

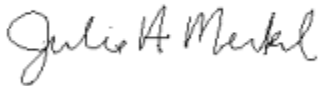
July 25, 2018

Matt Wolfe
Stillwater Mining Company
East Boulder Operations
P.O. Box 789
Big Timber, MT 59011

Dear Mr. Wolfe:

Montana Air Quality Permit #2653-06 is deemed final as of July 25, 2018, by the Department of Environmental Quality (Department). This permit is for an underground platinum/palladium mining and milling operation. All conditions of the Department's Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For the Department,



Julie A. Merkel
Permitting Services Section Supervisor
Air Quality Bureau
(406) 444-3626



Rhonda Payne
Air Quality Scientist
Air Quality Bureau
(406) 444-5287

JM:RP
Enclosure

Montana Department of Environmental Quality
Air, Energy & Mining Division

Montana Air Quality Permit #2653-06

Stillwater Mining Company
East Boulder Operations
P.O. Box 789
Big Timber, MT 59011

July 25, 2018



MONTANA AIR QUALITY PERMIT

Issued To: Stillwater Mining Company
East Boulder Operations
P.O. Box 789
Big Timber, MT 59011

MAQP: #2653-06
Application Complete: 5/10/2018
Preliminary Determination Issued: 6/12/2018
Department's Decision Issued: 7/9/2018
Permit Final: 7/25/2018

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Stillwater Mining Company – East Boulder Operations (Stillwater), 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

Stillwater's East Boulder Operations site is located approximately 11 miles south of McLeod and 32 miles south of Big Timber in Sections 2, 3, 11, 19, 26, and 34, Township 4 South, Range 13 East, in Sweet Grass County, MT.

B. Current Permit Action

On March 29, 2018 the Department of Environmental Quality (Department) received a request from Stillwater to modify MAQP 2653-05 to increase the annual ore production limitation, increase the annual waste rock limitation, and classify the mine ventilation source as a fugitive source. Stillwater is requesting an annual ore production increase from 730,000 tons of ore to 1,095,000 tons of ore. This increase is equal to an average daily production rate of 3,000 tons per day. Previous permits have determined that a rate of 3,500 or less should be maintained to ensure there are no impacts to ambient air quality standards.

The increase in ore production will be handled with the currently permitted equipment; there will be no new equipment added as part of this action. However, certain activities and units will have an increase in operation to accommodate the increased throughput. See Section I.A of the MAQP Analysis for a complete list of affected activities and units.

The Department requested additional emissions calculations information and clarification on April 25, 2018. On May 10, 2018 the Department received the additional information from Stillwater.

Section II: Conditions and Limitations

A. Emission Limitations

1. Nitrogen oxide (NO_x) emissions from electrical generation shall be limited to 65 tons per year. This limitation shall be verified through manufacturer information on the generator(s) or by performance testing of the actual generator(s) to be used (ARM 17.8.749).
2. Stillwater shall not cause or authorize to be discharged into the atmosphere, from the Nordberg surface crusher, any visible emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.340 and 40 CFR 60 Subpart LL).
3. Stillwater shall not cause or authorize to be discharged into the atmosphere from the stacker tower baghouse (controlling the crusher exit conveyor and the stacker tower transfer conveyor) any stack emissions that (ARM 17.8.340, ARM 17.8.752, and 40 CFR 60, Subpart LL):
 - a. Contain particulate matter in excess of 0.05 grams/dscm; and
 - b. Exhibit greater than 7% opacity.
4. All process fugitive emissions are subject to an opacity limitation of 10% (ARM 17.8.340 and 40 CFR Part 60, Subpart LL).
5. Stillwater must use reasonable precautions to minimize fugitive dust with respect to all construction and operation activities related to the project. This would include watering and/or chemical stabilization of roads and work areas on an as-necessary basis and adequate control of any process or material handling operations. With respect to the mine access road, Stillwater Mining Company must work in consultation and coordination with Sweet Grass County and the U.S. Forest Service to minimize particulate emissions from their respective portions of the road (ARM 17.8.749).
6. Stillwater shall be limited to a maximum of 1,095,000 tons of ore production during any rolling 12-month time period (ARM 17.8.749).
7. Stillwater shall be limited to a maximum of 1,095,000 tons of waste rock handled during any rolling 12-month time period (ARM 17.8.752).
8. Stillwater shall be limited to a maximum of 132,000 tons of borrow material to be crushed during any rolling 12-month time period (ARM 17.8.752).
9. Stillwater shall be limited to a maximum of 1,095,000 tons of ore processed in the surface crushing system during any rolling 12-month time period (ARM 17.8.749).

10. Stillwater shall comply with all applicable standards and limitations, and the reporting, recordkeeping and notification requirements contained in 40 CFR Part 60, Subpart LL (ARM 17.8.340 and 40 CFR Part 60).
11. Stillwater shall not cause or authorize to be discharged into the atmosphere any visible emissions from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).
12. Stillwater shall not cause or authorize to be discharged into the atmosphere any visible non-process fugitive emissions that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.308).
13. Stillwater shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308 and ARM 17.8.749).
14. Stillwater shall treat all unpaved portions of the haul roads, access roads, and the general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.13 (ARM 17.8.749).
15. Water and/or chemical dust control shall be available on site at all times, and operated as necessary, to maintain compliance with the opacity limitation in Section II.A.11 and Section II.A.12 (ARM 17.8.752).
16. The following list contains the required emission control technologies and techniques to be operated and maintained.
 - a. Surface Screening of Borrow Material – covered conveyors and transfer points (ARM 17.8.752).
 - b. Ore Apron Feeders – covered conveyors and transfer points (ARM 17.8.749).
 - c. Dumping Waste Rock by Stacker – covered conveyors and transfer points (ARM 17.8.752).
 - d. Underground Crusher – baghouse (ARM 17.8.749).
 - e. Stacker Tower Transfer Conveyor – stacker tower baghouse (ARM 17.8.749).
 - f. Surface Crushing of Ore and Waste Rock – covered transfer points and water spray and/or chemical dust suppression as necessary (ARM 17.8.752).
 - g. Surface Crushing Operations Material Transfer – covered conveyors and transfer points (ARM 17.8.752).

- h. Crusher Exit Conveyor – covered transfer point with baghouse pickup intake to stacker tower baghouse (ARM 17.8.752).

B. Testing Requirements

1. The Nordberg crusher, the crusher exit conveyor (via stacker tower baghouse), the stacker tower conveyor (via stacker tower baghouse), and any other affected equipment under 40 CFR 60, Subpart LL, shall be tested and compliance demonstrated with the emission limitation contained in Section II.A.2, Section II.A.3, and Section II.A.4 within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial start-up of the system. The test shall be conducted in accordance with the Montana Source Test Protocol and Procedures Manual (ARM 17.8.105, ARM 17.8.340, and 40 CFR 60, Subpart LL).
2. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).
3. The Department may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. Stillwater shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505). Stillwater shall submit the following information annually to the Department by March 1 of each year; the information may be submitted along with the annual emission inventory (ARM 17.8.505).

- a. The amount of ore and waste handled (annual basis and the maximum daily amount),
- b. A summary of dust control activities, including types and amounts of chemical stabilizers used, application areas, and general watering schedules where applicable (the summary should include dust suppression activities on the U.S. Forest Service and county portions of the access road), and
- c. The status of employee busing.

