Montana Department of
ENVIRONMENTAL QUALITY
Steve Bullock, Governor
Tracy Stone-Manning, Director
P. O. Box 200901 Helena, MT 59620-0901 (406) 444-2544 Website: www.deq.mt.gov

November 3, 2014

Paul Lammers
RC Resources Inc.
7 Rock Creek Road
P.O. Box 1488
Noxon, MT 59853

Dear Mr. Lammers:

Montana Air Quality Permit #2414-03 is deemed final as of November 1, 2014, by the Department of Environmental Quality (Department). This permit is for an underground silver/copper mine and processing facility. 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
Air Permitting Section Supervisor
Air Resources Management Bureau
(406) 444-3626

Craig Henrikson P.E.
Environmental Engineer
Air Resources Management Bureau
(406) 444-6711

JM:CH
Enclosures

Montana Department of Environmental Quality
Permitting and Compliance Division

Montana Air Quality Permit #2414-03

RC Resources Inc.
7 Rock Creek Road
P.O. Box 1488
Noxon, MT 59853

November 1, 2014

MONTANA AIR QUALITY PERMIT

Issued To:	RC Resources Inc. 7 Rock Creek Road P.O. Box 1488 Noxon, MT 59853	MAQP: #2414-03 Application Complete: June 18, 2014 Preliminary Determination Issued: July 18, 2014 Preliminary Determination Re-Issued: Sept.30, 2014 Department's Decision Issued: October 16, 2014 Permit Final: November 1, 2014 AFS #: 089-0010

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to RC Resources Inc (RCR), 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

RCR propose construct and operate an underground silver/copper mine and processing facility known as the Rock Creek Mine with activities in Township 27N, Range 32W, Sections 26, 27, 34, and 35: and Township 26N, Range 32W, Sections 3, 10, 15, 22, 23, 27, 28, 29, 32, and 33, Sanders County, Montana.

B. Current Permit Action

The Department of Environmental Quality (Department) received an application from RCR on September 4, 2012; a revised application submittal on September 13, 2013; and a revised application submittal on March 25, 2014, and a final correspondence on June 18, 2014. The March 25, 2014, application submittal received along with the final correspondence represents the complete application reviewed by the Department. The proposed action is for the reissuance of expired permit MAQP #2414-02 for an underground copper/silver mine. The project is scheduled to occur in two different phases. The first phase would be an "evaluation phase" where the ore body would be characterized using an evaluation adit. A second "production phase" would expand operations to include two production adits, a mill site, and a mill tailings process area. The evaluation adit will be adjacent to the southwestern border of the Cabinet Mountains Wilderness Area.

A preliminary determination was posted on July 18, 2014, and was out for public comment through August 18, 2014. Upon a request from RCR, and consultation within the Department, it was determined that the July 18, 2014, version could not rely on the completion of the supplemental environmental impact statement (SEIS) which is being prepared by the Kootenai National Forest Service. Therefore, the Department has prepared its own environmental review to satisfy the Montana Environmental Policy Act (MEPA). Because of the addition of the Department's

MEPA document, the July 18, 2014, version of the permit will not be issued decision, and instead a revised preliminary determination is being issued for a 15 day public comment period. Comments received from the public comment period ending August 18, 2014, have been included in this new preliminary determination as well as any changes the Department is proposing as a result of those comments.

The facility's potential to emit criteria pollutants will be below major source thresholds for the Prevention of Significant Deterioration – New Source Review (PSD-NSR) program. The potential criteria pollutant and hazardous air pollutants will also be below major source thresholds and only a minor source Montana Air Quality Permit application is required.

C. Permitted Equipment

Emitting units are grouped into the following categories:

a. Underground Blasting

b. Underground Ore Processing and Handling

c. Aboveground Ore Processing and Handling Circuit

d. Fine Ore Processing and Handling Process

e. Emergency Power

f. Storage Piles

g. Insignificant Emission Sources
    1. Underground road fugitive emissions
    2. Small number of Building Heaters
    3. Diesel Fuel Storage Tanks
    4. Flotation Separation, Concentrate dewatering, and other "wet" handling operations

Section II: Conditions and Limitations

A. Emission Limitations

1. RCR shall be limited to a maximum of 10,000 tons of ore production per day as measured by the ball mill feed during any 24-hour rolling period (ARM 17.8.749).

2. RCR shall be limited to a maximum of 3.5 million tons of ore production (3,500,000) as measured by the ball mill feed during any rolling 12-month time period (ARM 17.8.749).

3. RCR shall be limited to a maximum of 1,500 tons of emulsion explosive usage during any rolling 12-month time period (ARM 17.8.749)

4. RCR shall not cause or authorize to be discharged into the atmosphere any fugitive emissions from process equipment not covered under 40 CFR 60, Subpart LL that exhibit 20% opacity or greater averaged over 6 consecutive minutes (ARM 17.8.308).

5. RCR shall limit process fugitive emissions for any affected facility as identified in 40 CFR 60, Subpart LL, from the date of the performance test (as required by Section II.C. 1) forward, to a maximum opacity of 10%. Stack emissions from any affected facility are limited to a maximum of 7% opacity unless using a wet scrubber (40 CFR Part 60, Subpart LL, ARM 17.8.308 and ARM 17.8.340).

6. RCR 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).

7. RCR shall treat all unpaved portions of the haul roads, access roads, parking lots, or general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.6 (ARM 17.8.749).

8. The below ground Scrubber #1 shall be operated and maintained per the manufacturer's recommendations (ARM 17.8.749).

9. Emissions from the above ground Scrubber #2 used to control emissions from the above ground ore processing and handling shall be limited to a maximum of 0.05 grams per dry standard cubic meter (g/dscm) (ARM 17.8.340 and 40 CFR Part 60, Subpart LL).

10. RCR shall install, calibrate, maintain, and operate equipment at the above ground Scrubber #2 to monitor the following parameters (ARM 17.8.340 and 40 CFR Part 60, Subpart LL):

    a. Change in pressure of the gas stream through the above ground Scrubber #2. The monitoring device must be certified by the manufacturer to be accurate within ±250 pascals (±1 inch water) gauge pressure and must be calibrated on an annual basis in accordance with manufacturer's instructions.

    b. Scrubbing liquid flow rate to the above ground Scrubber #2. The monitoring device must be certified by the manufacturer to be accurate within ±5 percent of design scrubbing liquid flow rate and must be calibrated on at least an annual basis in accordance with manufacturer's instructions.

11. Emissions from Baghouse #1 used to control emissions from the Fine Ore Processing and Handling Process shall be limited to a maximum of 0.05 g/dscm (ARM 17.8.749 and 40 CFR Part 60, Subpart LL).

12. RCR shall comply with all applicable standards, limitations, and the reporting, record keeping, and notification requirements contained in 40 CFR Part 60, Subpart LL, for all affected facilities (ARM 17.8.340 and 40 CFR Part 60).

13. RCR shall develop a Fugitive Dust Control Plan which identifies practices which will be used to control fugitive dust. This plan shall include the tailings impoundment site to control wind erosion from the tailings impoundment site. Prior to the commencement of operation, RCR shall submit the Fugitive Dust Control Plan to the Department for review and approval. For the tailings impoundment site, the plan must include at a minimum, cell configurations, a general sprinkler arrangement, and a narrative description of the tailings impoundment operation, including tonnage rates, initial area, and plans related to how the impoundment operation might change over the mine life (ARM 17.8.749).

14. Tailings wind erosion control shall be maintained during the interim period after the end of active tailings deposition and prior to final reclamation of the site (ARM 17.8.749 and ARM 17.8.752).

15. RCR shall comply with all applicable standards and limitations, and the reporting, recordkeeping and notification requirements contained in 40 CFR 60 Subpart IIII for the emergency generator (ARM 17.8.340 and 40 CFR 60 Subpart IIII).

16. RCR shall comply with all applicable standards and limitations, and the reporting, recordkeeping and notification requirements contained in 40 CFR 63 Subpart ZZZZ for the emergency generator (ARM 17.8.342 and 40 CFR 63 Subpart ZZZZ).

17. RCR shall comply with all applicable standards and limitations, and the reporting, recordkeeping and notification requirements contained in 40 CFR 60, Subpart A (ARM 17.8.340 and 40 CFR 60, Subpart LL).

B. Emission Control Practice and Requirements

RCR shall utilize the following emission control requirements (ARM 17.8.752):

1. Underground Blasting – Industry Best Operating Practices (BOPs) shall be used for minimizing blasting emissions, including hole size optimization, water spray after each blast, and minimizing time between charge loading and detonation.

2. Underground Primary Crusher – An underground scrubber (Scrubber #1) shall be used to control crushing particulate emissions.

3. Underground Screens/Feeders – Scrubber #1 shall be used to control screens/feeders particulate emissions.

4. Underground Coarse Ore Conveyor Transfers – Scrubber #1 shall be used to control underground conveyor transfers.

5. Aboveground Ore Processing and Handling Circuit –An aboveground scrubber (Scrubber #2) shall be used to control the above ground Coarse Ore Circuit.

6. Fine Ore Processing and Handling – A fabric filter baghouse (Baghouse #1) shall be used to control particulate emissions from the Fine Ore Processing and Handling Circuit

7. Emergency Generator – The diesel-fired generator rated for up to 560 kW shall meet 40 CFR Part 60 Subpart IIII requirements.

8. Evaluation Adit Waste Rock Pile – RCR shall revegetate the Waste Rock Pile the first growing season after its creation or if the conditions do not allow for revegetation, RCR shall address fugitives in the Fugitive Dust Control Plan

9. Production Adit Ore Stockpile – This temporary ore stockpile produced during construction of the production adit shall be processed during the early periods of the mill operation or shall be addressed in the Fugitive Dust Control Plan.

10. Tailings Impoundment – The tailings from the mill shall be slurried through a pipeline to a tailings impoundment site. The impoundment area shall be managed according to the Fugitive Dust Control Plan.

11. Metallic Concentrate Product – The metallic concentrate product shall be slurried through a pipeline to the Highway 200 Paste Plant.

12. U.S. Forest Service Road 150 – U.S. Forest Service Road 150 shall be paved from the highway to the mill site prior to beginning the production phase of the mine.. Sweeping and washing shall also be performed on Forest Service Road 150.

13. Highway 200 Load-Out Facility – A load-out rail facility (or equivalent) shall be constructed and metallic concentrate product shall be loaded for transportation to a melting processing plant.

C. Testing Requirements

1. The affected facilities under 40 CFR 60, Subpart LL shall be tested and demonstrate compliance with the emission limitations contained in Section II.A.9 and Section II.A.11 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 startup of the system (ARM 17.8.105, ARM 17.8.340, 40 CFR 60.8 and 40 CFR 60, Subpart LL).

2. The underground Scrubber #1, shall be tested to demonstrate performance against the 98 percent capture used in the emission inventory. This shall be tested within 60 days after achieving the maximum production rate at which the will be operated, but not later than 180 days after initial startup of the system (ARM17.8.105).

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

4. The Department of Environmental Quality (Department) may require further testing (ARM 17.8.105).

D. Operational Reporting Requirements

1. RCR shall supply the Department with annual production information for all emission points for the same year the emission inventory is being provided, 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). RCR 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. Amount of ore produced.

   b. Amount of diesel fuel used

   c. Amount of propane and natural gas used.

   d. Amount of explosives used

   e. Hours of operation of the emergency diesel-fired generator.

   f. An estimate of company vehicle miles traveled from Highway 200 to the mine and mill access points.

   g. Amount of disturbed acreage (including tailings impoundment area).

