Appendix F

Public Comment Letters

Table F-1
Public Comment Letters

Letter Number	*Commenter*
Federal Agencies	
1	USEPA
2	USFWS
Nevada State Agencies	
3	NDOW
4	SHPO
5	Division of State Lands
Local Agencies	
6	Nye County Board of Commissioners
7	Round Mountain Town Board
Tribal	
8	Duckwater Shoshone Tribe
Organization	
9	Great Basin Resource Watch
Business	
10	Schmueser & Associates, Inc.
Individuals	
11	Randy Burggraff
12	Sheila Beery-Burggraff
13	Audry Casey
14	Barbara (Darrough) Culbertson
15	Felix Ike
16	Melanie Jensen
17	Dave Konsbruck
18	Darlene (Darrough) Murphy
19	Jim Shilling
20	Karla Snider
21	Dan Wooton
22	Mary Wooton

Federal Agencies

Letter - 1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

SEP 14 2009

Thomas Seley, Field Manager
Bureau of Land Management
Tonopah Field Office
P.O. Box 911
Tonopah, NV 89049

Subject: Round Mountain Expansion Project Draft Environmental Impact Statement (EIS), Nye County, Nevada [CEQ # 20090256]

Dear Mr. Seley:

The U.S. Environmental Protection Agency (EPA) has reviewed the above referenced document. Our review and comments are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) NEPA Implementation Regulations at 40 CFR 1500-1508, and our NEPA review authority under Section 309 of the Clean Air Act.

We have appreciated the opportunity to work closely with you during the preparation of this Draft EIS consistent with the draft Memorandum of Understanding between the Nevada Bureau of Land Management and EPA on mining-related NEPA projects. We believe this process was helpful in early resolution of some issues during the EIS preparation process. Several outstanding issues remain, however, and we recommend they be addressed in the Final EIS. We have, therefore, rated this Draft EIS as EC-2 (see enclosed "Summary of Rating Definitions and Follow-Up Action"). Our rating of this document is based on our concerns regarding the project's potential impacts to groundwater and surface water quality and quantity, riparian areas, air quality, and the potential need for long-term financial assurance to protect groundwater quality. We recommend the Final EIS provide additional information regarding these issues, and include additional mitigation measures as well as financial assurance for reclamation and post-closure monitoring and mitigation.

Responses to Letter - 1

Letter - 1 (Continued)

We request a copy of the Final EIS when it is filed with our Washington, D.C. office. If you have any questions, please call me at (415) 972-3521, or have your staff call Jeanne Geselbracht at (415) 972-3853.

Sincerely,

Kathleen M. Goforth, Manager
Environmental Review Office

004928

Enclosures: EPA's Summary of Rating Definitions and Follow-Up Action
EPA's Detailed Comments

Cc: David Gaskin, Nevada Division of Environmental Protection
Kristine Hansen, U.S. Army Corps of Engineers

Responses to Letter - 1

Letter - 1 (Continued)

SUMMARY OF EPA RATING DEFINITIONS

This rating system was developed as a means to summarize EPA's level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the EIS.

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts..

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

ADEQUACY OF THE IMPACT STATEMENT

Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment."

Responses to Letter - 1

Letter - 1 (Continued)

Round Mountain Expansion Project Draft EIS
EPA Detailed Comments – September, 2009

Water Quality and Quantity

The long-term drain-down solution from the Round Mountain heap leach pads would be collected and managed through evaporation and evapotranspiration cells that may be designed with an overflow system to a subsurface infiltration basin. However, the drain-down solution has the potential to exceed Nevada water quality standards for aluminum, arsenic, and antimony. While the Draft EIS indicates the alluvium has significant attenuation capacity for aluminum and arsenic, attenuation is not predicted for antimony. It is unclear how drain-down activities will be monitored and managed to ensure non-degradation of groundwater.

1-1 **Recommendation:** The Final EIS should identify the water quality criteria or non-degradation standards that would need to be met and discuss how the drain-down solution and groundwater would be monitored and managed to ensure non-degradation of groundwater in the project area.

Storm water would be diverted around mine facilities. However, it is unclear from the Draft EIS (e.g., in Figures 2.3-3 and 2.4-1) how drainage from Kelsey Canyon, the unnamed canyon to the south of it, Shoshone Canyon, and the drainages flowing toward the Gold Hill facilities will be diverted around mine facilities. It is also unclear how these diversions will be stabilized during reclamation to ensure long-term protection of tailings, leach pads, and waste rock facilities from surface water flows in channels that have been diverted from their natural drainages.

1-2 **Recommendation:** The Final EIS should clearly depict all storm water diversion channels on maps of the existing mine and proposed project, and describe in more detail how the project site will be reclaimed to ensure long-term protection of mine facilities from diversion channels.

The Draft EIS does not discuss the potential cumulative impacts of climate change on groundwater recovery, spring and stream flows, and riparian vegetation in the project area (e.g., shorter or longer recovery times, lower or higher predicted flows, reduced or expanded riparian areas, etc.).

1-3 **Recommendation:** The cumulative impacts section of the Final EIS should address potential impacts of climate change on groundwater recovery, spring and stream flows, and riparian vegetation, and discuss whether additional measures may be needed to mitigate for the potential range of project area impacts associated with climate change.

Responses to Letter - 1

1-1 Please see Table 3.3-12. Since the proposed project would be a zero-discharge facility, no solution monitoring would be required.

1-2 Please see Figure 2.4-14. Please refer to Section 2.6 regarding reclamation of storm water diversions.

1-3 As indicated in Section 3.7.3, it may be difficult to discern whether global climate change is already affecting resources in the proposed project area. In most cases, there is more information about potential or projected effects of global climate change on resources. It is important to note that projected changes are likely to occur over several decades to a century. Therefore, many of the projected changes associated with climate change may not be measurably discernible within the reasonably foreseeable future. However, the groundwater modeling includes a sensitivity analysis, which varies parameters similar to an expected variation caused by changing climatic conditions.

In order to characterize potential impacts to riparian vegetation from groundwater drawdown, please see Sections 3.14 and 4.14 regarding riparian baseline conditions within the maximum 10-foot drawdown isopleth and potential impacts from groundwater drawdown on riparian vegetation. Also, please see revised mitigation measure V-1 in Section 4.14.6 regarding riparian vegetation mitigation resulting from groundwater drawdown and surface disturbance-related activities.

Letter - 1 (Continued)

Clean Water Act Section 404

EPA has received for review the U.S. Army Corps of Engineers' (Corps) jurisdictional delineation for the Round Mountain Expansion Project. A final decision on whether surface waters in the project area are jurisdictional waters of the U.S. will be made by the Corps by September 15. [If a Clean Water Act Section 404 permit is required, the Final EIS should demonstrate the project complies with Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials (40 CFR 230), promulgated pursuant to Section 404(b)(1) of the Clean Water Act.] Pursuant to 40 CFR 230, any permitted discharge into waters of the U.S. must be the least environmentally damaging practicable alternative available to achieve the project purpose. [If any of the surface waters in the project area are determined to be waters of the U.S., it is unclear whether the project, as proposed, is the least environmentally damaging practicable alternative.]

1-4

1-5

Streams, springs, and riparian areas are extremely valuable in the desert environment and should be protected by avoiding direct, indirect, and cumulative impacts. Regardless of the outcome of the jurisdictional delineation, even if impacts cannot be avoided or minimized, we strongly recommend they be mitigated.

1-6

We note that, under the proposed project, Jefferson Creek would be culverted at the transportation/haul road crossing. According to the Draft EIS, Jefferson Creek provides limited riparian habitat and is likely a valuable water resource to local wildlife when flowing (p. 3.17-1). The stream is also probably a wildlife corridor and supports a greater species diversity and density than the surrounding area.

Recommendation: We recommend a bridge or conspan be seriously considered for the road crossing over Jefferson Creek to allow for better wildlife access along the stream and a more natural flowing stream.

1-7

Other intermittent and ephemeral streams also provide valuable water resources within the project boundary and larger cumulative effects area when they flow, which appears to be highest in winter and spring, according to Table 3.3-4. However, the Draft EIS does not provide information on how valuable these resources are, what wildlife is supported, how these resources will be affected, or how loss of these resources within the project area will be replaced.

Recommendation: The Final EIS should provide more information on existing values and functions of these streams and how those values and functions would be affected by the project. If values and functions could be adversely affected, the Final EIS should identify measures to avoid, minimize, or mitigate these impacts. [For all streams and springs in the project area, the Final EIS should also provide the following information.

1-8

1-9

- Will diversion channels be designed to provide wildlife connectivity where possible?

Responses to Letter - 1

1-4 No Section 404 Permit would be required since jurisdictional waters do not occur within the proposed project area.

1-5 Based on a letter from the USACE dated September 29, 2009, no waters of the U.S. occur within the project area or vicinity. As a result, no impacts to waters of the U.S. would occur as a result of the proposed project.

1-6 Please see response to comment 1-3.

1-7 As discussed in Section 2.4.4.7, culverts would be constructed along the transportation/haulage road at Jefferson Creek in accordance with Nye County standards. The construction of a bridge or "conspan" over Jefferson Creek would result in significantly more surface disturbance and loss of wildlife habitat than a culvert crossing. In addition, two box culvert underpasses would be constructed for wildlife and cattle passage under the proposed haul road. As a result, the BLM has determined that a culvert crossing at Jefferson Creek is the appropriate construction method for the Jefferson Creek crossing.

1-8 The proposed expansion of the Round Mountain Pit and the development of the Gold Hill Pit would not affect surface water flows. Surface water flow in streams within and near the project boundaries is controlled by snowmelt and rainfall. Groundwater dependent springs are a minor component of surface water flow. Although there is a possible temporary reduction in flow at selected springs within the maximum 10-foot drawdown contour, this reduction in flow is not expected to have a significant effect on stream flows. Also, please see response to comment 1-3.

1-9 Please see Figure 2.4-14. The BLM has determined that proposed configuration of the diversion channels are not expected to affect wildlife connectivity and movement in the project area.

Letter - 1 (Continued)

1-9 (cont'd)

- Will diversion channels be designed to properly transport sediment, avoid upstream head-cutting and downstream erosion or aggradation?
- How will influent/effluent stream effects be modified by the project? How will flows be interrupted?
- What will happen to the streams downstream of the diversions? How would these streams be filled and/or diverted?
- What are the existing average dimensions of the channels, diversions, and affected downstream areas?
- What are the acreages and linear feet of affected resources?

Vegetation Resources

The project would result in a long-term loss of riparian vegetation along seeps, springs, and perennial streams from groundwater drawdown impacts. In addition, 0.05 acre of Jefferson Creek riparian vegetation would be removed or disturbed and other small drainages would be affected by filling and excavation. Riparian vegetation losses would be mitigated by the compensatory enhancement of existing riparian areas at off-site locations at a 2:1 ratio (Draft EIS, p. 4.14-4).

1-10

Recommendation: [The Final EIS should include a detailed riparian habitat compensation plan.] [Mitigation should be successfully implemented before habitat losses occur to ensure continuity of this rare regional resource. The discussion should include the following information.

1-11

- Acreage and habitat type that would be restored or enhanced;
- Water sources to maintain the mitigation area;
- The revegetation plans including the numbers and age of each species to be planted;
- Maintenance and monitoring plans, including performance standards to determine mitigation success;
- The size and location of mitigation zones;
- The parties that would be ultimately responsible for the plan's success; and
- Contingency plans that would be enacted if the original plan fails.]

Air Quality

It is unclear whether Table 4.7-1 in the Draft EIS represents the Potential to Emit stationary source pollutants from the existing mine or the proposed project. In addition, with the exception of mercury, the Draft EIS does not identify or estimate emissions of hazardous air pollutants (HAP) from the existing mine or proposed project. Furthermore, only pollutants from stationary sources are estimated in the Draft EIS. Estimated fugitive emissions of both criteria pollutants and HAPs appear to be missing.

1-12

Recommendation: [The Final EIS should provide the projected emissions for both criteria pollutants and HAPs from the existing mine as well as the proposed project. Construction and operation emissions should be included.

Responses to Letter - 1

1-10 Please see response to comment 1-3.

1-11 Please see response to comment 1-3.

1-12 The potential to emit for criteria pollutants is listed in Table 4.7-1; actual emissions would be less than the potential to emit. NAAQS does not consider criteria pollutant emissions, rather concentrations of pollutants in areas where the public has access. Facility-wide $PM_{2.5}$ emission estimates are included in Section 4.7. Projected emissions of criteria pollutants and HAPs are provided in the Air Quality Report. The Final EIS text has been revised to respond to this comment and to include the results of additional air quality modeling.

Letter - 1 (Continued)

Recommendation: We recommend the following diesel particulate matter (DPM) emission reduction measures.

- Use particle traps and other appropriate controls to reduce emissions of DPM and other air pollutants. Traps control approximately 80 percent of DPM, and specialized catalytic converters (oxidation catalysts) control approximately 20 percent of DPM, 40 percent of carbon monoxide emissions, and 50 percent of hydrocarbon emissions;
- After June 2010, use diesel fuel with a sulfur content of 15 parts per million or less, or other suitable alternative fuel, which substantially reduces DPM emissions (see http://www.clean-diesel.org/nonroad.html);
- Minimize construction-related trips of workers and equipment, including trucks and heavy equipment;
- Lease or buy newer, cleaner equipment (1996 or newer model);
- Employ periodic, unscheduled inspections to ensure that construction equipment is properly maintained at all times and does not unnecessarily idle, is tuned to manufacturer's specifications, and is not modified to increase horsepower except in accordance with established specifications.

1-13

Financial Assurance

The Draft EIS does not address the closure and reclamation bond that will be required by BLM and the State of Nevada for this project. EPA believes this information is important in the EIS because the adequacy of the bond affects the efficacy of the reclamation plan, which is critical to long-term protection of environmental resources.

Recommendation: We recommend that the Final EIS identify the estimated bond amounts for each closure and reclamation activity. Also discuss how BLM can modify the bond during the course of operations if temporary, long-term, or perpetual treatment and/or remediation needs are discovered during operations. The costs of implementing contingency measures (e.g., needs discovered in infiltration field pilot tests at Gold Hill) should be addressed. Identify who would be responsible for any post-closure cleanup actions should they be necessary.