2. Stillwater shall notify the Department of any construction or improvement project conducted, pursuant to ARM 17.8.745, that would ***include the addition of a new emissions unit***, change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation. The notice must be submitted to the Department, in writing, 10 days prior to startup or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(l)(d) (ARM 17.8.745).
3. All records compiled in accordance with this permit must be maintained by Stillwater as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request. These records may be stored at a location other than the plant site upon approval by the Department (ARM 17.8.749).
4. Stillwater shall document, by month, the total tons of ore processed in the surface crushing system, tons of waste rock handled, and the total tons of borrow material to be crushed. By the 25th of each month, Stillwater Mining Company shall total each of these values during the previous 12 months to verify compliance with the limitation in Section II.A.6, II.A.7, and II.A.8. A written report of the compliance verification shall be submitted along with the annual emissions inventory (ARM 17.8.749).
5. Records of the generator(s) operating hours, loads, and fuel usage shall be maintained on site.
6. Stillwater shall provide the Department with written notification of the following dates within the specified time periods as required for 40 CFR Part 60, Subpart LL affected facilities including, but not limited to, the surface Nordberg crusher and the crusher exit conveyor (ARM 17.8.340 and 40 CFR 60, Subpart LL).
 - a. Commencement of construction within 30 days after commencement of construction,
 - b. Anticipated start-up date between 30 and 60 days prior to anticipated start-up date, and
 - c. Actual start-up date within 15 days after the actual start-up date.

SECTION III: General Conditions

- A. Inspection – Stillwater shall allow the Department’s representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment such as Continuous Emission Monitoring Systems (CEMS) or Continuous Emission Rate Monitoring Systems (CERMS), or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

- B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if Stillwater fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving Stillwater of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).
- D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties, or other enforcement action as specified in Section 75-2-401, *et seq.*, MCA.
- E. Appeals – Any person or persons jointly or severally adversely affected by the Department’s decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefor, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department’s decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department’s decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department’s decision on the application is final 16 days after the Department’s decision is made.
- F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by the Department at the location of the source.
- G. Permit Fee – Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by Stillwater 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
 Stillwater Mining Company – East Boulder Operations
 MAQP #2653-06

I. Introduction/Process Description

Stillwater Mining Company – East Boulder Operations (Stillwater) owns and operates an underground mine, an ore processing mill, a surface min/mill support complex, a tailings retention impoundment and other secondary facilities. The facility is located approximately 11 miles south of McLeod and 32 miles south of Big Timber in Sections 2, 3, 11, 19, 26, and 34, Township 4 South, Range 13 East, in Sweet Grass County, MT, and is known as the East Boulder Mine.

A. Permitted Equipment

Point #	Emitting Unit/Activity
1/01	Disturbed Areas 1a-1h
2	Mine Ventilation Exhaust
3	Coarse Ore Dumping @ Trestle
5	Waste Rock Dumping @ Trestle
7/01	Haul Roads >50T
7/02	Haul Trucks & Loaders <50T
7/03	Light Vehicles
10	Diesel Generators (3, Surface)
12	Propane (Surface)
13	Topsoil Removal
14	Topsoil Loading/Dumping/Screening
15	Bulk Loading (Borrow)
19	Waste Loading (from Trestle Drop into Bench Stockpile by Loader)
20/01	Ore Load, Haul, Dump Ore into Grizzly by Loader
20/02	Ore Loading (from Trestle Drop into Bench Stockpile by Loader)
21	Surface Crushing Ore (Nordberg Crusher)
22/01	Ore Conveyed from Apron Feed to Mill
22/02	Ore Conveyed from Crusher to Stacker
23/01	Native Borrow @ Tailings Embankment
23/02	Borrow material removal
23/03	Waste from Stockpile Below Stacker to Tailings Embankment
23/04	Waste @ Tailings Embankment (Spreading)
24/01	Crushing Bedding Material
24/02	Conveying Bedding Material
24/03	Material Handling - Bedding Material
24/04	Screening - Bedding Material
26	Pile Forming - Radial Stacker
27/01	Cement Batch Plant - Cement Unloading - Silo
27/02	Dumping Gravel into Stockpiles
27/03	Dumping Sand into Stockpiles
27/04	Gravel Mixer Loading to Truck
27/05	Sand Mixer Loading to Truck

Point #	Emitting Unit/Activity
27/06	Gravel Transfer to Bin
27/07	Sand Transfer to Bin
27/08	Weigh Hopper Unloading

B. Source Description

Stillwater's East Boulder Mine is an underground platinum/palladium mine and milling site. All ore and waste rock produced from the mine is transported to the surface via the twin adits located adjacent to the ore processing facilities. The ore is processed through a surface crusher, a wet semi-autogenous (SAG) grinding mill, a wet ball mill, followed by concentration in a bulk sulfide floatation process. The concentrate is shipped from the project site by truck for further processing in Stillwater's Columbus smelter and base metals refinery. The majority of the surface facilities are located adjacent to the mine access adits in the East Boulder River valley. Other surface construction is located on Stillwater's patented or mineral load claims.

C. Permit History

MAQP #2670 was issued on April 1, 1991, for an underground exploration project and related surface facilities at the East Boulder Project. Stillwater PGM Resources applied for an air quality permit for exploration activities on November 7, 1990; the application was deemed complete on December 3, 1990. On February 4, 1991, Stillwater PGM Resources submitted a revision to the application. The revision included proposing the use of a generic electrical generation system to allow some flexibility in the type and number of generators to be used. Approximately 3.5 megawatts of power would be required. The generator(s) could be propane-fired or diesel-fired with add-on emission controls or possibly a combination of generators. The limiting factor was NO_x emissions from the system and the ability to comply with the Class II Prevention of Significant Deterioration (PSD) NO₂ increment. Based on dispersion modeling results, a total of 65 tons per year of NO_x emissions from the generator(s), in conjunction with the other project-related NO_x emissions, was allowable.

PSD regulations did not directly apply to the project because potential emissions were less than 250 tons per year. Therefore, the source was not a major stationary source. However, the baseline date was triggered for sulfur dioxide (SO₂) and nitrogen dioxide (NO₂); these pollutants consume allowable PSD increment. Modeling was conducted to determine that the impacts of NO₂ and SO₂ emissions were small enough that modeling was not required to be performed.

MAQP#2653 for the underground platinum/palladium mining operation and ore-processing facilities was issued on August 19, 1992. PSD permit requirements were not applicable because estimated emissions of any pollutant were less than 250 tons per year. Although the PSD regulations did not directly apply, a demonstration was required to verify compliance with the PSD NO₂ increment. With respect to maximum allowable increases (PSD increments), only NO₂ and SO₂ emissions from this project would consume increment because the baseline is triggered for these two pollutants, but not for particulate matter. Under the Montana PSD regulations,

particulate baseline areas are defined as the impact areas of major sources, while the baseline is defined as the entire State for NO₂ and SO₂. There are no particulate baseline areas that would be impacted by this project. Therefore, there would be no increment consumption (particulate increases would become part of the baseline).

Stillwater applied for **MAQP #2653-01** on November 11, 1995. The application was deemed complete on January 23, 1996. The application proposed changing the on-site electrical generation system. Based on manufacturer supplied data, there would be an increase in allowable NO_x emissions of 176 tons per year and a decrease in sulfur dioxide of 43 tons per year. The two permits were proposed to be consolidated as part of the permitting action. On May 14, 1996, a draft preliminary determination was issued. The permit was not issued due to EPA's interpretation that all NO_x emissions, including those from minor sources, consume PSD increments. Stillwater withdrew the application on July 7, 1999.

On October 15, 1999, **MAQP #2653-02** was issued as a modification. The request proposed: 1) changing the control device specified on the concentrate dryer from a wet scrubber to a baghouse; 2) modifying the ambient air quality monitoring requirements; 3) clarifying that crushing and material handling of bedding material is permitted; and, 4) changing the permit name to Stillwater – East Boulder Operations.

The Department of Environmental Quality (Department) agreed to change the control device on the concentrate dryer from a wet scrubber to a baghouse. The emission limitation from the concentrate dryer did not change; therefore, the dryer's allowable emission rate would not increase as a result of changing the control device specification.

