

**FINAL ENVIRONMENTAL ASSESSMENT  
BARRETTS MINERALS INC.  
OPERATING PERMIT 00013  
AMENDMENT 005 FOR REGAL MINE EXPANSION**

April 4, 2007

Dear Reader:

Barretts Minerals Inc. (Barretts) filed an application on February 3, 2006 for Amendment 005 to Operating Permit 00013 from the Montana Department of Environmental Quality (DEQ), Environmental Management Bureau (EMB) in Helena. Barretts mines talc from the Regal Mine east of Dillon, MT.

The amendment would modify the approved pit dewatering system, expand the overburden disposal area, and realign the Sweetwater Road through the operating permit area. The overall disturbance at the mine site would increase by 39.8 acres. No changes in mining methods, mining rate, or number of employees are proposed.

DEQ published a Draft Environmental Assessment (EA) on January 25, 2007. The Draft EA analyzed the potential impacts of the Proposed Action as well as the potential impacts of two alternatives: 1) No Action (Denial of Amendment 005) and 2) Agency Modifications to the Proposed Action. The Draft EA addressed issues and concerns raised during agency scoping.

Comments concerning the adequacy and accuracy of the Draft EA were received from the State Historic Preservation Office and Montana Fish, Wildlife and Parks. The comments did not change the conclusions in the Draft EA. DEQ has decided to adopt the Draft EA as Final and approve Amendment 005 to Operating Permit 00013 with Agency Modifications to the Proposed Action. Please see the attached Appendix A to the Draft EA approving Amendment 005 to Operating Permit 00013.

Questions on the decision to approve the amendment should be directed to Herb Rolfes, Operating Permit Section Supervisor, DEQ/EMB, P.O. Box 200901, Helena, MT 59620-0901, phone (406)444-3841, or e-mailed to [hrolfes@mt.gov](mailto:hrolfes@mt.gov). Copies of Appendix A and the Draft EA can be obtained by contacting Mr. Rolfes or by accessing the DEQ website at <http://www.deq.mt.gov/ea/hardrock.asp>.

Sincerely,

**Warren D. McCullough**  
Chief Environmental Management Bureau

Appendix A

## APPENDIX A

### BARRETTS MINERALS INC. APPROVAL FOR AMENDMENT 005 TO OPERATING PERMIT 00013 AND THE FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR REGAL MINE EXPANSION

Operating Permit 00013 is revised to allow expansion of the Regal Mine as described in the Barretts Minerals Inc. Life-of-Mine Expansion Plan. The application was received on February 3, 2006. The amendment is approved as changed by modifications analyzed in the January 25, 2007 Draft Environmental Assessment (EA). DEQ has adopted the Draft EA as Final. As a result of the amendment approval, Barretts Minerals can expand the disturbance at the Regal Mine by 39.8 acres.

#### **PERMIT HISTORY AND PREVIOUS ENVIRONMENTAL ANALYSES:**

<u>Permit/Amendment/ Minor Revision</u>	<u>Date</u>	<u>Permit Area-Disturbance Area</u>
Permit 00013	March 17, 1972	Initial mine approved, 2 permit acres and 2 disturbed acres. Bond \$1,000
Permit 00013A	April 22, 1977	Permit area and disturbed area increased to 36 acres under two operating permits. Preliminary Environmental Review released April 6, 1977. Bond \$36,000 total.
Amendment 001	August 18, 1992	Permit area and disturbed area increased by 25 acres to 61 acres under two operating permits. Bond increased to \$61,000.
Amendment 002	May 11, 1993	Permit area and disturbed area increased by 4.9 acres to 66 acres under two operating permits. Bond increased to \$70,315. A Checklist Environmental Assessment was released on April 8, 1993.
Minor Revision 97-001	May 9, 1997	Approved increase in production. No bond increase or increase in permit area or permitted disturbance.
Consolidation of Operating Permits 00013 and 00013A Amendment 003.....	August 5, 1998	Permit area increased by 74.1 acres to 140 acres and disturbed area increased by 14 acres to 80 acres. Bond increased to \$987,000. A Checklist Environmental Assessment was

