM 17.8.749; 40 CFR 60, Subpart KKKK; and 40 CFR Parts 72-78).

2. All continuous monitors required by this permit and by 40 CFR Part 60 shall be operated, excess emissions reported as per 40 CFR 60, Subpart KKKK, and performance tests conducted in accordance with the requirements of 40 CFR 60, Subpart A; 40 CFR Part 60, Appendix B (Performance Specifications #2, #3, #4 and/or #4A); 40 CFR 60, Subpart KKKK and 40 CFR Parts 72-78, as applicable (ARM 17.8.749; 40 CFR 60, Subpart KKKK; 40 CFR Part 60; and 40 CFR Parts 72-78).

3. NWE shall develop and keep on-site a quality assurance plan for all the CEMS (40 CFR 60, Subpart KKKK).

4. On-going quality assurance for the CEMS must conform to 40 CFR Part 60, Appendix F (ARM 17.8.749, 40 CFR Part 60 Appendix F).

5. NWE shall maintain a file of all measurements from the CEMS and performance testing measurements, including: all CEMS performance evaluations; all CEMS or monitoring device calibration checks and audits; all adjustments and maintenance performed on these systems or devices. These shall be recorded in a permanent form suitable for inspection and shall be retained on-site for at least 5 years following the date of such measurements and reports. NWE shall supply these records to the Department upon request (ARM 17.8.749).

D. 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 document, by month, the hours of operation for each turbine (two per generating unit) when using ultra-low sulfur (#2) fuel oil. By the 25th day of each month, NWE shall total the hours of operation for each turbine, during the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.3. The information for each of the previous months shall be submitted along with the annual emissions inventory (ARM 17.8.749).

3. NWE shall document NO_x emissions from each generating unit at least once per hour. In addition, once per hour, NWE shall calculate the previous 4-hour rolling average emission rate for each of the generating units in conformance with the requirements contained in 40 CFR 60, Subpart KKKK (ARM 17.8.340 and 40 CFR 60, Subpart KKKK).

4. NWE shall calculate the 30-day rolling average emission rate for each generating unit to verify compliance with the limitations in Sections II.A.7 through II.A.11. This information shall be maintained on site and submitted upon request of the Department (ARM 17.8.749).

5. NWE shall document, by month, the total hours of operation of the emergency diesel-fired emergency generator and emergency water pump. By the 25th day of each month, NWE shall total the hours of operation of each for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.12. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

6. NWE shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745, that would include ***the addition of new emission unit***, a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location or fuel specifications, or would result in an increase in source capacity above its permitted operation. The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).

7. 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).

E. Notification

NWE shall provide the Department with written notification of the following dates within the specified time periods (ARM 17.8.749):

1. Beginning actual construction of the generating unit (Unit #4) within 30 days after actual construction has begun; and
2. Actual start-up date of Unit #4 within 15 days after the actual start-up of the generating unit.

SECTION III: Conditions and Limitations during Commissioning Period

1. NWE shall operate up to four simple-cycle, dual fuel powered generating units rated at 49.6 MW. Each generating unit consists of two combustion turbines and a common generator (ARM 17.8.749 and ARM 17.8.752).

2. NWE shall only combust pipeline quality natural gas or ultra- low sulfur (#2) fuel oil in the generating units (ARM 17.8.749, ARM 17.8.752 and 40 CFR 60, Subpart KKKK).

3. NWE shall control PM, PM_{10}, $PM_{2.5}$, and SOx emissions from each of the 49.6 MW dual fuel powered generating units by utilizing good combustion practices and only combusting low sulfur fuels (ARM 17.8.752).

4. NWE shall maintain and operate all equipment including associated air pollution control equipment in a manner consistent with air pollution control practices for minimizing emissions (ARM 17.8.749).

5. During the commissioning period, NOx emissions from the generating units shall not exceed 78.17 lb/hr based on a 1-hour average using natural gas and 84.64 lb/hr using ultra low sulfur fuel oil (#2) based on a 1-hour average (ARM 17.8.749).

6. During the commissioning period, CO emissions from the generating units shall not exceed 58.98 lb/hr based on a 1-hour average using natural gas and 52.29 lb/hr using ultra low sulfur fuel oil (#2) based on a 1-hour average (ARM 17.8.749).

7. During the commissioning period, VOC emissions from the generating units shall not exceed 2.47 lb/hr based on a 1-hour average using natural gas and 27.62 lb/hr using ultra low sulfur fuel oil (#2) based on a 1-hour average (ARM 17.8.749).

8. During the commissioning period, $PM/PM_{10}/PM_{2.5}$ emissions from the generating units shall not exceed 7.30 lb/hr based on a 1-hour average using natural gas and 19.30 lb/hr using ultra low sulfur fuel oil (#2) based on a 1-hour average (ARM 17.8.749).

9. During the commissioning period, SO_2 emissions from the generating units shall not exceed 0.83 lb/hr based on a 1-hour average using natural gas and 0.80 lb/hr using ultra low sulfur fuel oil (#2) based on a 1-hour average (ARM 17.8.749).

10. NWE shall operate and maintain the generating units, monitoring equipment, and ancillary equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including startup, shutdown, malfunction and during the commissioning period (ARM 17.8.340 and 40 CFR 60 Subpart KKKK).

11. The requirements of Section III, Conditions and Limitations during Commissioning Period shall only apply for a period of 16 weeks from initial startup of each generating unit, or any time following maintenance that requires removal or replacement of a combustion turbine. (ARM 17.8.749).

12. NWE shall notify the Department of any maintenance that requires removal or replacement of a combustion turbine or generating unit. NWE shall continue to operate and maintain the CO and NOx Continuous Emissions Monitoring System (CEMS) during removal or replacement to monitor compliance with the CO and NOx emission limits (ARM 17.8.749).

SECTION IV: 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 (CEMS and Continuous Emissions 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 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 therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department's decision on the application is final 16 days after the Department's decision is made.

F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by the Department at the location of the source.

G. 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).

H. Permit Fee – 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.

Attachment 2

INSTRUCTIONS FOR COMPLETING EXCESS EMISSION REPORTS (EER)

PART 1 Complete as shown. Report total time during the reporting period in hours. The determination of plant operating time (in hours) includes time during unit startup, shutdown, malfunctions, or whenever pollutants of any magnitude are generated, regardless of unit condition or operating load.

Excess emissions include all time periods when emissions, as measured by the CEMS, exceed any applicable emission standard for any applicable time period.

Percent of time in compliance is to be determined as: (1 – (total hours of excess emissions during reporting period / total hours of CEMS availability during reporting period)) x 100

PART 2 Complete as shown. Report total time the point source operated during the reporting period in hours. The determination of point source operating time includes time during unit startup, shutdown, malfunctions, or whenever pollutants (of any magnitude) are generated, regardless of unit condition or operating load.

Percent of time CEMS was available during point source operation is to be determined as: (1–(CEMS downtime in hours during the reporting period* /total hours of point source operation during reporting period)) x 100

* All time required for calibration and to perform preventative maintenance must be included in the CEMS downtime.

PART 3 Complete a separate sheet for each pollutant control device. Be specific when identifying control equipment operating parameters. For example: number of TR units, energizers for electrostatic precipitators (ESP); pressure drop and effluent temperature for baghouses; and bypass flows and pH levels for scrubbers. For the initial EER, include a diagram or schematic for each piece of control equipment.

PART 4 Use Table I as a guideline to report all excess emissions. Complete a separate sheet for each monitor. Sequential numbering of each excess emission is recommended. For each excess emission, indicate: 1) time and duration, 2) nature and cause, and 3) action taken to correct the condition of excess emissions. Do not use computer reason codes for corrective actions or nature and cause; rather, be specific in the explanation. If no excess emissions occur during the quarter, it must be so stated.

