



June 6, 2024

Jared Grundhauser
United States Air Force
Malmstrom Air Force Base
341 CES/CEIE 39 78th Street North
Malmstrom AFB, MT 59404

Sent via email: jared.grundhauser.1@us.af.mil

Dear Mr. Grundhauser:

Montana Air Quality Permit (MAQP) #1427-12 is deemed final as of June 6, 2024, by DEQ. This permit is for the Malmstrom Air Force Base. All conditions of the Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

Conditions: See attached

For DEQ,

A handwritten signature in black ink that reads "Craig Henrikson".

Craig Henrikson
Interim APS Supervisor
Air Quality Bureau
(406) 444-6711

Montana Department of Environmental Quality
Air, Energy & Mining Division
Air Quality Bureau

Montana Air Quality Permit #1427-12

United States Air Force
Malmstrom Air Force Base
341 CES/CEIE 39 78th Street North
Malmstrom AFB, MT 59404

June 6, 2024



MONTANA AIR QUALITY PERMIT

Issued to: Malmstrom	MAQP: #1427-12
Malmstrom Air Force Base	Application Complete: 04/10/2024
341 CES/CEV	Preliminary Determination (PD) Issued: 05/02/2024
39-78th Street North	Department Decision (DD) Issued: 05/21/2024
Great Falls, MT 59402-7536	Permit Final: 06/06/2024

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to the United States Air Force – Malmstrom Air Force Base (Malmstrom), 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

The Malmstrom base is located primarily in Township 20 North, Range 4 and 5 East, Sections 1, 2, 3, 10, 11, 12, 13, 14, and 15, in Cascade County. The facility is contained within approximately 3,159 acres located on the eastern edge of the City of Great Falls, Montana.

B. Current Permit Action

On February 20, 2024, DEQ received an application from Malmstrom for a modification of MAQP #1427-10. Upon realizing the February 20, 2024, application would result in Malmstrom triggering major source status, the application was withdrawn, and a revised application submitted on April 10, 2024, with federally enforceable limits to stay below major source status. This action also would remove three diesel operated fire pumps and three emergency diesel engines/generators that are no longer onsite and add two crushers, each with a diesel-fired engine. It also adds federally enforceable limits for a new emergency diesel engine/generator for Building 1455 (EU042). Emission increases are limited to the addition of the two crushers and their associated engines and the Building 1455 diesel engine/generator while decreases are associated with the removal of the six diesel engines. The crushers are not eligible for the Air Quality Bureau Portable Registration Program because Malmstrom already holds an MAQP and therefore the crushers must be added to their existing MAQP.

SECTION II: Limitations and Conditions

A. Emission Limitations

1. Malmstrom shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any of the three heating plant boilers or the coal handling baghouse that exhibit an opacity of 20% or greater averaged over six consecutive minutes (ARM 17.8.304).

2. Particulate emissions from any of the three heating plant boilers shall not exceed 4.0 pounds per hour (lbs/hour) (ARM 17.8.752).
3. Crusher #1 shall not exceed 365 hours per year on an annual calendar year basis (ARM 17.8.749).
4. The Crusher #1 diesel engine shall be certified as minimum EPA Tier 3 Certified engine (ARM 17.8.752).
5. Crusher #2 shall not exceed 365 hours per year on an annual calendar year basis (ARM 17.8.749).
6. The Crusher #2 diesel engine shall be certified as minimum EPA Tier 4 Certified engine (ARM 17.8.752).
7. The Crusher #1 diesel engine shall not exceed 300 brake horsepower and 365 operating hours per calendar year (ARM 17.8.749).
8. The Crusher #2 diesel engine shall not exceed 416 brake horsepower and 365 operating hours per calendar year (ARM 17.8.749).
9. Crusher #1 and Crusher #2 shall use water sprays for dust control whenever visible emissions are occurring (ARM 17.8.752).
10. All visible emissions from any Standards of Performance for New Stationary Source (NSPS) – affected crusher shall not exhibit an opacity in excess of the following averaged over 6 consecutive minutes (ARM 17.8.340, ARM 17.8.749, and 40 CFR 60, Subpart OOO):
 - For crushers that commence construction, modification, or reconstruction on or after April 22, 2008: 12% opacity
 - For crushers that commence construction, modification, or reconstruction after August 31, 1983, but before April 22, 2008: 15% opacity
11. All visible emissions from any other NSPS-affected equipment (such as screens and conveyors) shall not exhibit an opacity in excess of the following averaged over 6 consecutive minutes (ARM 17.8.340, ARM 17.8.749, and 40 CFR 60, Subpart OOO):
 - For equipment that commence construction, modification, or reconstruction on or after April 22, 2008: 7% opacity
 - For equipment that commence construction, modification, or reconstruction after August 31, 1983, but before April 22, 2008: 10% opacity

12. All visible emissions from any non-NSPS affected emission sources, including aggregate piles, shall not exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).
13. SO₂ emissions from any of the heating plant boilers shall not exceed (ARM 17.8.752):
 - a. 0.320 pounds per million British thermal unit (lb/MMBtu); or
 - b. 33.9 lb/hour.
14. NO_x emissions from any of the heating plant boilers shall not exceed (ARM 17.8.752):
 - a. 0.50 lb/MMBtu; or
 - b. 53 lb/hour.
15. Total heat content of the fuel combusted (coal + natural gas) in the three heating plant boilers during any rolling 12-month time period shall not exceed 314,120 MMBtu. Total Btus combusted shall be determined on a monthly basis using the following equation (ARM 17.8.749):

Total Btus Combusted = (A x B) + (C x D)

Where: A = Natural gas combusted million standard cubic foot (MMscf)
 B = Average heat content of the natural gas (Btu/MMscf)
 C = Coal combusted (tons)
 D = Average heat content of the coal (Btu/ton)
16. Maximum operating level of the three heating plant boilers combined shall not exceed 212 MMBtu/hr heat input (ARM 17.8.749).
17. A dry lime scrubber and baghouse shall be used on each heating plant boiler when combusting coal (ARM 17.8.752).
18. Malmstrom shall not emit from the coal handling baghouse particulate matter in excess of 0.02 grains per dry standard cubic foot (gr/dscf) (ARM 17.8.752).
19. A baghouse shall be used to control emissions from the coal handling system (ARM 17.8.752).
20. Malmstrom shall not cause or authorize emissions to be discharged to the atmosphere from coal storage and handling that exhibit an opacity of 20% or greater averaged over six consecutive minutes (ARM 17.8.304).
21. Malmstrom may combust coal and/or natural gas in heating plant boiler #1 and heating plant boiler #3 (ARM 17.8.749).
22. Malmstrom shall combust only natural gas in heating plant boiler #2 (ARM 17.8.749).

23. Malmstrom shall obtain a coal analysis, which is representative of each load of coal received from each coal supplier. The analysis shall contain, at minimum, sulfur content, ash content, and Btu value (ARM 17.8.749).
24. Malmstrom shall utilize fuel storage tanks H-1 and H-2 to store only JP-8 jet fuel or a similar jet fuel with a vapor pressure <3.5 kiloPascals (kPa) (ARM 17.8.749).
25. An internal floating roof shall be operated on each tank listed in Section I.B.4 of the permit analysis (ARM 17.8.752).
26. Malmstrom shall not combust any hospital/medical/infectious waste, as defined in 40 Code of Federal Regulations (CFR) 60, Subpart Ce, at their facility (ARM 17.8.749).
27. The Building 780 emergency/back-up diesel generator shall only be operated during periods when electric power from the local utility is interrupted or as necessary for routine maintenance of the generator (ARM 17.8.749).
28. The Building 1455 emergency/backup diesel generator shall only be operated during periods when electric power from the local utility is interrupted or as necessary for routine maintenance of the generator (ARM 17.8.49).
29. Each of the emitting units identified in Table 1 are limited to 160 hours of operation on a rolling 12-month total (ARM 17.8.749).

Table 1. Emitting Units

Emissions Unit ID	Description	Pollution Control Device/Practice
EU004	Emergency Power Diesel Generator Building 82110	Limited Operation
EU010	Building 500 Emergency/Back-Up Diesel Generator	Limited Operation
EU011	Building 165 Emergency/Back-Up Diesel Generator	Limited Operation
EU014	Building 18902 Emergency/Back-Up Diesel Generator	Limited Operation
EU015	Building 429 Emergency/Back-Up Diesel Generator	Limited Operation
EU016	Building 530 Emergency/Back-Up Diesel Generator	Limited Operation
EU017	Building 1836 Emergency/Back-Up Diesel Generator	Limited Operation
EU019	Building 780 Emergency/Back-Up Diesel Generator	Limited Operation
EU020	Building 1996 Emergency/Back-Up Diesel Generator	Limited Operation
EU021	Building 3080 Emergency/Back-Up Diesel Generator	Limited Operation
EU023	Building 1845 Emergency/Back-Up Diesel Generator	Limited Operation
EU024	Building 1408 Emergency/Back-Up Diesel Generator	Limited Operation
EU026	Building 1082 Emergency/Back-Up Diesel Generator	Limited Operation
EU027	Building 1482 Emergency/Back-Up Diesel Generator	Limited Operation
EU028	Building 470 Emergency/Back-Up Diesel Generator	Limited Operation
EU029	Building 1440 Emergency/Back-Up Diesel Generator	Limited Operation
EU030	Building 407 Emergency/Back-Up Diesel Generator	Limited Operation
EU032	Building 1441 Emergency/Back-Up Diesel Generator	Limited Operation
EU033	Building 152 Emergency/Back-Up Diesel Generator	Limited Operation

Emissions Unit ID	Description	Pollution Control Device/Practice
EU034	Building 1320 Emergency/Back-Up Diesel Generator	Limited Operation
EU038	Building 1840 Emergency/Back-Up Diesel Generator	Limited Operation
EU039	Building 13115 Emergency/Back-Up Diesel Generator	Limited Operation
EU040	Building 145/144 Emergency/Back-Up Generator	Limited Operation
EU041EU038	Building 219 Trainer Electric Generator	Turbocharged with Combustion Air Cooler Limited Operation
EU42EU039	Building 1455 emergency/backup diesel generator Building 13115 Emergency/Back-Up Diesel Generator	Limited Operation Limited Operation
IEU031EU040	Insignificant Emitting Units (Include units in Bldgs. 1831, 348, 2040, 294 and 1439) Building 145/144 Emergency/Back-Up Generator	Limited Operation
EU041	Building 219 Trainer Electric Generator	Turbocharged with Combustion Air Cooler
EU42	Building 1455 emergency/backup diesel generator	Limited Operation
IEU031	Insignificant Emitting Units (Include units in Bldgs. 1831, 348, 2040, 294 and 1439)	

B. Testing Requirements

1. Malmstrom shall conduct source testing for SO₂, NO_x, particulate matter, CO, Mercury, and opacity on boilers #1 and #3 and demonstrate compliance with the emission limits contained in Section II.A.1, Section II.A.2, Section II.A.13, and Section II.A.14. The above testing shall be performed while the boilers are being fired exclusively on coal. Compliance source testing shall be performed on a once every three-year basis or according to another testing/monitoring schedule as may be approved by DEQ. The first three-year period shall begin with the date on the final permit regardless of the elapsed time since the last source tests were conducted (ARM 17.8.749 and ARM 17.8.105).
2. Malmstrom shall conduct source testing for NO_x on boiler #2 and demonstrate compliance with the emission limits contained in Section II.A.11. For compliance with Section II.A.2 and II.A.13, particulate matter and SO₂ emissions may assumed to be zero since boiler #2 can only combust natural gas. Compliance source testing shall be performed on a once every three-year basis or according to another testing/monitoring schedule as may be approved by DEQ. The first three-year period shall begin with the date on the final permit regardless of the elapsed time since the last source tests were conducted (ARM 17.8.749 and ARM 17.8.105).
3. Malmstrom shall provide DEQ with a record of the amount of coal being combusted and a coal analysis for sulfur and Btu value during all compliance source tests on the heating plant boilers (ARM 17.8.749 and ARM 17.8.106).
4. All compliance source tests shall be conducted in accordance with the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

5. DEQ may require further testing (ARM 17.8.105)

C. Operational and Emission Inventory Reporting Requirements:

1. Malmstrom shall supply DEQ with annual production information for all emission points, as required by DEQ 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, and sources identified in Section I of the permit analysis.

Production information shall be gathered on a calendar-year basis and submitted to DEQ by the date required in the emission inventory request. Information shall include the information listed below and shall be in the units as required by DEQ (ARM 17.8.505).

- a. Tons of coal combusted in heating plant boilers #1 and #3, respectively;
- b. Million cubic feet of gas combusted in heating plant boilers #1, #2, and #3, respectively;
- c. Tons of coal delivered to the facility;
- d. Tons of coal processed through the coal handling system;
- e. Sulfur analysis for coal combusted during the past calendar year;
- f. Tons of ash removed from the facility;
- g. Gallons of JP-8 fuel throughput;
- h. Vehicle miles traveled on haul roads, type of vehicle category, and percent of roads paved;
- i. Gallons of diesel used in haul vehicles and unloaders; and
- j. Fugitive dust information consisting of a listing of all plant vehicles including:
 - i. Vehicle type;
 - ii. Vehicle weight;
 - iii. Number of tires on vehicle;
 - iv. Average trip length;
 - v. Number of trips per day;
 - vi. Average vehicle speed;
 - vii. Area of activity; and
 - viii. Vehicle fuel usage (gasoline or diesel) – annual total.