2. RCR 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 RCR as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

4. RCR shall document, by day, the ore production levels as measured by ball mill feed. RCR shall sum the total ore production during the previous 24 hours to verify compliance with the limitations in Section II.A.1. A written report of the compliance verification shall be submitted annually to the Department along with the annual emission inventory (ARM 17.8.749).

5. RCR shall document, by month, the ore production levels as measured by the ball mill feed. By the 25th day of each month, RCR shall total the total tons of ore processed for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.2. The information for each of the previous twelve months shall be submitted along with the annual emission inventory (ARM 17.8.749).

6. RCR shall document, by month, the tons of emulsion explosive used at the facility. By the 25th day of each month, RCR shall total the total tons of emulsion explosive used for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.3. The information for each of the previous twelve months shall be submitted along with the annual emission inventory (ARM 17.8.749).

7. RCR shall record the measurements of both the pressure drop across aboveground Scrubber #2 and the scrubbing liquid flow rate during the initial performance test of Scrubber #2 and at least weekly thereafter. RCR shall submit semiannual reports to the Department of occurrences when the measurements of the scrubber pressure loss (or gain) and liquid flow rate differ by more than ±30 percent from those measurements recorded during the most recent performance test. These reports must be submitted within 30 days following the end of the second and fourth calendar quarters (ARM 17.8.340 and 40 CFR Part 60, Subpart LL).

8. RCR shall document, by month, the diesel fuel consumption of all mine equipment. By the 25th day of each month, RCR shall calculate the total diesel fuel consumption for diesel-fired equipment for the previous month. The information for each of the previous twelve months shall be submitted along with the annual emission inventory (ARM 17.8.749).

9. RCR shall document, by month, the hours of operation of the emergency diesel-fired generator. By the 25th day of each month, RCR shall calculate the hours of operation of the diesel engine/generator for the previous month. The information for each of the previous twelve months shall be submitted along with the annual emission inventory (ARM 17.8.749).

E. Notification

1. RCR shall supply the Department the following notification (ARM 17.8.749 and 40 CFR 60, Subpart A):

a. Date when Aboveground Ore Processing and Handling Circuit commences construction, postmarked no later than 30 days after such date.

b. Date when Aboveground Ore Processing and Handling Circuit begins operation, postmarked no later than 15 days after such date.

c. Date when the Fine Ore Processing and Handling Process commences construction, postmarked no later than 30 days after such day.

d. Date when the Fine Ore Processing and Handling Process begins operation, postmarked no later than 15 days after such date.

SECTION III: General Conditions

A. Inspection – RCR shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, 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 RCR fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving RCR 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 RCR 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
Rock Creek Mine
MAQP #2414-03

I. Introduction/Process Description

RC Resources Inc. (RCR) proposed to construct and operate a silver/copper mine referred to as the Rock Creek Mine. The facility is located in Township 27N, Range 32W, Sections 26, 27, 34, and 35: and Township 26N, Range 32W, Sections 3, 10, 15, 22, 23, 27, 28, 29, 32, and 33, Sanders County, Montana.

A. Source Description

RCR proposes to construct a 10,000 ton-ore-per-day (3.5 million tons per year) mine and mill complex to extract copper and silver ore from a mineral deposit underlying a portion of the Cabinet Mountains Wilderness, about 13 miles northeast of Noxon, in Sanders County, Montana. RCR anticipates a 5-year period to fully complete both the evaluation and production phase of the mine. This plan includes a one year period for constructing an evaluation adit and support facilities, a 3-year period for production adit construction, primary crushing installation and tailings impoundment construction, with limited production and rail siding completion in year five. Full production would begin after that and is estimated to last for 30 years. The full production life would depend upon metal prices, engineering, and other factors that determine financial viability. Post-mining reclamation is estimated to last a few years.

Ore would be initially processed in an underground crusher. The above-ground ore-processing complex would further grind the ore to liberate metal-bearing sulfides. Sulfides would then be removed by flotation and the metallic product concentrate transported by slurry pipeline to a paste plant/load facility located about five miles away and ultimately shipped to an off-site smelter.

The mill complex, including surface conveyor, office building, shop, and warehouse, would be located north of USFS Road 150 as it heads west prior to connecting with Highway 200. Tailings would be transported as a slurry to the paste plant location at the tailings disposal area. There it would be dewatered to make a paste approximately 20 percent by weight. Approximately 3.5 million tons per year of tailings would be deposited in the tailings impoundment area.

The proposed evaluation adit would be driven prior to other work on the project in an attempt to better understand the configuration of the ore body. During the mine production phase, this adit would serve as the primary air intake opening and under a secondary contingency plan could serve as a secondary exhaust. Conventional mining methods would be employed for the 1-year adit construction period. All electric power would be provided by electric transmission lines. A backup emergency diesel-fired generator would be used during electrical power outages and for maintenance. Access would largely be by existing roads.

Mine development would include driving two parallel adits directly north-northeast of the mill site. One adit would be used as a conveyor adit for ore being conveyed from below ground and the other as access for personnel and equipment for mine access. A level working area at the portal would be constructed by cutting into the hill to create a vertical face for adit construction. Adit size is dictated by ventilation requirements and dimensions of mining equipment. Each adit would be approximately twenty to twenty five feet in diameter.

Equipment and processes used to prepare the emission inventory is as follows:

a. Underground Blasting

b. Underground Ore Processing and Handling
   1. Ore Bin
   2. Vibrating Grizzly Screen
   3. Primary Crusher
   4. Coarse Ore Bin
   5. Two Vibrating Feeders
   6. Three Belt Conveyors including one transferring ore above ground
   7. One below ground wet scrubber (Scrubber #1)

c. Aboveground Ore Processing and Handling Circuit (Contained in Crushing Building)
   1. Discharge End of Belt Conveyor From Below Ground
   2. Primary Surge Bin
   3. Primary Screen
   4. Secondary Crusher
   5. Secondary Surge Bin
   6. Two Secondary Screens
   7. Two Tertiary Crushers
   8. Three Belt Conveyors Including One Transferring to Milling Building
   9. One Above Ground Wet Scrubber (Scrubber #2)

d. Fine Ore Processing and Handling Process (Contained in Milling Building)
   1. Discharge End of Belt Conveyor from Crushing Building
   2. Tertiary Surge Bin
   3. Two Vibrating Feeders
   4. Belt Conveyor
   5. Wet Milling Processing Equipment
   6. One Baghouse (Baghouse #1)

e. Emergency Generator (Less than or Equal to 560 kW)

f. Storage Piles
   1. Evaluation Adit Waste Rock Pile
   2. Evaluation Adit Ore Stockpile
   3. Production Adit Waste Rock Pile
   4. Production Adit Ore Stockpile
   5. Tailings Impoundment

g. Road Dust
    1. Inclusive of all roads used based on all expected mine related travel

h. Insignificant Emission Sources
    1. Underground road fugitive emissions
    2. Small number of Building Heaters (electric or clean burning fuels, (natural gas or propane) with less than 5 MMBtu/hr ratings)
    3. Diesel Fuel Storage Tanks (Initially 500 gallon during evaluation phase, 20,000 gallon during production phase)
    4. Flotation Separation, Concentrate dewatering, and other "wet" handling operations which have negligible emissions due to moisture content and are located at the Paste Plant/Load-Out Facility

B. Permit History

ASARCO submitted the original air quality permit application **(#2414-00**) for the Rock Creek Project on December 15, 1987. Following the submittal of additional information that application was deemed complete on June 8, 1988. Subsequently, ASARCO requested a temporary suspension of the review process. On August 22, 1995, and December 4, 1995, ASARCO submitted updated modeling analyses in support of the application. The original Preliminary Determination on the application was issued March 5, 1996. ASARCO submitted revisions to the application on March 28, 1997, and May 28, 1997. This revised Preliminary Determination reflected the updated proposal and the revised application was given number 2414-01 for clarification. Based on comments received from the public, the Department of Environmental Quality (Department) requested additional clarification regarding the deposition factor for nitrogen oxides (NO_x) and the emissions from the temporary generators. The additional information was submitted by ASARCO on July 24, 1998. This revised Preliminary Determination reflects the updated proposal and the revised application was given number #**2414-01** for clarification.

The Record of Decision (ROD) for the Rock Creek Project contained the Department's decision on the air quality permit and was signed by the Department on December 26, 2001. However, there were printing and mailing delays associated with the issuance of the ROD and the document itself wasn't mailed until January 8, 2002. Because of these delays, the company and other interested persons were not provided a reasonable opportunity to request a hearing under 75-2-211, MCA on the decision to issue the air quality permit. Therefore, on January 24, 2002, the Department rescinded its decision on the air quality permit and re-issued its decision, resulting in the initiation of a new appeal period on the air quality permit. This re-issued Department decision was not changed in any substantive manner. A section was added to clarify the re-issuance of the Department decision and the dates were updated to reflect the date of issuance.

Upon issuance of the Department's decision on air quality Permit #2414-01, a request for a contested case hearing was filed before the Board of Environmental Review (Board). In settlement of the contested case, the Department agreed to several revisions of the permit. The Department required the company to submit a quarterly summary report to verify compliance with the limitations contained in Section II.A of the permit. The Department clarified the applicable limitations on the exhaust adits (evaluation adit and service adit) proposed at the mine in Section II.D of the permit. The Department also clarified that the

wilderness adit may be used only as an air intake adit and that a compliance demonstration method will be developed and approved by the Department in Section II.F of the permit. Under Attachment I, the monitoring was updated to reflect that the company is required to operate ambient monitors for at least 5 years and a request for discontinuance of monitoring after that time would be reviewed in accordance with the Department's October 9, 1998, "Monitoring Requirements" guidance or a more stringent guidance in effect at that time. The Department also agreed to and stated in Attachment I that one of the three PM_{10} ambient monitoring sites will be located northeast of the evaluation adit (between the evaluation adit and the Cabinet Mountain Wilderness).

Permit **#2414-01**, the original permit for the project, was issued as final on March 28, 2003.

The Department received a letter from Sterling Mining Company on October 23, 2003, requesting a name change for the project to Revett. The permit action made that change and updated the rule citations. Permit **#2414-02** replaced Permit #2414-01.

C. Current Permit Action

The current permit action would re-issue the expired permit based on a revised application for the silver/copper mine that was earlier permitted under MAQP #2414-02 which expired since construction never took place. Potential emissions with the revised application are lower than potential emissions associated with MAQP #2412-02 and the associated 2001 DEQ Record of Decision (ROD). R.C. Resources provided a new MAQP application to allow issuance of a Montana Air Quality Permit. **MAQP #2414-03** replaces MAQP #2414-02.