PART 5 Use Table II as a guideline to report all CEM system upsets or malfunctions. Complete a separate sheet for each monitor. List the time, duration, nature and extent of problems, as well as the action taken to return the CEM system to proper operation. Do not use reason codes for nature, extent or corrective actions. Include normal calibrations and maintenance as prescribed by the monitor manufacturer. Do not include zero and span checks.

PART 6 Complete a separate sheet for each pollutant control device. Use Table III as a guideline to report operating status of control equipment during the excess emission. Follow the number sequence as recommended for excess emissions reporting. Report operating parameters consistent with Part 3, Subpart e.

PART 7 Complete a separate sheet for each monitor. Use Table IV as a guideline to summarize excess emissions and monitor availability.

PART 8 Have the person in charge of the overall system and reporting certify the validity of the report by signing in Part 8.

EXCESS EMISSIONS REPORT

PART 1

a. Emission Reporting Period _____

b. Report Date _____

c. Person Completing Report _____

d. Plant Name _____

e. Plant Location _____

f. Person Responsible for Review and Integrity of Report _____

g. Mailing Address for 1.f. _____

h. Phone Number of 1.f. _____

i. Total Time in Reporting Period _____

j. Total Time Plant Operated During Quarter _____

k. Permitted Allowable Emission Rates: Opacity _____

SO2 _____ NOx _____ TRS _____

l. Percent of Time Out of Compliance: Opacity _____

SO2 _____ NOx _____ TRS _____

m. Amount of Product Produced During Reporting Period _____

n. Amount of Fuel Used During Reporting Period _____

PART 2 – Monitor Information (Complete for each monitor).

a. Monitor Type (circle one): Opacity SO2 NOx O2 CO2 TRS Flow

b. Manufacturer _____

c. Model No. _____

d. Serial No. _____

e. Automatic Calibration Value: Zero _____ Span _____

f. Date of Last Monitor Performance Test _____

g. Percent of Time Monitor Available:

1) During reporting period _____

2) During plant operation _____

h. Monitor Repairs or Replaced Components Which Affected or Altered Calibration Values _____

_____

i. Conversion Factor (f-Factor, etc.) _____

j. Location of monitor (e.g. control equipment outlet)_____

PART 3 - Parameter Monitor of Process and Control Equipment. (Complete one sheet for each pollutant.)

a. Pollutant (circle one): Opacity SO2 NOx TRS

b. Type of Control Equipment _____

c. Control Equipment Operating Parameters (i.e., delta P, scrubber water flow rate, primary and secondary amps, spark rate)_____

_____

d. Date of Control Equipment Performance Test _____

e. Control Equipment Operating Parameter During Performance Test _____

_____

_____

_____

_____

PART 4 – Excess Emission (by Pollutant)

Use Table I: Complete table as per instructions. Complete one sheet for each monitor.

PART 5 – Continuous Monitoring System Operation Failures

Use Table II: Complete table as per instructions. Complete one sheet for each monitor.

PART 6 – Control Equipment Operation During Excess Emissions

Use Table III: Complete as per instructions. Complete one sheet for each pollutant control device.

PART 7 – Excess Emissions and CEMS performance Summary Report

Use Table IV: Complete one sheet for each monitor.

PART 8 – Certification for Report Integrity, by person in 1.f.

THIS IS TO CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, THE INFORMATION PROVIDED IN THE ABOVE REPORT IS COMPLETE AND ACCURATE.

SIGNATURE _____

NAME _____

TITLE _____

DATE _____

TABLE I

EXCESS EMISSIONS

Date	Time			Magnitude	Explanation/Corrective Action
	From	To	Duration		

TABLE II

CONTINUOUS MONITORING SYSTEM OPERATION FAILURES

Date	Time			Problem/Corrective Action
	From	To	Duration	

TABLE III

CONTROL EQUIPMENT OPERATION DURING EXCESS EMISSIONS

Date	Time			Operating Parameters	Corrective Action
	From	To	Duration		

TABLE IV

EXCESS EMISSIONS AND CEMS PERFORMANCE SUMMARY REPORT

Pollutant (circle one): SO2 NOx TRS H2S CO Opacity

Monitor ID _____

Emission data summary [1]	CEMS performance summary [1]
1. Duration of excess emissions in reporting period due to: a. Startup/shutdown b. Control equipment problems c. Process problems d. Other known causes e. Unknown causes 2. Total duration of excess emissions 3. Total duration of excess emissions × 100 = Total time CEM operated	1. CEMS[2] downtime in reporting due to: a. Monitor equipment malfunctions b. Non-monitor equipment malfunctions c. Quality assurance calibration d. Other known causes e. Unknown causes 2. Total CEMS downtime 3. Total CEMS downtime × 100 = Total time source emitted

1. For opacity, record all times in minutes. For gases, record all times in hours. Fractions are acceptable (e.g., 4.06 hours)
2. CEMS downtime shall be regarded as any time CEMS is not measuring emissions.

Montana Air Quality Permit (MAQP) Analysis
NorthWestern Energy- Dave Gates Generating Station at Mill Creek
MAQP #4255-03

I. Introduction/Process Description

NorthWestern Energy (NWE) owns and operates a electrical power regulating facility located in the NW¼ of Section 17 and the SW ¼ of Section 8, Township 4 North, Range 10 West in Deer Lodge County, Montana.

A. Permitted Equipment

NWE was owns and operates a facility equipped with up to four simple-cycle, dual fuel-fired generating units. Each generating unit consists of two, aero-derivative combustion turbines and one, electric generator. The facility's purpose is to serve as a regulating resource to stabilize the transmission grid due to historical supply and load variations, and the integration of non-dispatchable and unpredictable fluctuations from intermittent renewable resources, such as wind power. The facility consists of the following equipment:

- Pratt & Whitney Power Systems FT8 Swiftpac – Generating Units (up to 4 units @ 49.6 megawatts per unit (MW/Unit));
- 1528-brake horsepower (bhp) Emergency Diesel Generator;
- 282-bhp Emergency Diesel-Fired Fire Pump;
- Two (2) above-ground 125,000 gallon diesel fuel tanks ;
- (2) 12,000 gallon aqueous ammonia tanks; and
- associated equipment

Emissions from the facility are controlled by water injection, selective catalytic reduction (SCR) and catalytic oxidation (CO).

B. Source Description

This facility, also known as the Dave Gates Generating Station at Mill Creek (DGGS), is located near the intersection of MT-1 and county road 273 approximately 3 miles southeast of Anaconda, Montana. DGGS serves as NWE's regulating resource to maintain a balance between electrical loads (demand) and resources (supply) within NWE's Balancing Authority (BA) on a moment-to moment basis. NWE is required to maintain system frequency and minimize inadvertent energy transfers between adjacent BAs which is critical to the stability of the transmission grid. Keeping the system in balance at all times can be exacerbated by the addition of intermittent renewable resources such as wind generation.

NWE selected the rapid ramping simple-cycle FT8 Swiftpacs™ generating units from Pratt & Whitney. DGGS can operate up to four generating units whereby each unit consists of a gas turbine flanked on each side of the common generator. NWE selected these units because they are capable of operating at various loads and temperatures with the ability to respond rapidly to fluctuations in wind conditions. The FT8 Swiftpacs™ are ideal for offsetting continuous variation between system generation and system load.

NWE also evaluated startup and shutdowns for the generating units. These are not typical startup and shutdowns as would be seen in other applications. This facility will have various forms of both a cold start and "windmill" startup. As the name implies, a cold start is when a turbine begins operation from non-operational to fuel firing. As such, these units are capable of generating full capacity in less than 10 minutes from a cold start. Windmill operation which is

unique to these generating units, is when the one turbine is fully operational while the other spins freely or "windmills" without fuel. The system response to a windmill start, though rapid, is not immediate, and requires several minutes to reach peak control efficiencies. Therefore, no emission estimate distinctions are made in startup and shutdown emissions regarding cold or windmill starts.