1-14

It is possible that the Gold Hill pit could become a flow-through pit lake starting about 200 years after mine closure (Draft EIS, p. 4.3-45). However, potential mitigation measures are not proposed in the Draft EIS to protect against degradation of waters of the State. It appears a long-term trust fund may need to be established to cover the costs of potential mitigation. In addition, the Draft EIS (pp. ES-7 and 4.3-45) states that any required monitoring or mitigation measures associated with the pit lake would be implemented by the BLM. It is unclear whether the mine operator would be financially responsible for these activities.

Recommendation: The Final EIS should identify how groundwater adjacent to the Gold Hill pit would be monitored, and describe the potential mitigation measures that may be needed to protect waters of the state. If a long-term post-closure monitoring and management plan is needed, it should be included in the

1-15

Responses to Letter - 1

1-13 RMGC already uses low-sulfur diesel fuel for their existing operations and will continue to do so for the Proposed Action. RMGC also currently minimizes construction-related trips for both cost and efficiency reasons, through both bulk transport and detailed scheduling. All of RMGC's mobile equipment is regularly maintained, to include tuning and appropriate emission controls to maintain specifications. Trap control is not necessary to include in the Final EIS because vehicles will be required to be certified to any Environmental Protection Agency transportation emission standards prior to being sold in the United States market. Traps will be included by vehicle manufacturers if applicable to meet diesel particulate matter standards.

1-14 As provided for in 43 CFR 3809.552c, BLM previously identified the need for a Long Term Trust Fund (LTTF) for RMGC's existing operations at the site to ensure the continuation of long-term monitoring and management of any issues identified during monitoring. The primary purpose of the LTTF is to provide a contingency fund for long-term monitoring of the project (after reclamation and bond release) and for remediation of future environmental issues. The fund would remain in place and would be increased to meet the potential monitoring and mitigation needs associated with the proposed Round Mountain Expansion Project. As part of the proposed reclamation plan, reclamation permit, and reclamation closure bond, monitoring of the environmental performance of reclamation and closure activities for the proposed project would be required for a minimum of 3 years for revegetation and 30 years for groundwater drawdown (see Section 2.6.9, Post-reclamation Monitoring and Mitigation). The LTTF would address long-term environmental monitoring and potential impacts in the post-closure period after bond release.

It is not the BLM's policy to include the reclamation cost estimate for financial assurance in NEPA documents. The reclamation and closure techniques are presented in the EIS to allow for review and comment on their adequacy. Reclamation and closure cost are time-sensitive, which is why the BLM Authorized Officer has the authority to review and require cost updates at any time to ensure bond adequacy. In addition, the BLM Authorized Officer has the regulatory authority to require additional bonding and/or long-term trust if these needs become necessary. As long as a plan of operations remains open, the operator of record is liable for post-mining environmental issues. In the case of the Round Mountain Expansion Project, a long-term trust will be established. BLM, as the beneficiary, will have access to the funds for environmental remediation and monitoring if the company is no longer solvent.

Letter - 1 (Continued)

1-15 (cont'd)

Final EIS, and a long-term trust fund or other funding mechanism should be established to ensure adequate funding will be available to implement the post-closure plan. The Final EIS should identify who would be financially responsible for funding the trust fund and implementing the post-closure monitoring and management plan; the projected costs of each long-term monitoring and management activity; the financial assumptions used to estimate the funding level; the projected trust fund growth rate; and the mechanics of the trust fund.

Responses to Letter - 1

1-15 Based on the geologic information and hydrologic modeling that is presented in Section 4.3 of the EIS, it is not expected that waters of the state will be degraded by the Gold Hill Pit Lake and BLM has determined that additional mitigation is not required. However, additional monitoring is warranted to refine available information and confirm that conclusion. The monitoring network for the Gold Hill Pit would (1) evaluate the impact of drawdown in the bedrock and alluvial aquifer from dewatering of the Gold Hill Pit, (2) provide additional geologic structure information, and (3) serve to determine the potential of a post-mining flow-through pit lake after the pit lake water level reaches approximately steady state. BLM, in coordination with NDEP, will continually evaluate the monitoring data and analysis through the life of the project, including the post-mining stage, to further understand the groundwater surface water hydraulics and any potential impacts to waters of the State. Based on further monitoring and evaluation, additional mitigation measures and bonding requirements can be implemented at any time during the life of the project if conditions warrant. RMGC would remain financially responsible for any additional mitigation that might be required.

Letter - 2

United States Department of the Interior
Pacific Southwest Region
FISH AND WILDLIFE SERVICE
Nevada Fish and Wildlife Office
1340 Financial Blvd., Suite 234
Reno, Nevada 89502
Ph: (775) 861-6300 ~ Fax: (775) 861-6301

September 22, 2009
File No. 2009-FA-0137

To: Field Manager, Tonopah Field Office, Bureau of Land Management
Tonopah, Nevada

From: State Supervisor, Nevada Fish and Wildlife Office, Reno, Nevada

Subject: Comments Regarding the Round Mountain Expansion Project Draft Environmental Impact Statement (DEIS).

The U.S Fish and Wildlife Service (Service) has reviewed the subject DEIS dated July 2009 received in our office on July 30, regarding the Round Mountain Expansion Project located in the Big Smokey Valley approximately 55 miles north of Tonopah, Nevada. We understand that the Proposed Action would require new surface disturbance of approximately 4,698 acres, including 4,581 acres of public land administered by the Bureau of Land Management (BLM). If approved, the life of the project would be approximately 13 years followed by several years of ongoing ore processing, reclamation and site closure. The notice states that the BLM is distributing the DEIS for the proposed project for a 30-day review period. Our comments and recommendations are provided below pursuant to the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*); Migratory Bird Treaty Act (MBTA), 16 U.S.C. 703; and the Bald and Golden Eagle Protection Act, 16 U.S.C. 668. Wetlands are afforded protection under Executive Orders 11990 (wetland protection) and 11988 (floodplain management), as well as section 404 of the Clean Water Act. Other fish and wildlife resources are considered under the Fish and Wildlife Coordination Act, 48 Stat. 401, as amended, 16 U.S.C. 661 *et seq.* and the Fish and Wildlife Act of 1956, as amended, 70 Stat. 1119, 16 U.S.C. 742a.

General Comments

We appreciate the opportunity to provide comments on the proposed project. We found the design, structure and scope of the DEIS substantive and informative. Chapter 2, "Proposed Action and Alternatives" provides sufficient information to adequately characterize the proposed alternatives. We agree with Round Mountain Gold Corporation's (RMGC's) environmental protection measures, especially concerning: water resources, hazardous materials and solid

Responses to Letter - 2

Letter - 2 (Continued)

waste, vegetation and invasive species, and wildlife resources. In particular, we noted the following:

2-1 (a) An 8 foot-high chain-link fence would be installed around the process ponds, and netting, pond covers, or floating "bird balls" would be installed over ditches and ponds that would contain leach solutions.

2-2 (b) Bat habitat in the Gold Hill area would be protected at five mine workings by installing bat gates. Construction of five bat gates in abandoned workings in Jefferson Canyon would protect off-site areas of critically important bat habitat.

2-3 (c) Based on the Service's conservation responsibilities and management authority for migratory birds under the MBTA, we are concerned about potential impacts the proposed project may have on migratory birds in the area. Under the MBTA, nests with eggs or young of migratory birds may not be harmed, nor may migratory birds be killed. Therefore, we recommend all construction activities be conducted outside the avian breeding season (March 1 through July 31). If this is not feasible, we agree that a qualified biologist survey the area prior to construction. If nests are located, or if other evidence of nesting (*i.e.*, mated pairs, territorial defense, carrying nesting material, transporting food) is observed, a protective buffer (the size depending on the habitat requirements of the species) should be delineated and the entire area avoided to prevent destruction or disturbance to nests until they are no longer active. Buffer zones should be developed in coordination with the Service.

We note that the Service has previously determined that no federally listed, proposed, or candidate species, or their designated critical habitat, occur in the project area. However, there are several habitat/species concerns upon which we are providing recommendations:

Spring/Riparian Habitats

2-4 The DEIS states that dewatering activities would result in groundwater drawdown potentially impacting at least 2 springs (Johnson Springs 1 and 2 and possibly Ink House and Healy Springs) and associated riparian habitat that occurs within the 10-foot groundwater drawdown isopleth. The DEIS correctly states that naturally occurring seeps, springs, and perennial and ephemeral creeks provide important wildlife habitat. Given the uncertainties of modeling groundwater/suface water interactions, we ask that you conduct annual long-term flow monitoring for the 20 springs and seeps identified in Table 3.3-6. Also, the DEIS states that: "Drainages associated with Shoshone and Kelsey canyons intersect the Round Mountain Area and Willow and Indian creeks intersect the Gold Hill Area" (3.3.3.1). We recommend these

2-5 creeks be included in flow monitoring. If results indicate unusual reductions in flows, mitigation measures outlined in environmental protection measures should be implemented (2.5.2). Results should be communicated to the Service.

Responses to Letter - 2

2-1 Thank you for your comment.

2-2 Thank you for your comment.

2-3 Thank you for your comment. Please see Section 2.5.10 for RMGC's environmental protection measures that have been developed to protect breeding birds.

2-4 Please see response to comment 1-3.

2-5 Comment noted. Approximately 10 years of flow data would be needed to adequately develop baseline flows within these intermittent drainages. As a result, no monitoring of these drainages is recommended. However, reductions in surface water in these drainages would be evaluated through riparian vegetation monitoring. Also, please see the responses to comments 1-3 and 1-14.

Letter - 2 (Continued)

Great Basin Springsnails

On February 17, 2009, the Center for Biological Diversity petitioned the Service to list 42 springsnail species from the Great Basin, and Mojave ecosystems in Nevada. One species, the Sterile Basin Pryg (*Prygulopsis sterilis*) has been documented approximately 17 miles southeast of the Round Mountain Mine (Figure 1). The Sterile Basin Pyrg is critically imperiled meaning
2-6 it is at very high risk of extinction (NatureServe 2008). As the name implies, the snail is restricted to springs and is primarily threatened by reduced spring discharge or spring failure. Given the potential for reduced spring discharge we request that surveys be conducted for the Sterile Basin Pryg in areas where reduced flows may occur. Results should be provided to the Service.

Water Quality

Water quality in the pit lakes is modeled in the DEIS on 2 year, 25 year, and 200 year time scales to account for long term evaporation and concentration of dissolved constituents. Effects of modeled water quality on wildlife are analyzed using a 3 step screening ecological risk assessment. Table 4.17-3 in the DEIS presents the results from step 3, which assumes *seasonal*
2-7 use by representative species. However, details of the seasonal exposure assumptions are not presented in the narrative weakening the assessment's conclusions. In particular, we question the seasonal exposure assumption for bats which are not generally considered migratory. Table 4.17-3 indicates that, assuming seasonal exposure, bats may be at risk from manganese in a 2 to 25 year timeframe. However, if the seasonal assumption is incorrect, then pit water quality could logically adversely affect bats in less than 2 years. We recommend that specific exposure assumptions and supporting documentation are provided in the Final EIS.

Potential climate change makes the prediction of pit water quality 200 years in the future uncertain. We understand a long term monitoring plan for the pit lakes will be provided in the
2-8 forthcoming Plan of Operations and request a copy for review. The BLM has developed long-term trust fund agreements at other pit mines. We recommend a similar agreement is developed with RMGC. The dollar amount should be sufficient, if necessary, to implement pit lakes treatment sufficient for the protection of migratory birds and other wildlife such as bats.

Pygmy rabbit

We are concerned that the project may impact the pygmy rabbit (*Brachylagus idahoensis*). On January 8, 2008, the Service published a substantial 90-day finding on a petition to list the
2-9 pygmy rabbit as threatened or endangered under the ESA, thus initiating a status review of the species.

We encourage you to survey the proposed project area for pygmy rabbits prior to any ground disturbing activities and communicate these results to the Service. We recommend the use of the draft survey guidelines developed for the pygmy rabbit by Ulmschneider *et al.* (2004). A copy of the guidelines is available upon request from the Nevada Fish and Wildlife Office, if needed.

Responses to Letter - 2

2-6 Thank you for your comment. Known records for the Sterile Basin Pryg occur in Ralston Valley, approximately 12 miles southeast of the 10-foot drawdown isopleth for the proposed project. As a result, no impacts to known populations of this snail species would occur. Johnson springs 1 and 2 occurs within the 10-foot drawdown isopleth, and Ink House and Healy springs occur 0.5 mile outside of the 10-foot drawdown isopleth. However, all four springs have been substantially altered from natural conditions and developed as private and public water sources. Development of these springs has resulted in the loss of potential suitable Sterile Basin Pryg habitat. As a result, the BLM determined that no further mitigation for springsnails would be necessary.

2-7 Text and Table 4.17-3 in Section 4.17 have been modified to address the comment. The EIS assumes that bats would be present and obtain food and water resources from the proposed pit lakes nine months (275 days) out of the year. This assumption is based on the expected migratory and hibernation patterns of bats likely to be present in the project area. During the winter months temperate-zone bats are expected to either migrate to warmer regions where food resources are readily available or hibernate locally.

2-8 Please see the responses to comments 1-3 and 1-14.

2-9 Comment noted. As discussed in Section 3.18, surveys for the pygmy rabbit occurred within the project area in 2001 and 2003. No pygmy rabbits (or its sign) or preferred habitat (tall, dense sagebrush) was found during these surveys. As a result, the BLM has determined that no further mitigation for pygmy rabbits would be necessary.

Letter - 2 (Continued)

The DEIS states that direct impacts would include the incremental long-term reduction of about 4,346 acres and the permanent loss of about 344 acres of potential habitat for the pygmy rabbit with the development of the Gold Hill Pit. Survey results will assist in determining whether this project is contributing to a cumulative loss of habitat for pygmy rabbit populations in Nevada.