D. 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.

E. Response to Public Comments

Person/Group Commenting	Permit Reference to PD Version	Comment	Department Response
RC Resources	Section VIII	Section VIII of the MAQP Analysis erroneously states that the Record of Decision (ROD) was issued by the United States Forest Service (USFS) and Department of Environmental Quality (DEQ) in 2003. The 2003 ROD was issued by the USFS only. The DEQ issued a ROD approving the Rock Creek Project in December 2001 that was not challenged in State court and is currently binding. The 2003 ROD	The language has been modified to better reflect that the 2001 ROD is still considered a valid environmental review by the Department and the details about the Forest Service efforts for an SEIS have been reworded.

		cover letter dated June 27, 2003 states that " ... because DEQ's decision was and is independent of the FWS's BO, their 2001 decision remains in effect.". Permit conditions proposed in MAQP #2414-03 are consistent with those contained in MAQP #2414-02 and approved by DEQ in the 2001 ROD. In addition, the emission inventory outlined in the MAQP #2414-03 Permit Analysis shows a reduction in estimated emissions of all pollutants from MAQP #2414-02 (see Section IV of the Permit Analysis). Additional environmental impact analyses are not necessary to satisfy the requirements of the Montana Environmental Policy Act (MEPA) and Departmental Action should not be predicated upon issuance of the final SEIS.	
RC Resources	Section I.C	Section I.C: "Permitted Equipment" should not include a detailed, descriptive listing of all emitting units addressed in the permit application. The Department's typical practice is to generally describe the facility and its primary emitting units, refer to "associated equipment," and refer to a complete list of permitted equipment matching the emission units outlined in the permit application in the analysis section. Listing specific emission units in the requirements section of the permit could imply conditions that are not intended.	The Department has determined that the units can be better summarized as "process operations" within the permit itself and relocated the individual listing of planned units to the permit analysis.
RC Resources	Section II.A.1	Section II.A.1: This condition requires monitoring at the primary crusher. For consistency with other operations measurement, RCR requests the production measurement point "as measured by ball mill feed". All material feeding the ball mill will have been processed by the primary crusher; therefore, monitoring at the mill will serve the same purpose while ensuring consistency among operational monitoring points.	Change made as requested.

RC Resources	Section II.A.2	Monitoring compliance with this condition should include language similar to that in Section II.A.1 as defining the measurement point	Change was made to Section II.A.2 to include a measurement location and made to match the comment in Section II.A.1.
RC Resources	Section II.A.4	Section II.A.4: This condition should be removed because it relates primarily to emissions from mobile sources, and the permit is intended to ensure compliance with Montana and Federal air quality rules that exclusively regulate non-mobile equipment sources. Almost all of the diesel used by the facility will be combusted in mobile equipment that will operate underground. The permit application presents the facility's expected annual diesel usage rate for the sole purpose of informing the NEPA and MEPA processes as noted on page 23. None of the compliance demonstrations made in the application relied on this value.	Condition has been removed. However, a reporting condition has been left intact in Section II.D.8, to confirm the information supplied is generally consistent with the 2001 EIS.
RC Resources	Section II.A.5	Section II.A.5: This condition's reference to ARM 17.8.340 as an underlying requirement seems inappropriate. That rule requires affected sources to comply with applicable federal New Source Performance Standards (NSPS). But this condition explicitly applies to process equipment that are not subject to the specified NSPS	Reference to ARM 17.8.340 has been removed.
RC Resources	Section II.A.6	Section II.A.6: This condition should be clarified. The first sentence applies to an opacity limit per NSPS Subpart LL that in turn applies to fugitive sources. The text refers to "the performance test" but does not specify or refer to a particular test. We believe the Department intended to refer to the 40 CFR 60.8(a) requirement to perform prescribed initial performance tests within 60 days after achieving the unit's maximum production rate but not later than 180 days after initial startup. This requirement applies as well to the opacity requirement for Subpart LL-affected non-scrubber stack	Underground scrubber does not appear to be covered under 40 CFR 60 LL. Made this a new condition. And therefore did not add Section II.A.6 to II.C.1.

		emissions. The second sentence of the condition addresses this requirement but does not refer to any compliance schedule. For the sake of consistency and clarity, the condition should be constructed similarly to other permit conditions derived from Subpart LL, such as Condition II.A.11 and II.A.13. These conditions simply reiterate the NSPS limit and rely on testing conditions in Section II.C to convey the associated schedule. Note, however, that Section II.C prescribes NSPS-required testing for PM emission limits from Baghouse #1 and Scrubber #2, but it does not address testing for Subpart LL opacity limits. To correct this oversight, Test Requirement II.C.1 should include a reference to Emission Limitation II.A.6	
RC Resources	Section II.A.9	Section II.A.9: This condition is unclear and unnecessary. It requires water availability and use, as necessary, "to maintain compliance with the opacity limitations" (emphasis added). The condition fails to specify what opacity limitations require water to be satisfied. Further, the condition indicates that this is a BACT requirement, but it is not clear what BACT requirement or requirements specify water usage to limit opacity. Finally, other permit conditions inherently or specifically require the use of water to reduce particulate emissions; because water availability is implied by these conditions, a separate condition requiring general water availability is redundant and unnecessary.	The Department has determined this condition is redundant to the Fugitive Dust Control Plan and has been deleted.
RC Resources	Section II.A.10	Section II.A.10: RCR requests that Scrubber #1 operation and maintenance be based on the manufacturer's recommendations rather than "industry best practices." "Best practices" is unclear and open to different interpretations; manufacturer's recommendations will be documented and provided	The applicant used “best operational practices” in the application which would be similar in nature to “industry best practices”. However, the Department has

		with the equipment, and they will be specific for the particular scrubber in use.	clarified the condition to require manufacturer's recommendations, and additionally required those to be available and included in the Fugitive dust Control Plan
RC Resources	Section II.A.11	Section II.A.11: RCR proposes that, because this emission limit derives from an applicable NSPS (Subpart LL), the related state rule citation should be ARM 17.8.340 rather than 17.8.749.Note that the federal rule citation to 40 CFR Part 60, Subpart LL is appropriate. Conditions II.A.12and II.A.14 also appropriately cite 40 CFR Part 60, Subpart LL, but they cite state rule ARM17.8.340.	17.8.749 has been replaced by 17.8.340
RC Resources	Section II.A.15	Section II.A.15 specifies that equipment "detailed descriptions" shall be submitted to the Department "prior to the commencement of construction". RCR requests that this condition be removed as it is not required to ensure compliance with ARM 17.8.749 and other permit requirements specify operating parameters for these devices (see permit conditions II.A.10, 11, and 12). If the Department determines this condition is still necessary, please specify both the specific information required by the Department and that "construction" refers to construction of those pieces of equipment listed. Construction activities associated with the evaluation adit may occur more than one year before the equipment specified in this section is purchased and specific information required by the Department may not be available. (1) When the department issues a Montana air quality permit, the permit must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and to	This condition has been determined to be satisfied by performance testing which is required for both scrubbers and the baghouse as identified in other permit conditions.

		the requirements of this subchapter. The permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act, with the Clean Air Act of Montana and rules adopted under those acts.	
RC Resources	Section II.A.16	Section II.A.16: RCR requests that this condition be revised to require only that a fugitive dust control plan be prepared; to remove the requirement that the Department approve a general operation plan {which would include dust control measures in addition to other, unspecified elements); and to remove detailed elements of the dust control plan. The open-ended nature of this condition makes it potentially difficult to comply with and to objectively enforce. RCR has no way of knowing what criteria the Department might apply in accepting or rejecting the operating and dust control plans. Nor is it clear upon what foundation the Department would base its approval or disapproval. Further, it is unclear whether changes to the plans would require Department review and approval and, if required, what process would be followed to secure approval. The fact that this condition refers to ARM 17.8.752, which requires BACT, as an underlying condition could make revisions especially burdensome if detailed elements of the plans were to be considered integral to the BACT determination. A 20% opacity limit for handling and storage of material per ARM 17.8.308{a) applies to the tailings management facility and implies that adequate control measures be used. RCR requests the flexibility to efficiently develop, revise, and implement dust control measures it deems necessary to meet the underlying opacity requirement without potential hindrance from an open ended and unnecessary bureaucratic process.	According to 17.8.749 CONDITIONS FOR ISSUANCE OR DENIAL OF PERMIT, the Department will require a condition be included when the Department determines it is necessary for compliance purposes. Based on the most recent issues with fugitive dust from mine sites, the Department has determined that a Fugitive Dust Control Plan is necessary to protect ambient air quality. The condition has been modified but mostly left intact and changed to a 17.8.749 condition.

RC Resources	Section II.A.18	Section II.A.18 specifies conditions specific to a "conditional additional adit"; however, this feature is not defined in either the permit or application. It is assumed that this feature is the "wilderness air-intake adit" described in the DEQ 2001 ROD which approved the Rock Creek Project. If this is the case, please change the verbiage in the draft permit to match the associated MEPA decision document.	This condition has been removed and no other adits are approvable that are not explicitly mentioned in this permit.
RC Resources	Section II.B.6	Section II.B.6: RCR requests removal of the last sentence: "All of the milling operations shall occur within enclosed buildings." Although RCR plans to conduct dry and wet milling processes inside buildings, BACT for reducing particulate emission from the fine ore handling circuit {which forms a part of the ore milling system) was determined to be fabric filter baghouse control. Projected particulate emissions are independent of whether baghouse-controlled operations occur inside or outside of a building.	The condition has been clarified to indicate all milling operations will be vented to a fabric filter baghouse and the reference to being within a building has been removed.
RC Resources	Section II.B.7	Section II.B. 7: RCR proposed that BACT for the emergency generator diesel engine is compliance with NSPS Subpart IIII requirements, not 40 CFR Part 89 Tier 4 requirements. Part 89 applies to non-road compression ignition engines, the definition of which specifically excludes engines subject to an NSPS. The mine's emergency generator diesel engine will be subject to NSPS Subpart IIII. The permit analysis section discussing BACT for the emergency generator engine {Section Ill) misrepresents RCR's BACT analysis and presents conflicting conclusions. It states that RCR proposed that BACT is compliance with 40 CFR Part 89 Tier 4 requirements. RCR actually proposed that BACT is compliance with 40 CFR Part 60, Subpart IIII requirements and limiting annual operations to no more than 100 hours {see Section 5.5, page 38 of	The BACT analysis has been updated to reflect the reference to 40 CFR 60 Subpart IIII and the associated condition has also been updated.

		the March 2014 application, Revision 3).1 Section III of the permit analysis goes on to state that, "Compliance with applicable federal emission standards with proper operation and maintenance is accepted as BACT ... " 40 CFR Part 89 is not an applicable federal emission standard; NSPS Subpart IIII is.	
RC Resources	Sections II.B.8 and 9	Section II.B.8 and 9: Although RCR does plan to limit particulate emissions from these storage piles as described in the conditions, these control methods were not specifically determined to be BACT for these sources. Please remove these conditions. It should also be noted that the featured referred to in Section II.B.8 as the "Exploration Adit Waste Rock Pile" should be called "Evaluation Ad it Waste Rock Pile" as specified in the permit application	The Exploration Adit Waste Rock Pile has been changed to Evaluation Adit Waste Rock Pile as requested and "evaluation" substituted for "exploration" throughout the document except for a section of the ambient air quality analysis where "exploration" and "evaluation" are used interchangeably. They have been included as 17.8.749 conditions and relocated.
RC Resources	Section II.B.10	Section II.B.10: Conveyor transfers associated with milling operations will be controlled by a wet scrubber or a baghouse as required by Conditions II.B.2 through 6. Both these controls have been determined to qualify as BACT for these sources. Although RCR plans to locate conveyor transfers either underground or inside a building, this is not a BACT requirement. Further, referring to "the mill" within an enforceable condition may cause confusion because that term is not specifically defined. It is generally used within the application to refer to the collection of above-ground beneficiation operations, although primary crushing, which will occur underground, could be considered a milling operation. Please remove this condition as it is not appropriately related to the ARM 17.8.752 BACT requirement,	The Department had originally included this condition as that is what the application indicates. The Department concurs, however, that the condition as written does not significantly reduce emissions and has been deleted.