DGGS starts and stops the turbines on a very routine basis, as much as, every 10 minutes depending on system demand and supply. In fact, normal operations for this facility could consist of approximately 40,000 startups and 40,000 shutdowns in any given year. Because the plant is not operated at a continuously set load, emission limits are not based on full-load operation but rather represent the worse-case scenario based on the variable turbine loads, ambient temperatures and fuel types.

In general, a gas turbine is an internal combustion engine that operates with rotary rather than reciprocating motion. Within each combustion turbine unit, a mixture of compressed air and natural gas is fired in the combustor to produce compressed hot combustion gases. Expansion of these gases in the turbine rotates the turbine shaft that turns a generator to produce electricity.

For stationary applications, the hot combustion gases are directed through one or more fan-like turbine wheels to generate shaft horsepower. A simple cycle turbine is the most basic operating cycle of a gas turbine.

Generally, the compressor draws in ambient air and compresses it to a pressure of up to 30 times the ambient pressure. The compressed air is then directed to the combustor section where fuel is introduced, ignited, and burned. The hot combustion gases are then diluted with additional cool air from the compressor section and directed to the turbine section. Energy is recovered in the turbine section in the form of shaft horsepower; typically greater than 50 percent of the horsepower is required to drive the internal compressor section. The balance of the recovered shaft energy is available to drive the external load unit. The compressor and turbine sections can be a single fan-like wheel assembly, but are usually made up of a series of stages. The compressor and turbine sections may be associated with one or several connecting shafts. In a single shaft gas turbine, all compressor and turbine stages are fixed to a single continuous shaft and operate at the same speed.

C. Permit History

On January 22, 2009, **MAQP #4255-00** was issued to NWE to construct and operate a facility equipped with up to four simple-cycle, dual fuel-fired generating units and other miscellaneous equipment, including: a 1,675 bhp emergency diesel generator, a 308.4 bhp emergency diesel fire pump, two above-ground 1,000,000 gallon diesel fuel tanks and two 10,000 gallon aqueous ammonia tanks.

NWE was issued a final MAQP on January 22, 2009, and a final Title V Operating Permit on June 3, 2010 for the Mill Creek project which included the following equipment: 1) up to four simple-cycle dual fuel-fired generating units; 2) a 1675-bhp blackstart diesel fired emergency generator; 3) a 308-bhp fire pump; 4) two above ground 1,000,000 gallon diesel fuel tanks; and 5) two 10,000 gallon aqueous ammonia tanks.

On July 26, 2010, NWE submitted a de minimis request to the Department of Environmental Quality-Air Resources Management Bureau (Department) for the following equipment changes: 1) replace the 1675 bhp diesel-fired emergency generator with a 1528 bhp diesel-fired blackstart emergency generator; 2) replace the 308 bhp fire pump engine with a 282 bhp fire pump engine; 3) replace two above ground 1,000,000 gallon diesel fuel tanks with a two above

ground 125,000 gallon diesel fuel tanks, and 4) replace two 10,000 gallon aqueous ammonia tanks with two 12,000 gallon (working volume) aqueous ammonia tanks. Additionally, NWE submitted information to update the location of the equipment listed from that submitted in the original application #4255-00. The Department was unable to make these changes pursuant to the de minimis rule, and therefore NWE submitted a permit application for modification on October 29, 2010, with additional information submitted on November 1, 2010; November 8, 2010; and November 19, 2010.

In addition, on August 20, 2010, NWE submitted a request to administratively amend MAQP #4255-00 to: 1) clarify the intent of the commissioning period; 2) clarify the number of generating units (phased in construction with up to four units) operating at MCGS; 3) clarify the hourly operational limit (720 hours/year/combustion turbine) while firing liquid fuels; and 4) include revisions to NWE's acid rain permit application. This permit action was assigned **MAQP #4255-01**; however, the permit was never finalized because the Department combined the administrative amendment with the permit modification application **MAQP #4255-02**.

D. Current Permit Action

On April 7, 2011, NWE contacted the Department to notify that the facility would be renamed to DGGS at Mill Creek rather than Mill Creek Generating Station (MCGS). The information submitted by NWE also included a request to change the designated responsible official from Dave Gates to William T. Rhoads.

On January 20, 2012, NWE submitted a permit application to request an extension for the construction of Unit #4. Originally MAQP #4255-02 allowed NWE phased in construction of up to four simple-cycle, dual fuel powered generating units each rated at 49.6 MW; however, NWE only completed three of the four units. Generally speaking, once an MAQP is issued, facilities have three years to construct. Because NWE did not construct the fourth unit within three years, NWE is requesting an extension on the construction of the fourth unit. In addition, the permit action updates the current rule references, permit format, and the emissions inventory.

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_{10}

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 an 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 20% for all fugitive emission sources and reasonable precautions be taken to control emissions of airborne particulate. (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 particulate matter.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.

4. ARM 17.8.322 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 combust pipeline quality gas (0.0017% sulfur by weight) or ultra low sulfur fuel oil (sulfur content less than 0.0015%) which will meet this limitation.

5. 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.

6. ARM 17.8.340 Standard of Performance for New Stationary Sources. This section incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). NWE's generating units are considered NSPS affected facilities under 40 CFR Part 60 and are subject to the requirements of the following subparts:

   - 40 CFR 60, Subpart A – General Provisions apply to all equipment or facilities subject to an NSPS Subpart as listed below.

   - 40 CFR 60, Subpart GG Standards of Performance for Stationary Gas Turbines. This subpart does not apply to the generating units because the turbines are subject to Subpart KKKK. Otherwise, the turbines would be subject to Subpart GG because they were constructed after October 3, 1977, and because the turbines will have a heat input capacity of greater than 10.7 gigajoules per hour.

   - 40 CFR 60, Subpart KKKK Standards of Performance for Stationary Combustion Turbines. This subpart applies to the generating units because they are stationary combustion turbines with a heat input at peak load equal to or greater than 10 MMBTU/hr that commenced construction, modification, or reconstruction after February 18, 2005.

   - 40 CFR 60, Subpart Kb Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage). This subpart applies to storage vessels with a capacity greater than or equal to 75 cubic meters (m^3) that is used to store volatile organic liquids for which construction, reconstruction, or modification is commenced after July 23, 1984. Storage vessels with a capacity greater than or equal to 151 cubic meters (m^3) (or 39,890 gallons) storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals (kPa) are exempt from this requirement. Although the storage vessel for NWE has a capacity greater than 75 m^3, NWE proposes to only store #2 distillate fuel oil with a vapor pressure of 0.152 kPa and therefore this Subpart does not apply.

   - 40 CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition (CI) Combustion Engines (ICE). This subpart indicates that NSPS requirements apply to owners or operators of stationary CI ICE that commence construction after July 11, 2005, or are manufactured after April 1, 2006. This subpart also applies to fire pump engines manufactured and certified by the National Fire Protection Association (NFPA) after July 1, 2006. This subpart applies to the emergency generator/engine and the fire pump.

4. ARM 17.8.341 Emission Standards for Hazardous Air Pollutants. This section incorporates, by reference, 40 CFR Part 61, National Emission Standards for Hazardous Air Pollutants (NESHAP). Since the emission of HAPs from the NWE facility is less than 10 tons per year (tpy) for any individual HAP and less than 25 tons per year for all HAPs combined, the NWE facility is not subject to the provisions of 40 CFR Part 61.

5. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. This section incorporates, by reference, 40 CFR Part 63, NESHAP for Source Categories. When the emission of HAP from a facility is less than 10 tons per year for any individual HAP and less than 25 tons per year for all HAP combined, the facility is not subject to the major source provisions of 40 CFR Part 63.

   - 40 CFR 63, Subpart A – General Provisions apply to all equipment or facilities subject to a NESHAPs Subpart as listed below.