If the information on vehicle size has not changed over the past year, Malmstrom only needs to supply the vehicle type and the vehicle miles traveled (VMT) by each vehicle type as required in Section II.C.1.h and i. If changes occur, Malmstrom shall supply the information in Section II.C.1.j for the changed vehicles.

2. Malmstrom shall document the total Btu value of the fuel combusted in the three heating plant boilers, based on the equation in Section II.A.15. Further, by the 25th day of each month Malmstrom shall calculate the total Btu value of the fuel combusted during the previous month. The monthly

information will be used to verify compliance with the limitation in Section II.A.16. A written report of the compliance verification shall be submitted to DEQ annually. The report for the previous calendar year shall be submitted no later than March 15 and may be submitted along with the annual emission inventory (ARM 17.8.749).

3. Malmstrom shall notify DEQ of any construction or improvement project conducted pursuant to ARM 17.8.745, that would include ***the addition of a new emissions unit***, change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location or fuel specifications, or would result in an increase in source capacity above its permitted operation

The notice must be submitted to DEQ, 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).

4. Malmstrom shall document by month the hours of operation of each of the emitting units identified in Table 1 (except for IEU031) and shall maintain an on-site log of the monthly hours of operation of each unit. The log must be available for inspection by DEQ, and a copy submitted to DEQ, if requested.
5. All records compiled in accordance with this permit must be maintained by Malmstrom 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 DEQ, and must be submitted to DEQ upon request (ARM 17.8.749).

D. Notification

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

1. All compliance source tests as required by the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).
2. Malmstrom shall provide notification of the dates the crushers commence operation within 15 days of beginning operation.

Section III: General Conditions

- A. Inspection – Malmstrom shall allow DEQ’s representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment Continuous Emissions Monitoring System (CEMS) or 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 Malmstrom fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving Malmstrom 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 DEQ’s decision may request, within 15 days after DEQ 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 DEQ’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 DEQ’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, DEQ’s decision on the application is final 16 days after DEQ’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 DEQ at the location of the source.
- G. Permit Fee – Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by Malmstrom may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.
- H. Duration of Permit – Construction or installation must begin, or contractual obligations entered into that would constitute substantial loss within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall expire (ARM 17.8.762).

Montana Air Quality Permit (MAQP) Analysis
 United States Air Force – Malmstrom Air Force Base
 MAQP #1427-12

I. Introduction/Process Description

A. Facility Description

The United States Air Force – Malmstrom Air Force Base (Malmstrom) is contained within approximately 3,159 acres, and is located in Township 20 North, Ranges 4 and 5 East, Sections 1, 2, 3, 10, 11, 12, 13, 14, and 15, in Cascade County. Malmstrom is located on the eastern edge of the City of Great Falls, Montana.

Malmstrom was established in 1942, and currently houses the 341st Missile Wing. The base itself contains the facilities necessary for all of its military and non-military personnel, which currently number between 4,000 and 5,000. The greatest stationary source of air contaminants at Malmstrom is the three heating plant boilers, although several other miscellaneous smaller sources of emissions are present at the base.

B. Permitted Equipment:

The list of permitted equipment was expanded as part of MAQP #1427-12 to demonstrate that all the equipment on site has a potential to emit less than 100 tons per year for all criteria pollutants.

Emissions Unit ID	Description	Pollution Control Device/Practice
EU001	Heating Plant Boiler #1, Coal / Natural Gas (Maximum Capacity 106.25 MMBtu/hr)	Dry Lime Scrubber and Fabric Filter Baghouse
EU002	Heating Plant Boiler #2, Natural Gas Only (Maximum Capacity 35 MMBtu/hr)	Natural Gas Combustion Only
EU003	Heating Plant Boiler #3, Coal / Natural Gas (Maximum Capacity 106.25 MMBtu/hr)	Dry Lime Scrubber and Fabric Filter Baghouse
EU004	Emergency Power Diesel Generator Building 82110	Limited Operation
EU005	Coal Yard Handling System	Fabric Filter Baghouse
EU008	JP-8 Fuel Storage Tanks (H-1 and H-2)	Floating Internal Roof
EU010	Building 500 Emergency/Back-Up Diesel Generator	Limited Operation
EU011	Building 165 Emergency/Back-Up Diesel Generator	Limited Operation
EU012	Building 200 Emergency/Back-Up Diesel Generator	Limited Operation
EU014	Building 18902 Emergency/Back-Up Diesel Generator	Limited Operation
EU015	Building 429 Emergency/Back-Up Diesel Generator	Limited Operation
EU016	Building 530 Emergency/Back-Up Diesel Generator	Limited Operation
EU017	Building 1836 Emergency/Back-Up Diesel Generator	Limited Operation
EU018	Building 1879 Emergency/Back-Up Diesel Generator	Limited Operation
EU019	Building 780 Emergency/Back-Up Diesel Generator	Limited Operation
EU020	Building 1996 Emergency/Back-Up Diesel Generator	Limited Operation
EU021	Building 3080 Emergency/Back-Up Diesel Generator	Limited Operation
EU023	Building 1845 Emergency/Back-Up Diesel Generator	Limited Operation
EU024	Building 1408 Emergency/Back-Up Diesel Generator	Limited Operation
EU026	Building 1082 Emergency/Back-Up Diesel Generator	Limited Operation
EU027	Building 1482 Emergency/Back-Up Diesel Generator	Limited Operation

Emissions Unit ID	Description	Pollution Control Device/Practice
EU028	Building 470 Emergency/Back-Up Diesel Generator	Limited Operation
EU029	Building 1440 Emergency/Back-Up Diesel Generator	Limited Operation
EU030	Building 407 Emergency/Back-Up Diesel Generator	Limited Operation
EU031	Building 1075 Emergency/Back-Up Diesel Generator	Limited Operation
EU032	Building 1441 Emergency/Back-Up Diesel Generator	Limited Operation
EU033	Building 152 Emergency/Back-Up Diesel Generator	Limited Operation
EU034	Building 1320 Emergency/Back-Up Diesel Generator	Limited Operation
EU035	Building 1459 Emergency Diesel Fire Pump #1	Limited Operation
EU036	Building 1459 Emergency Diesel Fire Pump #2	Limited Operation
EU037	Building 1459 Emergency Diesel Fire Pump #3	Limited Operation
EU038	Building 1840 Emergency/Back-Up Diesel Generator	Limited Operation
EU039	Building 13115 Emergency/Back-Up Diesel Generator	Limited Operation
EU040	Building 145/144 Emergency/Back-Up Generator	Limited Operation
EU041	Building 219 Trainer Electric Generator	Turbocharged with Combustion Air Cooler
EU042	Building 1455 Emergency/Back-Up Diesel Generator	Limited Operation
EU043	Crusher #1	Limited Operation
EU044	Crusher #2	Limited Operation
EU045	Crusher #1 Diesel Engine	Limited Operation
EU046	Crusher #2 Diesel Engine	Limited Operation
IEU031	Insignificant Emitting Units (Included for enforceable units) Include units in Bldgs. 1831, 348, 2040, 294 and 1430	
IEU023, IEU033, IEU035, IEU036, IEU037 IEU038	Emissions Unit ID IEU023 (Bldg 1075, off-season heating) IEU033 (Bldg 1010) IEU035 (Bldg 1012) IEU036 (Bldg 1180) IEU037 (Bldg 1075, domestic hot water) IEU038 (Bldg 1075, domestic hot water)	Occasional Use - Clean Burning Natural Gas Heaters

C. Permit History

MAQP #1427 was issued to Malmstrom on October 28, 1980. The application required a Prevention of Significant Deterioration (PSD) review by the state of Montana for sulfur dioxide (SO₂), particulate, and oxides of nitrogen (NO_x). The application was deemed complete September 4, 1979. The application was for the construction of a new heating plant at Malmstrom. Malmstrom proposed three high temperature hot water generators (heating plant boilers #1, #2, and #3) to be used as a heating plant for the base. Each boiler was rated at 85 MMBtu heat output per hour, with an input design capacity of 106.25 MMBtu/hr. Malmstrom identified that the three boilers would be capable of combusting coal. Two of the boilers would also have natural gas capabilities. The coal would generally be used only during the coldest periods of the year. At other times, the boilers would be operated using natural gas.

The Department of Environmental Quality – Air Resources Management Bureau (DEQ) determined the boilers were not subject to New Source Performance Standards (NSPS) because the size of the boilers is below the cutoff size contained in Subpart D and Da and the date of installation is before the effective date for Subpart

Dc. Also, the "boilers" do not actually produce steam, they produce hot water.

Malmstrom was required to obtain an Environmental Protection Agency (EPA) New Source Review (NSR) Prevention of Significant Deterioration (PSD) of air quality permit for this project since the state of Montana did not have a fully approved program at the time the permit application was processed. The **EPA PSD Permit** was issued pursuant to 40 Code of Federal Regulations (CFR) Part 52.21 (as amended 43 FR 26388). This permit was issued June 1, 1981. The EPA PSD permit contains emission limits. One of the limits stated that the maximum operating level of the system could not be greater than the combined capacities of any two of the three boilers operating simultaneously.

In 1994, Malmstrom requested a permit alteration to remove the 85% control efficiency requirement contained in MAQP #1427. The permit application was given MAQP #1427-01. An incompleteness letter was sent to Malmstrom. Malmstrom chose not to respond and to have the application withdrawn. The application was withdrawn by Malmstrom and MAQP #1427-01 was not issued.

MAQP #1427-02 accomplished numerous permitting goals at Malmstrom. Specifically, the requirement that the dry scrubbers maintain a control efficiency of 85% for SO₂ was removed. That level of efficiency was not practical when the facility burned low sulfur coal or operated at low loads. Because the emissions under this scenario were below the limits identified in the permit, DEQ determined the SO₂ emission limits contained in the permit were sufficient to maintain the ambient air quality of the area. MAQP #1427-02 also identified the fuels each of the boilers were capable of burning.

In addition, MAQP #1427-02 allowed Malmstrom to bypass the scrubbers and baghouses on the boilers during start up, until the scrubber inlet temperature reached approximately 350 degrees Fahrenheit (F). At temperatures below this level, the moisture in the lime slurry would not be completely evaporated and would cause blinding of the bags. All emission limits were still in effect during periods of scrubber bypass.

Further, MAQP #1427-02 authorized the modification of the #1 boiler to enable the boiler to fire coal and natural gas simultaneously. Prior to MAQP #1427-02, the boiler could not physically fire both fuels at once. The MAQP also established limits for NO_x emissions and modified the SO₂ limits for the boilers. The SO₂ emission limit was changed from 37 pounds per hour (lb/hour) to 33.8 lb/hour and a limit of 0.320 lb/MMBtu was added to be consistent with the BACT determination at the time of EPA's PSD permit issuance. The permit also limited the total fuel consumption for the boilers. The fuel consumption limitation (along with the NO_x and SO₂ limits) ensured that emissions of any pollutant from the three boilers would be less than 250 tons per year (tpy), or less than the PSD major-source permitting threshold. Therefore, the installation of the boilers was not subject to the requirements of the PSD program and it was possible for EPA to revoke the PSD permit issued on June 1, 1981.

MAQP #1427-02 also included the medical waste incinerator and the classified document incinerator to the list of permitted equipment on the base. Even though a permit was not required by the state at the time of construction, DEQ determined a

permit was necessary to meet the requirements of the Administrative Rules of Montana (ARM) 17.8.705 and for Malmstrom to operate the incinerators. The conditions applicable to the incinerators were included as part of that permit action.

Finally, MAQP #1427-02 included the tanks installed in 1987, which Malmstrom was not required to permit at the time of construction. DEQ determined that a permit was necessary to meet the requirements of ARM 17.8.705 and to operate the tanks. The conditions applicable to the tanks were included as part of the permit.

On July 17, 1996, DEQ received information regarding minor facility changes. The facility changes were assigned MAQP #1427-03. Subsequent to receipt of this information, DEQ determined that the facility changes did not require any permit action. Therefore, MAQP #1427-03 was not issued.

MAQP #1427-04 removed the Medical Waste Incinerator from Malmstrom's permit. Disposal of the medical red bag waste was to be accomplished through a private contractor, and the gas supply for the incinerator was disconnected.

In addition, MAQP #1427-04 removed two large fuel storage tanks (S-1 and S-2), subject to 40 CFR 60, Subpart Kb, from Malmstrom's permit and emission inventory. Malmstrom decommissioned the two large (1,050,000 gallons each) aboveground fuel storage tanks (S-1 and S-2) with the relocation of the 43rd Air Refueling Group. The remaining tanks (H-1 and H-2) were each 210,000-gallon and primarily supported the helicopters used by the 341st missile wing.

Further, the permit modification established a new testing campaign to begin by January 31, 2001, and to perform compliance testing on a once every four-year basis thereafter. Malmstrom requested a one-year extension to conduct emission testing on the base's heating plant boilers. The reasoning behind the request was that the boilers (Coal-fired) located at Malmstrom were selected for outsourcing and were to be operated by a private (non-government) contractor. The contractor that was awarded the bid for services began operation of the facilities on January 15, 2000.

MAQP #1427-04 resulted in an overall decrease in the allowable emissions from the facility. MAQP #1427-04 replaced MAQP #1427-02.

On December 22, 1999, DEQ received a request from Malmstrom for modification of MAQP #1427-04. Condition II.A.18 in MAQP #1427-04, regarding jet fuel storage tanks H-1 and H-2, required that Malmstrom comply with 40 CFR 60, Standards of Performance for New Stationary Sources, Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels. However, based on information in the permit modification request, DEQ determined that changes in Air Force policy and practice made 40 CFR 60, Subpart Kb, no longer applicable to jet fuel storage tanks H-1 and H-2.