		it does not reduce emissions beyond reductions achieved by other permit conditions, and it is potentially confusing.	
RC Resources	Section II.B.11	Section II.B.11: This condition and Condition II.A.16 both seek to apply BACT requirements to control fugitive dust emissions from the tailings pond. RCR suggests that having both conditions adds to the complexity of the permit and to RCR's regulatory burden and liability while adding no additional value relative to ensuring compliance with applicable air quality regulations or to protecting the environment. Should the Department decide to keep this condition, we request that the sentences between the first and last sentences (i.e., sentences two, three, and four) be omitted. Though they describe the tailings management facility and its configuration, they do not convey or contribute to a requirement or requirements. RCR is concerned that, if these descriptions remain in the permit, they could inappropriately be construed as requirements and result in confusion and potential enforcement problems.	This condition has been modified to reflect the slurry of the tailings to the impoundment site and now references the Fugitive Dust Control Plan.
RC Resources	Section II.B.12	Section II.B.12: Please remove from this condition the following descriptive portion: " ... where it is further dewatered to approximately 8-10% moisture." Again, RCR is concerned that this description could inappropriately be construed as a requirement and result in confusion and potential permit compliance issues	Modified as requested.
RC Resources	Section II.B.13	Section II.B.13: According to the permit application and to the permit analysis, BACT for controlling fugitive dust emissions from the main access road, Forest Service Road No. 150, is paving with periodic washing and sweeping as needed. Please remove the first sentence of this condition. Though road No. 150 will be the	Deleted the first sentence and removed the reasonable precautions reference and also indicated when paving must commence. The condition remains under a BACT reference according to

		predominant access route from the highway to the mine and mill sites, the requirement as written is not part of the BACT determination and, further, is not practically enforceable. Please also revise the last sentence of this condition to require controlling fugitive dust emissions from the road in accordance with a dust control plan that shall include periodic washing and sweeping. This was part of the BACT determination. The open-ended "reasonable precautions" language also applies in accordance with ARM 17.8.308(2), but is separate and distinct from the BACT requirement of ARM 17.8.752.	the BACT analysis submitted.
RC Resources	Section II.B.13	Section II.B.13 requires that U.S. Forest Service Road 150 will be paved from the highway to the mill site. This work is not planned to occur prior to or during construction of the evaluation adit phase. Please add verbiage to indicate that paving of the above referenced road will occur during production phase construction.	Table 5.4 in the application indicates this is a BACT condition. See comment directly above.
RC Resources	Section II.B.14	Section II.B.14: Please remove this condition. It contains no requirement that is directly or indirectly related to air quality regulation and environmental protection	The Department disagrees, as a rail load out facility implies a proper engineering design is inherent and as such would include a design that would minimize air quality concerns. The condition has been modified to remove the reference to a project schedule. Additionally, page 8 of the application explicitly says air emissions will be negligible due to the materials high moisture content and the enclosures. The application suggests a minimum water

			content is necessary combined with the partial enclosure at the rail load out facility – This is not unrelated to air quality based on the information submitted by the applicant in the application.
RC Resources	Section II.C.1	II.C.1: To improve clarity and completeness, please add reference to demonstrating compliance with the NSPS Subpart LL opacity requirements of Condition II.A.6.	See response to II.A.6
RC Resources	Section II.D.1	II.D.1: In item (a), please change "Amount of ore handled' to "Amount of ore produced." This improves coordination between this condition and Condition II.A.2 which limits annual production, rather than handling, of ore. Please omit from item (b) the parenthetical phrase "underground equipment." While most of the diesel fuel used by the mine will be used in underground mining equipment, not all will, and RCR assumes fees will be assessed based on all diesel fuel combusted, regardless the combustion source. Note that RCR recognizes emissions related to diesel combustion in mobile mine equipment may be subject to annual emissions-related fees even though, because they are not stationary sources, they are not regulated by the permit. Please omit from item (d) the parenthetical phrase "RU Emulsion explosive." RU Emulsion is a specific brand of emulsion explosive. The permit appropriately does not limit RCR to one brand of emulsion explosive, but including it here could cause confusion and potentially be construed as a limiting requirement. Please revise item (f) to specify vehicle miles traveled "by company vehicles." This clarifies that RCR is not responsible for emissions from non-company vehicles traveling the public access road.	Modified as requested.

RC Resources	Section II.D.4	Section II.D.4: Please clarify that the annual compliance report submitted with the annual emissions inventory shall report on compliance with Condition II.A.1 during the year for which annual emissions are reported	Changed the statement in II.D.1 to address all conditions.
RC Resources	Sections II.D.5,6, 8 and 9	Section II.D.5, 6, 8, and 9: Please clarify that the relevant information "for each of the previous months" to be submitted with each year's annual emissions inventory shall be limited to the twelve months preceding the month the inventory is submitted.	Modified as requested
RC Resources	Section II.D.8	II.D.8: Please remove this requirement. As noted above in a comment relating to Condition II.A.4, annual diesel consumption at the mine is relevant only to emissions from mobile sources which are regulated separate from the State and Federal stationary source regulations that the MAQP is required to address. Several details reported in the analysis section lead RCR to believe the Department may have reviewed a superseded version of the air quality application as a basis for their preliminary determination. 2 If true, RCR does not consider this to invalidate the preliminary determination; no fundamental changes exist between the two documents relative to required compliance demonstrations and conclusions. Nevertheless, such an oversight may explain the discrepancies upon which some of the following comments are based.	As the 2001 EIS and application addressed total diesel usage, the reporting condition is left intact but is no longer tied to a maximum diesel usage restriction.
RC Resources	I.A of the Analysis	Section I.A of the Montana Air Quality Permit (MAQP) Analysis indicates that tailings " ... would be dewatered to make a paste approximately 20 percent by weight." This language does not accurately describe the anticipated tailings paste product which will be dewatered to make a paste approximately 20 - 35 percent moisture by weight.	Condition has been modified to eliminate the moisture weight reference.

RC Resources	III of the BACT Analysis	Section III, BACT Underground Ore Processing and Handling and Aboveground Ore Processing and Handling Note that "course" ore throughout this section should be "coarse" ore. Emergency Generator As discussed above relative to Condition II.B.7, the permit analysis section discussing BACT for the emergency generator engine misrepresents RCR's BACT analysis and presents conflicting conclusions. It states that RCR proposed that BACT is compliance with 40 CFR Part 89 Tier 4 requirements. RCR actually proposed that BACT is compliance with 40 CFR Part 60, Subpart IIII requirements and limiting annual operations to no more than 100 hours (see Section 5.5, page 38 of the March 2014 application, Revision 3). Section Ill of the permit analysis goes on to state that, "Compliance with applicable federal emission standards with proper operation and maintenance is accepted as BACT ... " 40 CFR Part 89 is not an applicable federal emission standard; NSPS Subpart IIII is. Fugitive Emissions from Roads. Stockpiles, and Tailings Impoundment. The BACT determination for these sources should refer to a Fugitive Dust Control Plan rather than a Fugitive Control Plan.	Change made to Fugitive Dust Control Plan and correction made to the word course. Reference changed to 40 CFR 60 Subpart IIII.
RC Resources	Section IV, Emission Inventory	The results shown in this section should be revised to correspond with summary projected emission rates reported in the May 2014 application.	The updated tables have been inserted.
RC Resources	Section VI, Ambient Air Impacts	Section VI, Ambient Air Impacts The "NAAQS/MAAQS Impact Modeling Results" summary table purports to be based on modeling results reported in the permit application, but they are different. Please update to correspond to modeling results reported in the May 2014 application. To clarify, the District of Columbia Circuit Court of Appeals, at EPA's request,	Updated information has been added.

		vacated and remanded only two explicit references to $PM_{2.5}$ Sils in the air quality regulations. EPA subsequently revoked the affected rules. $PM_{2.5}$ Sils remain elsewhere in the regulations, along with Sils for other criteria pollutants. Further, updated EPA guidance for $PM_{2.5}$ permit modeling issued May 20, 2014, continues to recognize $PM_{2.5}$ Sils as important and conditionally available tools for demonstrating a proposed project's compliance with the $PM_{2.5}$ NAAQS. At the end of this section, after discussing extensive quantitative modeling analyses and reporting results relative to applicable ambient standards, the Department appears to base its determination of demonstrated compliance on "the minor level of emissions and proposed BACT methods." Please explain why the determination is not based on the submitted and approved modeling analyses.	
RC Resources, October 14, 2014	Application Clarification	In the course of reviewing the Supplemental Environmental Impact Statement development efforts, a discrepancy was discovered that placed a stockpile area designated "Production Adit Stockpile Area" over an area that will actually be protected as a Riparian Conservation Habitat Area. Bison has verified that the stockpile location adjustment does not affect the conclusion of the ambient air quality impacts demonstration model submitted with the permit application. All peak impacts reported in Table 6-6, Cumulative MAAQS/NAAQS Impacts Modeling Results, occurred well away from the subject stockpile and remain unchanged. Revised documents submitted include: Page 47. Figure 6-2 was revised to show the outline of the corrected stockpile area source and the locations of the new receptors placed in the area where the stockpile had been modeled.	The Department reviewed the emission inventory associated with the Production Adit Stockpile Area and due to the minor emissions from this source, distance the stockpile would be located from the previous modeled location, and determined no change would result in the ambient air quality impacts. Additionally, since this stockpile is temporary, once mill facilities are in place, no emissions will occur from this source.

		Page 51 Table 6-1 was revised to show easterly and northerly length parameters for the modified stockpile area source.	

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).

   RCR 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 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
2. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
3. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide

4. ARM 17.8.213 Ambient Air Quality Standard for Ozone
5. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
6. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
7. ARM 17.8.221 Ambient Air Quality Standard for Visibility
8. ARM 17.8.222 Ambient Air Quality Standard for Lead
9. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}
10. ARM 17.8.230 Fluoride in Forage

RCR 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, RCR 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 17.8.316 Incinerators. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any incinerator, particulate matter in excess of 0.10 grains per standard cubic foot of dry flue gas, adjusted to 12% carbon dioxide and calculated as if no auxiliary fuel had been used. Further, no person shall cause or authorize to be discharged into the outdoor atmosphere from any incinerator emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes.

6. 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.

7. 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.

8. 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). RCR is considered an NSPS affected facility under 40 CFR Part 60 and is subject to the requirements of the following subparts.

    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 – Standard of Performance for Metallic Mineral Processing Plants

    c. 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.

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

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

    b. 40 CFR 63, Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants (HAPs) for Stationary Reciprocating Internal Combustion Engines (RICE). An owner or operator of a stationary RICE at a major or area source of HAP emissions is subject to provisions of this subpart, except if the stationary RICE is being tested at a stationary RICE test cell/stand. As an area source, the diesel RICE will be subject to this rule.

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. RCR 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 15 tons per year of any pollutant for asphalt concrete plants, mineral crushers and mineral screens. RCR has a PTE greater than 15 tons per year of 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. RCR 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. RCR submitted an affidavit of publication of public notice for the August 31, 2012, issue of the *Western News*, a newspaper of general circulation in the Town of Libby in Lincoln 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 RCR 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 17.8.760 Additional Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those applications that require an environmental impact statement.

12. 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.

13. 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).

14. 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.

15. 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 10 – Preconstruction Permit Requirements for Major Stationary Sources of Modifications Located Within Attainment or Unclassified Areas, including, but not limited to:

ARM 17.8.1004 When Air Quality Preconstruction Permit Required. This current permit action does not constitute a major modification. Therefore, the requirements of this subchapter do not apply.