Amendment 004	March 20, 2001	released on June 30, 1998. Permit Area increased by 13 acres to 153.1 acres and permitted disturbance increased by 63 acres to 143.1 acres. Bond increased to \$2,778,300. Draft Environmental Impact Statement (EIS) released on December 19, 2000; Final EIS released on February 28, 2001.
Minor Revision 01-001	October 4, 2001	Revision allowed Barretts to test water quality. No change in permit area or permitted disturbance. No change in bond.
Minor Revision 05-001	July 8, 2005	Revision allowed Barretts to change the ore transfer site. Permit Area increased by 6.5 acres to 159.5 acres and permitted disturbance increased by 6.5 acres to 149.5 acres. Bond increased to \$2,788,059.
Minor Revision 05-002	December 5, 2005	Revision allowed Barretts to conduct ground water infiltration testing. Permit Area increased by 0.5 acres to 160 acres and permitted disturbance increased by 0.5 acres to 150 acres. Bond increased to \$2,790,059.
Amendment 005	<i>Date of Signature</i>	Permit area would increase by 83.1 acres to 243.1 acres. Permitted disturbance would increase by 39.8 acres to 189.8 acres. Unobligated bond balance would be obligated. Bond for Amendment 005 would be finalized in 2007.

Following is a summary of Barretts' operating permit conditions before and after Amendment 005 is approved:

<b>Operating Permit 00013</b>	<b>Current Conditions</b>	<b>Expansion Amendment</b>
Permit Area:	160.0 acres	243.1 acres
Permitted Disturbance:	150.0 acres	189.8 acres
Bonded Acres:	160.0 acres	160.0+ acres
Current Disturbance (as of July 2006 )	94.0 acres	94.0 acres
Current Bond:	\$2,878,300	\$2,878,300
Obligated Balance:	\$2,790,059	\$2,878,300
Unobligated Balance:	\$88,241	\$0

## STIPULATION HISTORY

The following stipulations apply to Operating Permit 00013:

### Amendment 005 Stipulations

**Stipulation 013-005-001:** DEQ approves the infiltration trench plan, contingent on the Montana Pollution Discharge Elimination System (MPDES) permit review indicating that the discharge quality complies with MPDES permit limits. Until the MPDES permit is approved, Barretts Minerals (BMI) shall only discharge unaltered groundwater to the trenches. BMI shall develop contingency plans for land application of water, disposal of groundwater in a drainfield, or water treatment in case quality of water reporting to the trenches exceeds expected MPDES effluent limits.

Rationale: A hydrologic connection between the infiltration trenches and Carter or Hoffman creeks exists as documented in the infiltration testing program in 2006. Unaltered groundwater in the dewatering wells contains selenium levels that approximate or occasionally exceed surface water standards. BMI is preparing a MPDES permit application which would be submitted to DEQ in 2007. The MPDES permit would cover the mine pit dewatering system water. The stipulation will protect water quality standards until the MPDES permit review is completed.

**Stipulation 013-005-002:** BMI shall clean out the infiltration trenches periodically to maintain infiltration rates. The mine pit sump water will not be pumped to the infiltration trenches. It shall be pumped to a lined pond where it will evaporate, be used to control dust on mine roads, be land applied on undisturbed land in the mine permit boundary, or used to irrigate reclamation on the mine site.

Rationale: The infiltration trenches could eventually plug from sediment over the mine life. Periodic cleaning will keep the trenches functional over mine life and reduce potential impacts from overtopping of the trenches and overland flow. This will minimize the potential for plugging the trenches with sediment and for nitrate, total suspended solids, and selenium impacts to surface water.

**Stipulation 013-005-003:** BMI shall submit in each annual report a summary of water discharged from the wells to each trench and the water quality. BMI shall submit in each annual report to DEQ a summary of the previous year's monitoring data with a trend analysis verifying that predicted water quality from the mine pit dewatering wells was within discharge limits set by the MPDES permit. The report shall detail pit dewatering volumes and discharges to each infiltration trench, to undisturbed land application disposal areas or reclaimed areas, disposal of the water in a drainfield during summer and/or winter, or other approved methods.