Section I.B.5 of the permit analysis to MAQP #1427-04 listed two 210,000-gallon storage tanks used for the storage of JP-4 and JP-8 jet fuel. Because of the physical characteristics of JP-4 jet fuel, and because Malmstrom had the option of storing JP-4 jet fuel in storage tanks H-1 and H-2, the tanks were subject to the requirements of 40 CFR 60, Subpart Kb. However, changes in Air Force policy dictated that the Air Force no longer utilize JP-4 jet fuel. Instead, Malmstrom reverted to the storage and

use of JP-8 jet fuel only in the two affected storage tanks. JP-8 jet fuel has a vapor pressure <3.5 kilopascals (kPa); therefore, storage of JP-8 or a similar jet fuel with a vapor pressure <3.5 kPa rendered the jet fuel storage tanks H-1 and H-2 as non-affected sources under 40 CFR 60, Subpart Kb, 60.110b. Therefore, the fuel storage tanks H-1 and H-2 were no longer subject to the requirements of 40 CFR 60, Subpart Kb.

The permit action removed permit condition II.A.18 in MAQP #1427-04 and relieved Malmstrom from the responsibility of compliance with 40 CFR 60, Subpart Kb, for jet fuel storage tanks H-1 and H-2. Further, the permit action added, in place of permit condition II.A.18 in MAQP #1427-04, a condition requiring the storage of only JP-8 jet fuel or a similar jet fuel with a vapor pressure <3.5 kPa. Finally, the permit action updated the equipment list in Section I.B of the permit analysis to properly identify the 210,000-gallon fuel storage tanks H-1 and H-2 and change the name of the boilers from High Temperature Hot Water Generators #1, #2, and #3 to Heating Plant Boilers #1, #2, and #3. **MAQP #1427-05** replaced MAQP #1427-04.

On November 26, 2002, DEQ received a request for permit modification from Malmstrom. On August 28, 2002, DEQ received a copy of a letter, dated November 5, 2001, from Malmstrom requesting a permit determination. DEQ was unable to find any record of this letter being received on or around November 5, 2001. The permit determination request was for the removal of the existing Building 1075 natural gas fired boiler rated at 11.954 MMBtu/hr heat input capacity and replacement of the existing unit with two smaller 2.1 MMBtu/hr heat input capacity units. Because potential emissions from the replacement boilers were less than the de minimis threshold of 15 tpy for any regulated pollutant, DEQ determined that the changes were accomplished in accordance with ARM 17.8.745(1).

The letter received by DEQ on November 26, 2002, also indicated that Malmstrom intended to install and operate a 200-kilowatt (kW) emergency diesel generator in the Building 780, Missile Services Facility. Because potential emissions of all regulated pollutants from the proposed Building 780 emergency diesel generator, operating under emergency/back-up equipment status, were less than 15 tpy, DEQ determined that installation and operation of the Building 780 emergency diesel generator could be accomplished under the provisions of ARM 17.8.745.

On January 29, 2003, DEQ received notice of a contested case hearing before the Montana Board of Environmental Review (Board) regarding specific conditions that were included in DEQ's decision on MAQP #1427-06, issued January 13, 2003. Based on the Settlement Stipulation and Order issued by the Board on March 28, 2003, several revisions were made to MAQP #1427-06 prior to issuance as a final permit. A detailed discussion of these revisions is contained in Section I.D, Current Permit Action, to air quality MAQP #1427-06. **MAQP #1427-06** replaced MAQP #1427-05.

On March 25, 2004, DEQ received a complete permit application to modify Malmstrom's MAQP #1427-06. Malmstrom proposed process changes to current operations at heating plant boilers #1 and #3. The proposed changes included the following:

- Replacement of the existing motors driving the induced draft fans with new variable frequency drive motors.
- Replacement of the existing ash unloading system with a new ash unloading system.
- Modification of exhaust gas ductwork to increase spray dryer absorber (SDA) control efficiency of SO₂ emissions.
- Installation of ductwork to provide effluent heat to the opacity monitors for the purpose of decreasing false increased opacity readings during foggy weather conditions.
- Removal of the existing 35 MMBtu/hr heat input capacity natural gas-fired burner from Boiler #1 and replacement of this burner with two 25 MMBtu/hr heat input capacity natural gas-fired low NO_x burners.
- Installation of two, 25 MMBtu/hr heat input capacity natural gas-fired low NO_x burners on Boiler #3.
- Installation of a load simulator for the purpose of testing and evaluating the new low NO_x burners described above.

As detailed in a DEQ internal file memorandum dated January 16, 2004, and subsequent correspondence to Malmstrom dated March 15, 2004, DEQ determined that Malmstrom is a major source as defined under the New Source Review (NSR) permitting program. However, potential emissions from the above detailed modifications were below the NSR/PSD significance threshold for all pollutants. Therefore, the permit action was not subject to NSR/PSD review. An emission inventory detailing potential emissions from the proposed project was included in Section IV of the permit analysis to this permit. **MAQP #1427-07** replaced MAQP #1427-06.

On May 16, 2005, DEQ received a request from Malmstrom for changes to Montana Air Quality Permit #1427-07 under the provisions contained in ARM 17.8.764, Administrative Amendment to permit. The requested changes include the following:

- Removal of the Classified Document Incinerator and all associated requirements from the permit. The unit has been dismantled and removed from the facility; and
- The addition of “National Security Emergency” and “surge condition” language as recommended to Malmstrom by the United States Pentagon.

At that time, DEQ did not believe that the addition of the requested “National Security Emergency” and “surge condition” language was appropriate for inclusion in the permit; therefore, DEQ did not include the language under the permit action. The Classified Document Incinerator and all associated requirements were removed under the permit action.

Further, based on information obtained through correspondence between DEQ and Malmstrom, DEQ determined that Malmstrom is a minor source of Hazardous Air Pollutants (HAPs), as defined under 40 CFR 63, Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters (Boiler MACT). Based on this information, DEQ determined that Malmstrom is not subject to the requirements contained in

the Boiler MACT. **MAQP #1427-08** replaced MAQP #1427-07.

On September 6, 2012, DEQ received a written request from Malmstrom to allow a 100-ton test burn of wood pellet fuel in Boiler #1 during the 2012-2013 heating season. This request was submitted in accordance with the requirements contained in ARM 17.8.745. On September 26, 2012, Malmstrom informed DEQ that Boiler #1 was down for repairs and requested to use Boiler #3 to complete the test burn.

According to the information submitted, Malmstrom proposed to test Boiler #3 (EU003) while burning 80 percent (%) coal and 20% wood pellets at a maximum heat input rate of 80 MMBtu/hr. Pursuant to the request, this was a temporary test burn to be completed during the 2012-2013 heating season, Malmstrom would not burn more than 100 tons of wood pellets and the emissions of any pollutant will not exceed 5 tpy. The duration of the test burn was to exceed 208 hours. In addition to this, the permit action also updated potential NSPS and NESHAP applicability, rule references and permit format. **MAQP #1427-09** replaced MAQP #1427-08.

On March 1, 2019, DEQ received an application from Malmstrom to establish federally enforceable limits to keep Malmstrom below 100 tpy for all criteria pollutants. This would make Malmstrom a synthetic minor and allow a future revocation of their Title V Operating permit. Specifically, the limits proposed restrict facility operations to lower the potential to emit for NO_x, CO and SO₂ to less than 100 tpy which were the three pollutants which triggered the requirement for a Title V permit. Restricting the average daily firing rate over the heating season and applying this over a 12-month rolling average, limits the overall heat input to approximately 314,120 MMBtu. **MAQP #1427-10** replaced MAQP #1427-09.

D. Current Permit Action

On February 20, 2024, DEQ received an application from Malmstrom for a modification of MAQP #1427-10. Upon realizing the February 20, 2024, application would result in Malmstrom triggering major source status, the application was withdrawn, and a revised application submitted on April 10, 2024, with federally enforceable limits to stay below major source status. This action also would remove three diesel fire pumps and three emergency diesel engines/generators that are no longer onsite and add two crushers each with a diesel-fired engine. It also adds federally enforceable limits for a new emergency diesel engine/generator for Building 1455 (EU042). Emission increases are limited to the addition of the two crushers and their associated engines and the Building 1455 diesel engine/generator while decreases are associated with the removal of the six diesel engines. The crushers are not eligible for the Air Quality Bureau Portable Registration Program because Malmstrom already holds an MAQP and therefore the crushers must be added to their existing MAQP. **MAQP #1427-12** replaces MAQP #1427-10.

E. Response to Public Comments (None were received)

F. Response to Malmstrom Comments (None were received)

G. Additional Information

Additional information, such as applicable rules and regulations, Best Available Control Technology (BACT)/Reasonably Available Control Technology (RACT) determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the ARMs and are available upon request from DEQ. Upon request, DEQ will provide references for locations 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 emissions of any air contaminant into the outdoor atmosphere shall, upon written request of DEQ, 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 DEQ.
3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by DEQ, 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).

Malmstrom 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 DEQ upon request.

4. ARM 17.8.110 Malfunctions. (2) DEQ must be notified promptly by phone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation, or to continue for a period greater than four hours.
5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant which would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner that a public nuisance is created.

B. ARM 17.8, Subchapter 2 - Ambient Air Quality, including, but not limited to:

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 PM₁₀

Malmstrom must comply with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 - Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.
2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, Malmstrom shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.
3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.
4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.
5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this rule.
6. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.
7. ARM 17.8.340 Standard of Performance for New Stationary Sources. This rule incorporates by reference 40 CFR 60, Standards of Performance for New Stationary Sources (NSPS). The following sources are considered NSPS-affected facilities under the following subparts.

Subpart Db, Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units. This Subpart does not apply to the heating plant boilers. The units do not produce steam and, therefore, are not affected facilities.

Subpart Kb, Volatile Organic Liquid Storage Vessels. This subpart applies to tanks for which construction, reconstruction or modification commenced after July 23, 1984. DEQ determined that Subpart Kb does not apply to the above-ground fuel storage tanks listed in Section I.B of the analysis section of this permit.

Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants. In order for a nonmetallic mineral plant to be subject to this subpart, the facility must meet the definition of an affected facility and, the affected equipment must have been constructed, reconstructed, or modified after August 31, 1983. Based on the information submitted by Malmstrom, the portable equipment to be used under MAQP #1427-12 is subject to this subpart because the facility has affected equipment constructed after August 31, 1983.

40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE). Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are manufactured after April 1, 2006, and are not fire pump engines, and owners and operators of stationary CI ICE that modify or reconstruct their stationary CI ICE after July 11, 2005, are subject to this subpart. Malmstrom may potentially be subject to this subpart.

8. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR 63, shall comply with the requirements of 40 CFR 63.

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 reciprocating internal combustion engine (RICE) at a major or area source of HAP emissions is 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. Malmstrom may potentially be subject to this subpart.

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

1. ARM 17.8.504 Air Quality Permit Application Fees. Malmstrom shall 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 DEQ. Malmstrom submitted the required fee as this was a modification.
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 DEQ by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by DEQ. 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. DEQ may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that prorate the required fee amount.

- E. ARM 17.8, Subchapter 7 - Permit, Construction and Operation of Air Contaminant Sources, including, but not limited to:
1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
 2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit alteration to construct, modify or use any air contaminant sources that have the Potential to Emit (PTE) greater than 25 tons per year of any pollutant. Malmstrom has the PTE more than 25 tons per year of oxides of nitrogen (NO_x), carbon monoxide (CO), and oxides of sulfur (SO_x); therefore, an air quality permit is required.
 3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.
 4. ARM 17.8.745 Montana Air Quality Permits—Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.
 5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, modification or use of a source. Malmstrom 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. Malmstrom submitted an affidavit of publication of public notice for the January 26, 2024, issue of the Great Falls Tribune, a newspaper of general circulation in the City of Great Falls, 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 DEQ must authorize the construction and operation of the facility or emitting unit subject to the conditions in the

permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The BACT analysis is provided 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 DEQ 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 Malmstrom 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 DEQ's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.
11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or modified source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than one year after the permit is issued.
12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).
13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board 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 DEQ.
- F. ARM 17.8, Subchapter 8 - Prevention of Significant Deterioration of Air Quality, including, but not limited to:
1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.
 2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications-- Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is not a listed source but is a synthetic minor source due to federally enforceable permit limits. The current permit action is not subject to major NSR review.

- G. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:
1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:
 - a. PTE > 100 tpy of any pollutant;
 - b. PTE > 10 tpy of any one HAP, PTE > 25 tpy of a combination of all HAPs, or a lesser quantity as DEQ may establish by rule; or
 - c. PTE > 70 tpy of PM₁₀ in a serious PM₁₀ 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 #1427-12 for Malmstrom, the following conclusions were made:
 - a. The facility's PTE is less than 100 tpy for all criteria pollutants.
 - b. The facility's PTE is less than 10 tpy for a single HAP and less than 25 tpy for all HAPs.
 - c. This source is not located in a serious PM₁₀ nonattainment area.
 - d. This facility may be subject to an NSPS (40 CFR 60, Subpart IIII and Subpart OOO).
 - e. This facility may be subject to a NESHAP (40 CFR 63, Subpart ZZZZ).