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

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

   a. PTE > 100 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 (PM_{10}) in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing MAQP #2414-03 for RCR, the following conclusions were made:

   a. The facility's PTE is less than 100 tons/year for any pollutant.

   b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year for all HAPs.

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

   d. This facility is subject to current NSPS as indicated in Section II.C.8.

   e. This facility is subject to current NESHAP standards as indicated in Section II.C.9.

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 RCR 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, RCR will be required to obtain a Title V Operating Permit.

III. BACT Determination

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

A BACT analysis was submitted by RCR in permit application #2414-03, addressing some available methods of controlling emissions from the proposed emitting units. The Department reviewed these methods, as well as previous BACT determinations. The following information has been summarized from the RCR proposed BACT submittal and has been reviewed by the Department in order to make the following BACT determination.

Blasting

Underground mining will be performed using emulsion explosives to liberate and fracture the ore. Blasting will generate both fugitive gaseous and particulate emissions which will largely be confined to underground. However, ventilation required largely for worker safety will also carry some emissions to the surface. The use of common Best Operating Practices (BOPs) is the industry standard method for minimizing the formation of blasting emissions and RCR proposes to use the following BOPs to establish BACT.

- Optimize drill hole sizes. Optimizing drill hole size will result in effective blasting and thus reduce the number of blasts needed to achieve the desired effect. Water added to the ore at this time will continue to reduce particulate emissions throughout downstream handling and processing operations.

- Spray the area with water after each blast. This is standard operating procedure done primarily to reduce airborne dust below thresholds established for worker safety.

- Minimize retention time between loading blasting holes with emulsion and detonation. RCR plans to load blast holes with emulsion and detonate them within 24 hours or less.

The use of BOPs as described above is accepted as BACT for the blasting operations underground.

Underground Ore Processing and Handling and Aboveground Ore Processing and Handling

Since both the underground and above ground handling of coarse ore are similar, for purposes of the BACT analysis they are included in a single category. The combined systems include a total of four crushing operations, four screening operations, four storage bins, and multiple conveyors and feeders.

The following alternatives were reviewed for the coarse ore handling operations:

- No Add-on Control. This is the base case for proposed new sources.
- BOPs. BOPs include a variety of techniques which largely utilize reducing the drop height for material transfers.
- Enclosure. Enclosure technology uses either a full enclosure or partial enclosure to shelter material from wind entrainment.
- Wet Dust Suppression. Water spray with or without surfactant to material reduces particulate emissions by increasing the moisture content.
- Electrostatic Precipitator (ESP). An ESP uses electrical forces to move entrained particles onto a collection surface. Periodic cleaning is needed to dislocate the trapped particulates and provide collection beneath the plates.
- Wet Particulate Scrubber. Wet scrubbers either use a venturi or spray chamber to collect particulate into water droplets.
- Fabric Filter Baghouse. Baghouses collect particulate on tightly woven fabric materials. As the fabric materials are loaded with particulate, the pressure drop increases and periodic cleaning is necessary to maintain collection efficiency and prevent excessive pressure drop.

Both ESPs and fabric filter baghouse technology suffer performance issues with wet particulate air streams and are eliminated as feasible control alternatives for the underground and above ground ore handling processes. Enclosures, BOPs and wet dust suppression are feasible but have relatively low control efficiencies.

The best remaining control technology for coarse ore handling is wet particulate scrubbers and RCR has proposed both a scrubber for the underground process handling activities and a wet scrubber for the above ground coarse ore handling activities. A wet scrubber for the control of coarse ore handling activities is accepted as BACT.

Fine Ore Processing and Handling

Each of the below control technologies were also reviewed for the fine ore processing and handling.

- BOPs
- Enclosure
- Wet Dust Suppression
- Electrostatic Precipitator (ESP)
- Wet Particulate Scrubber
- Fabric Filter Baghouse

The fine ore processing and handling is similar to the coarse ore handling but fine ore moisture content has been reduced to low enough levels that baghouse technology becomes feasible to deal with fine ore materials. ESP technology is still eliminated due to concerns around highly variable product characteristics and concern for long-term performance issues. Therefore, RCR is recommending fabric filter baghouse technology as the recommended control for the fine ore processing and handling operations located within the milling building. Baghouse technology has a minimum removal efficiency typically of 98 percent. Baghouse technology for the control of the fine ore handling activities is accepted as BACT.

Emergency Generator (Less than or Equal to 560 kW)

- RCR proposes that BACT for reducing all criteria pollutant emissions from the proposed emergency generator is compliance with 40 CFR 60 Subpart IIII requirements.

Compliance with applicable federal emission standards with proper operation and maintenance is accepted as BACT as the emission limits associated with the emergency generator represent low emission rates.

Emissions from Roads, Stockpiles and Tailings Impoundment

Primary sources of fugitive dust from the project will be light vehicle traffic and wind erosion of ore and waste stockpiles as well as from the tailings impoundment. RCR has proposed to implement a Fugitive Dust Control Plan for these sources which incorporate BOPs typically recognized as BACT for fugitives from similar sources.

Disturbed/Exposed Soil – Revegetation of disturbed areas will occur in the first appropriate season after disturbance or appropriately addressed in the Fugitive Dust Control Plan.

Roads

- U.S. Forest Service Road 150 will be paved to the mill facilities and be washed and swept to minimize dust emissions.

- All unpaved roads will be water or a dust palliative will be used as needed to reduce fugitive dust.

- Vehicle speeds will be restricted on haul roads to reduce the amount of fugitive dust.

- Heavily used unpaved roads will be chemically stabilized with nontoxic soil cement or dust palliatives mixed into the upper 1 to 2 inches of road surfaces as necessary.

- Metallic Product Concentrate and tailings will be piped in a slurry form from the mill to the paste plant/product load-out area and tailings impoundment.

- Personnel will be transported via multi-passenger vans from Highway 200 to the mill and mine sites.

Conveyors – A covered conveyor system will be used to minimize emissions.

Tailings Impoundment – A sprinkler system will minimize fugitive dust emissions from wind erosion of the tailings impoundment.

The development of a Fugitive Dust Control Plan with the elements incorporated above is accepted as BACT.

The control options and methods selected have controls and control costs comparable to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

IV. Emission Inventory

The point source emission inventory for the proposed RCR operations are indicated below. A full emission inventory with calculations is on file with the Department.

Table 1. Point Source Emission Inventory (Tons Per Year)

Emissions Source	**PM**	**PM_{10}**	**$PM_{2.5}$**	**NO_X**	**CO**	**VOC**	**SO_2**
Underground Scrubber #1	0.22	0.079	8.7E-3	—	—	—	—
Aboveground Scrubber #2	0.26	0.10	0.012	—	—	—	—
Fine Ore Baghouse	0.091	0.030	2.8E-3	—	—	—	—
Emergency Generator	0.018	0.018	0.018	0.304	0.38	0.043	—
Total	0.6	0.23	0.04	0.304	0.38	0.043	0

The fugitive source totals are listed below. Although the blasting emissions will exit the portal they are shown as fugitive.

Table 2. Fugitive Source Emission Inventory (Tons Per Year)

Emissions Source	PM	PM_{10}	$PM_{2.5}$	NO_X	CO	VOC	SO_2
Blasting	0.33	0.17	0.010	0.38	20.3	—	—
Storage Pile Wind Erosion	2.4	1.2	0.18	—	—	—	—
Road Dust	4.8	0.96	0.24	—	—	—	—
Total	7.53	2.33	0.43	0.38	20.3	0	0

V. Existing Air Quality

RCR production, processing facilities, and tailings area would be located in an area designated as "Unclassifiable/Attainment" for all air quality criteria pollutants (40 CFR 81.327). The Libby, Montana (MT), $PM_{2.5}$ and PM_{10} nonattainment areas (NAA) are located approximately 16.2 and 24.8 miles northeast, respectively, from the proposed Rock Creek Mine tailings pond. The mine tailings pond would be about 30.3 miles north from PM_{10} Thompson Falls NAA, MT, and 45.7 miles east from Sandpoint, Idaho, which has a PM_{10} maintenance area, once designated as nonattainment.

VI. Ambient Air Impact Analysis

The underground Rock Creek Mine would be classified as a minor source under the Title V and PSD regulations. The modeling was conducted for two scenarios according to the mining phase: exploratory or production. The underground emissions from the adits (exploratory and production) were identical but located in different areas. Within this ambient air impact analysis section, "exploratory" and "evaluation" adits are used interchangeably. The modeled emissions of regulated pollutants from the project during peak operations (year 5) are listed in Table 3; these emissions include CO, NO_X, PM_{10}, and particulate matter with a mean aerodynamic diameter equal to or less than 2.5 micrometers ($PM_{2.5}$).

Table 3. Modeled RCR Potential Emissions

Source	CO (tpy)[1]	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	NO_x (tpy)
Underground	20.250	0.250	0.019	0.375
Scrubber #2 (above ground)		0.100	0.012	
Fine Ore Baghouse		0.030	0.003	
Storage Pile		0.230	0.035	
Tailings Impoundment		1.000	0.140	

Source	CO (tpy)[1]	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	NO_x (tpy)
Road Dust		0.963	0.234	
Total	20.250	2.573	0.443	0.375

[1] tpy = tons per year.

The same emission rates were used for both the short and long-term modeled averaging periods, if applicable. The underground emissions included blasting and a scrubber (Scrubber #1) and the road emissions were allocated to 90 volume sources. The application also included the operation of an emergency generator for 100 hours per year. For modeling purposes, the annual tons per year would be multiplied by 0.0114 (100/8760) resulting in very small hourly emissions so this source was not included in the modeling analysis. Furthermore, this source is also considered an intermittent source in regards to the 1-hour NO_2 NAAQS and may be omitted from the associated modeling demonstration (http://www.epa.gov/region7/air/nsr/nsrmemos/appwno2_2.pdf).

As shown in Table 3, the potential rates of the criteria air pollutant emissions, as submitted in the RCR application, were minor and well below de minimis levels that would normally require dispersion modeling; these rates are as follows: CO (100 tons per year, tpy), PM_{10} (15 tpy), $PM_{2.5}$ (10 tpy), and NO_x (40 tpy). However, RCR chose to demonstrate that the proposed increase in air emissions would not cause or contribute to any violation of the state or national ambient air quality standard (MAAQS and NAAQS, respectively) or impact the Cabinet Mountains Wilderness Area, a federally-designated Class I area. Class I areas were created by the Clean Air Act of 1977 and are provided the highest level of air quality protection by U.S. Environmental Protection Agency (USEPA); these areas include wilderness areas and national parks (http://www.epa.gov/visibility/class1.html).

Dispersion Modeling and Associated Programs: The MAAQS/NAAQS compliance demonstrations were conducted using latest versions (at the time of application submittal) of AERMOD and auxiliary support programs; specifically, the following models were applied:

- AERMOD version 13350: primary air dispersion model
- AERMET version 13350: processes the hourly surface and upper air meteorological (met) data for input into AERMOD.
- AERMAP version 11103: processes the terrain data and determines the elevations of the receptors for AERMOD input; receptors are locations where AERMOD calculates the pollutant concentrations.
- BPIPPRM version 04274: characterizes building downwash effects for AERMOD
- AERSURFACE version 13016: extracts land use data to calculate the surface characteristics surrounding the surface met site(s) for AERMET.
- AERMINUTE version 11325: develops hourly wind data for AERMET input; under low hourly wind speeds or highly variable wind directions, AERMOD cannot process the hourly met data which results in zero air pollutant concentration(s) for that hour; uses more recent met data called one-minute ASOS (Automated Surface Observing System) located at National Weather Stations (NWS) which due to continuous data collection generally lacks the undesirable wind characteristics.