Stillwater proposed to change the ambient air quality monitoring by 1) reducing the sampling frequency from every 3rd day year-round to every 3rd day May through October and every 6th day November through April; 2) waiving the requirement to operate a collocated PM-10 sampler; and 3) eliminating the requirement for trace element analyses. The Department agreed to reduce the sampling at the East Boulder Operations. Stillwater did not operate collocated sampling at any other site; therefore, collocated sampling is required at the East Boulder site. The Department agreed to drop the trace element analyses because there were no enforceable standards to compare the values to and the ore and waste rock at the East Boulder Operations were similar to the Nye Operations, which did not demonstrate any problems.

Neither of Stillwater's air quality permits (MAQP #2653-00 or MAQP #2670) clearly specify that crushing and material handling, in conjunction with construction activities, is covered in the permits. However, the Department's files include correspondence from Stillwater requesting this activity be included in MAQP #2653-00 before it was issued. Based on that correspondence, the Department was aware that Stillwater intended to conduct crushing and material handling in conjunction with construction activities. This crushing and material handling was separate from the crushing and material handling for the ore; therefore, the activity was covered in MAQP #2653-00. Crushing and material handling, in conjunction with construction activities at the facility, is covered in MAQP #2653-02. **MAQP #2653-02** replaced MAQP #2653-00 and MAQP #2670-00.

Stillwater submitted an application for the modification of MAQP #2653-02. The proposed modification included an increase in the amount of waste rock to be handled at the operation; changes in equipment for ore and waste handling; an increase in the acreage for soil stock piles and disturbed areas; and a change in the language of the existing permit regarding ambient air monitoring. **MAQP #2653-03** replaced MAQP #2653-02.

Stillwater requested an increase in the maximum amount of waste rock to be handled, from 350,000 tons per year to 730,000 tons during any rolling 12-month time period. Also, the amount of waste rock does not include the borrow material to be crushed (132,000 tpy). The increase in the waste rock handled affected the particulate emissions from the stacking, hauling, and spreading of material. Stillwater submitted modeling to demonstrate compliance with the ambient standards and the limitations were changed. Any proposed increase above these levels would require a permit modification because these numbers were used in developing the emission inventory and dispersion modeling for the facility.

The second proposed action included three conveyor transfers on the ore/waste stacker and three conveyor transfer points from the apron feeder to the SAG mill. The action was approved and a complete list of emission controls was placed in the permit. These controls were used in the emission inventory calculations.

The third request was to increase the soil stockpile from 5 acres to 19 acres and the disturbed area from 150 to 200 acres. Also, Stillwater constructed and implemented the twin adit proposal that was approved by the Agencies in the supplemental EIS.

Stillwater constructed an overhead power line to supply the main source of electric power. On-site electrical generators are used for emergencies only. MAQP #2653-02 contained notification requirements that stated, "Prior to the commencement of operation, the recipient must submit to the Department a description of the electrical generation system to be used, including any emission data available." This condition was removed.

Stillwater also requested clarification of the language in the Ambient Air Monitoring Plan that requires Stillwater to begin monitoring at the time the facility enters a production status. **MAQP #2653-03** replaced MAQP #2653-02.

On February 15, 2001, Stillwater submitted a complete permit application for proposed changes to MAQP #2653-03. As part of the current permit action, Stillwater proposed to construct and operate a surface ore crushing system and associated ore handling facilities. The surface crushing system was to be used in place of the previously permitted underground crushing system until the underground crusher was built and ready for installation. After completion of the underground crushing system, Stillwater will maintain the surface crushing system for emergency use and back-up operations.

In addition, Stillwater proposed to remove the concentrate dryer and all associated requirements from the air quality permit. The concentrate dryer was to be constructed at the East Boulder site; rather, it was constructed and put into operation at the Stillwater Mining Company – Columbus facility. **MAQP #2653-04** replaced permit #2653-03.

On July 12, 2006, with an additional submittal on September 22, 2006, Stillwater notified the Department of various changes to the facility in accordance with the provisions contained in ARM 17.8.745 (de minimis rule) and also requested an administrative permit amendment to the existing permit under the provisions contained in ARM 17.8.764(1)(b). Specifically, Stillwater proposed the following:

- Addition of two new mine portal heaters under the de minimis rule,
- Removal of the daily ore production limit of 3500 tons per day and maintenance of the annual ore production limit of 730,000 tons per year under an administrative amendment,
- Removal of the ambient PM₁₀ air quality monitoring requirements under an administrative amendment, and
- A change to the emission inventory contained in the permit analysis to reflect updated emission factors applicable to facility operations.

Because potential emissions from two new mine portal heaters were less than 15 tons per year (cumulative), the project met the criteria for a de minimis change. Because removal of the ton per day ore production limit would not result in any annual increase in allowable emissions, the proposed change was accomplished under an administrative amendment. Further, through historic ambient air quality monitoring activities, Stillwater demonstrated to the Department's satisfaction that cessation of the applicable ambient PM₁₀ monitoring program was appropriate. Finally, through source testing, Stillwater demonstrated to the Department's satisfaction that the emission factors previously used to estimate emissions from facility mine ventilation exhaust were no longer appropriate. The existing permit was amended to include the above-cited changes. **MAQP #2653-05** replaced MAQP #2653-04.

D. Current Permit Action

On March 29, 2018 the Department received a request from Stillwater to modify MAQP 2653-05 to increase the annual ore production limitation, increase the annual waste rock limitation, and classify the mine ventilation source as a fugitive source. Stillwater is requesting an annual ore production increase from 730,000 tons of ore to 1,095,000 tons of ore. This increase is equal to an average daily production rate of 3,000 tons per day. Previous permits have determined that a rate of 3,500 or less should be maintained to ensure there are no impacts to ambient air quality standards.

The increase in ore production will be handled with the currently permitted equipment; there will be no new equipment added as part of this action. However, certain activities and units will have an increase in operation to accommodate the increased throughput. These include:

- #3 Coarse Ore Dumping at Trestle
- #5 Waste Rock Dumping at Trestle
- #7/01 Haul Roads >50T
- #7/02 Haul Trucks & Loaders <50T
- #7/03 Light Vehicles
- #19 Waste Loading

- #20/01 Load, Haul, Dump Ore into Grizzly by Loader
- #21 Surface Crushing Ore
- #22/01 Ore Conveyed from Apron Feed to Mill
- #22/02 Ore Conveyed from Crusher to Stacker
- #23/02 Borrow material removal
- #23/03 Waste at Tailings Embankment
- #26 Pile Forming – Radial Stacker

MAQP #2653-06 replaces MAQP #2653-05.

E. Response to Public Comments

Person/Group Commenting	Permit Reference	Comment	Department Response
Stillwater	Permit Analysis – Emission Inventory – Emission Calculation Details table	Point 7/03, Light Vehicles PM _{2.5} should be 0.04, not 0.44	The Department has corrected the error
Stillwater	Permit Analysis – Emission Inventory – Emission Calculation Details table	Point 10, Generator CO 12.11 is hourly rate – annual rate should be 3.03	The Department has corrected the error
Stillwater	Permit Analysis – Emission Inventory – Emission Calculation Details table	Point 23/01, Process Rate Units should be tons/yr	The Department has corrected the error
Stillwater	Permit Analysis – Emission Inventory – Emission Calculation Details table	Point 24/04 & 26, Process Rate Units should be tons/yr	The Department has corrected the error
Stillwater	Permit Analysis – Emission Inventory – Emission Calculation Details table	Point 27/01, Pollutant tpy PM = 0.00001, PM ₁₀ = 0.00003, PM _{2.5} = 0.00003	The Department has corrected the error
Stillwater	Permit Analysis – Emission Inventory – Emission Calculation Details table	Point 27/02, Emission Factor tpy PM = 0.0069, PM ₁₀ = 0.0033, PM _{2.5} = 0.0033	The Department has corrected the error
Stillwater	Permit Analysis – Emission Inventory – Emission Calculation Details table	Point 27/07, Emission Factor tpy PM ₁₀ = 0.001	The Department has corrected the error
Stillwater	Environmental Assessment	Page 1, paragraph 5 has a “Knife River” reference – should be removed	The Department has corrected the error
Stillwater	Environmental Assessment	Page 2, point C – East Boulder’s operating permit # is 00149. The operating permit #00118 referenced is for the Nye Mine site	The Department has corrected the error

F. Additional Information

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

II. Applicable Rules and Regulations

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

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

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

Stillwater shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

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

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

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM₁₀
11. ARM 17.8.230 Fluoride in Forage

Stillwater must maintain compliance with the applicable ambient air quality standards.