   - 40 CFR 63, Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants (HAPs) for Stationary Reciprocating Internal Combustion Engines (RICE). An owner or operator of a stationary RICE at a major or area source of HAP emissions may be subject to this rule except if the stationary RICE is being tested at a stationary RICE test cell/stand. An area source of HAP emissions is a source that is not a major source. Pursuant to this subpart, NWE's engines are considered an affected source because all the engines were constructed on or after June 12, 2006. Since all engines were constructed after June 12, 2006 and are located at an area source of HAP emissions, this standard applies. However, an affected source complies with Subpart ZZZZ by complying with the requirements of 40 CFR 60, Subpart IIII.

D. ARM 17.8, Subchapter 4 – Stack Height and Dispersion Techniques, including, but not limited to:

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

2. ARM 17.8.402 Requirements. NWE must demonstrate compliance with the ambient air quality standards with a stack height that does not exceed Good Engineering Practices (GEP). The proposed height of the stack will be below the allowable 65-meter GEP stack height.

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

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. NWE submitted the appropriate permit application fee for the current permit action.

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

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

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

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit alteration to construct, alter, or use any air contaminant sources that have the Potential to Emit (PTE) greater than 25 tpy of any pollutant. NWE has a PTE greater than 25 tons per year of particulate matter (PM), PM with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$), PM with an aerodynamic diameter of 10 microns or less (PM_{10}), oxides of nitrogen (NO_x), volatile organic compounds (VOCs) 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, alteration, or use of a source. NWE submitted the required permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. NWE submitted an affidavit of publication of public notice for the January 24, 2012, issue of the *Anaconda Leader*, a newspaper of general circulation in the town of Anaconda, as proof of compliance with the public notice requirements.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that Best Available Control Technology (BACT) shall be utilized. The BACT analysis is discussed in Section III of this permit analysis.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving 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 altered source may contain a condition providing that the permit will expire unless construction has commenced (begin or contractual obligations entered into that would constitute substantial loss) 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.

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

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.

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

The facility is not a "listed facility" and the PTE is less than 250 tpy of any pollutant (excluding fugitive emissions). Therefore, NWE facility is not deemed a major stationary source and is not subject to review under the PSD program.

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

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:

   a. PTE > 100 tpy of any pollutant;

   b. PTE > 10 tpy of any one HAP, PTE > 25 tpy of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or

   c. PTE > 70 tpy of PM_{10} in a serious PM_{10} 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 #4255-03 for NWE, the following conclusions were made:

   a. The facility's PTE is > 100 tpy for several criteria pollutants.

   b. The facility's PTE is < 10 tpy for any one HAP and < 25 tpy for all HAPs.

   c. This source is not located in a serious PM_{10} nonattainment area.

   d. This facility is subject to a current NSPS standard (40 CFR 60, Subpart(s) KKKK and IIII).

   e. This facility is not subject to a current NESHAP standard (40 CFR 63, Subpart ZZZZ).

   f. This source is a Title IV affected source.

   g. This source is an EPA designated Title V source.

   Based on these facts, the Department determined that NWE is subject to the Title V operating permit program.

III. BACT Determination

A BACT determination is required for each new or altered source. NWE shall install on the new or altered source the maximum air pollution control capability which is technically practicable and economically feasible, except that BACT shall be utilized. NWE submitted the required BACT analysis with MAQP #4255-00 and MAQP #4255-02. The BACT analysis for MAQP #4255-03 has not changed from that submitted under the original application, MAQP #4255-00. The changes to the equipment did not result in changes to previously established emission limits.

IV. Emission Inventory[1,2]

Source	Emissions (tons/year)							
	PM	PM_{10}	$PM_{2.5}$	NOx	VOC	CO	SO_2	HAPs
Up to Four FT Swiftpacs (NG)	127.90	127.9	127.90	193.95	43.27	188.87	14.54	9.50
Up to Four FT Swiftpacs (LIQ)	55.58	55.58	55.58	29.06	54.66	28.31	2.30	
Emergency Generator	0.11	0.11	0.11	3.52	0.26	0.44	0.01	0.02
Building Heaters (3 @ 1 MMBtu)	0.10	----	----	1.29	0.07	0.00	0.01	
Building Heaters (1 @ 2 MMBtu)	0.07	----	----	0.43	0.05	0.72	0.00	
Building Heaters (1 @ 3 MMBtu)	0.10	----	----	1.29	0.07	1.08	0.01	
Building Heaters (1 @ 0.5 MMBtu)	0.02	----	----	0.21	0.01	0.18	0.00	
Emergency Fire pump	0.01	0.01	0.01	0.42	0.01	0.07	0.0007	
Two Diesel tanks (125,000 gallons)		----	----	----	----	----	----	0.07
Fugitives3	0.58	0.16	0.02		----	----	----	----
Total Annual Emissions	**184.46**	**183.76**	**183.62**	**230.59**	**98.41**	**219.66**	**17.01**	**9.57**

Pratt and Whitney FT8 Swiftpac- 49.6 MW *(Sources #01, #02, #03, and #04)*
4 Units – using Natural Gas

Assumptions:

Nominal Twin Pack Size =	49.6 MW	{Source - Application}
Hours of Operation =	8,760 hr/yr	
Natural Gas Higher Heating Value =	21,488 Btu/lb	{Source - Application}
Natural Gas Lower Heating Value =	19,367Btu/lb	{Source - Application}
Assumed max sulfur in Natural Gas=	0.50 grains/100 scf	{Source - Application}
Natural Gas Fuel Heating Value =	1,020 Btu/SCF	{Source - Application}

PM Emissions:						
Emission Factor:	7.30	lb/hr	(BACT Emission Limit, 30-day rolling avg)			
Annual Calculations:	7.3 lb/hr * 8760 hr/yr * 0.0005 ton/lb * 4 units=				127.90	tpy
PM-10 Emissions:						
Emission Factor:	7.30	lb/hr	(BACT Emission Limit, 30-day rolling avg)			
Annual Calculations:	7.3 lb/hr * 8760 hr/yr * 0.0005 ton/lb * 4 units=				127.90	tpy
PM-2.5 Emissions:						
Emission Factor:	7.30	lb/hr	(BACT Emission Limit, 30-day rolling avg)			
Annual Calculations:	7.3 lb/hr * 8760 hr/yr * 0.0005 ton/lb * 4units =				127.90	tpy
NOx Emissions:						
Emission Factor:	11.07	lb/hr	(BACT Emission Limit, 30-day rolling avg)			
Annual Calculations:	11.07 lb/hr * 8760 hr/yr * 0.0005 ton/lb * 4 units=				193.95	tpy
VOC Emissions:						
Emission Factor:	2.47	lb/hr	(BACT Emission Limit, 30-day rolling avg)			
Annual Calculations:	2.47 lb/hr * 8760 hr/yr * 0.0005 ton/lb * 4 units=				43.27	tpy

1 Emissions were over estimated because calculations were based on natural gas operation for 8760 hours per year plus liquid fuel operation for up to 720 hours per year (per NWE). However, the facility requested it this way. Further, when DGGS operates on fuel oil, the emissions should be much less than calculated because the emission factors used were based on operating both turbines (the generating unit) even though the facility has the potential to only operate one turbine--which would essentially half their emissions. However, the Department did not have emission factors to support this change.
2 The majority of the emission calculations are shown below, the entire emission's inventory is on file with the Department.
3 Fugitives include liquid fuel and ammonia delivery in addition to plant road traffic fugitives.