The AERMOD air dispersion modeling was conducted using the USEPA default options except for two instances: the mine adits were modeled using the beta option of horizontal emission points and the 1-hour NO_2 non-default modeling methodology was used. The USEPA default options include the following:

- Stack-tip downwash
- Accounts for elevated terrain effects
- Use calms processing routine
- Use missing data processing routine
- No exponential decay

The Ozone Limiting Method (OLM) was applied in determining the short-term (1-hour) NO_2 modeled impacts. A combustion source normally emits a small amount of nitrous oxides (NO_x) as NO_2 with the remaining as nitric oxide (NO); NO can convert in the atmosphere to NO_2 depending on the amount of ozone (O_3) in the atmosphere.

1-Hour NO2 OLM Modeling Methodology: Two important inputs are necessary to use this non-default option: the in-stack NO_2/NO_x ratio and the NO_2/NO_x ratio in the atmosphere. In both cases, the USEPA default options were used, 0.5 and 0.9, respectively (http://www.epa.gov/region7/air/nsr/nsrmemos/appwno2_2.pdf). Background ozone concentrations are also required using this option, either hourly or a single value. RCR used hourly ambient ozone concentrations collected near Lake McDonald in Glacier National Park for the years 2007 – 2011 that corresponded to the most of the met data (http://java.epa.gov/castnet/epa_jsp/prepackageddata.jsp). Corresponding data were not available for the met year 1985 so RCR used 1990 data, the first available year of data. Some substitution of the missing ozone data was required, a normal occurrence.

Urban/Rural Status: This classification accounts for the dispersive nature of the "convective-like" boundary layer that forms during nighttime conditions from urban heat island effects. All of Montana is classified as rural so the rural dispersion coefficients were selected.

Land Use: The surrounding surface characteristic around the surface met sites are required input into AERMET. The most important parameter is the surface roughness length which determines the magnitude of the mechanical turbulence and stability of the boundary layer (where air quality dispersion occurs). A land cover file is required for input into AERSURFACE; the National Land Cover Data 1992 (NLCD92) file was obtained from the U.S. Geological Survey Land Cover Institute website in NAD83 for AERMAP input (http://landcover.usgs.gov/us_map.php). At this time, AERSURFACE only supports NLCD92.

Meteorology (Met): Two met datasets were used:

(1) Surface: On-site 1985 Noxon, MT, surface met which the Department provided; this file has been used in previous modeling demonstrations in the area.

Any missing surface data was substituted with 1985 Kalispell Glacier International Airport (KGPI), MT, National Weather Service (NWS) data (http://www.webmet.com/State_pages/met_mt.htm).
Upper Air: 1985 Spokane International Airport, WA, NWS upper air data (http://www.webmet.com/State_pages/met_wa.htm).

(2) Surface: On-site 2007 – 2011 Troy, MT, purchased from the Western Regional Climate Center (http://www.raws.dri.edu/index.html).

Any missing surface data was substituted with 2007 – 2011 KGPI data purchased from the National Climatic Data Center (http://www.ncdc.noaa.gov/data-access/land-based-station-data).

ASOS 2007 – 2011 KGPI one-minute data (ftp://ftp.ncdc.noaa.gov/pub/data/asos-onemin).

Upper Air: 2007 – 2011 Spokane International Airport, WA, NWS upper air data (http://www.esrl.noaa.gov/raobs/).

For the 1-hour NO_2, and 24-hour and annual $PM_{2.5}$, the five years of met data, 2007 – 2011, were combined (concatenated) into one met file (http://www.epa.gov/ttn/scram/models/aermod/aermod_userguide_addendum_v11059_draft.pdf). Table **4** lists for various met station information.

Table 4. Met Station Coordinates and Relevant Statistics

Station	Type	Met Year	Latitude	Longitude	Elevation (m)[1]	Anemometer Height (m)
Noxon, MT	Surface, On-Site	1985	47.979N	-115.74W	710.41	10.00
Kalispell Glacier Park international Airport, MT	Surface, NWS[2]	1985	48.310N	-114.267W	906.00	6.10
Spokane International Airport, WA	Upper Air, NWS	1985	47.370N	-117.310W	NA[3]	NA
Troy, MT	Surface, RAWS[4] On-Site	2007 - 2011	48.481N	-115.905W	612.00	6.10
Kalispell Glacier Park international Airport, MT	Surface, NWS	2007 - 2011	48.310N	-114.267W	906.00	7.92
Spokane International Airport, WA	Upper Air, NWS	2007 - 2011	47.680N	-117.630W	NA	NA

[1] m = meters.
[2] NWS = National Weather Service.
[3] NA = Not Applicable.
[4] RAWS = Remote Automated Weather Station; operated by the U.S. Forest Service.

Source, Structure, and Receptor Elevation/Location Determinations: The RCR provided the Consultant an AutoCAD drawing of the facility boundary including the sources and structures; RCR provided the structure heights information. This drawing was imported into an AERMOD software interface with graphic abilities (GUI) which allows the user to graphically depict the facility and components. The drawing was created in North American Datum 1983 (NAD83), Zone 11, the projected coordinate system of this modeling demonstration.

Using the graphic software interface, receptors were placed at 50 meters (m) spacing intervals on the mine permit boundary for a total of 793 receptors. At this time, the RCR does not plan to erect a physical barrier to restrict public access inside the mine boundary so a Cartesian receptor grid system

of 100 m spacings was developed inside the mine permit boundary. Some of these receptors were removed where the storage pile and tailing pond will be located. The USFS Road 150 runs through the mine permit area which will remain open to the public; additional receptors at 50 m spacings were included to represent this road. Another 100 m spacing grid system was established from the mine permit boundary out to 1 kilometer (km) in distance. From 1 km to 3 km, receptors with 250 m receptor spacings were developed. The total number of receptors was 10,576, including the mine boundary receptors.

National Elevation Dataset (NED) files were obtained from the U.S. Geological Survey website in NAD83 for AERMAP input (http://viewer.nationalmap.gov/viewer/). The NED files had a 1/3 arc-second (about 10 meter) horizontal resolution in Geographic Tagged Image File Format. With the application of AERMAP, the elevations of the sources, structures, and receptors (and hill heights) were determined. The corresponding elevations in the mill area were adjusted according to area grading and leveling information contained in a general plant layout drawing and AutoCAD file developed for the project by the RCR.

RCR Sources and Modeling Parameters: Two adits (nearly horizontal openings into the underground mine) were modeled: exploratory/evaluation and production. The underground blasting and Scrubber #1 emissions will be emitted through these adits and therefore, modeled accordingly. Three different model sources were modeled: point, area, and volume. Area and volume source emissions do not have any associated velocities and are released at ambient temperature. The RCR technical staff developed the following source modeling characteristics, except for the stockpile and tailings pond. The stockpile dimensions were based on the general facility layout drawing and engineering judgment. The tailings pond dimensions were also based on professional engineering judgment; Table 5 lists the modeled RCR sources.

Table 5. Modeled RCR Source Characteristics

Point Source	Stack Height (m)[1]	Stack Temperature (°K)[2]	Stack Velocity (m/s)[3]	Stack Diameter (m)
Exploratory Adit	3.00	289	23.5	6.19
Production Adit	3.80	289	15.3	7.68
Scrubber #2	11.60	289	18.8	1.22
Fine Ore Baghouse	11.60	289	16.9	0.66
Area Source	**Release Height (m)**	**Easterly Length (m)**	**Northerly Length (m)**	**Vertical Dimension (m)**
Storage Pile	2.29	72.00	350.00	1.06
Tailings Pond	2.29	144.00	144.00	1.06

Point Source	Stack Height (m)[1]	Stack Temperature (°K)[2]	Stack Velocity (m/s)[3]	Stack Diameter (m)
Volume Source	Release Height (m)	Horizontal Dimension (m)	Vertical Dimension (m)	
Road Dust (90)	2.07	5.58	1.93	

[1] m = meters.
[2] °K = degrees Kelvin; to convert °K to Fahrenheit, use the following formula: ($T_{(°F)} = T_{(K)} \times 9/5 - 459.67$).
[3] m/s = meters per second.

The road, USFS Road 150, was represented by 90 volume sources in the permit mine boundary area, spaced at 100 m.

Building Downwash: The USEPA-developed Building Profile Input Program – Plume Rise Model Enhancement (BPIP-PRIME version 04274) was used to determine any building downwash effects and to ensure no stack in the facility had a modeled height that exceeded good engineering practice (GEP). GEP means that the modeled stack height was not used as an air dispersion technique to reduce air pollutant concentrations at ground-level level (ARM 17.8 Subchapter 4: Stack Heights and Dispersion Techniques). A total of eight (8) buildings were included in the analysis and the results indicated no facility stack height exceeded GEP.

Significant Impact Analysis: The first modeling phase was the significant impact analysis which determines whether a cumulative impact modeling is necessary; a cumulative impact analysis includes other off-site emission sources. To reiterate, two scenarios were modeled defined by the mining phase (exploratory or production) with all other RCR sources included in each scenario. The highest (H1H) modeled concentrations were selected for comparison to the relevant Class II significant impact levels (SILs).

The USEPA codified PSD Class I and Class II $PM_{2.5}$ SILs in October 2010 (http://www.gpo.gov/fdsys/pkg/FR-2010-10-20/pdf/2010-25132.pdf). However, in January 2013, the U.S. United States Court of Appeals for the District of Columbia Circuit vacated and remanded these levels at the request of USEPA (http://epa.gov/nsr/documents/20130304qa.pdf). Currently, the USEPA does not preclude the use of the $PM_{2.5}$ SILs but advises exercising caution when applying the values.

Table 6 lists the results of this modeling phase including the met periods that produced the highest concentrations; no background concentrations are included in this type of modeling. Also noted in this table is the source group, exploratory (EXP) or production (PRO), with the other RCR sources included with each group, that caused the highest pollutant concentrations; in some cases, both source groups (EXP + PRO) produced equivalent concentrations.

Table 6. Significant Impact Modeling Results, RCR Sources Only

Pollutant	Averaging Period	Modeled Concentration (µg/m^3)[1]	Class II SIL[2] (µg/m^3)	Met Period	Significant? (Y/N)
CO	1-Hour	6,805 (PRO)[4]	2,000	2007	Y
	8-Hour	2,045 (PRO)	500	1985	Y
PM_{10}	24-Hour	36 (EXP + PRO)[4]	5	2007	Y
	Annual	7.3 (PRO)	1	2010	Y
$PM_{2.5}$	24-Hour	4.3 (EXP + PRO)	1.2	2007 – 2011	Y
	Annual	0.9 (EXP + PRO)	0.3	2007 - 2011	Y
NO_x	1-Hour	121[5] (PRO)	7.52[6]	1985	Y
	Annual	1.8 (PRO)	1	1985	Y

[1] µg/m^3 = micrograms per cubic meter.
[2] Class II SIL = Class II significant impact level.
[3] PRO = production adit.
[4] EXP + PRO = both exploratory (EXP) and production adits produced equivalent concentrations.
[5] Ozone Limiting Method was applied.
[6] In 2010, the USEPA proposed an interim 1-hour NO_2 SIL of 4 parts per billion (ppb); converting this value to micrograms per cubic meters results in a 7.52 value (http://www.epa.gov/region7/air/nsr/nsrmemos/appwno2.pdf).