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

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.
2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, Stillwater 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 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). This facility is an NSPS affected source because it meets the definition of any NSPS subpart defined in 40 CFR Part 60.

- a. 40 CFR 60, Subpart A – General Provisions apply to all equipment or facilities subject to an NSPS Subpart as listed below:
 - b. 40 CFR 60, Subpart LL - Metallic Mineral Processing Plants requires opacity limitations of 10% on process fugitive emissions, 7% on baghouse stack emissions, and a stack particulate emission limitation of 0.05 grams per dry standard cubic meter. Because Stillwater is a platinum/palladium mining and ore processing facility, Stillwater is subject to Subpart LL. All process operations at this facility are affected facilities, unless otherwise excluded in 40 CFR 60, Subpart LL.
- D. ARM 17.8, Subchapter 5 – Air Quality Permit Application, Operation, and Open Burning Fees, including, but not limited to:
1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. Stillwater submitted the appropriate permit application fee for the current permit action.
 2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.
- An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that prorate the required fee amount.
- E. ARM 17.8, Subchapter 7 – Permit, Construction, and Operation of Air Contaminant Sources, including, but not limited to:
1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
 2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit modification to construct, modify, or use any air contaminant sources that have the potential to emit (PTE) greater than 25 tons per year of any pollutant. Stillwater has a PTE greater than 25 tons per year of particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀), oxides of nitrogen (NO_x), and carbon monoxide (CO); therefore, an air quality permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.
4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.
5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, modification, or use of a source. Stillwater 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. Stillwater submitted an affidavit of publication of public notice for the March 29, 2018 issue of the *Big Timber Pioneer*, a newspaper of general circulation in the Town of Big Timber in Stillwater County, as proof of compliance with the public notice requirements.
6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.
7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.
8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.
9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving Stillwater of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.*
10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.
11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or modified source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.

12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).
 13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.
 14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of intent to transfer, including the names of the transferor and the transferee, is sent to the Department.
- F. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:
1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.
 2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications-
-Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.
This facility is not a major stationary source because this facility is not a listed source and the facility's PTE is below 250 tons per year of any pollutant (excluding fugitive emissions).
- G. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:
1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:
 - a. PTE > 100 tons/year of any pollutant;
 - b. PTE > 10 tons/year of any one hazardous air pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or

- c. PTE > 70 tons/year of particulate matter with an aerodynamic diameter of 10 microns or less (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 #2653-06 for Stillwater, the following conclusions were made:
 - a. The facility's PTE is less than 100 tons/year for any pollutant.
 - b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year for all HAPs.
 - c. This source is not located in a serious PM₁₀ nonattainment area.
 - d. This facility is subject to a current NSPS (40 CFR 60, Subpart LL).
 - e. This facility is not subject to any current NESHAP.
 - f. This source is not a Title IV affected source, or a solid waste combustion unit.
 - g. This source is not an EPA designated Title V source.

Based on these facts, the Department determined that Stillwater will be a minor source of emissions as defined under Title V. However, if minor sources subject to NSPS are required to obtain a Title V Operating Permit, Stillwater will be required to obtain a Title V Operating Permit.

III. BACT Determination

A BACT determination is required for each new or modified source. Stillwater 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.

The current permit action is for an increase in the annual ore production and waste rock handling limits. No new units are being added or modified, therefore a BACT analysis for this permit action is not necessary.

IV. Emission Inventory

Stillwater Mining Company

Underground platinum/palladium mine, ore processing plant, and tailings disposal facility

East Boulder Operations

Potential Emissions Summary - Particulate Matter									
Point #	Emitting Unit	Uncontrolled Emissions			Control	Percent	Controlled Emissions		
		PM (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)			PM (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)
1/01	Disturbed Areas 1a-1h	3.82	2.25	0.25	State Derived	30%-100%	3.82	2.25	0.25
2	Mine Ventilation Exhaust	33.47	12.55	4.18	None		33.47	12.55	4.18
3	Coarse Ore Dumping @ Trestle	5.48	2.19	1.75	Water spray as needed	50%	2.74	1.10	0.88
5	Waste Rock Dumping @ Trestle	5.48	2.19	1.75	Water spray as needed	50%	2.74	1.10	0.88
7/01	Haul Roads >50T	96.62	24.62	2.46	Water spray and/or chemical dust suppressant as necessary	85%	14.49	3.69	0.37
7/02	Haul Trucks & Loaders <50T	86.09	21.94	2.19	Water spray and/or chemical dust suppressant as necessary	85%	12.91	3.29	0.33
7/03	Light Vehicles	38.89	9.91	0.99	Water spray and/or chemical dust suppressant as necessary	85%	5.83	1.49	0.15
10	Diesel Generators (3, Surface)	0.25	0.20	0.20	None		0.25	0.20	0.20
12	Propane (Surface)	0.14	0.14	0.14	Good combustion practices		0.14	0.14	0.14
13	Topsoil Removal	1.18	0.59	0.18	None		1.18	0.59	0.18
14	Topsoil Loading/Dumping/Screening	1.18	0.59	0.18	None		1.18	0.59	0.18
15	Bulk Loading (Borrow)	0.03	0.01	Unknown	None		0.03	0.01	Unknown
19	Waste Loading (from Trestle Drop into Bench Stockpile by Loader)	10.95	5.48	1.64	Water spray as necessary	50%	5.48	2.74	0.82
20/01	Ore Load, Haul, Dump Ore into Grizzly by Loader	10.95	5.48	1.64	Water spray as necessary, minimize fall distance	50%	5.48	2.74	0.82