- f. This source is not a Title IV affected source, nor a solid waste combustion unit.
- g. This source is not an EPA designated Title V source.
- h. As allowed by ARM 17.8.1204(3), DEQ may exempt a source from the requirement to obtain an air quality operating permit by establishing federally enforceable limitations which limit that source's potential to emit
 - i) In applying for an exemption under this section, the owner or operator of the source shall certify to DEQ that the source's potential to emit, does not require the source to obtain an air quality operating permit.
 - ii) Any source that obtains a federally enforceable limit on potential to emit shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit.

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

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

3. ARM 17.8.1207 Certification of Truth, Accuracy, and Completeness.

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

III. BACT Determination

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

Malmstrom submitted a BACT analysis. DEQ has summarized the BACT analysis based on Malmstrom's application and the most recent applications submitted for similar equipment and prepared BACT conditions consistent with previously permitted similar projects and for similar equipment which has been registered under DEQ's Portable Registration Program. This includes using EPA Tier-rated diesel engines to drive the crushers, AP42 factors for emission factors, and dust control using water sprays. Additionally, the current permit action provides federally enforceable annual limits for the two new crushers and diesel-fired engines.

BACT Analysis: LT106 Mobile Crusher

Particulate Matter

Malmstrom AFB will utilize water as the primary control method for the suppression of dirt

and dust as well as any other fugitive emissions at the site. Water suppressant will be utilized around the areas surrounding the crushing/screening operations, and for the emissions from the crushing/screening operation itself. Water is the most cost-effective solution and is more environmentally friendly than other forms of suppressant. Therefore, water has been identified as the most appropriate method of pollution control for particulate emissions.

BACT Analysis: LT106 CAT C9 Diesel Engine

NO_x, CO, VOC, PM

Due in part to the limited amount of emission produced by the CAT C9 diesel-fired engine and the lack of readily available cost-effective post-manufacturer add-on controls, retrofitting the diesel fired engine with add-on controls would be cost prohibitive. Generally, as a Tier 3 diesel fired engine the tier level can be accepted as BACT with the inclusion of proper operation and maintenance of the CAT C9 diesel fired engine. Emission levels from Tier 3 engines are low versus lower Tiered or unrated engines, and additional controls for a Tier 3 engine would be cost prohibitive.

SO₂

Malmstrom will also utilize ultra-low sulfur diesel fuel providing low emissions levels of SO₂.

BACT Analysis LT200HPS Compact Mobile Cone Crusher with Screen

Particulate Matter

Malmstrom AFB will utilize water as the primary control method for the suppression of dirt and dust as well as any other fugitive emissions at the site. Water suppressant will be utilized around the areas surrounding the crushing/screening operations, and for the emissions from the crushing/screening operation itself. Water is the most cost-effective solution and is more environmentally friendly than other forms of suppressant. Therefore, water has been identified as the most appropriate method of pollution control for particulate emissions.

BACT Analysis; LT200 HPS CAT C9.3 Diesel Engine

NO_x, CO, VOC, PM

Due in part to the limited amount of emission produced by the CAT C9.3 diesel-fired engine and the lack of readily available cost-effective post-manufacturer add-on controls, retrofitting the diesel fired engine with add-on controls would be cost prohibitive. Generally, as a Tier 4 diesel fired engine the tier level can be accepted as BACT with the inclusion of proper operation and maintenance of the CAT C9.3 diesel fired engine. Emission levels from Tier 4 engines are low versus lower Tiered or unrated engines, and additional controls for a Tier 4 engine would be cost prohibitive.

SO₂

Malmstrom will also utilize ultra-low sulfur diesel fuel providing low emissions levels of SO₂.

Emergency Diesel Engine/Generator 728 Horsepower

This engine is rated as an EPA Tier 2 engine and due to the lower operating hour limit of

160 hours per year, no additional controls for pollutants would be cost effective. Additionally, proper maintenance and best practices for operation will limit emissions.

The control options selected contain control equipment comparable to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

IV. Emission Inventory

This emission inventory reflects revised federally enforceable conditions to keep the facility below Title V Operating permit thresholds. The primary emission units at Malmstrom are the Heating Plant Boilers, which are inventoried below.

Criteria Pollutants: Heating Plant Boilers

Source	tons/year					
	PM	PM ₁₀	NO _x	SO ₂	CO	VOC
Heating Plant Boilers	52.6	52.6	78.5	52.8	43.7	1.55
Potential emissions included in this table represent worst-case emissions regardless of fuel-type combusted.						

Fuel consumption = 314,120 MMBtu/yr (Revised Permit Limit)

If All Natural Gas:

Assume conservative heat content of 900 MMBtu/MMscf

$314,120 \text{ MMBtu/yr} \times 0.0011 \text{ MMscf/MMBtu} = 1110 \text{ MMscf/yr}$

If All Coal:

Assume conservative heat content of 18 MMBtu/ton

$314,200 \text{ MMBtu/yr} \times 0.0556 \text{ ton/MMBtu} = 17,470 \text{ tons coal/year}$

Total Particulate (Coal and Natural Gas)

Emission Factor 4 lb/hour (Revised Permit Limit)
 PM = 4.0 lb/hour * 8760 hours/year * 0.0005 ton/lb
 = 17.52 tons/year per Boiler
 = 52.56 tons/year

PM₁₀ (Coal and Natural Gas)

Assume all TSP is PM₁₀
 Emission Factor 4 lb/hour (Permit Limit)
 PM₁₀ = 4.0 lb/hour * 8760 hours/year * 0.0005 ton/lb
 = 17.52 tons/year per Boiler
 = 52.56 tons/year

NO_x Emissions (Coal and Natural Gas):

Emission Factor: 0.5 lb/MMBtu (Permit Limit)
 Fuel Consumption: 314,120 MMBtu/yr {Permit Limit}
 NO_x = 0.5 lb/MMBtu * 314,120 MMBtu/yr * 0.0005 ton/lb
 = 78.53 ton/yr

SO₂ Emissions (Coal):

Emission Factor: 0.32 lb/MMBtu (Permit Limit)
 Fuel Consumption: 314,120 MMBtu/yr (Permit Limit)
 SO₂ = 0.32 lb/MMBtu * 314,120 MMBtu/yr * 0.0005 ton/lb
 = 50.6 ton/yr

SO₂ Emissions (Natural Gas):

Emission Factor: 0.60 lb/MMscf (FIRE V 5.0 SCC 10200602)
 SO₂ = 1110 MMscf/yr * 0.60 lb/MMscf * 0.0005 ton/lb
 = 0.33 ton/yr

CO Emissions (Coal)

Emission Factor: 5.00 lb/ton coal (FIRE V 5.0 SCC 10200204)
CO = 17,470 tons coal/year * 5.00 lb/ton coal * 0.0005 ton/lb
= 43.7 ton/yr

CO Emissions (Natural Gas)

Emission Factor: 35.00 lb/MMscf (FIRE V 5.0 SCC 10200602)
CO = 1110 MMscf/yr * 35.00 lb/MMscf * 0.0005 ton/lb
= 19.43 ton/yr

VOC Emissions (Coal)

Emission Factor: 0.05 lb/ton (FIRE V 5.0 SCC 10200204)
VOC = 17,470 tons coal/year * 0.05 lb/ton * 0.0005 ton/lb =
= 0.44 ton/yr

VOC Emissions (Natural Gas)

Emission Factor: 2.80 lb/MMscf (FIRE V 5.0 SCC 10200602)
VOC = 1110 MMscf/yr * 2.80 lb/MMscf * 0.0005 ton/lb =
= 1.55 ton/yr

Criteria Pollutants, Crushers and Engines and Emergency Generator EU042

Crusher Calendar Year Limits of 365 Hours

Emergency Generator Limit of 160 Hours per year

Emission Source	Tons Per Year				
	PM	NO _x	CO	SO ₂	VOC
LT106 Crushing (Controlled) Emissions	0.10	0.00	0.00	0.00	0.00
LT106 Screening (Controlled) Emissions	0.18	0.00	0.00	0.00	0.00
LT106 Conveyor Transfer (Controlled) Emissions	0.01	0.00	0.00	0.00	0.00
LT200HPS Crushing (Controlled) Emissions	0.07	0.00	0.00	0.00	0.00
LT200HPS Screening (Controlled) Emissions	0.13	0.00	0.00	0.00	0.00
LT200HPS Conveyor Transfer (Controlled) Emissions	0.01	0.00	0.00	0.00	0.00
Crusher LT106 Engine	0.12	1.70	0.37	0.11	0.14
Crusher LT200HPS Engine	0.17	2.35	0.51	0.16	0.19
EU042 Emergency/Backup Generator	0.04	1.40	0.32	0.47	0.04
Total Potential Project Increases	0.83	5.45	1.19	0.74	0.37

Malmstrom Air Force Base				
LT106 Mobile Crusher				
Emission Unit	EU0043			
Engine manufacturer	CAT C9			
Engine HP rating	300			
Hours of Operation	365	hr/yr proposed Federally-enforceable limit		
Maximum fuel	6	gal/hr	<i>Reference: AP42, 3.3, table 3.3-1</i>	
Maximum material operation	440	ton/hr		
MMBtu/hr	0.8		assume HHV of 137,000 Btu/gal diesel from AP-42, Fifth Edition, Appendix A - Misc. Data & Conversion Factors, 9/85	
LT200HPS Crusher/Screen				
Emission Unit	EU0044			
Engine manufacturer	CAT C9.3B			
Engine HP rating	416			
Hours of Operation	365	hr/yr proposed Federally-enforceable limit		
Maximum fuel	10	gal/hr	<i>Reference: AP42, 3.3, table 3.3-1</i>	
Maximum material operation	330	ton/hr		
MMBtu/hr	1.4		assume HHV of 137,000 Btu/gal diesel from AP-42, Fifth Edition, Appendix A - Misc. Data & Conversion Factors, 9/85	

Criteria Pollutants LT106	Emission Factor ² (lb/ton)	Crushing (Controlled) Emissions		
		(lb/h)	(lb/yr)	(ton/yr)
Total PM	0.0012	0.53	192.72	0.0964
Criteria Pollutants LT106	Emission Factor ² (lb/ton)	Screening (Controlled) Emissions		
		(lb/h)	(lb/yr)	(ton/yr)
Total PM	0.0022	0.97	353.32	0.1767
Criteria Pollutants LT106	Emission Factor ² (lb/ton)	Conveyor Transfer (Controlled) Emissions		
		(lb/h)	(lb/yr)	(ton/yr)
Total PM	0.00014	0.06	22.48	0.0112
Combined Criteria Pollutants LT106	Emission Factor ² (lb/ton)	Combined Emissions		
		(lb/h)	(lb/yr)	(ton/yr)
Combined Total PM	0.00354	1.56	568.52	0.2843
Combined Total PM10	0.00354	1.56	568.52	0.2843
Criteria Pollutants LT106 (EU045)	Emission Factor ¹ (lb/hp-h)	Crusher LT106 Engine Emissions (EU045)		
		(lb/h)	(lb/yr)	(ton/yr)
Total PM	0.0022	0.66	240.90	0.1205
CO	0.00668	2.00	731.46	0.3657
NOx	0.031	9.30	3394.50	1.6973
SO2	0.00205	0.62	224.48	0.1122
VOC	0.002514	0.75	275.28	0.1376

Criteria Pollutants LT200HPS	Emission Factor ² (lb/ton)	Crushing (Controlled) Emissions		
		(lb/h)	(lb/yr)	(ton/yr)
Total PM	0.0012	0.40	144.54	0.0723
Criteria Pollutants LT200HPS	Emission Factor ² (lb/ton)	Screening (Controlled) Emissions		
		(lb/h)	(lb/yr)	(ton/yr)
Total PM	0.0022	0.73	264.99	0.1325
Criteria Pollutants LT200HPS	Emission Factor ² (lb/ton)	Conveyor Transfer (Controlled) Emissions		
		(lb/h)	(lb/yr)	(ton/yr)
Total PM	0.00014	0.05	16.86	0.0084
Combined Criteria Pollutants LT200HPS	Emission Factor ^{2,4} (lb/ton)	Combined Emissions		
		(lb/h)	(lb/yr)	(ton/yr)
Total PM	0.00354	1.17	426.39	0.2132
Total PM10	0.00354	1.17	426.39	0.2132
Criteria Pollutants LT200HPS (EU046)	Emission Factor ¹ (lb/hp-h)	Crusher LT200HPS Engine Emissions (EU046)		
		(lb/h)	(lb/yr)	(ton/yr)
Total PM	0.0022	0.92	334.05	0.1670
CO	0.00668	2.78	1014.29	0.5071
NOx	0.031	12.90	4707.04	2.3535
SO2	0.00205	0.85	311.27	0.1556
VOC	0.002514	1.05	381.73	0.1909
HAPs LT106	AP 42 EF ³ (lb/MMBtu)	Emissions (lb/hr)	Emissions (lb/yr)	Emissions (ton/yr)
Benzene	9.33E-04	7.67E-04	2.80E-01	1.E-04
Toluene	4.09E-04	3.36E-04	1.23E-01	6.E-05
Xylenes	2.85E-04	2.34E-04	8.55E-02	4.E-05
Formaldehyde	1.18E-03	9.70E-04	3.54E-01	2.E-04
Acetaldehyde	7.67E-04	6.30E-04	2.30E-01	1.E-04
Acrolein	9.25E-05	7.60E-05	2.78E-02	1.E-05
Total HAPs LT106		3.01E-03	1.1001	6.E-04
HAPs LT200HPS	AP 42 EF ³ (lb/MMBtu)	Emissions (lb/hr)	Emissions (lb/yr)	Emissions (ton/yr)
Benzene	9.33E-04	1.28E-03	4.67E-01	2.E-04
Toluene	4.09E-04	5.60E-04	2.05E-01	1.E-04
Xylenes	2.85E-04	3.90E-04	1.43E-01	7.E-05
Formaldehyde	1.18E-03	1.62E-03	5.90E-01	3.E-04
Acetaldehyde	7.67E-04	1.05E-03	3.84E-01	2.E-04
Acrolein	9.25E-05	1.27E-04	4.63E-02	2.E-05
Total HAPs LT200HPS		5.02E-03	1.8334	9.E-04
Notes:				
¹ Criteria pollutant emission factors based on AP-42, Fifth Edition, Chapter 3, Section 3.3, Table 3.3-1				
² Criteria pollutant emission factors based on AP-42, Fifth Edition, Chapter 11, Section 11.19.2, Table 11.19.2-2				
³ HAP emission factors based on AP-42, Fifth Edition, Section 3.3, Tables 3.3-2.				
⁴ Assume that PM10 Emission Factor and total tons/year are equal to Total PM Emissions.				
Example Calculations:				
Criteria Pollutant = (lb/hp-hr) x (hp) x PTE (hr/yr) x (ton/2000 lb) = tpy				
HAPs = (lb/MMBtu) x (MMBtu/hr) x PTE(hr/yr) x (ton/2000 lb) = tpy				

All emergency generators and emergency related equipment located across the site are each limited to 160 hours of operation per year. The emission calculations for EU042 are shown below.