Because pygmy rabbits may use certain habitats seasonally, it is possible surveyors may interpret inactive burrows as population declines. It can also be difficult to accurately determine burrow activity (active/inactive). Unless multiple years of survey data collected at appropriate times can be provided, one can not assume these areas no longer support pygmy rabbits or are being used infrequently. It should be kept in mind that individual pygmy rabbits will use more than one burrow. Research shows that inactive burrows likely play an important role in providing escape cover. Cameras placed on burrows classified as old or very old have documented use by pygmy rabbits. Other researchers have also photographed pygmy rabbits at sites where burrows were determined to be inactive. As a result, we encourage avoidance of those areas indicating pygmy
2-9 rabbit use whether current or not.

If pygmy rabbits are present, we encourage scheduling construction to avoid the pygmy rabbit's reproductive period, if possible. However, burrows can be used year-round, so construction activities that impact burrows may impact populations year round. Establishment of at least a 100-foot buffer around areas where pygmy rabbit sign (active and inactive) has been found has been suggested to agencies previously for other types of projects. For known natal burrows, a 200-foot buffer should be established and these burrows avoided. However, these distances were based on buffers for kit fox and kangaroo rat burrows as it related to potential impacts due to seismic testing from shotholes and vibe trucks. This may very well be inadequate for protection of pygmy rabbits. If avoidance is not possible, we recommend that potential pygmy rabbit habitat adjacent to or close to areas of direct impacts be identified and considered for improvement or a conservation easement for pygmy rabbits.

Because there is a lack of information related to mining impacts to pygmy rabbits, consideration should be made regarding development of a research project to document impacts to pygmy rabbit individuals or populations as a result of this project. This could include whether pygmy rabbits colonize or re-colonize the disturbed areas after restoration efforts have reached appropriate success levels.

Sage-grouse

We are concerned that the project may impact the greater sage - grouse (*Centrocercus urophasianus*), a species listed as sensitive under the Nevada Natural Heritage Program. On February 26, 2008, the Service published in the Federal Register an initiation of a status review
2-10 for the species as threatened or endangered under the ESA. The Western States Sage and Columbian Sharp-tailed Grouse Technical Committee, under direction of the Western Association of Fish and Wildlife Agencies, has developed and published guidelines to manage and protect sage-grouse and their habitats in the Wildlife Society Bulletin. We ask that you consider incorporating these guidelines (http://ndow.org/wild/sg) into the proposed project.

Responses to Letter - 2

2-10 On March 5, 2010, the USFWS determined that listing the greater sage-grouse as threatened or endangered under the ESA was warranted but precluded at this time. The USFWS determined that the greater sage-grouse will be added to the list of candidates for listing under the ESA.

Where appropriate, RMGC would follow greater sage-grouse guidance outlined in the Greater Sage-grouse Conservation Plan for Nevada and Eastern California (2004), BLM National Sage-grouse Habitat Conservation Strategy (2004), and BLM Management Guidelines for Sage Grouse and Sagebrush Ecosystems in Nevada (2000).

Letter - 2 (Continued)

Our specific concerns and recommendations for sage grouse relative to the DEIS are:

2-11 The document states that "direct impacts would include the incremental long-term reduction of 1,408 acres of occupied winter, spring, and brood-rearing habitat. In addition, approximately 222 acres of occupied winter, spring, and brood-rearing habitat associated with the developmen of the Gold Hill Pit would be permanently lost." The Service considers the loss of 1,630 acres c habitat substantial. Another direct effect noted in the DEIS is the predicted reduction in flows from Johnson 1 and 2 Springs and possibly Ink House and Healy Springs. Spring habitats and associated riparian areas are especially important spring/summer brood rearing grounds. The Service recommends that potential greater sage-grouse habitat adjacent to or close to areas of direct impacts be identified and considered for improvement and/or conservation. Improvemen could include:

(a) Cattle exclosures in spring, mountain meadows, or riparian areas;

(b) Re-vegetation should specifically be designed for sage-grouse in areas of habitat loss due to mining activities;

(c) The Service supports any additional recommendations submitted by the Nevada Departmen of Wildlife (NDOW).

Bats

2-12 The Service has communicated with NDOW's Las Vegas Office and fully supports the bat mitigation plan developed by NDOW staff.

We appreciate the opportunity to provide comments on this project. If you have any questions, please contact me or Jim Harvey at (775) 861-6300

for Robert D. Williams

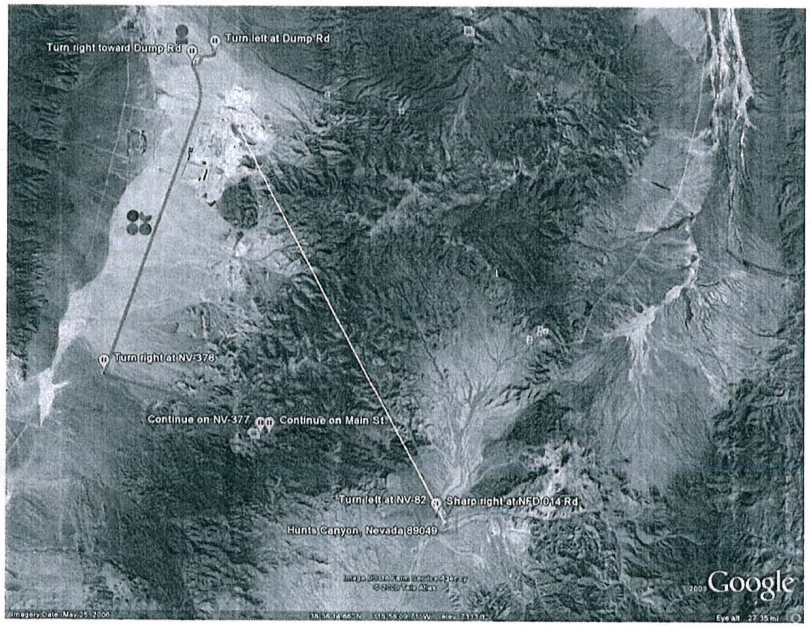
Responses to Letter - 2

2-11 Comment noted. Please see the responses to comments 1-3 and 2-10.

2-12 Thank you for your comment.

Letter - 2 (Continued)

Figure 1. Location of the Round Mountain Mine in relation to the Hunts Canyon location of the Sterile Basin Pyrg (*Pyrgulopis sterilis*).



Responses to Letter - 2

Letter - 2 (Continued)

References

Center for Biological Diversity. 2009. Petition to list 42 species of Great Basin springsnails from Nevada, Utah, and California as threatened or endangered under the Endangered Species Act. www.biolgicaldiversity.org

NatureServe. 2008. http://www.natureserve.org/

Ulmschneider, Helen. 2004. Surveying for pigmy rabbits (*Brachylagus idahoensis*). Bureau of Land Management, Boise District, Idaho. Fourth Draft. 25 pp.

Responses to Letter - 2

Nevada State Agencies

Letter - 3

09/14/2009 11:51 7024865133 NDOW PAGE 02/04

JIM GIBBONS
Governor

STATE OF NEVADA
DEPARTMENT OF WILDLIFE
1100 Valley Road
Reno, Nevada 89512
(775) 688-1500 • Fax (775) 688-1595

KENNETH S. MAYER
Director

RICHARD L. HASKINS II
Deputy Director

SOUTHERN REGION OFFICE
4747 Vegas Drive
Las Vegas, Nevada 89108
(702) 486-5127 · Fax (702) 486-5133

September 14, 2009

NDOW-SR# 10-047
LVO-10-013

Mr. Tom Seley, Field Manager
Bureau of Land Management
Tonopah Field Office
P.O. Box 911
Tonopah, NV 89049

Re: Draft Environmental Impact Statement - Round Mountain Expansion Project (DEIS)

Dear Mr. Seley:

The Nevada Department of Wildlife (Department) thanks you for this comment opportunity. As a Cooperating Agency in the development of the DEIS, the Department has worked with the Tonopah Field Office and Round Mountain Gold Corporation (RMGC) for describing existing wildlife use and habitats, developing wildlife impact minimization and mitigation measures, and planning for a post-mining landscape which is beneficial to wildlife. To that end, our review is intended to help ensure the DEIS has accurately captured this effort. We also offer what we believe are reasonable considerations for raising reclamation potential modestly above standard while greatly enhancing view-shed and wildlife resource benefits in the post-mining landscape.

3-1 Page ES-26 of Executive Summary, Ferruginous Hawk
The presence of Ferruginous Hawk pairs in 2008 and 2009 adjacent to existing RMGC operations suggests an active breeding territory. The Department believes minor adjustment to the first two sentences of this section would best reflect current knowledge of Ferruginous Hawk use in the project and study areas without compromising proposed mitigation. The following should replace the first two sentences, "*No Ferruginous Hawk nest sites have been documented within the project area. However, potential nesting habitat does occur in the study area.*"

3-2 Page iv, Acronyms
The NDOW acronym stands for Nevada *Department* of Wildlife, not *Division*.

3-3 Page 2-76, Section 2.5.10 Wildlife Resources
For all new proposed event ponds or fire ponds, we recommend pond liners be textured to allow wildlife safe egress out of ponds. Existing smooth liners at event ponds have proven difficult for wildlife to safely escape pond confines.

3-4 Page 2-82, Section 2.6.2 Growth Media Salvage and Reclamation Seed Mix
The Department recommends additional species consideration for inclusion in the Revegetation Seed Mixture presented in Table 2.6-1. The proposed recommended seed mixture is heavy on grasses and is

(NSPO Rev. 2-09)

Responses to Letter - 3

3-1 The text has been modified in the Executive Summary to address the comment.

3-2 The text has been modified in the Acronyms section to address the comment.

3-3 The text has been modified in Section 2.5.10 to address the comment.

3-4 A footnote has been added to Table 2.6-1 to address the comment.

Letter - 3 (Continued)

3-4 (cont'd) limited to one forb, Palmer Penstemon. While the species named are hardy and appropriate, additional forbs in the mix would likely enhance rates of reclamation and utility to a broader wildlife base by: 1) offering greater selection to herbivores and relieving pressure on key shrub and grass species, 2) attracting more winged insects (compared to grasses) providing a better forage base for bats and other insectivorous wildlife. Forbs also attract pollinators like insects and hummingbirds. Additional forb species may include but not be limited to desert paintbrush (*Castilleja chromosa*), desert mallow (*Sphaeralcea ambigua* var. *rugosa*), lupine (*Lupinus* sp.) and small burnet (*Sanguisorba minor*).

3-5 The application rate of 2 pounds/acre for crested wheat grass warrants reconsideration. While crested wheatgrass quickly establishes, it has been previously suggested not to seed-in crested wheatgrass with native species, unless crested wheatgrass seeding rates are very low (< 2 pounds per acre).

3-6 Page 2-90, Section 2.6.7.3 Waste Rock Dumps
The Department believes this is an area where efforts have fallen short at achieving optimal design of a post-mining landscape. Construction of new waste rock facilities offers a unique opportunity for a "ground up" reclamation approach. At a minimum, slopes should be graded to blend with local topographical relief with waste rock facilities and heap leach pads having rounded crests of variable sloped angles to more closely resemble natural landforms. Exposed rock piles should be integrated into reclaimed waste rock dumps and heap leach pads where they can serve as raptor perch sites; and, appropriately sized rock piles placed in numerous locations would provide cover for small mammals and reptiles. The new waste-rock dumps could eventually mimic local natural surroundings with an enhanced design facilitated by available reclamation software. Barrick Goldstrike Mines, Inc., for instance, recently utilized software called Natural Regrade for design of their new Clydesdale Waste Rock Facility in eastern Nevada. This approach incorporates development of closure and reclamation plans as a part of initial project planning and design. While this is a fundamentally different approach to mine reclamation, we believe the potential for reclamation success would be greatly benefited as would functionality as wildlife habitat. The Department would be happy to provide more information on the Natural Regrade approach.

3-7 Page 3.15-5, Section 3.17.1.5 Migratory Birds
Of note, all birds protected under the Migratory Bird Treaty Act are also State Protected (NAC 503.050).

3-8 Page 3.18-10, Section 3.18.1.1 Special Status Bat Species
As presented in this section, five species of bats were detected using an ultrasonic bat detector installed on a wind monitoring tower. The Department would like to have clarified that these bat species were detected in the study area, not in the proposed project area.

3-9 Pages 4.17-6 to 4.17-10, Water Management Activities
Post-mining, pit lakes are expected to develop at both the Round Mountain Pit and Gold Hill Pit. The Screening Level Ecological Risk Assessment concluded that it is unlikely that adverse effects would occur as a result of wildlife exposure to Chemicals of Concern in the existing or proposed post-mining pit lakes. Nonetheless, predicted water quality remains a concern and the Department believes water quality should be monitored and if warranted based on monitoring results, actively managed into the future.

3-10 The Department is supportive of the trust-fund concept for providing dedicated, long-term funding of environmental protection actions. At a minimum, we believe the trust-fund concept should be seriously considered along with bonding of the mine to ensure environmental stewardship continues well after closure of mine extraction and processing operations.

3-11 Page 4.17-14, Section 4.17.6 Monitoring and Mitigation Measures
Potential reduction of seeps, springs, streams, and riparian habitats consequential to existing and proposed

Responses to Letter - 3

3-5 A footnote has been added to Table 2.6-1 to address the comment.

3-6 Please see Sections 2.6.7.3 and 2.5.6 regarding the configuration and potential development of surface features for waste rock dumps.

3-7 The text has been modified to address the comment.

3-8 The text has been modified to address the comment.

3-9 Thank you for your comment, The ecological risk assessment concluded that it is unlikely that adverse effects would occur as a result of wildlife exposure to the chemical of concern (COC) in the proposed pit lakes. As a result, the BLM determined that no additional mitigation is recommended.

3-10 Please see the response to comment 1-14.

3-11 Comment noted.

Letter - 3 (Continued)

3-11 (cont'd) dewatering operations is of concern. The Department believes Mitigation Measure V-1 on page 4.14-4 and 4.14-5 is appropriate and to further complement Mitigation Measure V-1 we recommend that Proper Functioning Condition is the overriding objective to enhancement or restoration to these sensitive, wet habitat features. Doing so would add additional habitat protection (i.e. excluding livestock) benefiting wildlife like the Greater sage-grouse.

3-12 Page 4.18-1, Section 4.18 Special Status Species – Bats
The Department would like to see clarified that acoustic detection of bats was documented either by Wildlife Resource Consultants or O'Farrell Biological Consulting.