The annual summary report shall provide a review of the new springs and overland flows observed during the preceding year and a discussion of potential

changes to the plan to correct any problems resulting from these flows. BMI shall report spring and seep locations, quality and flows. BMI shall propose management changes to limit any impacts so that the plan complies with MPDES permit limits.

The annual summary report shall detail the volumes and quality of water from the mine pit sump that is pumped to the lined settling pond, and used for dust control, or land applied to undisturbed or reclaimed areas. BMI shall submit a plan for land application of the pit sump water on surrounding native rangeland or treatment of water if necessary. Annual monitoring shall identify the potential need. Any changes in monitoring shall be specified in the MPDES permit and reviewed annually based on the previous year's monitoring.

Rationale: Pit dewatering needs to be tracked to document the volumes and quality of flows associated with pit dewatering to ensure MPDES permit limits are met.

**Stipulation 013-005-004:** BMI shall add more BMPs to limit erosion and runoff from the larger overburden pile area. BMI shall provide a modification in the drainage plan to route the water back to the pit during operations and at closure, if necessary, until reclamation limits runoff to acceptable levels. BMI must submit a conceptual plan by the date of the next annual report, April 22, 2008.

Rationale: The drainage plan modification and additional BMPs would limit potential runoff impacts to Carter Creek.

**Stipulation 013-005-005:** BMI shall develop a plan to deposit overburden during operations to minimize regrading and to establish natural looking drainages at closure. BMI shall submit a plan by the date of the next annual report, April 22, 2008, showing a conceptual final design for the overburden pile including the plans for natural looking drainages and the overburden that would be placed on top to eliminate the flat top. BMI shall submit conceptual 5-year plans to achieve the design. BMI shall report in each annual report progress towards achieving the current 5-year design plan.

Rationale: BMI has supplied a conceptual design for the waste rock dump at closure. The stipulation would provide a more detailed and regular update to the plan over mine life.

**Stipulation 013-005-006:** BMI shall provide a plan for the size and shape of the overburden pile if operations cease before final build-out. BMI shall prepare a 5-year conceptual, concurrent overburden reclamation plan. BMI shall submit by the date of the next annual report, April 22, 2008, a conceptual life of mine concurrent reclamation plan for the overburden pile. BMI must submit conceptual 5-year plans to achieve the plan. BMI shall report in each annual report progress towards achieving the current 5-year concurrent reclamation plan.

Rationale: BMI has supplied a conceptual phased build-out of the overburden pile. BMI has committed to providing an updated reclamation plan should operations cease before end of mine life. This stipulation would help identify the extent of concurrent reclamation that could be achieved over the life of mine. DEQ would be assured that the amount of overburden exposed in the pile would be minimized.

### **Amendment 004 Stipulations**

**Stipulation 013-004-01:** If new springs or seeps associated with the infiltration trenches are identified, they must be added to the water monitoring program. Flow rate and water quality must be monitored weekly at these locations until flow rate and water quality are adequately assessed and DEQ agrees that the monitoring frequency can be reduced to monthly intervals. Results must be provided in the annual report to DEQ.

Rationale: This stipulation will ensure that, if the infiltration trenches begin discharging to surface water, water quality will meet standards. A MPDES permit may be required if new springs or seeps reach state waters.

Status: This stipulation has been modified removing the reference to percolation ponds and will apply to the Amendment 005 infiltration trenches.

**Stipulation 013-004-02:** For the pit water disposal system, BMI must submit a design for leak detection and automatic shutoff, along with collection sumps, for the pipeline.

Rationale: In the event of a pipeline leak or rupture, water would be prevented from entering, and possibly polluting, surface water. Erosion from a pipeline leak or rupture discharge would be minimized.

Status: BMI must submit the plan before pit dewatering begins.

**Stipulation 013-004-03:** If the pumping rate of the dewatering wells exceeds 1000 gpm, BMI must submit to DEQ, for review and approval, a plan to handle the excess water.

Rationale: The infiltration trenches were designed based on the most likely expected flows according to groundwater characterization studies. The trenches may not be able to infiltrate flows at higher rates.

Status: This stipulation has been modified removing the reference to percolation ponds will apply to the Amendment 005 infiltration trenches.