Potential Emissions Summary - Particulate Matter									
Point #	Emitting Unit	Uncontrolled Emissions			Control	Percent	Controlled Emissions		
		PM (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)			PM (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)
20/02	Ore Loading (from Trestle Drop into Bench Stockpile by Loader)	10.95	5.48	1.64	Water spray as necessary, minimize fall distance	50%	5.48	2.74	0.82
21	Surface Crushing Ore (Nordberg Crusher)	27.38	10.95	8.21	Fabric filter	99%	0.27	0.11	0.08
22/01	Ore Conveyed from Apron Feed to Mill	10.95	4.38	1.64	Enclosed	67%	3.61	1.45	0.54
22/02	Ore Conveyed from Crusher to Stacker	10.95	4.38	1.64	Enclosed, fabric filter	99%	0.11	0.04	0.02
23/01	Native Borrow @ Tailings Embankment	6.00	2.00	0.40	None		6.00	2.00	0.40
23/02	Borrow material removal	5.00	2.50	0.75	None		5.00	2.50	0.75
23/03	Waste from Stockpile Below Stacker to Tailings Embankment	10.95	4.38	1.64	Water spray as necessary, minimize fall distance	50%	5.48	2.19	0.82
23/04	Waste @ Tailings Embankment (Spreading)	5.48	2.19	0.44	Water spray as necessary, minimize fall distance	50%	2.74	1.10	0.22
24/01	Crushing Bedding Material	0.0027	0.0012	0.0001	None		0.0027	0.0012	0.0001
24/02	Conveying Bedding Material	0.01	0.002	0.000	Enclosed, water spray as necessary	50%	0.00	0.001	0.000
24/03	Material Handling - Bedding Material	0.01	0.002	0.000	None		0.01	0.002	0.000
24/04	Screening - Bedding Material	0.00006	0.00002	0.00002	Wet Material		0.00006	0.00002	0.00002
26	Pile Forming - Radial Stacker	5.48	2.19	0.11	Water spray as necessary, minimize fall distance	50%	2.74	1.10	0.05
27/01	Cement Batch Plant - Cement Unloading - Silo	0.05	0.04	0.04	Fabric filter	100%	0.0001	0.0000	0.0000
27/02	Dumping Gravel into Stockpiles	0.0020	0.0009	0.0009	None		0.0020	0.0009	0.0009
27/03	Dumping Sand into Stockpiles	0.0005	0.0002	0.0002	None		0.0005	0.0002	0.0002
27/04	Gravel Mixer Loading to Truck	0.0020	0.0009	0.0009	None		0.0020	0.0009	0.0009
27/05	Sand Mixer Loading to Truck	0.0005	0.0002	0.0002	None		0.0005	0.0002	0.0002
27/06	Gravel Transfer to Bin	0.0020	0.0009	0.0009	None		0.0005	0.0002	0.0009

Potential Emissions Summary - Particulate Matter									
Point #	Emitting Unit	Uncontrolled Emissions			Control	Percent	Controlled Emissions		
		PM (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)			PM (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)
27/07	Sand Transfer to Bin	0.0005	0.0002	0.0002	None		0.0020	0.0009	0.0002
27/08	Weigh Hopper Unloading	0.0548	0.0353	0.0353	None		0.0548	0.0353	0.0353
	TOTAL	387.77	126.66	34.11			121.22	45.73	13.11

Potential Emissions Summary - Gaseous Emissions							
Point #	Emitting Unit	Uncontrolled Emissions					
		SO ₂ (tpy)	NO _x (tpy)	CO (tpy)	VOC (tpy)	PB (tpy)	Total HAPS (tpy)
2	Mine Ventilation Exhaust	27.87	64.04	47.52	Unknown	Unknown	Unknown
10	Diesel Generators (3, Surface)	1.44	11.40	3.03	0.29	Unknown	0.0055
12	Propane (Surface)	negligible	2.60	1.50	0.16	Unknown	Unknown
	TOTAL	20.72	58.30	37.40	0.45	0.00	0.01

** CO = carbon monoxide
 (fil) = filterable
 HAPs = hazardous air pollutants
 hp = horsepower
 lb = pound
 N/A = not applicable
 ND = no data available
 NO_x = oxides of nitrogen
 PM = particulate matter

PM₁₀ = particulate matter with an aerodynamic diameter of 10 microns or less
 PM_{2.5} = particulate matter with an aerodynamic diameter of 2.5 microns or less
 SO₂ = sulfur dioxide
 TPH = tons per hour
 TPY = tons per year
 VOC = volatile organic compounds
 yr = year

Emission Calculation Details										
Point Name/Segment Description	Point #	Annual Process Rate	Process Rate Units	Emission Factor	Emission Factor Units	Calc Method	Emission Factor Source	% Control	Pollutant Tons/Year	Pollutant
Complete Backfilled, and Finish Graded (<2 Yr)	1.a	0	Acres	380	lbs/Acre	U	FIRE	90%	0.9	PM ₁₀ -Fil
				41.8					0.1	PM _{2.5} -Fil
				760					1.7	PT
Complete Backfilled, and Finish Graded (>2 Yr)	1.b	0	Acres	380	lbs/Acre	U	FIRE	100%	0.0	PM ₁₀ -Fil
				41.8					0.0	PM _{2.5} -Fil
				760					0.0	PT
Facilities	1.c	0	Acres	380	lbs/Acre	U	FIRE	100%	0.0	PM ₁₀ -Fil
				41.8					0.0	PM _{2.5} -Fil
				760					0.0	PT
Partially Backfilled, and	1.d	0	Acres	380	lbs/Acre	C	FIRE	30%	0.4	PM ₁₀ -Fil
				41.8					0.0	PM _{2.5} -Fil

Emission Calculation Details										
Point Name/ Segment Description	Point #	Annual Process Rate	Process Rate Units	Emission Factor	Emission Factor Units	Calc Method	Emission Factor Source	% Cont- rol	Pollutant Tons/Year	Pollutant
Finish Graded(<1 Yr)				760					0.8	PT
Partially Backfilled, and Finish Graded(<1 Yr)	1.e	0	Acres	380	lbs/Acre	C	FIRE	90%	0.1	PM ₁₀ -Fil
				41.8					0.0	PM _{2.5} -Fil
				760					0.2	PT
Pits, Peaks, Soil Stripping	1.f	0	Acres	380	lbs/Acre	C	FIRE	30%	0.1	PM ₁₀ -Fil
				41.8					0.0	PM _{2.5} -Fil
				760					0.3	PT
Tailings- Dry Area	1.g	0	Acres	380	lbs/Acre	C	FIRE	50%	1.0	PM ₁₀ -Fil
				41.8					0.1	PM _{2.5} -Fil
				760					2.1	PT
Tailings- Wet	1.h	0	Acres	380	lbs/Acre	C	FIRE	100%	0.0	PM ₁₀ -Fil
				41.8					0.0	PM _{2.5} -Fil
				760					0.0	PT
Mine Ventilation Exhaust	2	8760	hr/yr	0.0015	gr/dscf	U	Source Testing July 2017 - EEMC at Brownlee	--	33.47	PM
				0.001125	gr/dscf	U	Source Testing July 2017 - EEMC at Brownlee	--	12.55	PM ₁₀
				0.00075	gr/dscf	U	Source Testing July 2017 - EEMC at Brownlee	--	4.18	PM _{2.5}
				1.0	ppm v/v3	U	Source Testing July 2017 - EEMC at Brownlee	--	27.87	SO ₂
				3.2	ppm v/v3	U	Source Testing July 2017 - EEMC at Brownlee	--	64.04	NO _x
				3.9	ppm v/v3	U	Source Testing July 2017 - EEMC at Brownlee	--	47.52	CO
Coarse Ore Dumping @ Trestle	3	1,095,000	tons/yr	0.01	lb/ton	C	AP-42 Section 11.24 (8/82) Table 11.24-2	50%	2.74	PM
				0.004					1.10	PM ₁₀
				0.0032					0.88	PM _{2.5}