3-13 Page 4.18-10, Section 4.18.5.1 Cumulative Impacts - Wildlife
Potential cumulative reductions of seeps, springs, streams, and riparian habitats associated with existing and proposed dewatering operations is of concern. Again, the concept of establishing a trust-fund is one in which the Department believes may be appropriate for addressing environmental concerns well after active mining.

Thank you again for this opportunity to provide comment. We look forward to continuing in an active role as a Cooperating Agency in this EIS endeavor. Tracy Kipke will continue as the Department's representative and can be reached at 702-486-5127 x3612, or by e-mail at tkipke@ndow.org at the Department's Las Vegas office.

Sincerely,

D. Bradford Hardenbrook
Supervisory Habitat Biologist

cc: NDOW, Files

TK:tk

Responses to Letter 3

3-12 The text has been modified to address the comment.

3-13 Please see the response to comment 1-3.

Letter - 4

Rebecca Palmer

From: Nevada State Clearinghouse
Sent: Tuesday, August 04, 2009 12:42 PM
To: Rebecca Palmer
Subject: E2010-035 DEIS for Round Mountain expansion project, Nye County - Bureau of Land Management

NEVADA STATE CLEARINGHOUSE
Department of Administration, Budget and Planning Division
209 East Musser Street, Room 200, Carson City, Nevada 89701-4298
(775) 684-0213 Fax (775) 684-0260

TRANSMISSION DATE: 8/4/2009

State Historic Preservation Office
Nevada SAI # E2010-035
Project: DEIS for Round Mountain mine expansion project, Nye County

Follow the link below to download an Adobe PDF document concerning the above-mentioned project for your review and comment.
E2010-035

Please evaluate it with respect to its effect on your plans and programs; the importance of its contribution to state and/or local
areawide goals and objectives; and its accord with any applicable laws, orders or regulations with which you are familiar.

4-1 The SHPO reviewed the subject document. The SHPO notes that a number of surveys have been completed for the subject undertaking that have not been submitted to this office for review. The SHPO recommends that these inventories be submitted to this office for review as this undertaking exceeds the threshold for review under the Statewide Protocol Agreement between the Bureau of Land Management and the SHPO.

4-2 In addition, this office previously requested that the Bureau of Land Management evaluate the effect of the undertaking on the Gold Hill National Register District. If you have any questions concerning this correspondence, please contact me by phone at (775) 684-3443 or by e-mail at Rebecca.Palmer@nevadaculture.org.

AGENCY COMMENTS:

Rebecca L Palmer 8/31/09

8/4/2009

Responses to Letter - 4

4-1 Comment noted. The SHPO has all of the cultural surveys for the proposed project and has concurred with each of the reports. SHPO has not reviewed the follow-up report for the treatment of sites impacted by the Gold Hill Exploration Project. These treatment results will be incorporated into a new treatment plan that will be developed to mitigate adverse effects to National Register eligible sites that will be impacted by the Proposed Action.

There are five cultural resources inventory reports relevant to the Proposed Action. They are:

BLM 6-2229 SHPO concurred 12-21-2001,

BLM 6-2229-1 SHPO concurred 07-27-2004,

BLM 6-2229-2 SHPO concurred 02-27-2008,

BLM 6-2229-4 SHPO concurred 02-27-2008, and

BLM 6-2229-5 SHPO concurred 02-27-2008.

Note: There is no 6-2229-3.

SHPO concurrence on the treatment plan for the Gold Hill Exploration Project was received 01-09-2004.

4-2 The status of the Gold Hill area as a National Register District and any impacts to it from the Proposed Action will be evaluated and mitigated as part of a treatment plan that will be developed in consultation with the SHPO to mitigate impacts to National Register eligible sites.

Letter - 5

Nevada State Clearinghouse

From: Skip Canfield
Sent: Tuesday, August 11, 2009 4:00 PM
To: Nevada State Clearinghouse
Subject: RE: E2010-035 DEIS for Round Mountain expansion project, Nye County - Bureau of Land Management

The Nevada Division of State Lands provides the following comments:

There is a concern about the cumulative visual impacts to public lands users' experiences from development activities on public lands (temporary and permanent). Major intrusions include proliferation of new roads, poorly-sited and designed structures, lack of co-location of infrastructure and improper lighting, to name a few.

For example, dark sky attributes are a finite resource and subject to increasing deterioration as inappropriately-lighted development covers the landscape. This is even more evident in remote stretches of Nevada where dark skies prevail yet are seriously impacted by even one new lighting source. There is a concern about the cumulative visual impacts to public lands users' experiences.

Multiple use development on public lands is the accepted rule. However, the effects of these uses are broad-ranging. Resources that are very important to some user groups are typically affected by the development of other resources. Some effects can be mitigated in a relatively simple manner if measures are taken proactively and consistently. One very prominent example is lighting. Proper lighting can play a large role in the compatibility of the built and natural environment.

Impacts of improper lighting can be mitigated inexpensively and dark sky measures are simple to implement and very mainstream. In fact, lighting that is installed using dark sky fixtures (light is only aimed at the subject property) is more efficient, safer, and results in reduced electricity costs. The end product is a less obtrusive impact to other users of adjacent public lands.

A common misnomer is that facility lighting needs to stream well beyond the property and facility to be effective. The opposite is actually the case. Many southwestern cities have enacted strict dark sky ordinances to protect the night sky, including prison facilities. Lighting seen from a distance is actually wasted light that has spilled beyond the intended location of the site. Outdoor lighting that is properly directed and shielded, of adequate lumens and lighting types, and strategically placed is more cost effective and functional to monitor a site. There is a national organization, www.darksky.org, whose fundamental purpose is to educate the public and governments on ways to preserve our valuable night skies for us and future generations.

5-1 A comprehensive look at visual impacts should be considered when BLM and other federal agencies review any development plan on public lands in Nevada, and nationally. The Nevada Division of State Lands encourages federal agencies to develop a consistent policy and "condition of approval" that can be required of applicants and included in NEPA decisions. It is hoped that all Federal agencies would include dark sky lighting as a condition of approval for permanent and temporary applications.

5-2 The following language is suggested that should be provided up front to applicants who propose development on public lands that includes lighting:

Responses to Letter - 5

5-1 Please see Section 4.12 and Appendix E for impacts to visual resources.

5-2 Comment noted. A mitigation measure to address night lighting has been added to the Final EIS (see mitigation measure VR-2 in Section 4.12.6).

Letter - 5 (Continued)

Utilize appropriate lighting:

5-2 (cont'd)

- Utilize consistent lighting mitigation measures that follow "Dark Sky" lighting practices.
- Effective lighting should have screens that do not allow the bulb to shine up or out. All proposed lighting shall be located to avoid light pollution onto any adjacent lands as viewed from a distance. All lighting fixtures shall be hooded and shielded, face downward, located within soffits and directed on to the pertinent site only, and away from adjacent parcels or areas.
- A lighting plan shall be submitted with the site plan review and/or architectural drawings indicating the types of lighting and fixtures, the locations of fixtures, lumens of lighting, and the areas illuminated by the lighting plan.
- Any required FAA lighting is exempt from this condition.

In addition, the following mitigation measures should be employed.

Utilize building materials, colors and site placement that are compatible with the natural environment:

5-3

- Utilize consistent mitigation measures that address logical placement of improvements and use of appropriate screening and structure colors. Existing utility corridors, roads and areas of disturbed land should be utilized wherever possible. Proliferation of new roads should be avoided.
- For example, the use of compatible paint colors such as "sudan brown" for water tanks and other vertical structures reduces the visual impacts of the built environment. Using screening, careful site placement, and cognitive use of earth-tone colors/materials that match the environment improve the user experience for others who might have different values than what is fostered by built environment activities.
- Federal agencies should require these mitigation measures as conditions of approval for all permanent and temporary applications.

Skip Canfield, AICP
State Land Use Planning Agency

From: Nevada State Clearinghouse
Sent: Tuesday, August 04, 2009 12:42 PM
To: Skip Canfield
Subject: E2010-035 DEIS for Round Mountain expansion project, Nye County - Bureau of Land Management

Responses to Letter - 5

5-3 Mitigation measure VR-3 in Section 4.12.6 has been developed to address color contrast issues within the viewshed.

Local Agencies

Letter - 6

Board of County Commissioners
Nye County
Tonopah, Nevada

Tonopah Office
Nye County Courthouse
William P. Beko Justice Facility
PO Box 153
Tonopah, NV 89049
Phone (775) 482-8191
Fax (775) 482-8198

August 19, 2009

Bureau of Land Management
P.O. Box 911
Tonopah, NV 89049

Subject: Environmental Impact Statement for the Round Mountain Gold Corporation Expansion

Dear Tom Seley:

The Nye County Board of Commissioners hereby submits this letter to the Bureau of Land Management in support of the Environmental Impact Statement for the Round Mountain Gold Corporation Expansion. Round Mountain is an important economic resource for Nye County and Nevada.

6-1 The Round Mountain Mine has been in operation since 1976 and has a proven track record for responsible mining and community support.

Round Mountain Gold Corporation pays in excess of $9 million annually in Property and Net Proceeds taxes.

The Round Mountain mine is an important resource for central Nevada, providing critical jobs, economic strength, and community outreach.

Sincerely,

Joni Eastley

Joni Eastley,
Chairman

09-0264JE

Responses to Letter - 6

6-1 Thank you for your comment.

Letter - 7

TOWN OF ROUND MOUNTAIN
P.O. Box 1369
Round Mountain, Nevada 89045-1369
(775) 377-2508 Fax (775) 377-2631

RECEIVED
SEP 02 2009
Bureau of Land Management
Tonopah Field Office

Bureau of Land Management
Attn: Thomas Seley, Manager
Tonopah Field Office
PO Box 91
Tonopah, NV 89049-0911

Dear Mr. Seley:

On behalf of the Round Mountain Town Board, I hereby submit this letter, to the Bureau of Land Management, in support of the Environmental Impact Statement for the Round Mountain Gold Corporation expansion.

7-1 Round Mountain Gold Corporation is an important economic resource for Nye County and Nevada, as it is the largest taxpayer in Nye County and is the main employer in Round Mountain. Supporting the Round Mountain Gold Corporation expansion ensures economic stability and growth potential for Round Mountain.

It is in the best interest of our community and Nye County to support any endeavor that allows Round Mountain Gold Corporation to continue responsible mining.

Sincerely,

Johnny Archuleta

Johnny Archuleta, Chairperson
Round Mountain Town Board

cc: Round Mountain Town Board
Bill Goodhard, Round Mountain Gold Corporation

Responses to Letter - 7

7-1 Thank you for your comment.

Tribal

Letter - 8

Maurice Frank-Churchill, Duckwater Shoshone Tribe

19 Aug 09

PO Box 140068, Duckwater, NV 89314

Comments

8-1 | Executive Summary = Native American Tribes should be in this category→Cultural Resources.

8-2 |

8-3 | 3.4.1-Indian allotments need to be addressed—proximity or adjacent to the Gold Hill Expansion

8-4 | 3.4-Affected Environment—CESA. The study area as it is explained should be determined by the Shoshone people/tribes.

8-5 |

8-6 |

8-7 |

8-8 | 4.5/4.51-Native American Traditional Values. If there are disturbances, the tribes and Shoshone people be notified if there is an affect to the cultural sites.

I will submit additional comments after I re-read document.

Responses to Letter - 8

8-1 Thank you for your comment.

8-2 This comment contained information that the BLM determined, that if disclosed to the public, could potentially result in Native American traditional values, uses, and/or sites becoming compromised. Therefore, those portions of the comment have been redacted from Final EIS comment/ response section. All Native American comments, including the comments determined to be redacted, will be responded to by the BLM through letter correspondence. The sensitive comment/responses have been included in the Administrative Record but have been designated as confidential and not available to the public.

8-3 Old Indian Allotments exist throughout Big Smoky Valley. One former Allotment is located in close proximity to the project area, but will not be affected by the proposed project.

8-4 The tribes were given an opportunity to provide input on the CESA through review of the Draft EIS. To date, no comments on the CESA boundary have been received from the tribes.

8-5 Please see response to comment 8-2.

8-6 Please see response to comment 8-2

8-7 Please see response to comment 8-2.

8-8 Comment noted. Please refer to the Section 4.5, Native American Traditional Values.

Organizations

Letter - 9

Great Basin Resource Watch
85 Keystone Ave., Suite K
Reno, NV 89503
775-348-1986
www.gbrw.org

Working With Communities to Protect Their Land Air and Water

Western Shoshone Defense Project
P.O. Box 211308
Crescent Valley, NV 89821
www.wsdp.org

September 14, 2009

Attention: Thomas J. Seley
Field Manager
U.S. Bureau of Land Management
Tonopah Field Office
1553 S. Main St.
Tonopah, Nevada 89049

RE: *Round Mountain Expansion Project, Draft Environmental Impact Statement (NV065-EIS06-163)*

Dear Mr. Seley

Great Basin Resource Watch (GBRW) appreciates the opportunity to comment of this project, and the advanced documents provided by Round Mountain Gold Corporation (RMGC), which were very helpful in this review.

In general, there are a number of issues that need to be addressed to fully understand the impacts of this expansion on the local and regional environment. In the review that follows GBRW notes deficiencies in the hydrologic and geochemical analysis that calls into question the conclusions drawn in the DEIS regarding both water quantity and quality as a result of the Project. There is a serious concern that this project will degrade the "waters of the state' as well. Furthermore, analysis of mercury is incomplete and non-compliance to federal regulations also render the DEIS inadequate, which must be dealt with in a revised DEIS.

Responses to Letter - 9

Letter - 9 (Continued)

HYDROLOGIC AND GEOCHEMICAL ANALYSIS
Review provided by Tom Myers, Ph.D. For GBRW[1]

Summary

Round Mountain Gold Corporation (RMGC) proposes to expand its existing Round Mountain Mine pit and to add a satellite pit, Gold Hill, to its operation in Big Smoky Valley. This review of the DEIS and supporting documents has been prepared for Great Basin Resource Watch. This review primarily concerns water resources aspects of the Project, including mine dewatering, pit lake formation, and the characterization and segregation of the waste rock. The following three statements and supporting points summarize the findings of this review of the DEIS. The remainder of the review explains and discusses these issues in more detail and raises many related points.