As shown, all of the pollutants and averaging periods were higher than their respective SIL; therefore, a cumulative impact analysis including off-site emission sources was required in all cases. Furthermore, in most cases, the production adit with the other RCR sources included produced the highest concentrations.

Cumulative Impact Analysis: Any source outside the mine that had a Montana air quality permit (MAQP) within 50 kilometers of the mine (the modeling distance limitation of AERMOD) was included in the cumulative impact analysis; two mines, Montanore and Troy, fell within this distance criterion. The Montanore Mine (MAQP #3788-00) is about 12 miles northeast of the mine, over the CMWA mountains whereas the Troy Mine (MAQP #1690-02) is about 24 miles northwest of the mine. Tables 7 and 8 list the modeled off-site emissions and emissions characteristics; these parameters were provided by the Department based on previous modeling demonstrations in the area.

Table 7. Modeled Off-Site Emission Sources

Model ID	CO (tpy)[1]	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	NO_x (tpy)
Montanore Mine				
LIBPORT1 (Portal #1)	32.33	7.78	1.80	19.04
LIBPORT2 (Portal #2)	32.33	7.78	1.80	19.04
TAREA1 (Tailings Pond #1)		0.11	0.11	0.00
TAREA2 (Tailings Pond #2)		0.11	0.11	0.00
LIBEQUIP (Surface Equipment: Loader, Road Grader)		0.21	0.21	0.02
MSUREQP (Surface, Mill Mobile Sources)		16.46	3.83	10.97
Troy Mine				
GADITN (Transfer of material to crusher)	15.12	1.29	1.29	217.54
GXFER2SA (Crusher #2)		1.10	1.10	
5BAGHSE (Baghouses)		87.16	87.16	
TAIL1 (Tailings Pond #1)		2.47	2.47	
TAIL2 (Tailings Pond #2)		2.47	2.47	
Grand Total	79.78	126.92	102.35	266.61

[1] tpy = tons per year.

Table 8. Modeled Off-Site Emission Characteristics

Point Source	Location	Stack Height (m)[1]	Stack Temperature (°K)[2]	Stack Velocity (m/s)[3]	Stack Diameter (m)
LIBPORT1	Montanore Mine	15.3	294	2.69	8.84
LIBPORT2	Montanore Mine	3.0	294	0.01	145.00
GADITN	Troy Mine	1.0	283	15.70	6.19

Point Source	Location	Stack Height (m)[1]	Stack Temperature (°K)[2]	Stack Velocity (m/s)[3]	Stack Diameter (m)
GXFER2SA	Troy Mine	34.1	294	12.10	0.61
5BAGHSE	Troy Mine	27.4	286	7.10	0.50
Area Source	**Location**	**Release Height (m)**	**Easterly Length (m)**	**Northerly Length (m)**	**Vertical Dimension (m)**
TAREA1	Montanore Mine	3.0	770.9	770.9	3.0
TAREA2	Montanore Mine	3.0	770.9	770.9	3.0
LIBEQUIP	Montanore Mine	3.0	15.0	15.0	3.0
Volume Source	**Location**	**Release Height (m)**	**Horizontal Dimension (m)**	**Vertical Dimension (m)**	
MSUREQP	Montanore Mine	1.5	34.90	1.40	
TAIL1	Troy Mine	5.0	133.14	4.65	
TAIL2	Troy Mine	5.0	133.14	4.65	

[1] m = meters.
[2] °K = degrees Kelvin.
[3] m/s = meters per second.

Background Concentrations: Background concentrations are added to the modeled concentrations in a full cumulative impact modeling demonstration. These concentrations account for sources not explicitly included in the modeling. The USEPA AirData website provided the CO and NO_2 background concentrations for the relevant averaging periods (http://www.epa.gov/airquality/airdata/ad_rep_mon.html). The CO background concentrations were collected for the year 2012 at the Sieben's Flat, MT (Site ID 30-049-0004), the closest CO monitoring site. The closest NO_2 monitoring site relative to the mine was the Kootenai Water District Building north of Hayden, Idaho (Site ID 16-055-0003), about 50 miles west of the mine. The 98th percentile of the daily maximum 1-hour NO_2 concentration for the years 2008 – 2010 was 19 ppb (about 35.7 $\mu g/m^3$). PM10 data were collected near the Montanore Mine, about 7.5 miles east of the mine. The collection period was between July 1, 1988 and June 30, 1989. The $PM_{2.5}$ background concentrations were obtained from the Cabinet Mountains Wilderness Area IMPROVE (Interagency Monitoring of Protected Visual Environments) monitoring site: http://views.cira.colostate.edu/edmf/Explorer/Default.aspx?btid=FEDBanner1&ssp=~/css/fed1.css. The 2003 data was selected which was the most current year of data at that site; this value has been used in previous modeling demonstrations. The annual concentration was 3.5 $\mu g/m^3$ and the high-second-high 24-hour $PM_{2.5}$ of 10.4 $\mu g/m^3$ was selected for the corresponding background concentration. The Department did review 2004 – 2012 CMWA $PM_{2.5}$ monitoring data; the highest high second high was 19.2 µg/m3 in 2006, but the annual averages over this period were all below the 2003 concentration.

Cumulative NAAQS and MAAQS Impacts: Two scenarios were modeled as defined by the mining phase, exploratory or production, with all the other RCR and off-site sources included in each scenario. The results of the NAAQS and MAAQS compliance demonstrations with the off-site emission sources and background concentrations are listed in Table 9. Also noted in this table is the source group, exploratory (EXP) or production (PRO) adit, with all of the other sources included with each adit, that caused the highest pollutant concentrations; in some cases, both source groups (EXP + PRO) produced equivalent concentrations. For the 24-hour $PM_{2.5}$ modeled concentration, the average of the high-first-high of 24-hour concentrations was selected. It should be noted the USEPA released guidance in 2014 that states that the modeled 98th percentile (high-eighth-high) should be selected with 98th percentile background concentration for comparison to the 24-hour $PM_{2.5}$ NAAQS so result in Table 7 for the 24-hour $PM_{2.5}$ is overly conservative (http://www.epa.gov/scram001/guidance/guide/Guidance_for_PM25_Permit_Modeling.pdf).

Table 9. NAAQS and MAAQS Results.

Averaging Period	Modeled Concentration ($\mu g/m^3$)[1]	Background Concentration ($\mu g/m^3$)	Predicted Ambient Concentration ($\mu g/m^3$)	NAAQS[2] ($\mu g/m^3$)	Percent of NAAQS (%)	MAAQS[3] ($\mu g/m^3$)	Percent of MAAQS (%)	Met Period
CO								
1-hour (H2H)[4]	6466 (PRO)[5]	690	7156	40,000	18	26,450	27	2007
8-hour (H2H)	1981 (PRO)	575	2556	10,000	26	10,000	25	1985
PM_{10}								
24-hour (H6H)[6]	27.2 (PRO)	35	62.2	150	41	150	41	2007 - 2011
Annual (H1H)[7]	7.4 (PRO)	14	21.4	NA[8]	NA	50	43	2010
$PM_{2.5}$								
24-hour (H1H)	4.4 (EXP + PRO)[9]	10.4	14.8	35	42	NA	NA	2007 - 2011
Annual (H8H)[10]	1.01 (PRO)	3.5	4.5	12	38	NA	NA	2007 - 2011
NO_2								
1-hour (H8H)[10]	107[11, 12] (PRO)	35.7	142	188	76	564	25	1985
Annual (H1H)	1.8 (PRO)	6	7.4	100	7	94	8	1985

[1] $\mu g/m^3$ = micrograms per cubic meter.
[2] NAAQS = National Ambient Air Quality Standard.
[3] MAAQS = Montana Ambient Air Quality Standard.
[4] H2H = high-second-high.
[5] PRO = production adit.
[6] H6H = high-sixth-high or N-1 number of met years processed.
[7] H1H = high-first-high; highest annual average across the 5 years of met data.
[8] NA = Not Applicable. In this case, the annual PM_{10} NAAQS was revoked in 2006 (http://www.epa.gov/fedrgstr/EPA-AIR/2006/October/Day-17/a8477.htm).
[9] EXP = exploratory adit.
[10] H8H = high-eighth-high, 98th percentile.
[11] Concentration is the one-year average of the 98th percentile of the daily maximum 1-hour averages.
[12] The OLM method was applied.

The RCR CO, PM_{10}, $PM_{2.5}$, and NOx emissions with the nearby off-site corresponding emissions will not cause or contribute to a NAAQS or MAAQS violation pertaining to these ambient air pollutants. In most cases, the production adit emissions with the other sources produced the higher ambient concentrations than the exploratory adit emissions with the other sources. The modeled concentrations for CO and NO_2 appear relatively high compared to the background concentrations but this is due to the low release height of the emissions coming out of the adits. The highest percentage of any associated NAAQS limit was the 1-hour NO_2 at 76%. The next closest to any NAAQS limit was the annual PM_{10} NAAQS, but the results from the $PM_{2.5}$ emissions were very similar.

PSD Class I Increment Impact Analysis: Modeling was conducted to evaluate the Prevention of Significant Deterioration (PSD) Class I increments. This analysis is similar to the NAAQQS/MAAQS modeling analysis except for two major differences: no background concentrations are added and actual rather than potential emissions are used. If a source has not been operating or operating under normal condition, the potential emissions must be used. Similar to the NAAQS/MAAQS analysis, a significant impact analysis is performed first before a full impact analysis is conducted that includes off-site sources.

CMWA Receptors: A shapefile of the CMWA obtained from the following website was imported into the AERMOD graphic software interface: http://www2.nature.nps.gov/air/Maps/receptors/. Any receptor from the NAAQS/MAAQS analysis outside the wilderness area boundary was manually removed. Additional receptors (613) were added in Cartesian grid format so the most of the wilderness area was covered; the wilderness area far to the north was not included since the impacts would occur closer to the RCR emission sources. Complete coverage was not necessary to the large size of the wilderness area, over 94,000 acres (almost 147 square miles). A total of 1,272 receptors represented the CMWA.

PSD Class I Significant Impact Analysis: PSD Class I increments exist only for the following project-related pollutants and averaging periods: PM_{10} (24-hour and annual), and NO_2 (annual); there are no increment for CO and $PM_{2.5}$ (24-hour and annual). The USEPA codified PSD Class I $PM_{2.5}$ SILs in October 2010 (http://www.gpo.gov/fdsys/pkg/FR-2010-10-20/pdf/2010-25132.pdf). However, in January 2013, the U.S. United States Court of Appeals for the District of Columbia Circuit vacated and remanded these levels at the request of USEPA (http://epa.gov/nsr/documents/20130304qa.pdf). Currently, the USEPA does not preclude the use of the $PM_{2.5}$ SILs but advise exercising caution when applying the values; therefore, for completeness purposes the $PM_{2.5}$ values were included in this analysis. The highest modeled concentrations were selected for comparison to the PSD Class I significant impact levels; the modeling results are listed in Table 10 with the met period that caused the highest concentrations. Also noted in this table is the source group, exploratory (EXP) or production (PRO), with the other RCR source included that caused the highest pollutant concentrations.

Table 10. PSD Class I Significant Modeling Results.