Emission Calculation Details										
Point Name/ Segment Description	Point #	Annual Process Rate	Process Rate Units	Emission Factor	Emission Factor Units	Calc Method	Emission Factor Source	% Cont- rol	Pollutant Tons/Year	Pollutant
Waste Rock Dumping @ Trestle	5	1,095,000	tons/yr	0.01	lb/ton	C	AP-42 Section 11.24 (8/82) Table 11.24-2	50%	2.74	PM
				0.004					1.10	PM ₁₀
				0.0032					0.88	PM _{2.5}
Haul Roads >50T	7/01	30,000	miles/yr	6.44	lb/VMT	C	AP-42 Section 13.2.2, (11/06) Unpaved Roads	85%	14.49	PM
				1.64					3.69	PM ₁₀
				0.16					0.37	PM _{2.5}
Haul Roads <50T	7/02	30,000	miles/yr	5.74	lb/VMT	C	AP-42 Section 13.2.2, (11/06) Unpaved Roads	85%	12.91	PM
				1.46					3.29	PM ₁₀
				0.15					0.33	PM _{2.5}
Light Vehicles	7/03	53,900	miles/yr	1.44	lb/VMT	C	AP-42 Section 13.2.2, (11/06) Unpaved Roads	85%	5.83	PM
				0.37					1.49	PM ₁₀
				0.04					0.15	PM _{2.5}
Diesel Generators (3, Surface)	10	52,000 0.137	gal/yr MMBtu /gal	0.0697	lb/MMBtu	U	AP-42 Section 3.4, Table 3.4- 2 (10/96) AP-42 Section 3.4, Table 3.4- 1 (10/96) AP-42 Section 3.3, Table 3.3-1 (10/96)	0%	0.25	PM
				0.0573					0.20	PM ₁₀
				0.0556					0.20	PM _{2.5}
				0.40					1.44	SO ₂
				0.85					3.03	CO
				0.0819					0.29	VOC
				3.2					11.40	NO _x
Propane (Surface)	12	400,000	gal/yr	0.7	lb/10 ³ gal	U	AP-42 Section 1.5, Table 1.5- 1 (07/08) Liquified Petroleum Gas Combustion	0%	0.14	PM
				negligible					negligible	SO ₂
				13					2.60	NO _x
				7.5					1.50	CO
				0.8					0.16	VOC
Topsoil Removal	13	236,321	tons/yr	0.010	--	U	FIRE	0%	1.18	PM
				0.0050					0.59	PM ₁₀
				0.0015					0.18	PM _{2.5}
Topsoil Loading /Dumping/ Screening	14	236,321	tons/yr	0.010	--	U	FIRE	0%	1.18	PM
				0.0050					0.59	PM ₁₀
				0.0015					0.18	PM _{2.5}
Bulk Loading (Borrow)	15	1,500	tons/yr	0.036	lb/ton	U	AP-42 Section 11.19.2 (8/04) Crushed	0%	0.03	PM

Emission Calculation Details										
Point Name/ Segment Description	Point #	Annual Process Rate	Process Rate Units	Emission Factor	Emission Factor Units	Calc Method	Emission Factor Source	% Cont- rol	Pollutant Tons/Year	Pollutant
				0.009			Stone Processing and Pulverized Mineral Processing Table 11.19.2- 2		0.01	PM ₁₀
				No data					Unknown	PM _{2.5}
Waste Loading (from Trestle Drop into Bench Stockpile by Loader)	19	1,095,000	tons/yr	0.010	--	C	FIRE	50%	5.48	PM
				0.0050					2.74	PM ₁₀
				0.0015					0.82	PM _{2.5}
Ore Load, Haul, Dump Ore into Grizzly by Loader	20/ 01	1,095,000	tons/yr	0.010	--	C	FIRE	50%	5.48	PM
									2.74	PM ₁₀
									0.82	PM _{2.5}
Surface Crushing Ore (Nordberg Crusher)	21	1,095,000	tons/yr	0.05	lb/ton	C	AP-42 Section 11.24, (8/82) Table 11.24-2 (High Moisture Ore - Secondary Crushing) Metallic Mineral Processing	99.0%	0.27	PM
				0.02					0.11	PM ₁₀
				0.015					0.08	PM _{2.5}
Ore Conveyed from Apron Feed to Mill	22/01	1,095,000	tons/yr	0.010	--	C	FIRE	67.0%	3.61	PM
				0.0040					1.45	PM ₁₀
				0.0015					0.54	PM _{2.5}
Ore Conveyed from Crusher to Stacker	22/02	1,095,000	tons/yr	0.010	--	C	AP-42 Section 11.24, (8/82) Table 11.24-2 (High Moisture Ore - Material Handling & Transfer – All Materials Except Bauxite) Metallic Mineral Processing	99.0%	0.11	PM
				0.0040					0.04	PM ₁₀
				0.0015					0.02	PM _{2.5}
Native Borrow @ Tailings Embankment	23/01	1,000,000	tons/yr	0.012	lb/ton	U	AP-42 Section 11.9, (7/98) Western Surface Coal Mining Table 11.9-4	0%	6.00	PM
				0.004				0%	2.00	PM ₁₀

Emission Calculation Details										
Point Name/ Segment Description	Point #	Annual Process Rate	Process Rate Units	Emission Factor	Emission Factor Units	Calc Method	Emission Factor Source	% Cont- rol	Pollutant Tons/Year	Pollutant
				0.001			as referenced by AP-42 Section 13.2.3 (7/95) Heavy Construction Operations	0%	0.40	PM _{2.5}
Borrow Material Removal	23/02	1,000,000	tons/yr	0.010	--	U	FIRE	0%	5.00	PM
				0.0050					2.50	PM ₁₀
				0.0015					0.75	PM _{2.5}
Waste from Stockpile Below Stacker to Tailings Embankment	23/03	1,095,000	tons/yr	0.01	lb/ton	C	AP-42 Section 11.24, (8/82) Table 11.24-2 (High Moisture Ore - Material Handling & Transfer - All Materials Except Bauxite) Metallic Mineral Processing	50%	5.48	PM
				0.004					2.19	PM ₁₀
				0.0015					0.82	PM _{2.5}
Waste @ Tailings Embankment (Spreading)	23/04	1,095,000	tons/yr	0.01	lb/ton	C	AP-42 Section 11.24, (8/82) Table 11.24-2 (High Moisture Ore - Material Handling & Transfer - All Materials Except Bauxite) Metallic Mineral Processing	50%	2.74	PM
				0.004					1.40	PM ₁₀
				0.001					0.22	PM _{2.5}
Crushing Bedding Material	24/01	1,000	tons/yr	0.0054	lb/ton	U	AP-42 Section 11.19.2, (8/04) Table 11.19.2- 2 (Crushed Stone Processing Operations) Crushed Stone Processing and Pulverized Mineral Processing	0%	0.0027	PM
				0.0024					0.0012	PM ₁₀
				0.0002					0.0001	PM _{2.5}

Emission Calculation Details										
Point Name/ Segment Description	Point #	Annual Process Rate	Process Rate Units	Emission Factor	Emission Factor Units	Calc Method	Emission Factor Source	% Cont- rol	Pollutant Tons/Year	Pollutant
Conveying Bedding Material	24/02	1,000	tons/yr	0.0054	lb/ton	C	AP-42 Section 11.19.2, (8/04) Table 11.19.2- 2 (Crushed Stone Processing Operations) Crushed Stone Processing and Pulverized Mineral Processing	50%	0.0027	PM
				0.0024					0.0012	PM ₁₀
				0.0002					0.0001	PM _{2.5}
Material Handling – Bedding Material	24/03	1,000	tons/yr	0.0054	lb/ton	U	AP-42 Section 11.19.2, (8/04) Table 11.19.2-2 (Crushed Stone Processing Operations) Crushed Stone Processing and Pulverized Mineral Processing	0%	0.0054	PM
				0.0024					0.0024	PM ₁₀
				0.0002					0.0002	PM _{2.5}
Material Handling – Bedding Material Screening	24/04	25	tons/yr	0.0022	lb/ton	U	AP-42 Section 11.19.2, (8/04) Table 11.19.2-2 (Crushed Stone Processing Operations) Screening Controlled	0%	0.0001	PM
				0.00074					0.0000	PM ₁₀
				0.00074					0.0000	PM _{2.5}
Pile Forming – Radial Stacker	26	1,095,000	tons/yr	0.01	lb/ton	C	AP-42 Section 11.24, (8/82) Table 11.24-2 (High Moisture Ore - Material Handling & Transfer - All Materials Except Bauxite) Metallic Mineral Processing	50%	2.74	PM
				0.004					1.10	PM ₁₀
				0.0002					0.05	PM _{2.5}