Emergency Generator EU042

Malmstrom Air Force Base				
Diesel Standby Generator		4.62E-04		
Emission Unit	EU0042			
Building	1455			
Engine manufacturer	Perkins	Model No.	2506C-E15TAG3	
Engine HP rating	728	hp		
Hours of Operation	160	hr/yr proposed Federally-enforceable limit		
Maximum fuel	34.87	gal/hr	<i>Reference: AP42, 3.4, table 3.4-2</i>	
MMBtu/hr	4.8	assume HHV of 137,000 Btu/gal diesel from AP-42, Fifth Edition, Appendix A - Misc. Data & Conversion Factors, 9/85		
Criteria Pollutants	Emission Factor (lb/hp-h)	Emissions		
		(lb/h)	(lb/yr)	(ton/yr)
PM	0.0007	0.51	81.54	0.0408
CO	0.0055	4.00	640.64	0.3203
NOx	0.024	17.47	2795.52	1.3978
SO2	0.00809	5.89	942.32	0.4712
VOC	0.00071	0.52	82.70	0.0414

Emission decreases occurring with the removal of the six diesel engines are shown below with the overall project change in emissions. Totals shown as net potential changes are potential increases in each pollutant category.

	Tons Per Year				
	PM	NOx	CO	SO ₂	VOC
EU012 Emergency Backup Generator	0.14	0.64	0.4	0	0.04
EU018 Emergency Backup Generator	0.01	0.11	0.02	0.01	0.01
EU031 Emergency Backup Generator	0.08	1.15	0.25	0.08	0.09
EU035 Diesel Fire Pump	0.05	0.72	0.13	0.05	0.06
EU036 Diesel Fire Pump	0.05	0.72	0.13	0.05	0.06
EU037 Diesel Fire Pump	0.05	0.72	0.13	0.05	0.06
Total Potential Project Decreases	0.38	4.06	1.06	0.24	0.32
Net Potential Permit Changes	0.45	1.39	0.13	0.50	0.05

The tables indicate that with the addition of two crushers each with a diesel engine, a new emergency generator (EU042) and the removal of six diesel engines, the sitewide emission changes are a negligible increase in criteria pollutant emissions. The smallest increase is 0.05 ton per year in VOCs, and the largest increase is a 1.39 ton per year increase in oxides of nitrogen.

Sitewide Emissions Totals have been recalculated based on this permit action to reflect the current operation of the facility and to demonstrate the source remains below 100 tons per year for each pollutant category. Oxides of nitrogen is the highest pollutant total at 95.55 tpy.

Source	Tons Per Year					
	PM	PM10	NOx	SO2	CO	VOC
Heating Plant Boilers	52.6	52.6	78.5	52.8	43.7	1.55
2 Crushers with Engines	0.78	0.78	4.05	0.87	0.27	0.33
All Permitted Emergency Diesel Engines	0.76	0.76	13	2.42	4.01	0.83
Site Totals	54.14	54.14	95.55	56.09	47.98	2.71

Emergency Generators PTE

Bldg	EU #	Pollutant Emission Factor (lb/hp-hr)					Engine HP	Operating Hours	PTE Tons Per Year				
		SO2	CO	NOx	VOC	PM			SO2	CO	NOx	VOC	PM
500	EU010	0.00022	0.0055	0.00881	0.000176	0.0005	1175	160	0.021	0.517	0.828	0.017	0.047
1831	IEU031	0.0081	0.0055	0.0152	0.002202	0.000881	749	160	0.485	0.330	0.911	0.132	0.053
348	IEU031	0.00205	0.00668	0.0152	0.00247	0.00225	166	160	0.027	0.089	0.202	0.033	0.030
780	EU019	0.00128	0.00668	0.01987	0.000507	0.00225	317	160	0.032	0.169	0.504	0.013	0.057
165	EU011	0.000375	0.00183	0.004277	0.000265	0.00022	162	160	0.005	0.024	0.055	0.003	0.003
82110	EU004	0.000242	0.0055	0.0087	0.000154	0.0005	1490	160	0.029	0.656	1.037	0.018	0.060
1996	EU020	0.00205	0.00668	0.031	0.00237	0.00225	166	160	0.027	0.089	0.412	0.031	0.030
3080	EU021	0.00205	0.0055	0.0152	0.002202	0.000881	207	160	0.034	0.091	0.252	0.036	0.015
1840	EU038	0.000011	0.000033	0.000487	0.000004	0.000033	497	160	0.000	0.001	0.019	0.000	0.001
1845	EU023	0.00205	0.00668	0.0152	0.00247	0.00225	166	160	0.027	0.089	0.202	0.033	0.030
1408	EU024	0.00205	0.00668	0.031	0.00247	0.00225	102	160	0.017	0.055	0.253	0.020	0.018
145/144	EU040	0.000309	0.000419	0.010097	0.000086	0.000044	375	160	0.009	0.013	0.303	0.003	0.001
2040	IEU031	0.0081	0.0055	0.024	0.0007	0.0007	749	160	0.485	0.330	1.438	0.042	0.042
294	IEU031	0.00205	0.00668	0.031	0.00247	0.00225	29	160	0.005	0.015	0.072	0.006	0.005
1082	EU026	0.00205	0.00668	0.031	0.00247	0.00225	207	160	0.034	0.111	0.513	0.041	0.037
530	EU016	0.00205	0.00668	0.031	0.00247	0.00225	36	160	0.006	0.019	0.089	0.007	0.006
1482	EU027	0.0081	0.0055	0.024	0.0007	0.0007	750	160	0.486	0.330	1.440	0.042	0.042
470	EU028	0.00205	0.00668	0.031	0.00247	0.00225	317	160	0.052	0.169	0.786	0.063	0.057
1440	EU029	0.00205	0.00668	0.031	0.00247	0.00225	166	160	0.027	0.089	0.412	0.033	0.030
1439	IEU031	0.00205	0.00668	0.0152	0.00247	0.00225	141	160	0.023	0.075	0.171	0.028	0.025
407	EU030	0.00205	0.00668	0.031	0.00247	0.00225	99	160	0.016	0.053	0.246	0.020	0.018
1441	EU032	0.00205	0.0067	0.031	0.00247	0.00225	166	160	0.027	0.089	0.412	0.033	0.030
152	EU033	0.0021	0.0067	0.031	0.0025	0.00225	305	160	0.051	0.163	0.756	0.061	0.055
1320	EU034	0.00205	0.00668	0.031	0.00247	0.00225	41	160	0.007	0.022	0.102	0.008	0.007
1836	EU017	0.000011	0.003726	0.011905	0.000705	0.000617	100	160	0.000	0.030	0.095	0.006	0.005
429	EU015	0.00205	0.00668	0.007709	0.00022	0.00225	27	160	0.004	0.014	0.017	0.000	0.005
18902	EU014	0.002048	0.008223	0.00773	0.00773	0.000658	82	160	0.013	0.054	0.051	0.051	0.004
13115	EU039	0.000012	0.001645	0.008075	0.00428	0.00028	33	160	0.000	0.004	0.021	0.011	0.001
1455	EU042	0.00809	0.0055	0.024	0.00071	0.0007	728	160	0.471	0.320	1.398	0.041	0.041
								Totals	2.423	4.009	12.997	0.832	0.755

V. Air Quality Impacts

DEQ does not anticipate any additional adverse air quality impacts as a result of this permitting action. The permit action incorporates federally enforceable permit conditions which limits the PTE of the facility. Malmstrom will need to continue to provide recordkeeping documenting facility emissions.

VI. Existing Air Quality

The facility is in an area identified as attainment for all pollutants. However, the facility is located near an area that has been re-designated attainment for CO under a limited maintenance plan. The Malmstrom facility has not been identified in any studies as impacting the previous nonattainment area.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, DEQ 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, DEQ 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.



FNAL ENVIRONMENTAL ASSESSMENT

Malmstrom Air Force Base

05/21/2024

Air Quality Bureau

Air, Energy, and Mining Division

Montana Department of Environmental Quality

Table of Contents

Project Overview	3
Location	3
Compliance with the Montana Environmental Policy Act	3
Proposed Action	3
Purpose and Need	3
EVALUATION OF AFFECTED ENVIRONMENT AND IMPACT BY RESOURCE:	8
1. Geology and Soil Quality, Stability, and Moisture	9
2. Water Quality, Quantity, and Distribution	9
3. Air Quality	9
4. Vegetation Cover, Quantity, and Quality	11
5. Terrestrial, Avian, and Aquatic Life and Habitats	12
6. Unique, Endangered, Fragile, or Limited Environmental Resources	12
7. Historical and Archaeological Sites	13
8. Aesthetics	13
9. Demands on Environmental Resources of Land, Water, Air, or Energy	14
10. Impacts on Other Environmental Resources	14
11. Human Health and Safety	15
12. Industrial, Commercial, and Agricultural Activities and Production	15
13. Quantity and Distribution of Employment	16
14. Local and State Tax Base and Tax Revenues	16
15. Demand for Government Services	16
16. Locally-Adopted Environmental Plans and Goals	17
17. Access to and Quality of Recreational and Wilderness Activities	17
18. Density and Distribution of Population and Housing	17
19. Social Structures and Mores	18
20. Cultural Uniqueness and Diversity	18
21. Private Property Impacts	19
22. Other Appropriate Social and Economic Circumstances	19
23. Greenhouse Gas Assessment	20
PROPOSED ACTION ALTERNATIVES	22
CONSULTATION	23
PUBLIC INVOLVEMENT	23
OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION	23
NEED FOR FURTHER ANALYSIS AND SIGNIFICANCE OF POTENTIAL IMPACTS	23
CONCLUSIONS AND FINDINGS	23
REFERENCES	27

Project Overview

COMPANY NAME: United States Air Force
EA DATE: April 23, 2024
SITE NAME: Malmstrom Air Force Base (AFB)
MAQP#: 1427-12
Application Received Date: February 20, 2024 and April 10, 2024

Location

Township 20 North, Range 4 and 5 East, Sections 1, 2, 3, 10, 11, 12, 13, 14, and 15
County: Cascade

Crusher location is projected to occur at Latitude 47.500306, and West Longitude 111.168848
PROPERTY OWNERSHIP: FEDERAL STATE PRIVATE

Compliance with the Montana Environmental Policy Act

Under the Montana Environmental Policy Act (MEPA), Montana agencies are required to prepare an environmental review for state actions that may have an impact on the human environment. The proposed action is considered to be a state action that may have an impact on the human environment and, therefore, the Department of Environmental Quality (DEQ) must prepare an environmental review. This Environmental Assessment (EA) will examine the proposed action and alternatives to the proposed action and disclose potential impacts that may result from the proposed and alternative actions. DEQ will determine the need for additional environmental review based on consideration of the criteria set forth in Administrative Rules of Montana (ARM) 17.4.608. DEQ may not withhold, deny, or impose conditions on the Permit based on the information contained in this EA (§ 75-1- 201(4), MCA).

Proposed Action

Malmstrom Air Force Base has applied for a Montana Air Quality permit modification under the Clean Air Act of Montana to add two diesel-fired engine-driven crushers to their facility. The proposed action also removes three diesel fire pumps and three emergency generators from Malmstrom's list of emitting units. The state law that regulates air quality permitting in Montana is the Clean Air Act of Montana, §§ 75-2-101, et seq., (CAA) Montana Code Annotated (MCA). DEQ may not approve a proposed project contained in an application for an air quality permit unless the project complies with the requirements set forth in the CAA of Montana and the administrative rules adopted thereunder, ARMs 17.8.101 et. seq. The proposed action would be located on federally owned land, in Great Falls, Cascade County, Montana. All information included in this EA is derived from the permit application, discussions with the applicant, analysis of aerial photography, topographic maps, and other research tools.