CO Emissions:						
Emission Factor:	10.78	lb/hr	(BACT Emission Limit, 30-day rolling avg)			
Annual Calculations:	10.78 lb/hr * 8760 hr/yr * 0.0005 ton/lb * 4 units=				188.87	tpy
SOx Emissions:						
Emission Factor:	0.83	lb/hr	(BACT Emission Limit, 30-day rolling avg)			
Annual Calculations:	0.83 lb/hr * 8760 hr/yr * 0.0005 ton/lb * 4 units=				14.54	tpy

Pratt and Whitney FT8 Swiftpac- 49.6 MW *(Sources #01, #02, #03, and #04)*
(2 turbines per generating unit using Ultra low sulfur fuel oil (#2))

Assumptions:

Nominal Twin Pack Size =	49.6 MW	{Source – MAQP #4255-00 Application}
Hours of Operation =	720 hr/yr	
Higher Heating Value =	19,553 Btu/lb	{Source - Application}
Lower Heating Value =	18,360 Btu/lb	{Source - Application}
Assumed max sulfur =	0.0015	{Source - Application}

PM Emissions:						
Emission Factor:	19.3000	lb/hr	(BACT Emission Limit, 30-day rolling avg)			
Annual Calculations:	19.3 lb/hr * 720 hr/yr * 0.0005 ton/lb * 8 units=				55.58	tpy
PM-10 Emissions:						
Emission Factor:	19.3000	lb/hr	(BACT Emission Limit, 30-day rolling avg)			
Annual Calculations:	19.3 lb/hr * 720 hr/yr * 0.0005 ton/lb * 8 units=				55.58	tpy
PM-2.5 Emissions:						
Emission Factor:	19.3000	lb/hr	(BACT Emission Limit, 30-day rolling avg)			
Annual Calculations:	19.3 lb/hr * 720 hr/yr * 0.0005 ton/lb * 8 units =				55.58	tpy
NOx Emissions:						
Emission Factor:	10.0900	lb/hr	(BACT Emission Limit, 30-day rolling avg)			
Annual Calculations:	10.09 lb/hr * 720 hr/yr * 0.0005 ton/lb * 8 units=				29.06	tpy

VOC Emissions:						
Emission Factor:	18.98	lb/hr	(BACT Emission Limit, 30-day rolling avg)			
Annual Calculations:	18.98 lb/hr * 720 hr/yr * 0.0005 ton/lb * 8 units=				54.66	tpy
CO Emissions:						
Emission Factor:	9.83	lb/hr	(BACT Emission Limit, 30-day rolling avg)			
Annual Calculations:	9.83 lb/hr * 720 hr/yr * 0.0005 ton/lb * 8 units=				28.31	tpy
SOx Emissions:						
Emission Factor:	0.8	lb/hr	(BACT Emission Limit, 30-day rolling avg)			
Annual Calculations:	0.8 lb/hr * 720 hr/yr * 0.0005 ton/lb * 8 units=				2.30	tpy

Emergency Diesel Fired Generator (Tier 2)
1000 kWe diesel fired Engine = 1528 bhp = 1139 KWm
Hours of Operation (limit) = 500 hours per year
Heat Input rate = 10.61 MMBtu/hr
Fuel flow = 73.6 gallon/hr @ 100%
Flow Rate (acfm) = 9534
Temperature (degrees Fahrenheit) = 1000
Stack Diameter = 1.3 feet
Stack Height = 14 feet

PM Emissions:							
	Emission Factor (filt)	0.140	g/kw-hr	(manufacturer data)			
	Annual Calculations	1139 kWm * 0.14 g/kw-hr * 2.2 lb/1000 g * 0.0005 tons/lb * 500 hr/yr =				0.09	tpy
	Emission Factor (cond)	0.080	lb/hr	(AP-42, Table 3.4-2)			
	Annual Calculations	0.08 lb/hr * 0.0005 tons/lb * 500 hr/yr =				0.02	tpy
					Total PM	0.11	
PM_{10} Emissions:							
	Emission Factor (filt)	0.140	g/kw-hr	(manufacturer data)			
	Annual Calculations	1139 kWm * 0.14 g/kw-hr * 2.2 lb/1000 g * 0.0005 tons/lb * 500 hr/yr =				0.09	tpy
	Emission Factor (cond.)	0.080	lb/hr	(AP-42, Table 3.4-2)			
	Annual Calculations	0.08 lb/hr * 0.0005 tons/lb * 500 hr/yr =				0.02	tpy
					Total PM_{10}	0.11	

PM-2.5 Emissions:							
	Emission Factor (filt)	0.140	g/kw-hr	(manufacturer data)			
	Annual Calculations	1139 kWm * 0.14 g/kw-hr * 2.2 lb/1000 g * 0.0005 tons/lb * 500 hr/yr =				0.09	tpy
	Emission Factor (cond)	0.080	lb/hr	(AP-42, Table 3.4-2)			
	Annual Calculations	0.08 lb/hr * 0.0005 tons/lb * 500 hr/yr =				0.02	tpy
					Total $PM_{2.5}$	0.11	
NOx Emissions:							
	Emission Factor	5.600	g/kw-hr	(Vendor CARB report)			
	Annual Calculations	1139 kWm * 5.6 g/kw-hr * (1 lb/453.6 g) * 0.0005 tons/lb * 500 hr/yr =				3.52	tpy
VOC Emissions:							
	Emission Factor	1.04	lb/hr	(AP-42 Table 3.4-1,10/96)			
	Hourly Calculations	1.04 lb/hr * 0.0005 tons/lb * 500 hr/yr =				0.26	tpy
CO Emissions:							
	Emission Factor	0.700	g/kw-hr	(Vendor CARB report)			
	Hourly Calculations	1139 kWm * 0.7 g/kw-hr * (1 lb/453.6 g) * 0.0005 tons/lb * 500 hr/yr =				0.44	tpy
SOx Emissions:							
	Emission Factor	0.03228	lb/hr	(applicant, S % by wt = 0.0015)			
	Hourly Calculations	0.03228 lb/hr * 0.0005 tons/lb * 500 hr/yr =				0.01	tpy

Fire Pump Engine (Tier 3)

Power Rating = 282 bhp/211 kW
Certified RPM = 1760
Heat Input rate = 1.90 MMBtu/hr
Fuel flow = 13.7 gallon/hr
Hours of Operation (limit) = 500 hours per year
Flowrate (acfm) = 1121
Temperature (degrees Fahrenheit) = 810
Stack Diameter = 0.5 feet
Stack Height = 13 feet

PM Emissions:							
	Emission Factor (filt)	0.055	g/bhp-hr	(Manufacturer information)			
	Hourly Calculations	282 bhp * 0.055 g/bhp-hr * 2.2 lb/1000 g				0.03	lb/hr
	Annual Calculations	0.03 tpy * 500 hr/yr * 0.0005 tons/lb =				0.01	ton/yr
	Emission Factor (cond)	0.015	lb/hr	(Manufacturer information)			
	Annual Calculations	0.015 lb/hr * 500 hr/yr * 0.0005 tons/lb =				0.00	ton/yr
					PM total	0.01	tons/yr
PM-10 Emissions:							
	Emission Factor	0.055	g/bhp-hr	(Manufacturer information)			
	Hourly Calculations	282 bhp * 0.055 g/bhp-hr * 2.2 lb/1000 g				0.03	lb/hr
	Annual Calculations	0.03 tpy * 500 hr/yr * 0.0005 tons/lb =				0.01	ton/yr
	Emission Factor (cond)	0.015	lb/hr	(Manufacturer information)			
	Annual Calculations	0.015 lb/hr * 500 hr/yr * 0.0005 tons/lb =				0.00	ton/yr
					PM_{10} total	0.01	tons/yr