Emission Calculation Details										
Point Name/ Segment Description	Point #	Annual Process Rate	Process Rate Units	Emission Factor	Emission Factor Units	Calc Method	Emission Factor Source	% Cont- rol	Pollutant Tons/Year	Pollutant
Cement Batch Plant – Cement Unloading – Silo	27/01	150	tons/yr	0.73	lb/ton	C	AP-42 Section 11.12 (6/06) Table 11.12-2 (Cement unloading to elevated storage silo - pneumatic) Concrete Batching	99.9%	0.00001	PM
				0.47					0.00003	PM ₁₀
				0.47					0.00003	PM _{2.5}
Dumping Gravel into Stockpiles	27/02	570	tons/yr	0.0069	lb/ton	U	AP-42 Section 11.12 (6/06) Table 11.12-2 (Aggregate transfer) Concrete Batching	0%	0.0020	PM
				0.0033					0.0009	PM ₁₀
				0.0033					0.0009	PM _{2.5}
Dumping Sand into Stockpiles	27/03	35	tons/yr	0.0020	lb/ton	U	AP-42 Section 11.12 (6/06) Table 11.12-2 (Aggregate transfer) Concrete Batching	0%	0.0005	PM
				0.001					0.0002	PM ₁₀
				0					0	PM _{2.5}
Gravel Mixer Loading to Truck	27/04	46	tons/d	0.0069	lb/ton	U	AP-42 Section 11.12 (6/06) Table 11.12-2 (Aggregate transfer) Concrete Batching	0%	0.0020	PM
				0.0033					0.0009	PM ₁₀
				0.0033					0.0009	PM _{2.5}
Sand Mixer Loading to Truck	27/05	35	tons/d	0.002	lb/ton	U	AP-42 Section 11.12 (6/06) Table 11.12-2 (Aggregate transfer) Concrete Batching	0%	0.0005	PM
				0.01					0.0002	PM ₁₀
				0					0	PM _{2.5}
Gravel Transfer to Bin	27/06	46	tons/d	0.0069	lb/ton	U	AP-42 Section 11.12 (6/06) Table 11.12-2 (Aggregate transfer) Concrete Batching	0%	0.0020	PM
				0.0033					0.0009	PM ₁₀
				0.0033					0.0009	PM _{2.5}
Sand Transfer to Bin	27/07	35	tons/d	0.002	lb/ton	U	AP-42 Section 11.12 (6/06) Table 11.12-2 (Aggregate transfer) Concrete Batching	0%	0.0005	PM
				0.001					0.0002	PM ₁₀
				0					0	PM _{2.5}

Emission Calculation Details										
Point Name/ Segment Description	Point #	Annual Process Rate	Process Rate Units	Emission Factor	Emission Factor Units	Calc Method	Emission Factor Source	% Cont- rol	Pollutant Tons/Year	Pollutant
Weigh Hopper Unloading	27/08	12	tons/d	0.73	lb/ton	U	AP-42 Section 11.12 (06/06) Table 11.12-2 (Cement unloading to elevated storage silo - pneumatic) Concrete Batching	0%	0.0548	PM
				0.47					0.0353	PM ₁₀
				0.47					0.0353	PM _{2.5}

V. Existing Air Quality

Baseline air quality (particulate) was monitored in the area during two periods prior to permitted operation of the Stillwater's East Boulder Mine. The first monitoring was conducted during portions of 1981 and 1982 and the second was during portions of 1988 and 1989. All historic baseline values are well below the applicable ambient air quality standards. Further, as required by previous permits, Stillwater operated an ambient monitoring network and showed an average annual PM₁₀ concentration of 5.3 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) of ambient air, which was approximately 10% of the PM₁₀ ambient air quality standard of $50 \mu\text{g}/\text{m}^3$. Stillwater demonstrated to the Department's satisfaction that cessation of the ambient PM₁₀ monitoring program was appropriate. The monitoring requirement was removed in MAQP #2653-05. The area is currently in compliance with the applicable ambient air quality standards for PM₁₀.

The project area is classified as a Class II area under the Prevention of Significant Deterioration (PSD) regulations. This Class II area includes the Absaroka-Beartooth Wilderness area to the south. The nearest PSD Class I area is Yellowstone National Park, approximately 15 miles south of the project area. In the immediate project area there are no significant sources of air contaminants. Local sources for air pollutants include slash burning and unpaved roads.

VI. Ambient Air Impact Analysis

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

VII. Taking or Damaging Implication Analysis

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

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

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

VIII. Environmental Assessment

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

Analysis Prepared By: R. Payne
Date: 4/20/2018

DEPARTMENT OF ENVIRONMENTAL QUALITY
Air, Energy & Mining Division
Air Quality Bureau
P.O. Box 200901, Helena, Montana 59620
(406) 444-3490

ENVIRONMENTAL ASSESSMENT (EA)

Issued To: Stillwater Mining Company – East Boulder Operations

Montana Air Quality Permit number (MAQP): 2653-06

EA Draft: 6/12/2018

EA Final: 7/9/2018

Permit Final: 7/25/2018

1. *Legal Description of Site:* The facility is located approximately 11 miles south of McLeod and 32 miles south of Big Timber in Sections 2, 3, 11, 19, 26, and 34, Township 4 South, Range 13 East, in Sweet Grass County, MT, and is known as the East Boulder Mine.
2. *Description of Project:* Stillwater is proposing to increase the annual ore production limitation, increase the annual waste rock limitation, and classify the mine ventilation source as a fugitive source. Stillwater is requesting an annual ore production increase from 730,000 tons of ore to 1,095,000 tons of ore. This increase is equal to an average daily production rate of 3,000 tons per day. Previous permits have determined that a rate of 3,500 or less should be maintained to ensure there are no impacts to ambient air quality standards.
3. The increase in ore production will be handled with the currently permitted equipment; there will be no new equipment added as part of this action.
4. *Objectives of Project:* Increase ore production and waste handling to produce more platinum/palladium to meet increasing demands.
5. *Alternatives Considered:* In addition to the proposed action, the Department also considered the “no-action” alternative. The “no-action” alternative would deny the issuance of the MAQP to the facility. Stillwater would be denied the opportunity to increase their throughput and meet market demands for platinum/palladium. Any potential air emission increases that would be authorized by issuing the MAQP would not occur. However, the Department does not consider the “no-action” alternative to be appropriate because Stillwater has demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the “no-action” alternative was eliminated from further consideration. Other alternatives considered were discussed in the BACT analysis, Section III, in the permit analysis.
6. *A Listing of Mitigation, Stipulations, and Other Controls:* A list of enforceable conditions, including a BACT analysis, would be included in MAQP #2653-06.

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

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

A. *Terrestrial and Aquatic Life and Habitats*

The proposed project would allow for an increase in ore and waste rock production. Conditions requiring control mechanisms have been placed within MAQP #2653-06 to ensure that only minor air quality impacts would occur. Additionally, limitations established within MAQP #2653-06 would minimize air pollution. Overall, any adverse impact on terrestrial and aquatic life and habitats is anticipated to be minor.

B. *Water Quality, Quantity and Distribution*

This project would expect to have a limited effect on the water quality, quantity, and distribution due to the use of water for fugitive dust suppression. Emissions from the mine audit and surface equipment would be deposited at varying distance within the mine boundary and beyond depending upon particle size, location of release and immediate meteorological conditions. However, with the nature of pollutants and generally good dispersion in the area, only minor pollutant deposition on surface waters near the area are expected to occur. Any air emissions from this source would not likely impact groundwater. Water would be required for fugitive dust suppression within the mine site; however, water use is not expected to increase substantially with the current permit action and any water spray for dust suppression would likely result in the water being evaporated to the atmosphere shortly after its application which minimizes water quality concerns. Therefore, the Department has determined that the impacts to the water quality, quantity, and distribution would likely be minor.