Purpose and Need

Under MEPA, Montana agencies are required to prepare an environmental review for state actions that may have an impact on the human environment. The Proposed Action is considered to be a state action that may have an impact on the human environment and, therefore, DEQ must prepare an environmental review. This EA will examine the proposed

action and alternatives to the proposed action and disclose potential impacts that may result from the proposed and alternative actions. DEQ will determine the need for additional environmental review based on consideration of the criteria set forth in ARM 17.4.608.

TABLE 1: SUMMARY OF ACTIVITIES PROPOSED IN APPLICATION

Table 1. Summary of Proposed Activities in Application	
General Overview	To add two portable crushers each with an associated diesel-fired engine. Add federally enforceable conditions for a new emergency 725 horsepower diesel engine/generator. It would also remove three diesel fire pumps and three emergency diesel engines/generators from the existing air quality permit from approved use.
Duration and Timing	Construction: Installation and set-up of the two new crushers would be completed in 1 to 3 days, as these are units that would arrive on-site fully assembled, ready to deploy and operate. Operation: These units each may operate up to 365 hours per calendar year for the life of the facility. Demobilization would be limited to hauling the crushers from the site.
Estimated Disturbance	There would be minimal disturbance to the existing land as the two crushers would be staged at a readily accessible site and no subsurface digging would be required. Total site disturbance would be estimated at 2 acres. The 2-acre site is an area located with access roads on all sides and already void of vegetation due to previous military uses. The 2 acres includes the area for staging the crushers as well as vehicle traffic disturbance immediately surrounding the crushers location. Materials to be crushed would have some storage piles from pre and post crushing materials.
Equipment	Two portable crushers each with an associated diesel-fired engine and a 725 horsepower emergency diesel engine/generator. Removal of three diesel fire pumps and three other emergency diesel engines.
Location	The crushers would be located on the Malmstrom AFB which is identified as Township 20 North, Range 4 and 5 East. Sections 1, 2, 3, 10, 11, 12, 13, 14, and 15. The crushers are planned to be located on the AFB at Latitude 47.500306, and West Longitude 111.168848. See Figure 1 and Figure 2 below.
Personnel on-site	Construction: Mobilization limited to crusher unloading and minor utility connections. Operation: Numerous existing staff would operate the equipment on an as needed basis.
Location and Analysis Area	The analysis area for this permit action is the area shown in Figures 1 and 2, and the immediate area surrounding the crushers planned location.
Air Quality	The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to air quality.
Water Quality	This project would not affect water quality. Water used on the crushers would be partially absorbed into the materials being crushed. The Applicant would be required to comply with the applicable local, county, state, and

	federal requirements pertaining to water quality.
Erosion Control and Sediment Transport	This project is on property currently in use for industrial purposes. This project would not contribute to additional erosion or sediment transport. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to erosion control and sediment transport.
Cultural resources	The property is already in use as industrial property, and there would be no effects on cultural resources. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to cultural resources.
Aesthetics	The property is already in use as industrial property, and there would be negligible effects on aesthetics. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to aesthetics.
Hazardous Substances	This project does not contribute any hazardous substances to the facility. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to hazardous substances.
Weed Control	The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to weed control.
Reclamation Plans	The property is already in use as industrial property, so no reclamation is necessary.
Solid Waste	This project would have no effect on solid waste in the area. The purpose of the crushers would be to reuse existing materials such as old concrete runway base and roadway base materials for future construction materials. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to solid waste.

Cumulative Impact Considerations	
Past Actions	The most recent air quality permitting action at Malmstrom was a reduction in permitted emissions from the Air Force Base. That action occurred in early 2019 and resulted in a decrease in the potential emissions for the Malmstrom site. There are several other sites holding air quality permits in the general vicinity of Malmstrom. The three closest permitted sites include CHS Nutrition, P66, and Montana Specialty Mills. The CHS facility is a livestock feed producer, P66 is used for petroleum storage, and Montana Specialty is a grain elevator and processing facility. These three facilities have not had air quality permit modifications within the last six years.
Present Actions	This is the only Montana Air Quality Permit action in the immediate vicinity at the current time.
Related Future Actions	DEQ is unaware of any applications submitted to DEQ in the analysis area and near the Malmstrom Air Force Base.

Project Location (47.500306, -111.168848).
Figure 1. Approximate Crusher Site on Malmstrom Parcel

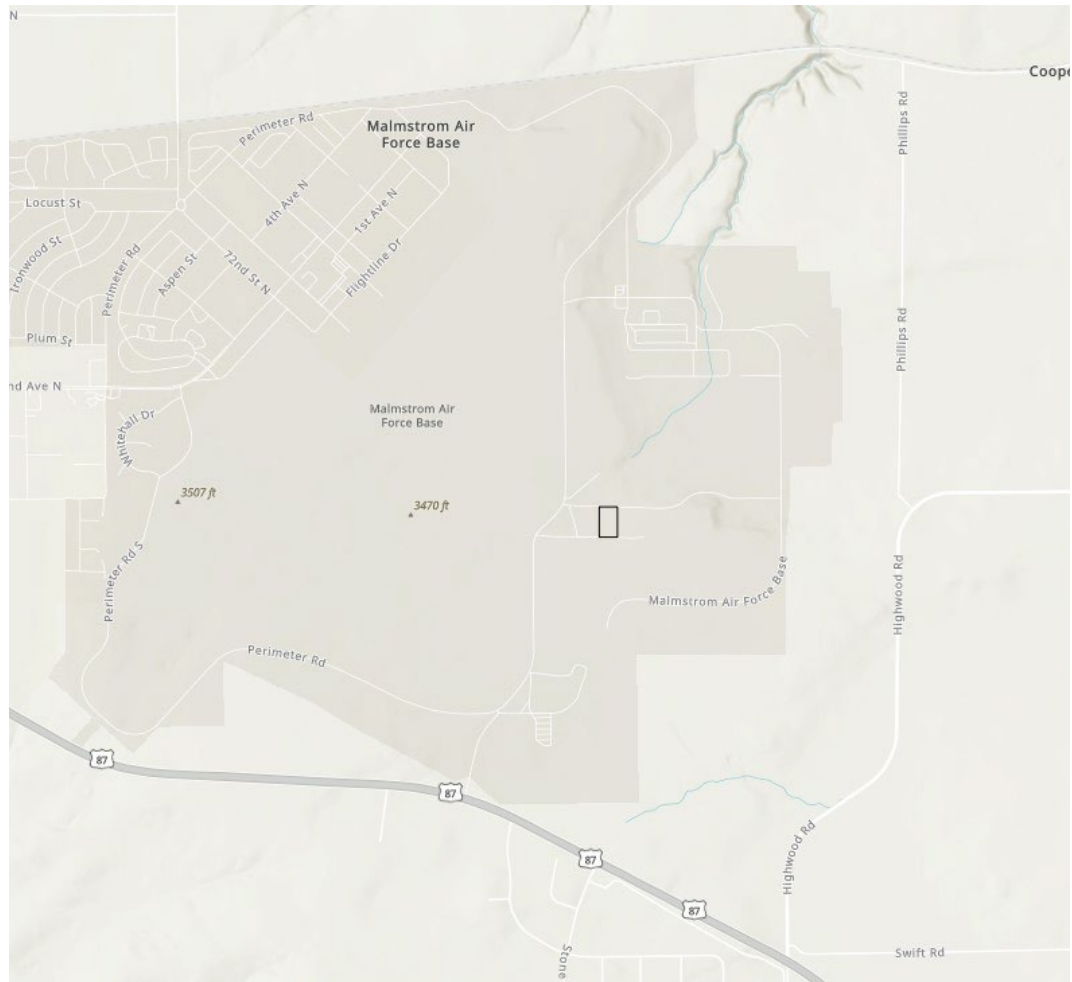


Figure 2. Zoomed in Crusher Location on Malmstrom Parcel



EVALUATION OF AFFECTED ENVIRONMENT AND IMPACT BY RESOURCE:

The impact analysis will identify and evaluate whether the impacts are direct or secondary impacts to the physical environment and human population in the area to be affected by the proposed project. Direct impacts occur at the same time and place as the action that causes the impact. Secondary impacts are a further impact to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action (ARM 17.4.603(18)). Where impacts would occur, the impacts will be described.

Cumulative impacts are the collective impacts on the human environment within the borders of Montana that could result from the Proposed Action when considered in conjunction with other past and present actions related to the Proposed Action by location and generic type. Related future impacts must also be considered when these actions are under concurrent consideration by any state agency through pre-impact statement studies, separate impact statement evaluation, or permit processing procedures. The activities identified in Table 1 were analyzed as part of the cumulative impacts assessment for each resource.

The duration is quantified as follows:

- Construction Impacts (short-term): These are impacts to the environment during the construction period. When analyzing duration, please include a specific range of time.
- Operation Impacts (long-term): These are impacts to the environment during the operational period. When analyzing duration, please include a specific range of time.

The intensity of the impacts is measured using the following:

- No impact: There would be no change from current conditions.
- Negligible: An adverse or beneficial effect would occur but would be at the lowest levels of detection.
- Minor: The effect would be noticeable but would be relatively small and would not affect the function or integrity of the resource.
- Moderate: The effect would be easily identifiable and would change the function or integrity of the resource.
- Major: The effect would alter the resource.

1. Geology and Soil Quality, Stability, and Moisture

The Applicant proposes to complete this project on property within the boundaries of the Malmstrom Air Force Base. As the two crushers are considered portable, they would be hauled onto site, set up, and put into operation. The proposed location is open bare land intended for federal military government operations. The units will rest on the top of the ground and require no foundational support infrastructure. The applicant identified the geology description as unconsolidated sediment that overlies Cretaceous bedrock (Kootenai Formation).

Direct Impacts:

The proposed project is on land currently used for purposes required for operation of an Air Force Base. It would be considered industrial use property. There are no known direct impacts on the geology and soil.

Secondary Impacts:

There are no predicted secondary impacts associated with this project.

Cumulative Impacts:

Since there are no direct or secondary impacts, there are also no cumulative impacts anticipated from this project.

2. Water Quality, Quantity, and Distribution

This project would not impact any surface or groundwater in the area. The project is proposed on property that is already under use for federal military operations, and it would not impact the surrounding property.

Direct Impacts:

There are no direct impacts expected to water quality, quantity, and distribution from this project. Any water used for fugitive dust mitigation for the crushing operation would be negligible and would evaporate or be absorbed into the soil prior to affecting any groundwater or runoff.

Secondary Impacts:

There are no secondary impacts expected from this project.

Cumulative Impacts:

There are no cumulative impacts expected from this project.

3. Air Quality

Applicants are required to comply with all laws relating to air, such as the Federal Clean Air Act, National Ambient Air Quality Standards set by the Environmental Protection Agency (EPA), and the Clean Air Act of Montana. In addition, the MAQP #1427-12 permit requires that the Applicant take reasonable precautions to control airborne particulate matter any

time the opacity is 10% or greater.

Direct Impacts:

The air quality impacts would be minor for this project. The majority of pollutants from the proposed project would be related to the combustion of diesel fuel. This would result in the release of NO_x, CO, SO₂, VOCs, and particulate matter. The two crushers would also release fugitive particulate matter from the physical crushing of materials, and from fugitive dust (particulate matter) from the crushing operations. Three diesel fire pumps and three emergency generators with associated engines would be removed as authorized equipment, and two crushers and their associated engines would be added as well as a new 725 horsepower emergency generator (EU042). The crusher units would be limited to 365 hours per calendar year so the impacts to air quality are minor as demonstrated by the emissions in the Air Quality section of the permit. Emission totals associated with the two new crushers and two engines plus the new emergency backup generator are duplicated here.

The emission inventory shown here is for up to 365 hours of operation per calendar year for each of the two crushers and their associated engine. Malmstrom currently operates as a Synthetic Minor permit which means the facility has taken limits to stay below major source status. By accepting annual limits of 365 hours per calendar year, keeps Malmstrom below sitewide limits of 100 tons per calendar year, and remain a Synthetic Minor source.

Potential Emission Increases for Two Crushers 365 Hours Per Year and EU042 at 160 Hours

Emission Source	Tons Per Year				
	PM	NO _x	CO	SO ₂	VOC
LT106 Crushing (Controlled) Emissions	0.10	0.00	0.00	0.00	0.00
LT106 Screening (Controlled) Emissions	0.18	0.00	0.00	0.00	0.00
LT106 Conveyor Transfer (Controlled) Emissions	0.01	0.00	0.00	0.00	0.00
LT200HPS Crushing (Controlled) Emissions	0.07	0.00	0.00	0.00	0.00
LT200HPS Screening (Controlled) Emissions	0.13	0.00	0.00	0.00	0.00
LT200HPS Conveyor Transfer (Controlled) Emissions	0.01	0.00	0.00	0.00	0.00
Crusher LT106 Engine	0.12	1.70	0.37	0.11	0.14
Crusher LT200HPS Engine	0.17	2.35	0.51	0.16	0.19
EU042 Emergency/Backup Generator	0.04	1.40	0.32	0.47	0.04
Total Potential Project Increases	0.83	5.45	1.19	0.74	0.37

Malmstrom also would be reducing their allowable emissions from the removal of the three diesel fire pumps and three emergency generators. The emission decreases that would occur from the removal of these six diesel engines is shown in the following table.