**Stipulation 013-004-04:** If groundwater drawdown due to pit dewatering dries up the office well, replacement with a dewatering well will be permitted.

Rationale: This stipulation will ensure that water is available at the mine office and facilities area, if the cone of depression dries up the shallow office well. BMI would have to secure a water right for the well for this use, if they use more than 35 gpm or 10 acre-feet per year.

Status: Pit dewatering has not started yet.

**Stipulation 013-004-05:** Revegetated areas must be irrigated with the pit sump water during the growing season at a rate not to exceed 35 gpm or 10 acre-feet per year.

Rationale: Pit sump water is expected to have a high nitrate content. Using this water to irrigate revegetated areas should improve reclamation success and prevent potential nitrate problems at the percolation pond area. This level of use would not require a water right.

Status: Pit dewatering has not started yet.

**Stipulation 013-004-06:** The coarse fragment content of soil salvaged for reclamation of steeper slopes must be at least 25 percent by volume as identified by sampling on a 100-by-100-foot grid after application. If sampling indicates that coarse fragment content is less than 25 percent, BMI must submit for review and approval a final design for additional slope breaks and erosion controls, such as benches and cross-slope talus features.

Rationale: Rock fragments reduce erosion potential. Precipitation and snow melt water also infiltrate more rapidly into soils with a high volume of coarse fragments. This reduces erosion on steeper slopes. If the coarse fragment content of the soil placed on steeper slopes is less than 25 percent, the required slope breaks or other erosion controls will help route runoff water from long waste rock dump slopes and stop sheet erosion on upper slopes.

Status: Waste rock dump reclamation has not started yet.

**Stipulation 013-004-07:** Pit inflow monitoring must be added to the **Water Resources Monitoring Plan**.

Rationale: Pit inflow monitoring information will be used to verify the results of pit inflow and water quality modeling. If water moving out of the pit lake into the groundwater does not meet groundwater quality standards, a mixing zone would have to be designated.

Status: BMI has added pit inflow monitoring to the Water Resources Monitoring Plan. The stipulation has been fulfilled.

**Stipulation 013-004-08:** BMI must submit a final design for the final pit access ramp to provide shallow water areas for aquatic habitat. The ramp must be sloped at 8 percent in the zone of pit lake water level fluctuation to maximize the

littoral zone (the zone between high and low water marks) available in the post-mine lake.

Rationale: A large littoral zone along this ramp will enhance aquatic habitat by providing some shallow areas in the relatively deep small lake.

Status: The final design has not been submitted to date.

**Stipulation 013-004-09:** BMI must start reclamation of the pit as soon as mining ceases and not wait for the pit lake to fill.

Rationale: This will speed up the final reclamation process for the pit above the ultimate lake surface by up to 3 years.

Status: Pit reclamation has not begun yet.

**Stipulation 013-004-10:** BMI must submit an alternative design for DEQ and Madison County review, before the waste rock dump is expanded in the area of the public road, to move the Sweetwater Road to at least 50 feet from the pit.

Rationale: Placing the road away from the edge of the pit will minimize the potential risks of trespass to the pit and the risk to public safety due to pit wall raveling.

Status: BMI has submitted the relocation plan as part of Amendment 005. The stipulation has been fulfilled.

**Stipulation 013-004-11:** Talus must be placed in the pit on the Sweetwater Road side of the pit.

Rationale: Talus placed on the upper pit walls will enhance their long-term stability in that area, protecting the road and the public from post-mine safety hazards due to pit wall slumping and raveling.

Status: BMI has relocated the talus to the required location as part of Amendment 005. The stipulation has been fulfilled.

**Stipulation 013-004-12:** BMI must submit a final design for a fence to control trespass and a safety berm on the pit side along the Sweetwater Road to limit visibility and access into the pit by the public.

Rationale: This stipulation is designed to protect the public by keeping people away from the pit edge and pit lake.

Status: BMI has not submitted the final design to date.

**Stipulation 013-004-13:** BMI must submit an interim reclamation plan for DEQ approval for all disturbances associated with the dewatering wells, pipeline, and percolation ponds.

Rationale: This stipulation will help control noxious weeds during mine operations on areas disturbed by the water disposal system.