PM-2.5 Emissions :								
	Emission Factor (filt)	0.055	g/bhp-hr	(Manufacturer information)				
	Hourly Calculations	282 bhp * 0.055 g/bhp-hr * 2.2 lb/1000 g					0.03	lb/hr
	Annual Calculations	0.03 tpy * 500 hr/yr * 0.0005 tons/lb =					0.01	ton/yr
	Emission Factor (cond)	0.015	lb/hr	(Manufacturer information)				
	Annual Calculations	0.015 lb/hr * 500 hr/yr * 0.0005 tons/lb =					0.00	ton/yr
						$PM_{2.5}$ total	0.01	tons/yr
NOx Emissions:								
	Emission Factor	2.69	g/hp-hr	(Manufacturer information)				
	Hourly Calculations	282 bhp * 2.69 g/hp-hr * 2.2 lb/1000 g					1.67	lb/hr
	Annual Calculations	1.67 lb/hr * 500 hr/yr * 0.0005 tons/lb =					0.42	ton/yr
VOC Emissions:								
	Emission Factor	0.06	g/hp-hr	(Manufacturer information)				
	Hourly Calculations	282 bhp * 0.06 g/hp-hr * 2.2 lb/1000 g					0.04	lb/hr
	Annual Calculations	0.04 lb/hr * 500 hr/yr * 0.0005 tons/lb =					0.01	ton/yr
CO Emissions:								
	Emission Factor	0.45	g/hp-hr	(Manufacturer information)				
	Hourly Calculations	282 bhp * 0.45 g/hp-hr * 2.2 lb/1000 g					0.28	lb/hr
	Annual Calculations	0.28 lb/hr * 500 hr/yr * 0.0005 tons/lb =					0.07	ton/yr
SOx Emissions:								
	Emission Factor	2.9E-03	lb/hr	(applicant, S % by wt 0.0015)				
	Hourly Calculations	0.00289755 lb/hr * 500 hr/yr * 0.0005 tons/lb =					0.00	tpy

V. Existing Air Quality

NWE's facility also known as the DGGS is located near the intersection of MT-1 and county road 273 approximately 3 miles southeast of Anaconda, Montana. The property lies within a 50-acre parcel in the NW¼ of Section 17 and the SW ¼ of Section 8, Township 4 North, Range 10 West in Deer Lodge County, Montana.

VI. Ambient Air Impact Analysis

The air quality classification of the immediate area is "Unclassifiable/Attainment" for all pollutants (40 CFR Part 81.327). The city of Butte and surrounding area is classified as nonattainment for PM_{10} upon based on 24-hour monitoring values. This PM_{10} nonattainment area (NAA) boundary is about 13 miles (21 kilometers) to the southeast of the DGGS. The closest federally mandatory Class I area is the Anaconda-Pintler Wilderness Area, which is about 16 miles (26 km) southwest of the facility.

The Ambient Air Impact Analysis was completed previously for MAQP #4255-00. This unit was previously permitted under MAQP #4255-00 and no changes were made to emissions or emission limits. The permit application merely requests an extension on the ability to construct the fourth unit.

The modeling results for DGGS's natural gas-fired power plant project have previously demonstrated compliance with the National Ambient Air Quality Standards (NAAQS)/Montana Ambient Air Quality Standards (MAAQS) and Prevention of Significant Deterioration (PSD) increments under MAQP #4255-00. Therefore, no further analysis was required for this permit action.

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?
	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

An environmental assessment, required by the Montana Environmental Policy Act, was completed for this project. A copy is attached.

DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Air and Waste Management Bureau
P.O. Box 200901, Helena, Montana 59620
(406) 444-3490

FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: NorthWestern Energy
40 E. Broadway
Butte, MT 59701

Montana Air Quality Permit (MAQP) Number: #4255-03

Preliminary Determination Issued: 03/02/2012
Department Decision Issued: 04/03/2012
Permit Final: 04/19/2012

1. *Legal Description of Site*: NWE facility also known as the Dave Gates Generating Station at Mill Creek (DGGS) located near the intersection of MT-1 and county road 273 approximately 3 miles southeast of Anaconda, Montana. The property is located within a 50-acre parcel in the NW¼ of Section 17 and the SW ¼ of Section 8, Township 4 North, Range 10 West in Deer Lodge County, Montana.

2. *Description of Project*: This permit action would update the facility name from Mill Creek Generating Station (MCGS) to DGGS. Additionally, the permit action would allow an extension for the construction of Unit #4. Originally MAQP #4255-02 allowed NWE phased in construction of up to four simple-cycle, dual fuel powered generating units each rated at 49.6 megawatts (MW). However, NWE only constructed three of the four units.

3. *Objectives of Project*: The objective of the project would be to modify some of the equipment and update the name of the facility and allow an extension on construction of Unit #4.

4. *Alternatives Considered*: In addition to the proposed action, the Department also considered the "no action" alternative. The "no action" alternative would deny the issuance of the air quality preconstruction permit to the proposed facility. However, the Department does not consider the "no action" alternative to be appropriate because NWE demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the "no action" alternative was eliminated from further consideration.

5. *A Listing of Mitigation, Stipulations, and Other Controls*: A list of enforceable conditions, including a Best Available Control Technology (BACT) analysis, would be included in MAQP #4255-03.

6. *Regulatory Effects on Private Property*: The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions would be reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and would not unduly restrict private property rights.

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

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

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

A. Terrestrial and Aquatic Life and Habitats

The existing facility is located within the South Uplands Unit of the Anaconda Smelter National Priorities List (NPL) at the existing Mill Creek electrical power substation that currently covers approximately 10 acres.

Impacts to terrestrial and aquatic life and habitats from this permit action would be minor because of the relatively small portion of land that would be disturbed during construction of Unit #4. The area has already been designated for this unit and was previously discussed in the EA for MAQP #4255-00. Terrestrials such as livestock, deer, elk, moose, and rodents would use the general area near the facility. However, the area surrounding DGGS is fenced to limit access to the site. Fencing would not restrict access from all animals that frequent the area, but would discourage most animals from entering the facility.

There are no wetlands listed for the project site according to the Riparian and Wetland Research Program (RWRP) database, the Natural Heritage Wetland Program (NHWP) database, or the Department's database. However, the final design report for the South Opportunity Uplands area of the Anaconda Superfund Site indicates the presence of wetland north of the existing substation and east of the project site along Mill Creek. These wetlands were part of delineation activities that occurred in 1999 and since then the project site surface conditions have been altered to address arsenic-impacted soils. However, it is anticipated that activities associated with the proposed permit action would have no adverse impacts on identified but altered wetlands.

Construction of Unit #4 would result in very little impact on the terrestrial and aquatic life and habitats because there would be minimal disturbance and any disturbance would be temporary and of short duration. As stated above, the area is currently occupied by the Mill

Creek electrical substation and the DGGS. The proposed modification to the DGGS facility would cause minor impacts to the area. Overall, the impacts from this project to terrestrial and aquatic life and habitats would be minor.

B. Water Quality, Quantity, and Distribution

There are no surface water bodies on the site and the nearest surface water body would be Mill Creek, which would be located several hundred feet southeast of the existing facility. This permit action would grant an extension to construct a previously permitted unit and would not cause additional impact. As proposed, there would be no additional impact on the water supply for the City of Anaconda that results from this permit modification. Therefore, the proposed permit modification would result in minor impacts to water quality, quantity, and distribution in the area.

C. Geology and Soil Quality, Stability, and Moisture

Impacts to the geology and soil quality, stability, and moisture from this facility would be minor because the permit modification would impact a relatively small portion of land and the amount of resulting deposition of the air emissions would be small. Unit #4 would be located within the existing DGGS and therefore any disruption or displacement of soils during the construction would be contained to the existing fenced area.

According to information provided previously by the applicant, available geologic mapping indicates that the general geology in the project area consists of "Surficial Sedimentary Deposits: **QS**-Alluvium, and terrace gravel, gravel deposits on pediment surfaces, and landslide and travertine deposits: till, glacial lake, and outwash deposits" and "Sedimentary Deposits and Rocks: **Ts**- Fan and gravel deposits on pediment conglomerate, sandstone, mudstone, and volcanic ash beds".