	Tons Per Year				
	PM	NOx	CO	SO ₂	VOC
EU012 Emergency Backup Generator	0.14	0.64	0.4	0	0.04
EU018 Emergency Backup Generator	0.01	0.11	0.02	0.01	0.01
EU031 Emergency Backup Generator	0.08	1.15	0.25	0.08	0.09
EU035 Diesel Fire Pump	0.05	0.72	0.13	0.05	0.06
EU036 Diesel Fire Pump	0.05	0.72	0.13	0.05	0.06
EU037 Diesel Fire Pump	0.05	0.72	0.13	0.05	0.06
Total Potential Project Decreases	0.38	4.06	1.06	0.24	0.32

The potential overall change in emissions with the crusher additions and emergency generator addition and the six diesel engine removals results in the following net change. Values shown are potential increases associated with the overall project.

	Tons Per Year				
	PM	NOx	CO	SO ₂	VOC
Net Potential Permit Changes	0.45	1.39	0.13	0.50	0.05

The project net change indicates the largest emission increase would be for NOx at 1.39 tons per year.

Secondary Impacts: Fugitive dust that normally migrates from the crushing site would not travel long distances but rather settle on the immediate area surrounding the crushers, typically downwind of prevailing winds. Malmstrom would be required to use water spray and other reasonable precautions to mitigate fugitive dust. The proposed permit action authorizes the two crushers operating on site, but materials would be transported from within the Malmstrom Air Force Base boundary for crushing. These materials would be transported with haul trucks and mobile loaders from nearby areas on the base including mothballed concrete airport runways. Transport of these materials to the crusher location would mostly occur on paved roads and at distances estimated by the Applicant to be 2 miles per round trip. Fugitive road dust would occur depending on the actual travel path on the AFB, and mobile emissions from diesel haul trucks and loaders would also occur due to transporting materials to and from the crushers.

Cumulative Impacts:

Cumulative impacts would be negligible based on the limited hours of 365 hours per year of operation for this project.

4. Vegetation Cover, Quantity, and Quality

There are no known rare or sensitive plants or cover types present within the proposed analysis area. No known fragile or unique resources or values, or resources of statewide or societal importance, are present within the proposed analysis area. The property is already in use for federal military purposes. The area where the crushers will be located has been used for previous activities resulting in an area devoid of natural vegetation so these new activities would not disturb native vegetation.

Direct Impacts:

Since the property is already used for federal military purposes, there would be no additional impacts to vegetation. Some storage of pre and post crushing materials would be likely but the 365 hour annual limitation on crushing would not produce high volumes of crushed materials.

Secondary Impacts:

No secondary impacts to vegetation are expected as a result of this project.

Cumulative Impacts:

No cumulative impacts are expected as a result of this project.

5. Terrestrial, Avian, and Aquatic Life and Habitats

The project is proposed on property that is currently in use as federal military property. There are no additional impacts to terrestrial, avian, or aquatic life habitats on the property in question.

Direct Impacts:

There are no direct impacts expected from this project on these habitats.

Secondary Impacts:

No secondary impacts to terrestrial, avian and aquatic life and habitats would be expected.

Cumulative Impacts:

There are no cumulative impacts expected from this project.

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

DEQ conducted a search using the Montana Natural Heritage Program (MTNHP) webpage with file downloads saved to the AQB project file. The polygon selected was the immediate area surrounding the proposed 2-acre crusher location.

The proposed project is not in core, general or connectivity sage grouse habitat, as designated by the Sage Grouse Habitat Conservation Program (Program) at: <http://sagegrouse.mt.gov>. Impacts to sage grouse would not be expected.

Species of concern from the MTNHP report indicate one observance of a Grizzly Bear. Other species of concern are primarily noted as species including *Carex sychnocephala*, *Bacopa rotundifolia* and *Najas guadalupensis*

Direct Impacts:

The Sage Grouse Habitat Conservation Program has stated that the proposed project would not occur in core, general or connectivity sage grouse habitat. Therefore, impacts to sage grouse would not occur.

Secondary Impacts:

No secondary impacts to sage grouse or sage grouse habitat would be expected as this site is not in sage grouse habitat. No secondary impacts to unique, endangered, fragile, or limited environmental resources would be expected.

Cumulative Impacts:

No cumulative impacts to unique, endangered, fragile, or limited environmental resources would be expected.

7. Historical and Archaeological Sites

The Montana State Historic Preservation Office (SHPO) was notified of the application. SHPO conducted a file search and provided a letter dated April 18, 2024.

This project is proposed on land that is currently part of the Air Force Base operation and is industrial in nature. No additional impacts to history, culture, and archeological uniqueness are expected. There are eighteen sites that have been evaluated in Section 12, Township 20 North 4 East made up of Historic District, Historic Outbuildings, Historic Exploration and Historic Road.

It is SHPO's position that any structure over fifty years of age is considered historic and is potentially eligible for listing on the National Register of Historic Places. If any structures are within the Area of Potential Effect, and are over fifty years old, SHPO recommends that they be recorded, and a determination of their eligibility be made prior to any disturbance taking place.

No underground disturbance would be required for the proposed action as the crushers just sit on top of the mobilization site.

Direct Impacts:

No direct impacts are expected from this project.

Secondary Impacts:

No secondary impacts to historical and archaeological sites are anticipated.

Cumulative Impacts:

No cumulative impacts to historical and archeological sites would be expected.

8. Aesthetics

The site is located in an area on Air Force property which is industrial in nature.

Direct Impacts:

No aesthetic impacts are anticipated off the Air Force Base property. The crushers are located within the facility boundary, as shown in Figures 1 and 2, so the noise will be contained within the federal property itself and would not be expected to be audible off the Air Force Base. Military personnel and/or civilian contractors either operating the equipment or in the nearby proximity would be expected to both hear and see the crushers

when in operation. This would be expected to be noise associated with crushing materials, material handling, and engine noise at typical industrial machinery decibel levels estimated to be at or above 85 decibels in nearby proximity. Malmstrom has indicated the crushers would normally operate during the day-time so no lighting impacts would be expected. Impacts would be expected to be industrial noise levels at the location of the crushers and fugitive dust immediately downwind of crushing operations.

Secondary Impacts:

No secondary impacts to aesthetics are anticipated.

Cumulative Impacts:

No cumulative impacts to aesthetics would be expected from this project.

9. Demands on Environmental Resources of Land, Water, Air, or Energy

There are minor expected impacts to the demands on environmental resources of land, water, air, or energy resulting from this project. The Applicant is required to comply with all applicable federal, state, county, and local regulations and ordinances, permits, licenses, and approvals for the operation of the site, and therefore the impacts are limited by the permit requirements listed in MAQP #1427-12.

Direct Impacts:

Based on the analysis of available data and certifications made by the Applicant, DEQ does not foresee any unusual or excessive demands on land, water, air, or energy from this project. Therefore, limited direct impacts would be anticipated.

Secondary Impacts:

No secondary impacts to demands on environmental resources of land, water, air, or energy would be anticipated.

Cumulative Impacts:

No cumulative impacts to demands on environmental resources of land, water, air, or energy would be expected.

10. Impacts on Other Environmental Resources

The site is currently being utilized on Federal Property for federal military purposes. No impacts to other environmental resources are anticipated.

Direct Impacts:

Based on the analysis of available data and on the certifications made by the Applicant, DEQ does not foresee any impacts on other environmental resources from this project. Therefore, no direct impacts are anticipated.

Secondary Impacts:

No secondary impacts to other environmental resources are anticipated as a result of the proposed project.

Cumulative Impacts:

No cumulative impacts to other environmental resources would be expected.

11. Human Health and Safety

The crushers being installed must comply with the permit conditions included in MAQP #1427-12, which are protective of human health and safety.

Direct Impacts:

Direct impacts to human health and safety are expected to be negligible for this project. The operating hours of the crushers would be limited to 365 hours per calendar year. Daytime operation of the crushers would be the anticipated operating period. Since the crushers are within the current Air Force Base property boundary, the noise would not disturb any offsite properties. The nearest non-military residents from the proposed site are approximately 5600 feet directly south from the proposed crushing site. The closest private property without inhabitants is located directly south east and east at approximately 5000 feet in distance owned by the Kysco Corporation. There do not appear to be any residences, commercial or industrial buildings located on the Kysco owned parcels.

Secondary Impacts:

Fugitive dust that leaves the immediate crushing site would not be expected to travel long distances and would be deposited nearby downwind from the crushers. Dust is considered an acute irritant and long-term dust exposure is known to have potential chronic impacts.

Dust impacts from crushing activities would be mitigated by the use of water as a reasonable precaution for the control of dust). ARM 17.8.308 would require the Applicant to take reasonable precautions to control airborne particulate matter.

Cumulative Impacts:

Negligible cumulative impacts are expected from this project.

12. Industrial, Commercial, and Agricultural Activities and Production

This proposed project area has been in use as federal military property for many years, and it is anticipated that there will be no additional impacts to industrial, commercial, and agricultural activities from this project.

Direct Impacts:

There are no anticipated direct impacts to industrial, commercial, or agricultural activities as a result of this project.

Secondary Impacts:

No secondary impacts to industrial, commercial, and agricultural activities and production would be expected.

Cumulative Impacts:

No cumulative impacts are expected as a result of this project.

13. Quantity and Distribution of Employment

Existing employees would likely be utilized for this operation.

Direct Impacts:

New employment opportunities would be limited. No lasting positive or negative impacts to employment would be expected from this project. The annual limits of 365 hours of operation would limit the number of employee hours required for crushing.

Secondary Impacts:

No secondary impacts to quantity and distribution of employment are anticipated as a result this project.

Cumulative Impacts:

No cumulative impacts to the quantity and distribution of employment would be expected.

14. Local and State Tax Base and Tax Revenues

Crushing volumes would be considered minor as compared to other larger crushing operations. Minor impact is anticipated to local and state tax base or tax revenues.

Direct Impacts:

Negligible direct impacts to the tax base or revenues are anticipated as a result of this project.

Secondary Impacts:

No secondary impacts to local and state tax base and tax revenues would be expected.

Cumulative Impacts:

No cumulative impacts to local and state tax base and tax revenues would be expected.

15. Demand for Government Services

The proposed project would add two crushers and two associated engines and federally enforceable conditions for a new 725 horsepower generator, and this equipment would become part of ongoing equipment regulated by entities such as DEQ.

Direct Impacts:

Negligible direct impacts to demand for government services would be expected as a result of regulating the additional equipment associated with this project. However, additional regulated equipment has been removed from operations, so this impact is lessened.

Secondary Impacts:

No secondary impacts to government services are anticipated as a result of the proposed project.

Cumulative Impacts:

No cumulative impacts are anticipated as a result of this project.

16. Locally-Adopted Environmental Plans and Goals

The proposed operation would occur within Cascade County, adjacent to the City of Great Falls. The project would be required to comply with city and county zoning regulations that may have authority in the area as well as any Federal Environmental Plans implemented by the Department of the Air Force and Department of Defense.

DEQ is not aware of any additional policies and plans.

Direct Impacts:

DEQ is not aware of any other locally-adopted environmental plans or goals that would be impacted by this proposed project or in the project area. Impacts from or to locally-adopted environmental plans and goals would not be expected as a result of this project.

Secondary Impacts:

No secondary impacts to locally-adopted environmental plans and goals are anticipated as a result of the proposed work.

Cumulative Impacts:

No cumulative impacts to locally-adopted environmental plans and goals would be expected.

17. Access to and Quality of Recreational and Wilderness Activities

The proposed project would not limit access to wilderness or recreational areas nearby. The proposed activities would occur on federal land already in use as an Air Force base. The nearest recreational areas from the Base are Benton Lake and Sand Coulee, each of which is approximately 10 miles away.

Direct Impacts:

Based on the information provided by the Applicant and DEQ’s review of the surrounding area, DEQ does not anticipate that any wilderness or recreational areas would be impacted by the proposed project. Access to wilderness or recreation areas is not an issue at this site.

Secondary Impacts:

No secondary impacts to wilderness or recreational areas are anticipated.

Cumulative Impacts:

No cumulative impacts to access to, and quality of, recreational and wilderness activities would be expected.

18. Density and Distribution of Population and Housing

The proposed project is not expected to add or remove any housing in the area.

Direct Impacts:

It is unlikely this project would add to the population significantly. No direct impacts are anticipated.

Secondary Impacts:

No secondary impacts to density and distribution of population and housing are anticipated as a result of the proposed project.

Cumulative Impacts:

No cumulative impacts to density and distribution of population and housing are anticipated as a result of this project.

19. Social Structures and Mores

DEQ is not aware of any Native American cultural concerns that would be affected by the proposed activity. Based on the information provided by the Applicant, it is not anticipated that this project would disrupt traditional lifestyles or communities.

Direct Impacts:

No direct impacts to social structures and mores are anticipated as a result of the proposed project.

Secondary Impacts:

No secondary impacts to social structures and mores are anticipated as a result of the proposed project.

Cumulative Impacts:

No cumulative impacts to social structures and mores would be expected.

20. Cultural Uniqueness and Diversity

Based on the information provided by the Applicant, DEQ is not aware of any unique qualities of the area that would be affected by the proposed activity. The site is currently located on land in industrial-like use owned by the federal government.

It is not anticipated that this project would cause a shift in some unique quality of the area.

Direct Impacts:

No impacts to cultural uniqueness and diversity are anticipated from this project.

Secondary Impacts:

No secondary impacts to cultural uniqueness and diversity are anticipated as a result of the proposed project.

Cumulative Impacts:

No cumulative impacts to cultural uniqueness and diversity would be expected.

21. Private Property Impacts

The proposed project would take place on land owned by the Federal Government. DEQ's approval of MAQP #1427-12 permit would not affect the applicant's real property. DEQ has determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements under the Montana Clean Air Act. Therefore, DEQ's approval of MAQP #1427-12 would not have private property-taking or damaging implications.