9-1

The impacts of mine dewatering may be underestimated because of the following:

- **The groundwater model used to predict the impacts is poorly calibrated.**
- **The groundwater model relies on an artificially large low-conductivity layer 2 to separate the bedrock being dewatered from the overlying basin fill.**
- **The recharge amount and distribution is incorrectly estimated.**
- **The constant head boundary on the south side of the domain artificially constrains the development of the drawdown.**
- **The sinter cannot act as a drain for dewatering most of the proposed Gold Hill pit.**
- **Model layer 1 is the only layer for basin fill and is more than 2000 feet thick in places.**
- **The model is inaccurate with its representation and conceptual modeling of ET through layer 1.**
- **The model structure fails to represent accurately the changing transmissivity in layers.**
- **The model underestimates drawdown by either underestimating storage coefficient or assuming there is more compartmentalization than is in reality present at the site.**
- **The pit lake will hold about 2.6 times the perennial yield for the north Big Smoky Valley.**
- **The BLM should require that the mine establish water rights for the water that will evaporated from the future pit lake.**

9-2

The Gold Hill pit lake would degrade waters of the state. The Gold Hill pit lake must not be allowed to form unless adequate mitigation measures are taken:

- **The DEIS predicts the pit lake water quality will violate standards for many potential contaminants. The DEIS also predicts the pit lake will be flow-through in the bedrock. This flow through groundwater will degrade waters of the state downgradient of the Gold Hill pit.**
- **Pit lake evaporation is incorrectly modeled.**
- **The model does not provide accurate estimates of the formations from which groundwater will flow.**
- **The model does not consider how the geochemistry of the groundwater flowing into the pit changes due to seepage through the near-pit wall rock.**

[1] Myers, Tom, "Review Draft Environmental Impact Statement Round Mountain Gold Corporation Round Mountain Mine Ex and Gold Hill Project," Sept. 1, 2009.

Responses to Letter - 9

9-1 Responses to bulleted items for mine dewatering are provided in responses to the detailed comments.

9-2 Responses to bulleted items for the Gold Hill Pit lake are provided in responses to the detailed comments.

Letter 9 (Continued)

The waste rock dumps may cause acid mine drainage to seep to groundwater or form seeps downgradient from the dumps.

9-3

- **The testing, especially of the waste at Gold Hill, used a poor selection of samples and failed to sample much of the pit area.**
- **The infiltration cover modeling does not consider runoff that may infiltrate downhill from the source or preferential flow. Either would cause substantial flow rates into the waste in localized areas.**

Mine Dewatering

The primary water quantity issues with the proposed Round Mountain expansion and Gold Hill pit are the extent of drawdown, the effect on the basin's water budget, the effect on springs, the rate the pit lake forms, and the estimation of the geologic formations from which the flow to the forming pit lakes discharge.

Groundwater Hydrology (DEIS Section 3.3.3.2 and WMC (2008, section 5)

The DEIS describes five hydrologic units at the Round Mountain area and four at the Gold Hill area. At Round Mountain, there is the Quaternary alluvium, Stebbins Hill lacustrine, volcanic bedrock, sedimentary rocks, and granite, in descending order from the ground surface. At Gold Hill, three volcanic units, the ash-fall tuff, volcanic sinter, and volcanic bedrock, underlie the Quaternary alluvium. In this review, the Quaternary alluvium is referred to as basin fill because this term is more hydrogeologically accurate (Plume, 1998) in a closed basin.

The basin fill has been the primary current source of dewatering water at Round Mountain since 1990. The proposed expansion would deepen the pit and increase the dewatering in the deeper bedrock. Lowering the water table in bedrock would establish a gradient between the bedrock and basin fill which could draw water from the basin fill into the bedrock. This could extend the drawdown further to the west in the basin fill. One question is whether the Stebbins Hill formation (Tshs), which separates the basin fill from the bedrock (volcanics), will isolate the bedrock from the fill.

9-4

Stebbins Hill formation: Because of low permeability in the Tshs, the DEIS claims the formation effectively prevents a connection between the volcanics and the basin fill thereby preventing the bedrock dewatering from drawing water from the fill. This is dubious because geologic section A-A' (figure 3.3-19) shows the Tshs extending to the west and section C-C' (Figure 3.3-21) shows it pinching out about 1000 feet northwest of the Round Mountain pit. Section B-B' (Figure 3.3-20) does not include Tshs which means it does not extend north-south along the range front. Drawdown in the volcanics will extend beyond the Tshs at least to the north, northwest, south and southwest; there will be areas where the water level in the fill will be affected by the vertical gradient induced by dewatering the volcanics[2]. The Trmv formation has a water level about 700 feet lower than that in the Qal at the location of M/O 2000-6 and M/O 2003-3-820 (section C-C'). The Tshs pinches out 1000 feet west so that a vertical gradient developed from dewatering could draw water from the basin fill.

[2] There are sections below which discuss the distribution of the low permeability zone corresponding to the Tshs in the groundwater model, which may have extended the lack of connection beyond the area the geology maps justify.

Responses to Letter - 9

9-3 Responses to bulleted items for acid mine drainage from proposed waste rock dumps are provided in responses to the detailed comments.

9-4 The Stebbins Hill Formation is a local siliceous lacustrine unit found primarily on the west side of the Round Mountain Pit. Dewatering since 1990 has generated water levels in the underlying volcanics that are 450 to 630 feet below the water levels in the basin alluvial aquifer. The vertical hydraulic conductivity of the Stebbins Hill Formation is approximately 2.8 x 10^{-4} feet/day. The past 16 years of dewatering at Round Mountain have demonstrated that the Stebbins Hill is an aquitard separating the basin alluvial aquifer from the underlying Tertiary volcanic bedrock aquifer.

Letter - 9 (Continued)

Sinter Unit: Near the Gold Hill pit, the DEIS claims the very conductive volcanic Sinter unit (Tsnt)[3], could act as a "drain" during dewatering (DEIS, page 3.3-42). This claim will be addressed below. The high conductivity was estimated with a pump test, reviewed below.

The extent of Tsnt is not great, as shown in the geologic sections (DEIS, Figures 3.3-24 and -25) which show Tsnt extends west and northwest of the proposed pit. The east end is apparently at a fault within the proposed pit which will likely remove some of the formation. It appears to pinch out about 1000 feet northwest of the proposed pit (DEIS Figure 3.3-24). Figure 3.3-25 shows an indeterminate end about 1500 feet west of the proposed pit.

9-5 The DEIS should include a map showing the perceived extent of the formations to support the conductivity zones developed for a particular formation.

Details of the Pump Test in the Sinter near Gold Hill: The pump test conducted with a well in the Tsnt formation (WMC, 2008) used primary monitoring wells 2000 feet west of the pumping well in the sinter and 1400 feet east within fractured volcanic bedrock adjacent to the sinter (WMC, 2008, page 5-40). RNGC pumped well GHB-BPW an average 194 gpm for 61 days and observed water levels in the pumping and two monitoring wells. Well levels dropped from 25 to 35 feet and the monitoring well hydrographs almost paralleled that of the pumping well (Figure 5.13, WMC, 2008). WMC suggests this indicates the volcanic rock east of the sinter is in good contact with the sinter (WMC, 2008, Appendix 5.D, page 2).

Recovery is slow with levels rebounding only 20 to 30 percent of the drawdown in 60 days. As correctly noted by WMC (2008, page 5-41), this is "very non-standard" and renders "normal aquifer analysis methods … not appropriate". WMC suggests the test indicates the sinter has a high conductivity but is surrounded by low conductivity formations which prevent rapid recharge to the sinter, even though they also noted that the parallel drawdown indicated a good connection with volcanics east of the sinter, as discussed in the last paragraph. They describe it as a "highly permeable but bounded aquifer" (WMC, 2008, Appendix 5.D, page 2). WMC (2008) estimates the recharge to the sinter after the pump test to be only 50 to 60 gpm which, although based on substantial assumptions of the size of the sinter unit (WMC, 2008, Appendix 5.D, pages 2 and 3), are reasonable.

9-6

The rapid response of well GHB-02 to the pumping suggests the boundary between the sinter and the volcanics to the east is blurred. It recovered even slower (Figure Gold Hill Pumping Test Water Levels – Bedrock, WMC Appendix 5.D2) than the wells within the sinter. GHB-02 likely screens a fracture zone that has limited connection to surrounding sources of water. Pumping the sinter drained the fracture but the sinter recovers faster because it has a larger area of connection to other water sources than does the fracture zone monitored by GHB-02.

A primary issue therefore is whether the sinter unit is a drain.

Sinter Unit as a Drain: As noted, the DEIS refers to the sinter unit as a "drain" (DEIS, page 3.3-42) and that it may be a primary target for dewatering at the proposed Gold Hill pit. WMC section 8.2 discusses dewatering from the sinter and concludes that 450 to 850 gpm of a total required dewatering rate of 500 to 1000 gpm will come from the sinter. WMC appendix 8.A provides a calculation of inflow to the sinter during dewatering based on interpolation and extrapolation of the pump test results

[3] The DEIS states the conductivity is 800 ft/d based on a pump test in GHB-BPW (page 3.3-42).

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9-5 The Sinter Unit at Gold Hill has a local extent, as shown in Figure 3.3-24. This unit lies mostly below the projected pit bottom of the proposed Gold Hill Pit. A pump test conducted in the Sinter using well GHB-BPW showed that the Sinter Unit is very permeable and probably a bounded, fractured aquifer. For this reason, when the Sinter Unit is pumped it acts as a drain on the surrounding Mt. Jefferson Tuff volcanic bedrock and groundwater in the volcanic bedrock flows into the Sinter Unit during pumping. Thus, the Sinter Unit is a potential "drain" during dewatering of the proposed Gold Hill Pit area because of its high permeability and its hydraulic connection with the adjacent volcanic bedrock. Groundwater modeling of the proposed dewatering of the Gold Hill Pit has supported the statement that the Sinter Unit acts as a "drain" during dewatering.

9-6 A fractured bounded aquifer will dewater quickly due to the limited storage capacity of fractures. However, this aquifer will recharge slowly because it receives its recharge water from the surrounding volcanic bedrock that has a low hydraulic conductivity and thus, a low groundwater influx rate into the dewatered fractured Sinter Unit aquifer. This has been supported by the WMC (2008) pump and recovery tests using well GHB-BPW. As stated, conventional hydrogeologic methods for analyzing drawdown and recovery are not suitable for bounded, fractured aquifers like the Sinter Unit at Gold Hill.

The Sinter Unit acts as a drain during dewatering because of its high permeability due to fracturing. This applies only to the west side of the proposed Gold Hill Pit in the area of the Sinter Unit, as shown in Figure 3.3-24. The Sinter Unit lies at a depth mostly below the projected bottom of the proposed Gold Hill Pit, as shown in Figures 3.3-24 and 3.3-25. Pumping of the Sinter Unit will lower the bedrock water levels below the bottom of the Gold Hill Pit long before the Sinter Unit is fully dewatered. Thus, the modeled connection between the Sinter Unit and the volcanic bedrock used by WMC (2008) is considered reasonable.

Figure 4.3-22 shows the conceptual model for refilling of the proposed Gold Hill Pit based on aquifer tests by WMC (2008) and groundwater modeling by WMC (2008). Flow to the pit from the west will initially utilize the Sinter Unit, until the water level in the pit lake is above the elevation of the Sinter Unit. Most flow into the pit will come from the Mt. Jefferson Tuff and will come primarily from the east, upgradient of the pit.

9-6 (cont'd)

based on the drawdown in the sinter to establish a gradient from adjacent formations – thereby effectively dewatering the surrounding formations[4].

WMC (page 5-53) extrapolates the 50 to 60 gpm recharge observed during the pump test to from 44 to 122 gpm during the first year to 179 to 206 gpm during the sixth year of dewatering. During this time period the effective drawdown reaches 730 feet (WMC, appendix 8.A), therefore the calculation assumes the hydraulic connection remains so that the gradient remains effective. It also appears that the calculation assumes the cross-section between volcanics and sinter remains constant. Considering that the sinter formation slopes downward from about 5900 ft amsl to 5300 ft amsl from the southeast to northwest (WMC Figure 5.8 and Figure 8.2) and that dewatering lowers the water table from about 6200 ft amsl to about 5500 ft amsl, much of the sinter will be dewatered and the connection between the sinter and surrounding formations lost. The gradient, connection, and cross-section assumed by WMC between the sinter and surrounding formations cannot be maintained throughout the entire six-year period of dewatering.

The proposed Gold Hill pit would cut through several volcanic formations. These have lower conductivity than the sinter, but there would be a large cross-section with the pit and gradient drawing groundwater into the pit. The pit will be upgradient of the sinter and be excavated to 5600 ft amsl (WMC Figure 8.2). The pit could intercept flow from the east of the proposed pit before it reaches the sinter. This could be more important when considering the refill of the pit lake. As discussed below, RMGC considers that the sinter will be the primary source of inflow, but due to its slow recharge rate, small cross-sectional area next to the pit, and location downgradient from the pit, this assumption is doubtful.

The BLM should reconsider the assumptions concerning the sinter and dewatering the Gold Hill pit. They are based on dubious assumptions and unrealistic extrapolations of pump test data.

Impacts of Dewatering (in Section 4.3)

The DEIS relies on a groundwater model (WMC, 2008) to estimate the dewatering rates and drawdown for and caused by each mine. WMC used the MODFLOW-SURFACT code. This section considers issues as presented in the DEIS (section 4.3) with references to the issues as described in WMC, as necessary.

Conceptual Model for the Round Mountain Mine: A conceptual model is a qualitative description of the sources and pathways for groundwater flow through an area. The general description of the recharge as infiltration to bedrock in the mountains and seepage of streamflow at the point the streams cross the pediment is correct. Also, the general discharge to the playa and phreatophytes northwest of the site and as interbasin flow out of the model area is also correct. Details of flow around the proposed pit and pit expansion are questionable.

[4] The idea is that the sinter is easy to drain which will create a gradient with the surrounding formations. Because there is a sufficient contact area between the sinter and surrounding formations, much of the drawdown will occur across that contact. But this assumption is dubious and the results of relying on it may cause the dewatering predictions at Gold Hill to be grossly incorrect.