There are no known unique geologic or physical features at the site. NWE previously reported that in 2007, two bore holes were drilled to a depth of 20 feet below ground surface by SK Geotechnical at the facility location. Topsoil and the root zone were encountered at two to three inches below ground surface. Below the topsoil and root zone to the total depth, the soil profile was alluvium/glacial deposits consisting of poorly graded gravels with silt, sand, and cobbles. Groundwater was not observed in the bore holes. The subsurface soils are considered more than adequate to support the foundations for the simple cycle combustion units. The soil stability in the immediate vicinity would be impacted by construction activities, but disturbances would be temporary. The proposed permit modification would not discharge any material to the soil. Installing the proposed equipment would result in minimal impact on geology and soil quality, stability and moisture because the construction would be temporary and of short duration. Overall, the Department believes there would be minor impacts to geology, soil quality, stability, and moisture.

D. Vegetation Cover, Quantity, and Quality

The proposed project would result in minor impacts on the vegetative cover, quantity, and quality in the immediate area because only a small amount of property would be disturbed.

The project site would be located in an existing industrial area where vegetation is sparse to none. In comparison to the surrounding area, the disturbance of this acreage would be very small. The vegetated areas outside of this proposed project include: small stands of cottonwoods and other deciduous species, grasslands with Great Basin wildrye and redtop, and scattered shrub lands with rabbitbrush (Chrysothamnus nauseosus), currant and Woods rose. See Section 8.D of this EA. In addition, as described in Section 7.F of this EA, the impacts from the air emission from this facility are minor.

There are no known endangered or threatened plant species at the project site. This permit modification would result in minimal disturbance to the land and the disturbances would be temporary. Most of the newly disturbed areas would be restored to their previous status after installation of equipment. The corresponding deposition of the air pollutants on the surrounding vegetation would also be minor.

Any disturbances would be of short duration and the area would be returned to its current status. Therefore, the proposed project would result in minor impacts on the vegetative cover, quantity, and quality.

E. Aesthetics

Impacts to the aesthetics of the area from this action would be minor because the permit action merely extends the construction on the existing facility that was already permitted. The land use surrounding the existing project area is primarily agricultural grazing, recreation and open space mixed with commercial/industrial areas for gravel mining and an electrical substation.

The existing facility is visible from various roadways in the area, such as: State Highway-1 located approximately 1 mile to the northeast, Mill Creek Road approximately 1/5 mile to the west, and Willow Glen Road approximately 1/5 mile to the southwest of the site.
The community of Opportunity is located approximately 1.5 miles east of the facility and a gravel pit is located approximately 0.25 miles to the northeast.

Visible emissions from the facility would be limited to 20% opacity. There would not be an increase in odors with this permit action. The proposed change could result in some additional noise during construction but would be temporary.

The area would also receive increased vehicle use as a result of the proposed project; however, the Department does not believe that the amount of vehicle trips in the area would increase substantially over the existing traffic patterns. The vehicles would use the existing roads in the area on route to the roads established as part of the facility. Obviously during construction of the facility, there might be a noticeable increase; however, it would be temporary.

Impacts to the aesthetics of the area from the project would be minor because of these other industrial and commercial operations. Odor would be negligible and visible emissions would be limited to less than 20% opacity. Therefore, the Department believes that aesthetics in the area would only experience minor impacts.

F. Air Quality

The air quality classification of the immediate area is "Unclassifiable/Attainment" for all pollutants (40 CFR Part 81.327). The city of Butte and surrounding area is classified as nonattainment for PM_{10} upon based on 24-hour monitoring values. This PM_{10} nonattainment area (NAA) boundary is about 13 miles (21 kilometers (km)) to the southeast of the DGGS. The closest federally mandatory Class I area is the Anaconda-Pintler Wilderness Area, which is about 16 miles (26 km) southwest of the facility.

This permit action did not require modeling; however, modeling previously completed under MAQP #4255-00 concluded that the Class I Anaconda-Pintler Wilderness Area would not be significantly impacted by DGGS's NOx and PM_{10} emissions. The annual NOx and PM_{10}

DGGS emissions were about 1% of their respective modeling significance levels whereas the 24-hour PM_{10} emissions were about 50%. In addition, the modeling results (previously completed) for DGGS demonstrated compliance with the National Ambient Air Quality Standards (NAAQS)/Montana Ambient Air Quality Standards (MAAQS) and Prevention of Significant Deterioration (PSD) increments. The permit action at the DGGS facility would result in no overall emission increases because all emissions were accounted for in the original application. Therefore, this permit action was minor and the Department did not require additional modeling. Overall, the air impacts from the proposed change would be minor.

G. Unique, Endangered, Fragile, or Limited Environmental Resources

To identify any species of special concern in the immediate area of the proposed project, the Department previously contacted the Montana Natural Heritage Program of the Natural Resource Information System (NRIS). The Natural Heritage Program identified one endangered species of special concern in the area of the proposed facility. The species identified is the gray wolf.

In the mid-to-late 1980s, in an effort to restore wolf populations, the wolf was reintroduced into three recovery areas – Northwestern Montana, Central Idaho, and the Greater Yellowstone. Wolf populations have increased throughout the last several decades, however, generally, the wolves usually occupy areas with few roads and little human disturbance so it is unlikely that wolves would be impacted by this project. This permit action extends the amount of time available to NWE to construct Unit #4 which was previously permitted and accounted for. Because the unit would be located at an existing facility (DGGS) in addition a nearby gravel pit and an electrical substation, there would be little additional impact to the wolf population. Therefore, the Department believes there would be minor impacts to any unique, endangered, fragile, or limited environmental resources in the area.

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

As described in Section 7.B of this EA, impacts to the water resource would be minor. The proposed modification would not directly discharge any material to the surface or ground water in the area other than a minor amount of stormwater runoff.

As described in Section 7.F of this EA, the impact on the air resource in the area of the facility would be minor. Ambient air modeling for NO_X, CO, VOC, PM, PM_{10}, and SO_2 was conducted for the facility at "worst case" conditions that demonstrates that the emissions from the proposed facility would not exceed any ambient air quality standard.

During construction of Unit #4, there would be minor energy impacts however, impacts would be temporary. No additional impacts to the water quality and quantity would occur because the majority of the facility has already been constructed. The project would result in minor changes of air quality and dispersion would be minimal. Energy use would be minimized due to the operational limitations placed on the facility. Therefore, the Department believes the project would result in minor impacts to demands on environmental resources of water, air, and energy.

I. Historical and Archaeological Sites

The Department previously contacted the Montana Historical Society – State Historic Preservation Office (SHPO) in an effort to identify any historical, archaeological, or paleontological sites or findings near the proposed project. SHPO's records indicate that there are currently no previously recorded cultural properties within the project site. Because

of the fact that the site has been previously disturbed, the likelihood of finding undiscovered or unrecorded historical properties is unlikely. The old Anaconda Copper Company smelter stack, located approximately two miles west of the site, is listed in the National Register of Historic Places.

Impacts on historical and archaeological sites would be minor because the equipment associated with this permit modification would locate within an area that has been previously disturbed and previously designated as DGGS.

Therefore the Department believes that there would be minimal impact to cultural properties. However, should cultural materials be inadvertently discovered during this project SHPO requested that they be contacted to investigate.

J. Cumulative and Secondary Impacts

Overall, the cumulative and secondary impacts from this project on the physical and biological aspects of the human environment would be minor because the impact from the modification would be relatively minor. The proposed equipment would locate in close proximity to existing power lines and a natural gas distribution pipeline. Because the majority of the DGGS project is constructed, the proposed modification would result in minimal and temporary changes. The overall impact due to the project would be minor. Because the proposed equipment would be located at the existing DGGS facility, and would not be located in the PM_{10} nonattainment area, and the fact that NWE has shown previously shown compliance with the NAAQS/MAAQS; the modification would have minor impacts to the surroundings. Therefore, the Department believes that impacts to Air Quality would be minor.