Pollutant	Averaging Period	Modeled Concentration ($\mu g/m^3$)[1]	Class I SIL[2] ($\mu g/m^3$)	Significant? (Y/N)	Met Period
PM_{10}	24-Hour (H1H)[3]	0.27 (EXP)[3]	0.3	N	1985
	Annual (H1H)	0.02 (EXP)	0.2	N	2010
$PM_{2.5}$	24-Hour (H1H)	0.04 (EXP)	0.07	N	2011
	Annual (H1H)	0.002 (EXP)	0.06	N	2010
NO_x	Annual[3] (H1H)	0.03 (EXP)	0.1	N	2010

[1] $\mu g/m^3$ = micrograms per cubic meter.
[2] Class I SIL = Class I significant impact level.
[3] EXP = exploratory adit.

No receptors were significantly impacted using the six years of met; therefore, the modeling analysis demonstrates continued ambient air protection in the CMWA and no cumulative impact analysis was required.

The Department determined, based on the minor level of emissions, proposed BACT methods, and modeling analysis submitted 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: Craig Henrikson
Date: September 3, 2014

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

FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: RC Resources Inc.

Montana Air Quality Permit Number: 2414-03

Preliminary Determination Issued: July 18, 2014
Preliminary Determination Reissued: September 30, 2014
Department Decision Issued: October 16, 2014
Permit Final: November 1, 2014

1. *Legal Description of Site*: RC Resources Inc. (RCR) proposes to construct and operate an underground silver/copper mine and processing facility known as the Rock Creek Mine with activities in Township 27N, Range 32W, Sections 26, 27, 34, and 35: and Township 26N, Range 32W, Sections 3, 10, 15, 22, 23, 27, 28, 29, 32, and 33, Sanders County, Montana.

2. *Description of Project*: The proposed action is for re-issuance of a permit to construct an underground copper/silver mine which is scheduled to occur in two different phases. The first phase would be an evaluation phase where the ore body would be characterized using an evaluation adit. A second production phase would expand operations to include two production adits and would include a mill site, and a mill tailings process area. The evaluation adit will be adjacent to the southwestern border of the Cabinet Mountains Wilderness Area.

3. *Objectives of Project*: Re-issuance of a permit for development of an underground copper/silver mine.

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

5. *A Listing of Mitigation, Stipulations, and Other Controls*: A list of enforceable conditions, including a BACT analysis, would be included in MAQP #2414-03.

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

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

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

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

A. Terrestrial and Aquatic Life and Habitats

The proposed operation of the underground mine would have minor impacts upon the terrestrial and aquatic life and habitats in areas where the mine and mine operations would be located. Although air pollutant deposition would occur in the areas where the equipment would be sited, the size and nature of the operation, dispersion characteristics of pollutants, and conditions placed in MAQP #2414-03 would result in minor impacts at the site. Therefore, the operation of the equipment would create minor impacts on terrestrial and aquatic life that is present in the area of proposed operation.

B. Water Quality, Quantity, and Distribution

Although there would be air emissions associated with the mine operation in the area where the equipment would operate, there would only be minor impacts on water quality, quantity, and distribution because of the nature, size, operational requirements, and conditions placed in MAQP #2414-03 for the mine and associated equipment. The revised application has included emission factors would result in lower potential emissions than previously submitted. Further, as described in Section 7.F. of this EA, the Department determined that any impacts from deposition of pollutants would be minor. In addition, any accidental spills or leaks from equipment would be required to be handled according to the appropriate environmental regulations in an effort to

minimize any potential adverse impact on the immediate and surrounding area. Overall, the operation of the equipment would have minor impacts to water quality, quantity, and distribution in the area of operations.

C. Geology and Soil Quality, Stability, and Moisture

As a result of the operation of the underground mine, there would be minor impacts to the geology and soil quality, stability, and moisture near the equipment's operational area because of the increased vehicle traffic and deposition of pollutants from the facility. As explained in Section 7.F. of this EA, the facility's size, operational requirements, and conditions placed in MAQP #2414-03 would minimize the impacts from deposition.

D. Vegetation Cover, Quantity, and Quality

The operation of the underground mine and associated equipment would result in minor impacts to the vegetative cover, quantity, and quality, because the siting would require some ground disturbance. As explained in Section 7.F. of this EA, the Department determined that due to the nature of the operation, conditions placed in MAQP #2414-03, and dispersion characteristics of the emissions, any impacts from deposition would be minor. In addition, because the water usage would be limited to use in particulate control (as described in Section 7.B. of this EA) corresponding vegetative impacts from water and soil disturbance would be minimal.

E. Aesthetics

Equipment associated with the mine would be visible and would create some noise in the areas where it would operate. MAQP #2414-03 would include conditions to control emissions (including visible emissions) from the equipment and the surrounding work area. The proposed project site would utilize many of the existing roads, would utilize vans for employee transport, use pipelines to slurry tailings and metallic product and therefore, aesthetic impact would be minor.

F. Air Quality

Air quality impacts from the operation of the underground mine and milling operations would be minor because emissions from the facility would be relatively small when controls such as scrubbers and a baghouse are applied to the equipment. Dispersion and deposition of pollutants would occur from the operation of the facility; however, the Department determined that any air quality impacts from the pollutants would be minor due to dispersion characteristics (from factors such as wind speed and wind direction) and conditions placed in MAQP #2414-03.

MAQP #2414-03 would include conditions limiting opacity from the facility and would require that reasonable precautions be taken to control emissions from haul roads, access roads, parking lots, storage piles and the general work area. In addition, the permit would also limit total emissions from the underground mine and any additional equipment operated at the same site to 250 tons per year or less. Further, because the underground mine has less than 100 tons per year of potential emissions for any pollutant generated, the Department determined that the underground mine is a minor source of emissions as defined under Title V.

G. Unique Endangered, Fragile, or Limited Environmental Resources

In an effort to identify species of special concern that may be present in the proposed areas of operation, the Department contacted the Montana Natural Heritage Program (MNHP) for a new review of species of special concern. The 2001 EIS was also reviewed relative to endangered and fragile species. The MNHP indicates 18 animal species of concern. These include the Great Blue Heron, Harlequin Duck, Bald Eagle, Peregrine Falcon, Brown Creeper, Pacific Wren, Westslope Cutthroat Trout, Bull Trout, Lake Trout, Townsend's Big-eared Bat, Grizzly Bear, Fisher, Wolverine, Northern Alligator Lizard, Western Skink, Robust Lancetooth, Sheathed Slug, and Millipede. Issuance of this permit would increase actual emissions to the atmosphere near any location proposed for the operation of the underground mine. However, as explained in Section 7.F. of this EA, because of the nature of the underground mine, and conditions placed in MAQP #2414-03, any impacts to unique endangered, fragile, or limited environmental resources from the deposition of pollutants would be minor.

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

Water would be used on particulate emissions at equipment transfer points, haul roads, access roads, parking lots, or the general plant property, as necessary, to control dust resulting from use of the underground mine. The diesel-fired equipment would consume energy from diesel fuel, a non-renewable resource. Therefore, any impacts on the demands of the environmental resources of water, air, and energy would be minor.

I. Historical and Archaeological Sites

According to correspondence with the Montana State Historic Preservation Office (SHPO), there have been several previously recorded sites in the sections planned for the mine and paste facility which may have cultural resource value. Most of the sites are related to historic mine and timber development. Many of the sites are ineligible for the National Registry according to SHPO, several are listed as "undetermined" and four sites were listed as "consensus determination (CD). Three of the CD sites are listed as "historic railroads" and the fourth CD site is listed as "historic energy development". However, given the proposed underground mine will primarily use existing roadways, minor or no impact to historical or archaeological sites would likely occur. For new land disturbance which occurs, it will be minimal in acreage, and therefore it is unlikely that the project would affect any historic or archaeological site and resulting impacts would be minor.

J. Cumulative and Secondary Impacts

The operation of the underground mine would cause minor effects to the physical and biological environment because although the mine life is limited, some post-mine closure activities and impacts would be on-going. However, any on-going operations would have to operate these post-closure activities in compliance with these mine closure plans. The permits would address the environmental impacts associated with the operations at the proposed site.

The underground mine operations would be limited by MAQP #2414-03 to total emissions of 250 tons/year or less from non-fugitive underground mine operations and any other additional equipment used at any given site.

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

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

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

A. Social Structures and Mores

The operation of the underground mine would not likely alter or disrupt any local lifestyles or communities (social structures and mores) in the area of operation because the mine would have a limited life.

B. Cultural Uniqueness and Diversity

The operation of the underground mine would have no impact on the cultural uniqueness and diversity because the operation because the mine would have a limited life

C. Local and State Tax Base and Tax Revenue

The proposed operation of the underground mine would have minor impacts on local and state tax base and tax revenue as the operation would bring moderately paying jobs to the area.

D. Agricultural or Industrial Production

No impact on agricultural production would occur as the proposed site for the underground mine would be located in an area which is primarily forested. The mine itself could be considered industrial production and it is likely that services supporting the mine would provide contract services which could be included in the industrial production category. Therefore, a minor impact on industrial production and related could occur.

E. Human Health

MAQP #2414-03 would incorporate conditions to ensure that the underground mine would be operated in compliance with all applicable rules and standards. These rules and standards are designed to be protective of human health. As described in Section 7.F. of this EA, the Department determined that any impacts from deposition of pollutants would be minor due to dispersion characteristics and conditions placed in MAQP #2414-03. The air emissions from this facility would be minimized by opacity limitations on the facility and the surrounding area of operation.

F. Access to and Quality of Recreational and Wilderness Activities

The proposed underground mine would limit to some degree access to the area immediately part of the permitted mine area. While the proposed mine would operate in the vicinity of the Cabinet Mountain Wilderness, minor access restrictions could occur directly at the mine site for recreational and wilderness activities.

G. Quantity and Distribution of Employment

Given the expected capacity of the operation, it is expected that the activities from the operation of the underground mine would positively affect the quantity and distribution of employment in any given area. A moderate number of new jobs are expected to be created to support all of the types of employment necessary to support a mine operation.

H. Distribution of Population

Given the expected capacity of the operation, it is likely that the activities from the underground mine would cause a shift from the normal population distribution of any given area or at a minimum result in employees being pulled in from communities further out. Some secondary activities would likely move to the proposed area as a result of the proposed underground mine.

I. Demands of Government Services

Government services could be required for acquiring the appropriate permits and ensuring compliance with the permits that would be issued; however, the government services required would be minor.

J. Industrial and Commercial Activity

The operation of the underground mine would represent only a minor increase in the industrial activity in any given area. Some additional industrial or commercial activities would be likely from the operation of the underground mine and secondary activities would be likely from the limited operation facility. Therefore, some minor industrial and commercial activity resulting from the current permit action would be expected.

K. Locally Adopted Environmental Plans and Goals

The Department is unaware of any locally adopted environmental plans or goals at any given site that the underground mine could be operated at under MAQP #2414-03. The conditions identified in MAQP #2414-03 would apply to operation of the underground mine at the proposed mine site as well as the location of the paste facility.

L. Cumulative and Secondary Impacts

Overall, the cumulative and secondary social and economic impacts from this project would be expected to be minor. Some new businesses would be expected to be drawn to the area as a result of the mine. In addition, any social and economic impacts that could be created would be minor because the mine would have a fixed mine life.

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

If an EIS is not required, explain why the EA is an appropriate level of analysis: Because this underground mine is moderately sized by mining standards, and must use reasonable precautions to control emissions, any impacts created would be minor impacts. A previous EIS and ROD was issued in 2001 by Montana DEQ. This permit is for reissuance of an expired permit which results in lower emissions than the previously issued permit.

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*

Individuals or groups contributing to this EA: *Department of Environmental Quality – Air Resources Management Bureau.*

EA Prepared by: Craig Henrikson
Date: September 15, 2014