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9-7 There is no basis for the statement that there is a "stair-stepped water level pattern in the granite" (DEIS, page 4.3-5) east of the mine. The cross-sectional figures which show the increasing groundwater levels to the east (figure DEIS, Figure 3.3-19 or WMC (2008, Figure 5.2) do not show such a pattern; water levels shown on WMC Figure 5.5 do not show a stair-stepped pattern. The DEIS should refrain from statements which have no scientific support. Supposition about the characteristics of the faults is not proof nor a basis for a conceptual model. There are similar concerns about statements regarding "compartmentalization of the groundwater in the bedrock hydrostratigraphic units" (DEIS, page 4.3-5).

9-8 The following sentence (in the DEIS) refers to flow among compartments. "Groundwater flow between structural compartments depends on the groundwater gradient, degree of pumping for dewatering, and permeability of the bedrock units and faults that bound the structural compartments" (*Id.*). This sentence is not consistent with other sections which indicate the effect of dewatering in the bedrock east of the site is minimal. It should also indicate that the flow among compartments also reflects the recharge occurring within the bedrock because without recharge there would be no flow.

9-9 *Model Domain:* The east/west model boundaries at the mountain range divides are simulated as no flow. Boundaries on the north and south are lie in the middle of the valley so that groundwater can leave the domain through either end of the model. WMC models these with constant head boundaries which allow a flux to enter or leave the domain. By using these boundaries, WMC assumes the dewatering effects will not extend to them. A constant head boundary, by definition, holds the head constant at the boundary by allowing the flux to change without limit by changing the gradient, or head difference between the boundary and adjoining cell. Very little change occurs if the boundary is set far from the stress. The modeler must use care to not assign too much trust in the fact they assume the boundary to be constant.

9-10 At steady state, the recharge as input to the model discharges through either the ET boundaries or the constant head boundaries. Because dewatering represents a new discharge, it will eventually decrease the natural discharges from the model. Some ET may occur north of the model boundary, as mapped in Handman and Kilroy (1997). If the dewatering pumping changes flow through the constant head boundary too much, the boundary should be set further north to avoid limiting the drawdown extent. **WMC should prove in its model report that this does not occur with** a figure showing fluxes across the boundary during the predictive phase. If the flux changes by more than a couple percent, the boundary is too far south.

9-11 Constant head boundaries also bound the southern edge of the model (DEIS, Figure 4.3-2). The 10-foot drawdown contour draws very close to the south end of the model domain (DEIS Figure 4.3-14), therefore the boundary probably artificially limits the extent of the drawdown. WMC should also provide a flux hydrograph through this boundary to ascertain whether dewatering drawdown will cause changes in the flow on the south end of the model and establish whether the model boundary is sufficiently far from the dewatering stress.

9-12 *Groundwater Model Layers:* The model has "five layers that are designed to represent the five hydrostratigraphic zones in the Round Mountain Area and to incorporate the geology of the Round Mountain Area block model" (DEIS, page 4.3-5). The statement implies that each layer represents a "hydrostratigraphic zone", but this is not correct because the layers are not all of or just a specific zone, as may be clearly seen on WMC Figure 7.14; DEIS Figure 4.3-4 which purports to be the same cross-section does not have conductivity zones for the layers beneath the pit. WMC (2008, page 7-11) more accurately states the layers "represent the conceptualization of the hydrostratigraphy", but still does not

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9-7 Figure 3.3-19 was not intended to show water levels east of the Round Mountain Pit or to show the "stair-stepping" of water levels in the Toquima Range granite to the east of the pit. Figure 5.4 of WMC (2008) shows the "stair-stepping" of water levels. The statement in the EIS referencing "stair-stepped" water levels in the bedrock granite east of the Round Mountain Pit was from WMC (2008) and is based on monitoring of water levels east of the Round Mountain Pit over the past 15 years of pumping and dewatering at the mine. The water levels in the bedrock granite do not change continuously from east to west toward the Round Mountain Pit, but rather follow a "stair-stepped" pattern controlled by faults and dikes in the granite. Table 5.2 in WMC (2008) provides water level data to support the "stair-stepped" pattern of water levels east of the pit.

9-8 Groundwater flow in the granite is controlled by the natural gradient, which in turn is a function of recharge to the granite. The groundwater flow is also controlled by faults, dikes, and pumping of groundwater around the Round Mountain Pit. Recharge to the granite and its importance to groundwater flow in the granite is implicit in the determination of the groundwater gradient in the granite. Recharge to any individual structural compartment within the granite comes from precipitation, and also from flow uphill (i.e., upgradient) within the granite.

9-9 Comment noted. As shown in Figure 4.3-14, the maximum extent of the 10-foot drawdown isopleth does not reach either the north or south model boundaries. Modeling has shown that the decrease in flow out of the model domain along the southern boundary is around 100 to 500 gpm, while the recharge to the southern model boundary is around 9,000 gpm from Peavine Creek and the Toiyabe Range (Rush and Schrorer 1970).

9-10 Figure 4.3-13 shows that the modeled 10-foot drawdown isopleth is not near the northern model boundary. Thus, the position of the northern model boundary does not affect evapotranspiration in the basin north of the model domain. Modeled flows show that on average the boundary flow change is a decrease by 2 to 3 percent.

9-11 Figure 4.3-14 shows that the maximum extent of the 10-foot drawdown isopleth is 2.5 miles north of the southern model boundary. This model boundary does not affect drawdown.

9-12 The geology of the modeled area is very complex . The five layers, which represent a conceptualization of the groundwater flow and are thus "conceptualized" hydrostratigraphic units, are designed to represent the complex geology in a fashion that allows for modeling the key aspects of groundwater flow that may be impacted by pit dewatering and eventual pit

9-12 (cont'd) refilling at the end of mining. The five layers are not intended to represent every aspect of the geology of the basin or the project area, only those components of the geology and hydrogeology that will be affected by the Proposed Action. To that end, the model adequately addresses the hydrogeology of the basin and the project area.

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9-12 (cont'd) reflect the facts such as layer 1 is basin fill in the valley and bedrock in the mountains (WMC Figure 7.14). The statement ignores the fact that the same conductivity zones in the mountain and under the basin fill in the valley (layer 1) span more than one layer. In the mountains, the flat layers in DEIS Figure 4.3-4 do not correspond to the sloping formation bounds in DEIS Figure 3.3-19. Layer 2 clearly does not represent a specific hydrostratigraphic zone anywhere, as will be discussed below.

9-13 Figures 1 and 2, comparing the relevant geologic and model cross-sections near the Round Mountain Mine as published in the DEIS, demonstrate various errors made by WMC in their representation of the layers near the pit. For example, the pit will intersect the Kg formation (Figure 1) but the pit will excavate only model layer 1 as shown in Figure 2. None of the layers simulate properly the Tsts formation (Figure 1).

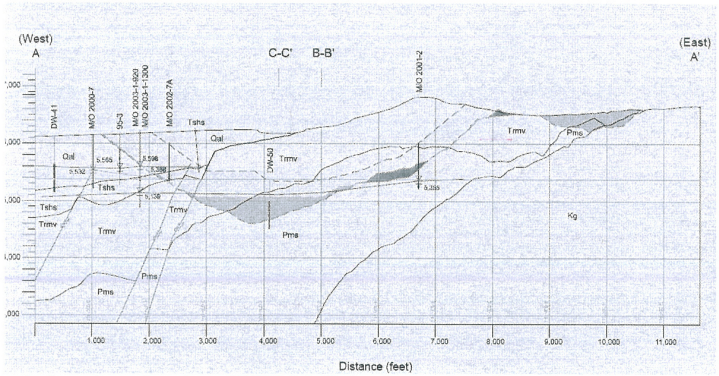

Figure 1: Snapshot of portion of DEIS 3.3-19 showing geologic in the Round Mountain pit. The vertical grid is 1000 feet.

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9-13 The Stebbins Hill Formation (Figure 3.3-19 of the EIS) is incorporated into Layer 2 of the groundwater model. The hydraulic conductivity distribution in Layer 2 reflects the geologic location of the Stebbins Hill Formation.

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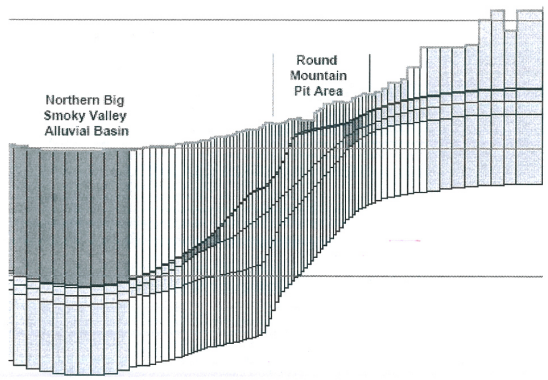

Figure 2: Snapshot from DEIS Figure 4.3-4 showing the groundwater model layers near the Round Mountain pit. Colors represent conductivity zones which are intended to correspond with hydrostratigraphy, however this DEIS figure does not show the conductivity zones near the proposed pit. Vertical grid is 2000 feet. Compare with Figure 1.

9-14 *Layer 1* represents basin fill wherever it exists. In the middle of the valley it is over 3000 feet thick; the model simulates it as 2000 feet thick west of the Round Mountain pit (Figure 2). This prevents the model from simulating vertical gradients within the basin fill because a single layer effectively has the same head throughout the cell. This is an inaccurate depiction of ET discharge, and the conceptual model, because water that recharges in the mountains and valley edges flows vertically downward and then toward the middle of the valley. It then flows upward to discharge as ET at the surface. It would be more accurate to use several layers to simulate the changing gradient within the fill.

The thick layer 1 representation may also artificially increase the transmissivity of the basin fill. Basin fill in reality is layered so the transmissivity could be much less than has been modeled. In reality, the drawdown could be limited to one or more actual fill layers rather than being extended over such a thick layer. Drawdown in near-surface layers, as is likely, will affect the water users much more than predicted by WMC's modeling.

9-15 *Layer 2* is very thin across the entire domain but because of it very low conductivity has a large, inappropriate effect on flow in the model. There is no hydrostratigraphic formation it could represent across the entire valley (Figure 1). WMC may have intended layer 2 near the Round Mountain pit to be

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9-14 Layer 1 in the groundwater model represents the entire basin alluvial fill in the southern part of Northern Big Smoky Valley. The model is designed to estimate the total drawdown in the basin alluvial aquifer, not the drawdown in individual layers within the alluvial fill. As shown in Handman and Kilroy (1997), the lower part of the basin fill has few monitoring wells and thus, little hydraulic data. The purpose of the groundwater model is to estimate total impacts to the basin alluvial aquifer. Because most of the pumping at Round Mountain is in the upper part of the basin alluvial aquifer, the drawdown estimated by the groundwater model is primarily to the upper part of the basin alluvial fill.

9-15 Layer 2 hydraulic conductivity zones are shown in Figure 7.10 of WMC (2008). This figure shows the extent of the Stebbins Hill Formation by the area of low hydraulic conductivity values of 2.0×10^{-5} feet/day. The Sinter Unit at Gold Hill is included in this zone of low hydraulic conductivity for Layer 2. Thus, the low hydraulic conductivity zone in Layer 2 west of the Round Mountain/Gold Hill area is designed to represent the Stebbins Hill Formation and Sinter Unit in the model. The thickness of Layer 2 does not exactly match the thickness of the Sinter Unit or Stebbins Hill Formation , but the combination of the thickness and the hydraulic conductivity is designed to represent the transmissivity of both units. Outside of the geologic extent of the Stebbins Hill Formation , Layer 2 is "a dummy layer" in that is has the same hydraulic parameters as the layer underlying it.

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the Stebbins Hill formation which separates the basin fill from the underlying volcanics. Just west of the Round Mountain pit, there is a grey-colored zone with hydraulic conductivity equal to 0.00002 ft/day, approximately the likely conductivity of Stebbins Hill[5] (WMC Figure 7.10). (WMC Figure 7.14, Figure 2) does not show layer 2 corresponding to the grey-colored zone.) A much larger grey section west of and within the Gold Hill pit absolutely does not correspond with the mapped hydrogeology of Stebbins Hill in WMC or in the DEIS.

9-15 (cont'd) The Stebbins Hill formation thickness ranges from about 100 to 300 feet (Figure 1), which is much thicker than layer 2 (Figure 2). It is also not clear how the model simulates the Stebbins Hill formation pinching out within the pit area.

Layer 2 therefore effectively separates the basin fill from the underlying bedrock. Because of the low conductivity zones, the grey and light green on WMC Figure 7.10, layer 2 effectively prevents a hydraulic connection between the basin fill and bedrock. Layer 2 effectively prevents dewatering of the bedrock from drawing water from the basin fill, in the model, and biases the predicted drawdown due to dewatering.

9-16 *Layers 3 and 4* are substantially thinner than layers 1 and 5, but at 100 to 200 feet thick, they are thicker than layer 2. *Layer 5* is essentially a constant 1500 foot thickness paralleling the other layers. The conductivity varies little among these deep volcanic bedrock layers (WMC Figures 7.18-20) which corresponds to the DEIS statement (page 4.3-1) that the "volcanics and metasedimentary rocks act as a single hydrologic unit during dewatering due to an interconnection caused by extensive fracturing in the round Mountain Area". These layers could be combined, as suggested below, without any loss of model accuracy.

9-17 The model layers dip and rise substantially and therefore the flow also dips and rises, although this may not be appropriate over the entire domain. If the vertical anisotropy exceeds 1.0, as it does in WMC's model, the tendency is for flow between cells within a layer rather than vertically among layers (Anderson and Woessner, 1992). If a layer represents a single hydrostratigraphic unit, this is appropriate. To represent a single unit, a layer's thickness must vary along with the changing formation thicknesses as all of the geologic cross-sectional maps indicate. Some of the formations, such as the important sinter at Gold Hill and Stebbins Hill at Round Mountain, pinch out or are discontinuous. Modeling a layer as a constant thickness singular conductivity zone fails to accurately represent the changing transmissivity within the formation.