C. *Geology and Soil Quality, Stability and Moisture*

The activities associated with the current permit action would be conducted within the boundaries of the existing Stillwater East Boulder Mine. Stillwater's Operating Permit No. 00149 states that there are no unusual or unstable geologic features or special reclamation considerations within the mine boundary. Furthermore, Operating Permit No. 00149 lists minimal impacts to soils because of operating the mine. MAQP #2653-06 would contain limitations and conditions to minimize emissions to areas beyond the permit boundary effectively reducing the potential impact. Therefore, the Department has determined that the impacts to the geology and soil quality, stability, and moisture related to the current permit action would likely be minor.

D. *Vegetation Cover, Quantity, and Quality*

The particulate matter emissions increase from this project would be expected to have a limited impact on the surrounding vegetation with respect to cover, quantity and quality. Any impacts from emissions or deposition of pollutants would be minor due to dispersion characteristics of the pollutants, prevailing atmospheric conditions (wind speed, wind direction, ambient temperature, etc.), and the conditions that would be placed in MAQP #2653-06.

E. *Aesthetics*

There would not be any changes to the aesthetics of the site because of this project. The site is currently an operating mine and would have the same appearance after the increase in production occurs. Visual impacts would be consistent with those found under normal operations. There would not be excessive noise or any change in light. Therefore, the Department has determined that there would not be any impacts to aesthetics related to the proposed project.

F. *Air Quality*

The air quality of the area would realize minor impacts from the proposed project because the facility would emit the following air pollutants: PM, PM₁₀, PM_{2.5}, NO_x, SO₂, CO and VOCs. These emissions would be minimized by limitations and conditions that would be included in MAQP #2653-06. While additional deposition of pollutants would occur because of the increased production, the Department determined that the impacts from deposition of pollutants would be minor due to dispersion characteristics of pollutants, the prevailing atmospheric conditions, and conditions that would be placed in MAQP #2653-06.

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

In an effort to identify any unique endangered, fragile, or limited environmental resources in the area, the Department completed a species of concern report through the environmental summary function shared by the Montana Natural Heritage Program, Natural Resource Information System (NRIS). The area was defined by the section, township, and range of the proposed location with an additional 1-mile buffer zone. Search results identified a number of species within the search radius. Species of concern include the Hoary Bat, Canada Lynx, Grizzly Bear, Wolverine, Brown Creeper, Cassin's Finch, Clark's Nutcracker, Golden Eagle, Great Gray Owl, Green-tailed Towhee, Northern Goshawk, Peregrine Falcon, and Yellowstone Cutthroat Trout. Because potential emission levels are minor, the Department has determined that there will be a minor disturbance to unidentified unique, endangered, fragile, or limited environmental resources in the area.

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

The proposed project would have minor impacts on the demands for the environmental resources of air, water and energy. Additional demand for water and

energy will be required for increased throughput activities and fugitive dust suppression. However, these demands are expected to be representative of current levels. Pollutant emissions generated from the proposed permit action would have limit demands on air because of the conditions placed in MAQP #2653-06. Overall, the Department determined that the demands on the environmental resource of water, air, and energy related to the current permit action would be minor.

I. *Historical and Archaeological Sites*

The current permit action would occur within the previously disturbed industrial site at the mine. According correspondence from the Montana State Historic Preservation Office, there is low likelihood of adverse disturbance to any known archaeological or historic site because of previous industrial disturbance within the area. Therefore, the Department determined that the likelihood that the proposed project would have an impact on historical or archaeological sites would be expected to be minor.

J. *Cumulative and Secondary Impacts*

The cumulative and secondary impacts from the proposed project on physical and biological receptors in the immediate area due to an increase in emissions from the proposed project would be expected to be minor. Air pollution from the facility would be controlled by the limitations and conditions in MAQP #2653-06. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as outlined within the air quality permit.

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

A. *Social Structures and Mores*

The proposed project would not create additional disruption to any native or traditional lifestyles or communities (social structures or mores) in the area as the area surrounding the project area is currently undeveloped agricultural or livestock grazing land. Furthermore, the project will occur within the boundary of the existing mine and the increase in activity would be representative of current use. The Department is not aware of any current utilization by native or traditional communities. Therefore, no known impact to social structures and mores would be expected.

B. *Cultural Uniqueness and Diversity*

The Department determined that the current permit action would not have any additional impact on the cultural uniqueness and diversity of this area of operation because the proposed project would occur within the previously disturbed industrial area. The surrounding area would remain unchanged because of the proposed project.

C. *Local and State Tax Base and Tax Revenue*

The current permit action could potentially increase the impact on the local and state tax base and tax revenue due to an increase in platinum/palladium production. However, the increase in production is scheduled to progress over an extended period of time. In turn, no additional employees are planned because of this project. Therefore, the cumulative impact to the tax base and revenue would be to be minor.

D. *Agricultural or Industrial Production*

The proposed project would occur within the previously disturbed industrial area; therefore, the Department would not expect an impact to or displacement of agricultural production. The proposed project does increase production from 730,000 tons of ore to 1,095,000 tons of ore; therefore an increase in industrial production would occur. The overall impacts to agricultural or industrial production would be expected to be minor.

E. *Human Health*

The proposed project would result in a minor increase in emissions due to an increase in ore production levels. However, MAQP #2653-06 contains limitations and conditions to ensure that the operations would maintain compliance with all applicable rules and standards. These rules and standards are designed to be protective of human health. Any impact to human health from the proposed project would be expected to be minor.

F. *Access to and Quality of Recreational and Wilderness Activities*

The proposed project would occur within the existing mine boundary and would not impact access to recreational and wilderness activities. Emissions from the proposed project may potentially present an increase in impacts to the quality of recreational activities; however, these impacts would be minimized because of the conditions that would be placed in MAQP #2653-06. No designated wilderness areas would be impacted by the project. Therefore, the associated impacts on the access to and quality of recreational and wilderness activities would likely be minor.

G. *Quantity and Distribution of Employment*

According to Stillwater, the proposed project would not necessitate the hiring of additional employees; therefore, no effect on the quantity and distribution of employment would be expected because of the expansion.

H. *Distribution of Population*

The proposed project would not impact the density or distribution of population and housing outside of those previously analyzed.

I. *Demands for Government Services*

There would be minor impacts on the demands for government services because additional time would be required by government agencies to issue MAQP #2653-06. In the future, the proposed project would not likely increase the need for compliance assistance resources beyond the current capacity. No other permits associated with this proposed project would be required. Overall, any demands for government services to regulate the facility or activities associated with the facility would be minor.

J. *Industrial and Commercial Activity*

The proposed project would result in a substantial increase in production from the mine site; however, the industrial activity would be commensurate with current operations and no additional equipment or manpower would be required. As such, only minor increases to industrial and commercial activity would be expected to occur.

K. *Locally Adopted Environmental Plans and Goals*

Overall, cumulative and secondary impacts from this project would result in only minor impacts to the social and economic aspects addressed. The Department believes that Stillwater would be expected to operate in compliance with all applicable rules and regulations as outlined in MAQP #2653-06.

L. *Cumulative and Secondary Impacts*

Recommendation: No Environmental Impact Statement (EIS) is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permitting action is for the increase in ore production at the East Boulder Mine. MAQP #2653-06 includes conditions and limitations to ensure the facility will operate in compliance with all applicable rules and regulations. In addition, there are no significant impacts associated with this proposal.

Other groups or agencies contacted or which may have overlapping jurisdiction: Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program – Montana Sage Grouse Conservation Program

Individuals or groups contributing to this EA: Department of Environmental Quality – Air Quality Bureau, Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

EA prepared by: R. Payne

Date: 04/23/2018