Status: BMI has submitted a plan for these disturbances as part of Amendment 005. The stipulation has been fulfilled.

**Stipulation 013-004-14:** The pipeline must be left in the ground at closure. Only inlet and outlet areas and any pump stations or other surface exposures of the pipeline will be removed at closure.

Rationale: Re-disturbance of the pipeline corridor at mine closure would retard final reclamation and set back operational weed control efforts.

Status: This stipulation would also apply to the pipeline to the Amendment 005 trenches.

**Stipulation 013-004-15:** BMI must report all asbestiform minerals sampling results to DEQ in the annual reports.

Rationale: DEQ needs to track monitoring results at least annually to ensure BMI's sampling plan is adequate.

Status: BMI has been submitting the results in the annual reports.

**Stipulation 013-004-16:** BMI must implement continuous streamflow monitoring in Hoffman and Carter creeks to help identify potential impacts from pit dewatering on local stream flows. Monitoring information must be provided to DEQ in the annual water resources monitoring report. A summary report of the flow data must be provided annually to the local ranchers who may be impacted.

Rationale: Continuous monitoring of the streams will help identify impacts to stream flow over the years.

Status: BMI has committed to continuous monitoring in Amendment 005. This stipulation is fulfilled.

**Stipulation 013-004-17:** BMI must receive approval for the design and construction of the Sweetwater Road underpass tunnel to ensure the tunnel meets Madison County road standards.

Rationale: The underpass tunnel below the haul road could create a public safety hazard if not designed properly.

Status: The tunnel has not been constructed to date.

**Stipulation 013-004-18:** In the bond calculations for the Regal Life-of-Mine Expansion Plan, DEQ has not bonded for complete reclamation of the waste rock dump assuming that BMI would reclaim portions of the dump concurrently during operations (See page 2 of 8 of the bond calculations). BMI must comply with the concurrent reclamation as proposed in the reclamation plan or the bond would be increased accordingly.

**Rationale:** Concurrent reclamation must be conducted or the bond would be inadequate if the State of Montana assumed the reclamation liability.

Status: The stipulation would also apply for Amendment 005 disturbances.

**Stipulation 013-004-19:** BMI must construct the open pit in accordance with the approved plan as described in the Call and Nicholas pit design report to prevent wedge failures in the pit.

**Rationale:** Pit wedge failures could occur increasing the risk of injury to mining personnel if the pit is not constructed according to the design report.

Status: The stipulation still applies.

**Administrative Stipulation 013-004-20:** BMI must provide replacement pages to the Regal Life-of-Mine Expansion Plan operating permit amendment application document, incorporating all stipulations as part of operating permit requirements.

**Rationale:** Incorporation of the stipulations into the operating permit document makes them an enforceable part of Operating Permit 00013.

Status: BMI must submit replacement pages with the 2006 annual report due on April 22, 2007.

**Administrative Stipulation 013-004-21:** BMI must update the Regal Life-of-Mine Expansion Plan document to include commitments made during the completeness review process, the bond calculation process, and changes made in the **Agency Modifications to the Proposed Action** in the Environmental Impact Statement by the date of the first annual report after Amendment 004 approval.

**Rationale:** The completeness review process, bond calculation process **and Agency Modifications to the Proposed Action** in the Environmental Impact Statement have resulted in the need for the Regal Life-of-Mine Expansion Plan document to be corrected to reflect the changes made since the permit amendment application document was submitted. These changes on replacement pages would remove any outdated information and make the operating permit document more enforceable.

Status: The stipulation will be applied to Amendment 005 approval. BMI must submit replacement pages with the 2006 annual report due on April 22, 2007.

**Amendment 003 Stipulations**

Status: All the stipulations were fulfilled.

**Amendment 002 Stipulations**

Status: All the stipulations were fulfilled.

**FINDING OF NO SIGNIFICANT IMPACT**

Based on the analysis of potential environmental impacts and lack of comments received on the environmental assessment, DEQ has determined that the proposed action with agency mitigation measures described in the environmental assessment will not have any significant impacts on the human environment and the preparation of an environmental impact statement is not required.

Approved by:

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Warren McCullough, Chief  
Environmental Management Bureau

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Date

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