9-18 WMC's layer design combined with their methodology for modeling the pit would cause much of the bedrock flow to go underneath the forming pit. DEIS Figure 3.3-19 (Figure 1) shows clearly that pit does or will intersect formations Qal, Trmv, and Pms. The latter two formations dip sharply to the west. WMC Figure 7.14 (or DEIS Figure 4.3-4, Figure 2) suggests the pit will be constructed just in layer 1[6]. The discussion below considers that WMC uses hydraulic parameters for the pit only in layer 1. The layers as constructed therefore cause the groundwater flow to plunge beneath the pit which may limit the amount of dewatering simulated by the model.

The layer design used here effectively forced much of the flow to follow inappropriate flow paths. Because those layers are beneath the pit, **the model underestimated the extent drawdown could**

[5] The conductivity in the model may not equal that from pump tests because it was determined through calibration.
[6] There may be a significant error in the graphics in WMC. Figure 7.14 shows the ground surface less than 5000 ft amsl whereas the geologic figures show the ground surface near the mine exceeds 6000 ft amsl.

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9-16 Comment noted.

9-17 Comment noted. Transmissivity is the product of hydraulic conductivity and thickness. By varying the hydraulic conductivity, the variation in transmissivity due to thickness changes can be accommodated in a model.

9-18 Figure 4.3-4 does not suggest that the Round Mountain Pit is only in Layer 1. It shows the approximate areal location of the pit in the cross-section, not the depth of the pit. The pit will extend vertically into Layer 4 of the model for Round Mountain and into Layer 3 for Gold Hill. Thus, the comment is incorrect – groundwater flows into the pit from Layers 1-4 at Round Mountain and Layers 1-3 at Gold Hill.

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extend into the bedrock; if the model were used to estimate dewatering rates, it also caused the model to underestimate future rates from the bedrock.

9-18 (cont'd)

Properly designed layers would simulate flow within the formations and allow appropriate leakage among layers – the latter being dependent on the vertical gradient and anisotropy. WMC could have properly modeled each unit with variable thickness layers, as shown on the various geologic cross-sections. Layers under the pit should simulate the development of the pit more accurately than they do – they should not tend to drive flow beneath the pit (see the review below concerning dewatering pumping).

9-19

At the proposed Gold Hill pit, WMC did spread the sinter unit among layers. This may be seen on WMC figure 7.15; the green parameter zone extends from layer 1 through layers 2 and 3 (just two model columns wide at this point) to layer 4 where it extends westward fourteen columns, which at a 300-foot cell width would be 4200 feet. Although the vertical scale on the figure is illegible, it appears the formation dips to about 5200 feet amsl. Section B-B' in DEIS Figure 3.3-25 shows the sinter formation does not intersect the ground surface; as discussed above, it is a high conductivity zone surrounded by basin fill (above) and other volcanic bedrock. The model should include it in layer 1. If this high conductivity zone acts like a drain, it will provide most of the water to the dewatering pumps in the model. **This will artificially decrease the amount of water drawn from the basin fill and decrease the predicted drawdown west of the pit.**

9-20

In summary, regarding the layers, the following recommendations apply:

- Layer 1 should be split into multiple layers to improve the simulation of the basin fill, especially of vertical flow with the fill. Near the pit, this would also have improved the simulation of flow into the pit (see below).
- Layer 2 inappropriately decreases flow between layer 1, the fill and deeper layers, the bedrock.
- Layers 3, 4, and 5, having similar parameter zones but extending far beneath the pit, provide a level of detail far better than simulated near the pit and other near surface zones. These layers could be combined and layer 1 split into three layers as recommended above thereby maintaining a five-layer model (neither the calibration data nor understanding of the geology support a more-geologically-complex model).
- The Stebbins Hill formation should be modeled more accurately because over a limited extent it does prevent hydraulic connections between the basin fill and deeper layers. Because the layer pinches out, it would be appropriate for this layer to be simulated as part of layer 3 mentioned above. It may be necessary to make the layer thinner in this region to accommodate the formation.
- Near the Gold Hill mine, the sinter formation should not be simulated in layer 1.
- When layers dip steeply, it may be better to simulate them using similar conductivity zones among layers (Anderson and Woessner, 1992, page 49).

9-21

Recharge: Recharge is the input to the model and controls the water balance, because by conservation of mass recharge must equal discharge. The DEIS conceptually describes the two sources of recharge, stream runoff recharges the basin fill at the point where the streams cross the pediment or fan bounding the valley or some precipitation infiltrates within the mountains if the geology is conducive to recharge (Flint et al, 2004; Wilson and Guan, 2004). However, the model estimates the total and simulates the flux into the model incorrectly.

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9-19 The volcanic tuff is above the Sinter Unit at Gold Hill and between the Sinter Unit and the basin alluvium. Pumping of the Sinter Unit will not affect the groundwater in the basin alluvium.

9-20 The issues raised in this comment have been addressed previously in responses to comments 9-4 through 9-19. The groundwater model is designed to: (1) estimate impacts to the basin alluvial aquifer, (2) estimate drawdown in the bedrock aquifer, and (3) estimate the long-term drawdown in the alluvial and bedrock aquifers due to pit lake formation and evaporation.

9-21 Estimating recharge to a basin, especially a desert basin, is a difficult exercise. The methodology for use in estimating recharge to basins is currently in a state of flux – there is no agreement among various hydrologists as to which method is the best. The method of Maxey and Eakin, developed in 1949 for White Pine County in Nevada, has been tested and still is a standard method used. The report by Handman and Kilroy (1997) relied on this proven method for estimating recharge to Nevada basins. Other methods exist, as discussed in this comment, but the method of Maxey and Eakin is a standard method that has been in use for many decades and is still considered adequate for estimating recharge for a groundwater model.

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The commonly accepted method for estimating recharge within a basin is to estimate discharge and assume it equals the recharge (Cherkauer, 2004; Myers, 2006 a and 2009; NDWR, 1971; Nichols, 2000). Lacking data, many hydrologists have used the Maxey and Eakin (1949) method to estimate basinwide recharge. Interestingly, Maxey and Eakin (1949) derived their method, that is estimated recharge coefficients for precipitation zones, by first estimating the discharge from the basin as the groundwater ET (GWET) from the basin and then determining the amount of precipitation which must recharge to equal the estimated discharge from the basin. In other words, they used the same method recommended in this paragraph to derive their famous recharge estimation methodology.

9-21 (cont'd) WMC's estimate for recharge is incorrect, both in its total and its distribution around the model domain. They based their estimates on Handman and Kilroy (1997) which used methodology that is now understood to be incorrect. Handman and Kilroy used the Maxey and Eakin (1949) methodology (M-E) to estimate recharge in small sub-basins of the Big Smoky Valley rather than over an entire basin. The M-E method does not directly account for geology, and a subbasin consisting of carbonate outcrops will have no runoff while a subbasin having intrusive outcrops will have lots of runoff. Flint and Flint (2007) found that carbonate outcrops in the eastern Great Basin had much higher recharge rates than other zones within the same precipitation zone; in many instances carbonate rock would prevent there being perennial streams draining from the mountains. The M-E the method was derived for use over an entire basin where there is a mixture of geologic outcroppings in the subbasins.

Rather than using M-E estimates for individual basins, WMC should have used a basin characterization method similar to Flint and Flint (2007) or the overall M-E estimate for the basin and distribute the recharge around the basin according to methods of Stone et al (2001)[7].

Discharge from the Model Domain: Natural discharge is either to ET, to spring or stream flow, or to interbasin flow. The model domain includes small portions of two larger basins, Big Smoky Valley North and Tonopah Flat. Interbasin flow is relevant but the flow from the model domain to the north and south is relevant. There are no stream or spring boundaries in the domain. As noted above, WMC models discharge to the north and south through constant head boundaries and to ET.

92-22 WMC set all of the ET rates for different vegetation types, greasewood, wet grass, grass, and grass and rabbitbrush, equal to 0.0105 ft/day (Table 7.9) or 3.83 ft/y which is apparently the potential ET for the site. The only model difference among vegetation types was the extinction depth. This methodology is incorrect because it does not account for PET being satisfied first by local precipitation. The BARCASS study provides ET rates for various shrub types, from sparse to dense shrubland. The actual rates resulting in the model from the combination of ET rate and extinction depth should be compared to measured values within the Great Basin (Welch et al, 2007).

Calibration of Groundwater Model: WMC calibrated their model in both steady state (pre-1990 pumping) mode and transient mode for the dewatering observed at the Round Mountain pit from 1990 through 2005.

9-23 **Contrary to statements in the DEIS, the steady state calibration is poor and biased.** The statement "[t]he overall steady-state calibration had a standard deviation/head range of 4.5 percent, which is within the generally accepted maximum of 10 percent" is not referenced; based on what

[7] The authors of this report were employees and the principal of WMC, therefore their failure to use this methodology for this study is difficult to understand.

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9-22 Most of the area modeled for evapotranspiration (E/T) is either grass or grass plus rabbitbrush (Figure 3.3-8). Greasewood is the third vegetation type and it is found on the fringe of the modeled area. The E/T for grass and for grass/rabbitbrush is very similar (around .4 to .5 acre-feet/year), so that modeling both with one E/T value in the groundwater model will not lead to an error in the model water balance. The total E/T simulated in the model agrees with the water budget from Handman and Kilroy (1997).

9-23 The maximum error of 10 percent for an acceptable calibration is a standard used in many EISs and modeling protocols. It is an accepted industry standard. The transient calibration to alluvial wells is quite good, as stated in the EIS.

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source is a 10% error acceptable (DEIS, page 4.3-15)? The preceding (in the DEIS) sentences describe the biases imparted by the model, although it does not call them biases:

> As illustrated in Figure 4.3-10, calibration residuals in the southern part of the model domain are mainly negative and range from 0.5 to 5.3 feet. In the central part of the valley west of the Round Mountain Area, the residuals are mostly positive and range from 2.8 to 9.5 feet. In the northern part of the model domain, the residuals are balanced between positive and negative. Near the Round Mountain Area, the residuals are positive and range from 8.9 to 56.4 feet. In the Gold Hill Area, the residuals are mostly negative and range from 2.1 to 10.3 feet. (DEIS, page 4.3-15)

9-23 (cont'd) A residual is the difference between simulated and observed water level at an observation point, therefore the model underpredicts the water level in the southern part, overpredicts west of the Round Mountain area, vastly overpredicts near the Round Mountain mine (8.9 to 56.4 feet), and underpredicts near the Gold Hill area. The residual mean is 3.85 feet which is achieved by averaging much higher positive and negative errors; the residual standard deviation is 13.6 feet (WMC, Table 7.10) which means that approximately 67% of the residuals are within plus or minus 13.6 feet. These errors cause the saturated thickness to vary from the actual values which will bias conductivity estimates by biasing the transmissivity estimate.

The transient calibration was generally poor, with a mean residual equal to 16.7 and standard deviation of 104.1 feet (WMC Table 7.12). However, WMC claims the match was reasonably good for the alluvial wells. Information from hydrographs in Figures 7.24a-e does not verify this because the plots are poor due to the use of a vertical scale of 1800 feet, symbols that are about 40 feet thick, and trends of just tens of feet.

9-24 The DEIS acknowledges the fit for the bedrock wells is much poorer, but Figures 7.24 f-h (WMC) demonstrate this to be an understatement. Excepting M/O2003-3-1300 and M/o2003-7 (Figure 7.24h), the model overpredicts the drawdown with most observations not showing much drawdown during the period when observations were taken. This suggests that either **the storage coefficient is too low** or that the model is **too compartmentalized**. For either reason, the model will simulate too much drawdown for a given amount of pumpage or pumping a given amount causes more drawdown in a small compartment. Both of these errors would **minimize the predicted extent of drawdown** because the target drawdown will be easier to reach if the storage coefficient is too low (less water pumped than will be required in reality) and compartments with artificially impermeable boundaries will limit the drawdown extent.

9-25 WMC Figure 7.25 shows the transient calibration hydrograph for the sinter pump test near the proposed Gold Hill mine. The model overpredicts the recovery of the observation well in the sinter by about 5 feet over a year. This over-prediction indicates that water "drains" to the sinter in the model that may not occur in reality. The model results show the sinter acting as a drain during the dewatering whereas the test results indicate otherwise. The model would underestimate the overall drawdown because fewer dewatering points (wells) would be needed in the model.

9-26 A general comment regarding the use of statistics for transient calibration is that one well with more observations but with a good fit will make the overall statistics look much better because the additional observations cause a better apparent fit.

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9-24 The bedrock calibration of the groundwater model is affected by a number of factors, including compartmentalization, cell size, hydraulic conductivity and storage coefficients. The drawdown in the bedrock will affect mainly the project area and the pits. Past pumping at Round Mountain and attempts to match that pumping history have aided the model design and calibration in the Round Mountain Pit area. Any adjustments needed during mining to ensure adequate drawdown will be made by RMGC. The potential effect on water resources from a possible increase in pumping to accommodate needed drawdown would be minimal and limited to the project area.

9-25 The pumping test in the Sinter Unit using well GHB-BPW (discussed in Appendix 5.D of WMC [2008]) shows that the Sinter Unit is a fractured bounded aquifer with a wedge shape (based on geology). It is in fracture communication with some bedrock wells, but not all wells. The groundwater model treats the Sinter Unit as a porous medium and use porous media flow in rectangular cells. Consequently, the groundwater model does not exactly replicate the pumping test, but the model does show the influence of the Sinter Unit on groundwater flow during pumping and the potential for the Sinter to act as a focus (i.e., drain) for groundwater flow during dewatering.

9-26 Please see response to comment 9-25.

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9-27 DEIS Figures 4.3-10 and 4.3-11 purportedly show water levels and residuals in 1990 and 2005, but actually show the exact same contours and residuals. This is an error in the DEIS[8].

9-28 *Simulation of Dewatering Pumping*: WMC used the Fracture Well Package to simulate pumping, presumably both future and current, at the mine. This package removes groundwater from the level necessary to lower the water table as required. The modeler does not specify the model layer from which the groundwater will be removed. WMC does not provide information concerning which layer the wells actually remove water from. WMC Figure 7.28 does not distinguish among bedrock and fill for the current dewatering wells; all are labeled DW-*. Proposed future wells presumably are F*DW-* and bedrock or fill are presumably FBDW-* or FADW-*, respectively. "Presumably" this is due to WMC not explaining their nomenclature on the figure. However, distinguishing among bedrock and fill does not provide any information regarding the layer being pumped; east of the pit is bedrock even in layer 1 and layers beneath the pit are bedrock even if the pit will not be excavated into these layers (in the model).