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)

22. Other Appropriate Social and Economic Circumstances

Due to the nature and scope of the proposed project activities, no further direct or secondary impacts would be anticipated from this project.

23. Greenhouse Gas Assessment

Issuance of this permit would authorize use of two crushers each powered by a diesel-fired engine for the crushing of used concrete and other materials on the Air Force Base. It would also add federally enforceable conditions for the addition of a 725 horsepower emergency generator. Under the proposed action it would also remove authority to operate three diesel fire pumps, and three emergency diesel engines/generators. Each diesel engine associated with the proposed project is included in the Greenhouse Gas Assessment.

The analysis area for this resource is limited to the activities regulated by the issuance of MAQP #1427-12 permit which is the mobilization phase, and operation of two crushers and their associated engines as well as the new emergency generator. The amount of diesel fuel utilized at this site may be impacted by a number of factors including the availability of crushing materials and weather as well as equipment downtime. To account for these factors DEQ has calculated the emissions using information provided by in the Applicant's air quality permit application and existing MAQP. The GHG emissions were calculated from the horsepower ratings and estimated gallons of diesel fuel per hour of operation. The applicant also provided GHG calculations based on 40 CFR 98 which are nearly identical to calculations used in other EPA GHG references. Since Malmstrom has taken federally enforceable limits not to exceed 365 hours per calendar year, the volume of diesel fuel per year has been calculated for each engine and input into the GHG calculator.

For the purpose of this analysis, DEQ has defined greenhouse gas emissions as the following gas species: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and many species of fluorinated compounds. The range of fluorinated compounds includes numerous chemicals which are used in many household and industrial products. Other pollutants can have some properties that also are similar to those mentioned above, but the EPA has clearly identified the species above as the primary Greenhouse Gases (GHGs). Water vapor is also technically a greenhouse gas, but its properties are controlled by the temperature and pressure within the atmosphere, and it is not considered an anthropogenic species.

The combustion of diesel fuel at the site would release GHGs primarily being carbon dioxide (CO₂), nitrous oxide (N₂O) and much smaller concentrations of uncombusted fuel components including methane (CH₄) and other volatile organic compounds (VOCs).

DEQ has calculated GHG emissions using the EPA Simplified GHG Calculator version May 2023, for the purpose of totaling GHG emissions. This tool totals carbon dioxide (CO₂), nitrous oxide (N₂O), and methane (CH₄) and reports the total as CO₂ equivalent (CO₂e) in metric tons CO₂e. If there are also fluorinated compounds associated with the project those may also be input into the GHG calculator. The calculations in this tool are widely accepted to represent reliable calculation approaches for developing a GHG inventory.

Direct Impacts

Operation of new diesel-fueled engines (2 crushers and new backup generator) throughout the life of the proposed project would produce exhaust fumes containing GHGs. The removal of six diesel engines would result in the discontinuation of exhaust fumes from these engines. The net project change for GHGs is shown in the below table:

	Metric Tons of CO₂e
Emission Source	Includes CO ₂ , CH ₄ and N ₂ O
LT106 Crushing (Controlled) Emissions	0.00
LT106 Screening (Controlled) Emissions	0.00
LT106 Conveyor Transfer (Controlled) Emissions	0.00
LT200HPS Crushing (Controlled) Emissions	0.00
LT200HPS Screening (Controlled) Emissions	0.00
LT200HPS Conveyor Transfer (Controlled) Emissions	0.00
Crusher LT106 Engine	22.43
Crusher LT200HPS Engine	37.38
EU042 Emergency/Backup Generator	59.81
Total Potential Project Increases	119.62
EU012 Emergency Backup Generator	59.26
EU018 Emergency Backup Generator	3.53
EU031 Emergency Backup Generator	36.50
EU035 Diesel Fire Pump	22.76
EU036 Diesel Fire Pump	22.76
EU037 Diesel Fire Pump	22.76
Total Potential Project Decreases	172.10
With Maximum Haul Truck Increase	61.80
Overall Project GHG Change (Increase in GHGs)	9.32

DEQ has also prepared a calculation to estimate the GHG emissions from mobile equipment that potentially would be used to transport the materials to and from the crusher location all occurring on the Air Force Base. DEQ does not regulate haul trucks but has included the potential CO₂e contribution based on estimated haul truck distances. There is no reason to believe that the crushers would each operate 365 hours per year, but the calculation assumes haul trucks would each carry 30,000 lbs or 15 tons of material to and from the crushers, traveling 2 miles per round trip. Haul trucks were estimated to achieve 6.5 miles per gallon of diesel fuel. Total crushing capacity for the two crushers operating in parallel is 770 tons per hour. The additional fuel consumption for the haul trucks would use approximately 5540 gallons of diesel fuel adding an additional 62 metric tons of CO₂e. Therefore, even with additional accounting for haul trucks the overall project results in an approximate increase of 9.3 metric tons of CO₂e annually.

Secondary Impacts

GHG emissions contribute to changes in atmospheric radiative forcing, resulting in climate change impacts. GHGs act to contain solar energy loss by trapping longer wave radiation emitted from the Earth's surface and act as a positive radiative forcing component (BLM 2021). The impacts of climate change throughout the Northern Great Plains of Montana

include changes in flooding and drought, rising temperatures, and the spread of invasive species (BLM 2021).

Cumulative Impacts

Montana recently used the EPA State Inventory Tool (SIT) to develop a greenhouse gas inventory in conjunction with preparation of a possible grant application for the Community Planning Reduction Grant (CPRG) program. This tool was developed by EPA to help states develop their own greenhouse gas inventories, and this relies upon data already collected by the federal government through various agencies. The inventory specifically deals with carbon dioxide, methane, and nitrous oxide and reports the total as CO₂e. The SIT consists of eleven Excel based modules with pre-populated data that can be used as default settings or in some cases, allows states to input their own data when the state believes their own data provides a higher level of quality and accuracy. Once each of the eleven modules is filled out, the data from each module is exported into a final “synthesis” module which summarizes all of the data into a single file. Within the synthesis file, several worksheets display the output data in a number of formats such as emissions by sector and emissions by type of greenhouse gas.

DEQ has determined the use of the default data provides a reasonable representation of the greenhouse gas inventory for the various sectors of the state, and an estimated annual greenhouse gas inventory by year. The SIT data is currently only updated through the year 2021, as it takes several years to validate and make new data available within revised modules.

Future GHG emissions from operations such as this site would be represented within the module titled Carbon Dioxide Emissions from Fossil Fuel Combustion, with emissions from the following subcategories Transportation Sector, and Industrial Sector. At present, the Transportation Sector accounts for 8.1 million metric tons (MMT) of CO₂e, and the Industrial Sector accounts for 4.4 MMTCO₂e in Montana annually. Combined the two Sectors account for 12.5 MMTCO₂e. This project may contribute up to 9.3 metric tons per year of CO₂e if the haul truck diesel fuel is included or roughly 0.000074 percent of the Transportation and Industrial Sector total. If the project were to last 20 years, the GHGs over the life of the project would be 186 metric tons. Comparison to the statewide GHG total (47.77 million metric tons CO₂e) for the project on an annual basis (2021) would be only 0.000019 percent.

PROPOSED ACTION ALTERNATIVES

No Action Alternative: In addition to the proposed action, DEQ must also considered a "no action" alternative. The "no action" alternative would deny the approval of MAQP #1427-12. The applicant would lack the authority to conduct the proposed activity. Any potential impacts that would result from the proposed action would not occur. The no action alternative forms the baseline from which the impacts of the proposed action can be measured.

If the Applicant demonstrates compliance with all applicable rules and regulations required for approval, the “no action” alternative would not be appropriate.

Other Reasonable Alternative(s): No other alternatives were considered.

CONSULTATION

DEQ engaged in internal and external efforts to identify substantive issues and/or concerns related to the proposed project. Internal scoping consisted of internal review of the environmental assessment document by DEQ staff. External scoping efforts also included queries to the following websites/databases/personnel:

MAQP #1427-10, MAQP #1427-12 Application, EPA State Inventory Tool, and the EPA GHG Calculator Tool.

PUBLIC INVOLVEMENT

The public comment period for this permit action occurred from 5/02/2024 through 5/17/2024. Public comments may be submitted to the DEQ through the DEQ website, email, written letter, or in person. No public comments were received.

OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION

The proposed project would be located on property owned by the Federal Government. All applicable state and federal rules must be adhered to, which, at some level, may also include other state, or federal agency jurisdiction.

NEED FOR FURTHER ANALYSIS AND SIGNIFICANCE OF POTENTIAL IMPACTS

When determining whether the preparation of an environmental impact statement is needed, DEQ is required to consider the seven significance criteria set forth in ARM 17.4.608, which are as follows:

- The severity, duration, geographic extent, and frequency of the occurrence of the impact;
- The probability that the impact will occur if the proposed action occurs; or conversely, reasonable assurance in keeping with the potential severity of an impact that the impact will not occur;
- Growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative impacts – identify the parameters of the proposed action;
- The quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources and values;
- The importance to the state and to society of each environmental resource or value that would be affected.
- Any precedent that would be set as a result of an impact of the proposed action that would commit the department to future actions with significant impacts or a decision in principle about such future actions; and
- Potential conflict with local, state, or federal laws, requirements, or formal plans.

CONCLUSIONS AND FINDINGS

The DEQ finds that this action results in negligible impacts to air quality and GHG emissions in Cascade County, Montana.

The severity, duration, geographic extent and frequency of the occurrence of the impacts associated with the proposed air quality project would be limited. The proposed action would result in the disturbance of about 2 acres on the Malmstrom Air Force Base. The Applicant is proposing to conduct crushing operations at the site as explained in MAQP #1427-12 to crush various materials including concrete from an abandoned airport runway from the AFB for possible reuse. The site would be permitted to operate the crushers up to 365 hours per calendar year. The site selected for crushing is currently bare and open land. The new 725 horsepower emergency generator also included in the proposed action would be located elsewhere on the site for Building 1455 and have negligible impact based on a maximum operation of 160 hours per calendar year. The removal of authority to operate three other diesel fire pumps and three other emergency generators would result in a drop in pollutant releases for these units.

Materials for crushing will be hauled to the location of the crushers using haul trucks and loaders primarily on paved roads to the crusher staging area. Some pre-crushing and post-crushing piles would be staged on the 2-acre site estimated for disturbance.

As discussed in this EA, DEQ has not identified any significant impacts associated with the proposed actions for any environmental resource. DEQ does not believe that the proposed activities by the Applicant would have any growth-inducing or growth-inhibiting aspects, or contribution to cumulative impacts. The proposed crushing site does not appear to contain known unique or fragile resources.

There are no unique or known endangered fragile resources in the project area. No underground disturbance would be required for this project.

There would be negligible impacts to view-shed aesthetics as the crusher operation would not be visible to residents off the Air Force Base. Employees at the base would see and hear the crushing operations when in the immediate area of the crushing operation.

Demands on the environmental resources of land, water, air, or energy would not be significant. When the crushers were no longer needed, they would be removed from the site at Malmstrom's direction.

Impacts to human health and safety would not be significant as access roads would be closed to the public and because the site is on Federally Owned Land. The public is not allowed on the Malmstrom site.

As discussed in this EA, DEQ has not identified any significant impacts associated with the proposed activities on any environmental resource.

Issuance of a Montana Air Quality Permit to the Applicant does not set any precedent that commits DEQ to future actions with significant impacts or a decision in principle about such future actions. If the Applicant submits another modification or amendment, DEQ is not committed to issuing those revisions. DEQ would conduct an environmental review for any subsequent permit modifications sought by the Applicant that require environmental review. DEQ would make permitting decisions based on the criteria set forth in the Clean Air Act of Montana.

Issuance of the Permit to the Applicant does not set a precedent for DEQ's review of other applications for Permits, including the level of environmental review. The level of environmental review decision is made based on case-specific consideration of the criteria set forth in ARM 17.4.608.

Finally, DEQ does not believe that the proposed air quality permitting action by the Applicant would have any growth-inducing or growth inhibiting impacts that would conflict with any local, state, or federal laws, requirements, or formal plans.

Based on a consideration of the criteria set forth in ARM 17.4.608, the proposed operation is not predicted to significantly impact the quality of the human environment. Therefore, preparation of an EA is the appropriate level of environmental review for MEPA.

PREPARATION AND APPROVAL

EA and Significance Determination prepared by:

Craig Henrikson

Environmental Engineer, PE

Environmental Assessment Reviewed by:

John P. Proulx

Air Quality Engineer

Approved by: Craig Henrikson

REFERENCES

- MAQP #1427-10
- MAQP #1427-11 Application received from Malmstrom AFB on February 20, 2024.
- MAQP #1427-12 Application received from Malmstrom AFB on April 12, 2024.
- Additional Malmstrom Email Correspondence received on April 16, 2024.
- EPA GHG Calculator Tool <https://www.epa.gov/statelocalenergy/state-inventory-and-projection-tool>. Version dated May 2023 in the Introduction Tab.
- EPA State Inventory Tool, <https://www.epa.gov/statelocalenergy/state-inventory-and-projection-tool> Version 2024.1.
- State Historical Society Data requested on 4/18/2024.
- Montana NRIS Data downloaded on 4/18/2024.
- Results of State Inventory Tool model run for Version 2024.1. Model results run by AQB staff on March 7, 2024.
- 2021 BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends, <https://www.blm.gov/>