8. *The following table summarizes the potential social and economic effects of the proposed project on the human environment. The "no action" alternative was discussed previously.*

Potential Social and Economic Effects							
		Major	Moderate	Minor	None	Unknown	Comments Included
A.	Social Structures and Mores				X		yes
B.	Cultural Uniqueness and Diversity				X		yes
C.	Local and State Tax Base and Tax Revenue			X			yes
D.	Agricultural or Industrial Production			X			yes
E.	Human Health			X			yes
F.	Access to and Quality of Recreational and Wilderness Activities			X			yes
G.	Quantity and Distribution of Employment			X			yes
H.	Distribution of Population				X		yes
I.	Demands for Government Services			X			yes
J.	Industrial and Commercial Activity			X			yes
K.	Locally Adopted Environmental Plans and Goals				X		yes
L.	Cumulative and Secondary Impacts			X			yes

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

A. Social Structures and Mores
B. Cultural Uniqueness and Diversity

The proposed permit action would not cause a disruption to any native or traditional lifestyles or communities (social structures or mores, or cultural uniqueness and diversity) in the area because the land use proposal would not be out of place given the industrial land use of the surrounding area. The area is currently occupied by an existing electrical substation and the equipment would be located at the existing DGGS facility. In addition to these industrial land uses, there is an existing gravel pit located north of this facility. The project would not impact social structures or mores because these activities are consistent with activities performed throughout Montana and would be located in an existing industrial area.

C. Local and State Tax Base and Tax Revenue

Most of the DGGS facility is already constructed, so it is estimated that NWE would employ a few (if any) additional people. There may be a few new people on-site during the construction however most likely this would be temporary. Therefore, the Department believes this project would have minor effects to the local and state tax base and tax revenue

D. Agricultural or Industrial Production

The impacts to agricultural and industrial production in the area from this permit modification would impact such a small amount of land, the impact from the air emissions on the land would be small, and the amount of electricity produced to assist other industrial activities within the state is relatively small. The proposed equipment would be located on 50 acres privately owned by NWE, much of which is already occupied by the Mill Creek electrical substation and other previously approved DGGS equipment. The project would not remove any existing land from agricultural production and would add to other industrial uses in the area.

As described in Section 7.F of the EA, the air quality impacts from this facility are minor, and the resulting deposition of the pollutants from the project would consequently also be minor. In addition, as described in Section 7.F, the fact that the DGGS previously complied with the NAAQS (protect public health and promote public welfare) indicates that the impacts from the facility would be minor. Therefore, the Department has determined that the impacts to Agricultural or Industrial Production would be minor.

E. Human Health

As described in Section 7.F of the EA, the impacts from this project on human health would be minor because the impact from the air emissions would be greatly dispersed before reaching an elevation where humans were exposed. Also, as described in Section 7.F, the previously modeled impacts from DGGS, taking into account other dispersion characteristics (wind speed, wind direction, atmospheric stability, stack height, stack temperature, etc.), were well below the MAAQS, NAAQS, and PSD Increments. NWE was not required to conduct additional modeling with this permit modification. However, NWE would be subject to limits and conditions that would ensure that the facility be operated in compliance with all applicable rules and standards. Given these reasons, and the fact that the nearest neighbor is approximately 1.5 miles away, the Department believes that the impact to human health would be minor.

F. Access to and Quality of Recreational and Wilderness Activities

The proposed changes would result in small or no impacts on the access to and quality of recreational wilderness activities. The air emissions from the facility would disperse before impacting any recreational areas.

No significant recreational or wilderness activities exist within the NWE property boundaries and all recreational activities would remain available. Based on the previous modeling analysis (see Section 7.F of the EA) and the distance between and direction from the recreational sites and the NWE facility, there would not be any noticeable impacts. This project would not cause denial of access and would not impact wilderness activities, therefore, the Department determined that this facility would have minor impact to recreational and wilderness activities.

G. Quantity and Distribution of Employment

There would be a minor effect on the employment of the area from this project because it would result in construction-related employment opportunities. As such, any effects would be minor but positive in the area. Therefore, the Department determined that this modification would not negatively impact the quantity and distribution of employment in the area and would have minor impacts, if any.

H. Distribution of Population

The project would not affect the normal population distribution in the area because the permit modification would result in few, if any, new jobs. The facility's operation would result in approximately 11 new positions. However, neither the 11 positions created as a result of facility, nor the numerous temporary construction-related positions would likely affect the distribution of population in the area. Therefore, the Department believes that the distribution of population would not be affected.

I. Demands of Government Services

The demands on government service due to the project modification would be minor, if any, as most of the required permits are already in place. Demands on government services from this facility would be minor because the facility would pay relatively high taxes and require fewer than average government services once all the necessary permits are received. There may be a minor increase in traffic on existing roads in the area during construction, but for the normal operation of the facility traffic increases would be minimal. NWE continues to work with all affected local and state agencies to alleviate any additional demands on Government Services. Therefore, the Department believes the demands on Government Services would be minor.

J. Industrial and Commercial Activity

The area both currently and historically has been primarily an industrial area. The proposed changes would have minor additional impacts to the surrounding area. The project would cause a minor increase in industrial activity in the area during construction. However, given the fact that the area is predominantly industrial, the Department believes that effects to industrial and commercial activity would be minor.

K. Locally Adopted Environmental Plans and Goals

The air quality classification for the immediate area is "Unclassifiable or Better Than National Standards" (40 CFR Part 81.327) for all pollutants. The city of Butte and surrounding area are classified as non-attainment for PM_{10} with the closest boundary approximately 13 miles to the east of the facility. The closest PSD Class I area would be the Anaconda-Pintler Wilderness located approximately 15 miles southwest of the facility.

The project would be located within the Anaconda Regional Water, Waste, and Soils Operable Unit, RDU 6 - South Uplands Unit of the Anaconda Smelter National Priorities List (NPL) Site (Anaconda Superfund site). RDU 6 covers approximately 300 square miles in the southern Deer Lodge Valley and surrounding foothills.

This permit action did not require additional modeling; however, the proposed DGGS facility would locate outside of the nonattainment area and would result in only minor impacts because the PM emissions from the facility have been previously modeled to demonstrate that the facility would not have a significant impact on the adjacent PM_{10} nonattainment area. The modeling inputs were based on the "worst case" PM emissions from the facility.

The Department is unaware of any other locally adopted environmental plans and goals that would be affected by the permit modification, or the other portions of the project, as identified at the beginning of this EA. In addition, NWE has been proactive with local and state agencies to minimize impacts. Therefore the Department believes there would be minor impacts to locally adopted environmental plans and goals as a result of this permit modification.

L. Cumulative and Secondary Impacts

Overall, the cumulative and secondary impacts from this project on the social and economic aspects of the human environment would be minor because few employment opportunities may result, state and local taxes would be generated from the facility but little change would result from the permit modification. The DGGS facility could sell power to other residents and industries in Montana. Overall, the NWE project would result in additional jobs for the area. As described in Section 8.G of this EA, the facility would employ approximately 11 full-time people. Therefore, the permit action would result in few cumulative or secondary impacts.

Recommendation: An Environmental Impact Statement (EIS) is not required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: All potential effects resulting from construction and operation of the proposed facility are minor, therefore, an EIS is not required. In addition, the source would be applying the Best Available Control Technology and the analysis indicates compliance with all applicable air quality rules and regulations.

Other groups or agencies contacted or which may have overlapping jurisdiction: Department of Environmental Quality – Permitting and Compliance Division (Air Resources Management Bureau); Previously the Department contacted: Public Service Commission (PSC), Montana Natural Heritage Program; and State Historic Preservation Office (Montana Historical Society).

Individuals or groups contributing to this EA: Department of Environmental Quality (Air Resources Management Bureau and Water Quality Bureau) Montana Natural Heritage Program, State Historic Preservation Office (Montana Historical Society) and Bison Engineering.

EA Prepared By: Jenny O'Mara
Date: February 8, 2012