9-29 Above, this review discussed how layers 2 through 5 appear to plunge beneath the pit in the model, which may artificially limit the groundwater flow to the pit. The well model used herein may underestimate the amount of dewatering water to be pumped because it is only necessary to prevent the pressure head from rising to pit level which means to keep it within the model layer. The amount of water pumped in this circumstance is very sensitive to the vertical anisotropy because a high anisotropy would require limiting the vertical flow to the pit. There is no current data used in the calibration that would accurately or adequately simulate this vertical flow and therefore the vertical conductivity is very uncertain. The DEIS should present detailed sensitivity analysis of the predicted dewatering pumpage.

Predicted Drawdown: Water levels within the basin fill drop more after mining ceases as shown by the 10-foot drawdown extent at the end of mining (DEIS Figure 4.3-13) and at the maximum extent (DEIS Figure 4.3.14). This is due to the pit lakes filling, a process which effectively extends dewatering many years after mining ceases and the cessation of reinfiltration of the dewatering water.

9-30 WMC (page 7-47) indicates the maximum extent occurred "25 to 30 years after the end of active mining" but does not explain what they mean by maximum drawdown extent. "After the maximum drawdowns are reached, the groundwater system outside the pit recovers to a new equilibrium elevation" (*Id.*). That which defines maximum extent depends on the drawdown being considered; WMC does not state which contour they are considering other than to say they considered drawdown plots for every five years after mining ceased to determine the time to maximum drawdown (WMC, page 7-48). WMC states the maximum drawdown time for the currently permitted pit is 25 years and for the proposed action is 30 years (*Id.*). This reflects the filling of a larger pit lake.

9-31 WMC claims their predictions of drawdown in the basin fill are "conservatively high" because they simulated the basin fill as one layer and that in reality the "unit is layered and horizontally heterogeneous" (WMC, page 7-50) which they imply will limit the extent of drawdown. Their explanation is backwards unless it can be legitimately stated that dewatering the basin fill will occur homogeneously along a vertical section of fill. Layering will focus the drawdown near the ground surface where the drawdown may be much more than predicted. This is due to the transmissivity of the layers actually being dewatered being much less than the overall basin fill thickness being modeled.

[8] It is not possible to compare most of the longer-term drawdown maps in the DEIS with those in WMC because it appears the DEIS presents figures not discussed within WMC.

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9-27 Comment noted. Figures have been corrected.

9-28 Screened intervals are provided in Table 5.2 (WMC 2008). The simulated screen intervals match the levels listed in the table. Fracture wells are screened over multiple model layers and include a specified bottom elevation.

9-29 The EIS is concerned with maximum probable impacts, rather than a range of impacts. To that end, the EIS presents the modeled maximum extent of the 10-foot drawdown to provide the reader with an estimate of the extent of drawdown and the water resources that may be affected. Also, the Gold Hill Pit is in model Layers 1 through 3 and the Round Mountain Pit is in Layers 1 through 4.

9-30 The EIS presents the modeled maximum extent of the 10-foot drawdown in Figure 4.3-14. This maximum drawdown assumes that the basin alluvial aquifer is a single aquifer throughout the basin, rather than a number of separate aquifers in individual layers within the basin alluvium. Dewatering of the alluvial aquifer near the Round Mountain Pit encompasses the entire thickness of the alluvial aquifer near the pit. Westward in the basin, the alluvial aquifer thickens. By assuming that pumping of the alluvial aquifer near the Round Mountain Pit will affect the entire thickness of the basin alluvial aquifer to the west, WMC was stating that the drawdown modeled was "conservatively high."

9-31 Please see response to comment 9-30.

Letter - 9 (Continued)

9-32 WMC contrastingly suggests the drawdown predicted in the bedrock is probably too high due to unidentified and unmodeled compartmentalization (WMC, page 7-50). This statement is irresponsible unless there is data to support it; WMC presents no such data even though RMX has been dewatering bedrock at the site since the early 1990s (WMC Figure 7.8). If they had been pumping from specific compartments, once one became dewatered the required pumping would decrease. Figure 7.8 does not show such changes in bedrock pumping (in Jan 04, it appears they pumped at unnecessarily high rates after which they decreased by pumping by up to 30%, but still about 20% higher than pre-Jan 04).

9-33 Many questions regarding flow near the pits and how the model handles the dewatering remain unanswered. An improved understanding could be gained from the appropriate maps. Rather than overall water level maps, the DEIS should provide maps showing drawdown by model layer so that the reviewer can assess whether the drawdown is similar in all formations. The DEIS should also provide maps of water level by model layer or by hydrostratigraphic unit to allow the reviewer to consider the vertical groundwater movement into the future.

Pit Lake Infill and Water Quality

The DEIS predicts water quality in the future pit using a combination of the groundwater model to estimate infill rates and sources and geochemical modeling. The groundwater model estimates the inflow rates to the geochemical model.

Groundwater Modeling

9-34 WMC simulated the pit lake as a high conductivity/storativity unit, setting the conductivity equal to 500 ft/d and storage coefficient equal to 1.0, which effectively allows MODFLOW to "replicate the open void of the pit lake" (WMC, page 7-43). This is unsophisticated, but not inaccurate, because there are LAKE packages available for MODFLOW. Because the layers do not accurately represent hydrostratigraphic sections, the model does not adequately distinguish inflow among layers.

9-35 WMC may have underestimated pit lake evaporation by using the open water rate of 46.5 in/y (3.87 ft/y) (WMC, page 7-44). However, the evaporation rate for the pit from the water balance tables in Appendix 7.B shows that for the long-term ET of 920 gpm 1484 af/y) and an area of 397 acres, the rate is 3.7 ft/y. After 2 years the ET equals 172 af/y from 49.8 acres for an ET rate of 3.5 ft/y. The error is probably due to the use of the ET package, which requires the maximum rate be set at the ground surface and an extinction depth be used to decrease the rate with depth below the ground surface. WMC does not specify the depth they used, but the lower rate as calculated from Appendix 7.B indicates clearly this was their method. Because there is a long-term drawdown, even a full pit lake does not evaporate at the full open water rate; this could underestimate evaporation by as much as 79 af/y. At lower levels, earlier years, the underestimate could proportionally be greater, reaching as much as 18 af/y at 2 years.

9-36 The pit lake water balance tables show another error in the pit lake evaporation. Evaporation from the current pit for base case inflow is 1010 gpm (WMC, Table 7.B.1) while for the expanded pit it is 920 gpm (WMC, Table 7.B.3). However, the expanded pit will fill to higher elevations, at 5653 ft amsl, and have 1.73×10^{7} ft^2 of surface area. However, the current pit would fill to elevation 5639 ft amsl, lower than expected for the expanded pit, but have surface area a larger surface area at 1.87×10^{7} ft^2. This leads to more evaporation for the current pit. The expansion should increase the pit area by 200 acres (DEIS, pages 2-27 and -29). It is not possible for a smaller pit, the currently permitted pit, filling to a lower elevation would have more surface area than a larger pit filling to higher level unless there is

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9-32 Comment noted. The statement by WMC (2008) that bedrock drawdown predicted by the model is "probably too high" is not found in the EIS. That statement is also not found in WMC (2008) on page 7-50 or any other page in the WMC report.

9-33 The EIS deals with impacts to the basin alluvial aquifer and to the bedrock aquifer within and near the Round Mountain and Gold Hill pits. The EIS does not address impacts to individual layers.

9-34 Comment noted. The method used to model pit lake inflow after cessation of mining is consistent with industry practice and provides an adequate estimate of total pit inflow.

9-35 The E/T package was not used to simulate pit lake evaporation. Please see page 7-42 of WMC (2008) for an explanation of pit lake simulation methodology. Evaporation is part of the overall pit lake water balance and the values presented are consistent with other components and the total water balance for the pit lakes.

9-36 The current pit lake area is correct. It is larger than the expanded pit for Round Mountain. Please see page 7-46 of WMC (2008). Appendix 7B in WMC (2008) was checked and found to be in error. A correct Appendix 7B will be submitted to replace the incorrect version. The E/T rates listed in Appendix 7B are correct. The E/T of 46.5 inches/year yields 107 gpm for a surface area of 1.94×10^{6} ft^2 (Year 2) and 920 gpm for a surface area of 16.7 million ft^2 at equilibrium.

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9-36 (cont'd) backfill. The BLM should explain these disparities and run the groundwater and pit lake models over for updated results if they represent errors in the input to the model; this is based on a standard input being a volume/area/water surface elevation relationship.

9-37 The Round Mountain pit lake would be much larger than that created at the Gold Hill pit. WMC predicts the 200 year Round Mountain pit lake volume will vary from 166,000 to 176,000 af, depending on the rate of infilling (WMC, Table 7.B.4, converted from ft^3 to af). The pit lake volume at the Gold Hill pit will be from 3100 to 5800 af depending on the inflow rate (*Id.*). If the recharge or perennial yield of the Big Smoky Valley is 65,000 af, the pit lake will eventually hold 2.63 times the total perennial yield of the basin. The highest pit lake inflow for base case conditions is about 2117 gpm (WMC, Table 7.B.3) or 3414 af/y. At its peak inflow rate after 6 years, the inflow will equal about 5% of the perennial yield in the basin. The relative volumes and inflow rates for the Gold Hill pit would be a much smaller proportion of the perennial yield, with the pit lake volume being about 8% of the perennial yield.

9-38 The DEIS indicates the Gold Hill pit could be flow-through, meaning that pit lake water could flow into downgradient aquifers.

> Initially, the proposed Gold Hill Pit may be a terminal pit with groundwater flowing into the pit from all directions in the bedrock. But when the pit lake approaches its final elevation, about 200 years after cessation of mining, the pit lake could become a flow-through pit lake with groundwater in the bedrock volcanics flowing into and through the pit from east to west with an approximate gradient of 0.07 feet/feet. (DEIS, pages 4.3-42 and -45)

WMC does not directly state this, but does not contradict it either. "The model predicts that the [Gold Hill] pit lake will be a hydrologic sink to **alluvial groundwater** for all three cases considered in the model" (WMC, page 7-47, emphasis added). This implies that there will be no flow from the pit lake into the alluvium which is due to the sinter/alluvium contact being above the final pit lake level. The pit lake may discharge into the surrounding bedrock.

9-39 The conceptual flow diagram around the Gold Hill pit lake (WMC Figure 7.40) suggests the flow is to the pit lake from all directions, including the downgradient side. The actual configuration and hydraulic properties of the bedrock around the pit will control the flows to the pit, during infilling and during dewatering. Doubts concerning the roll of the sinter as a drain during dewatering were expressed above – these same doubts continue with regard to pit lake infill. WMC states "direct groundwater inflow to the pit comes mainly from the sinter unit which extends to the north and south of the pit" (WMC, page 7-47). "Although the **sinter unit occupies a relatively small portion of the area in contact with the pit**, it accounts for about 60% to 70% or more of the groundwater inflow into the pit during filling, compared with 30% to 40% coming from the welded tuff…" (*Id.*, emphasis added). This description is more dubious for pit infill because once the water level in the sinter has recovered, there will be no driving force for groundwater to flow from the surrounding tuff into the sinter; as long as the water level in the pit remains low, there will be a larger gradient from the tuff into the pit than from the tuff into the sinter. To maintain flow from the tuff into the sinter, the head in the tuff must be above that in the sinter. There is also a larger cross-section for flow directly into the pit than into the sinter. The pit lake would likely rise more due to flow from the tuff than from the sinter because it is from the tuff the sinter is recharged. If the tuff discharges to the pit lake, the lake will have higher water levels than the sinter. The sinter at this point would then be recharged from the pit lake rather than tuff. ***This would clearly be a flow-through pit lake.***

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9-37 Comment noted.

9-38 Comment noted. If the Gold Hill Pit lake becomes a flow-through pit lake, pit lake water would flow into the bedrock volcanic aquifer, an aquifer that is not used for human consumption and one that is not used by wildlife.

9-39 Figure 4.3-22 shows the conceptual model for expected flow to the Gold Hill Pit lake during pit lake formation. Most of the groundwater flow to the pit would come from the east or from below the pit. Groundwater flow along the west side would initially be focused along the Sinter Unit because of its high permeability. As the pit fills, flow from the Sinter Unit would decrease. As stated in the EIS, the Gold Hill Pit lake may become a flow-through pit lake after about 200 years of filling.

Letter - 9 (Continued)

9-40 WMC Figure 7.40 suggests there will be discharge into the Gold Hill pit above the lake water level. On the east side, the figure shows a steep water level intersecting with a pit cut at about the 4000 foot point. This could be a water quality or long-term erosion problem within the pit. The BLM should verify whether the model is actually showing a discharge on the pit wall.

Geochemical Modeling

9-41 The DEIS summarizes in ten points the basic pit lake geochemical modeling (DEIS, page 4.3-30 and -31). My summary of the required model inputs is as follows:

1) Background groundwater quality and flow rate based on measured chemistry.
2) Geochemical changes due to background groundwater flowing through exposed geologic formations before the flow reaches the damage zone
3) Geochemical changes due to groundwater flowing through the damage zone and zone of oxidation on the pit wall. This is water that enters the pit lake prior to the pit lake rising to the specified level (this implies the groundwater enters the pit lake as seepage above the rising water surface).
4) Additional load from the damage zone being leached to the pit lake water as a result of the pit lake filling and saturating the damage zone
5) Chemistry of rainfall/snow
6) Chemistry of pit wall runoff as a function of the chemistry of the pit wall it flows across

The DEIS does not but should explain how each of these loads have been estimated and provide the evolving chemistry of each of these inflow streams and their flow rates. As described in the DEIS (#s 6, 7, 8, and 10, DEIS page 4.3-31), the modeling mixes the inflow loads to estimate the pit lake chemistry.

9-42 The DEIS and WMC have made a major error in the determination of input chemistry to the pit lakes by failing to consider how pit wall changes the groundwater inflow to the pit. The DEIS is not clear but WMC (page 9-3) states the "observed groundwater chemistry data" is used for "groundwater inflows". This means the modeling does not account for how the near-pit geochemistry affects the inflowing groundwater.

9-43 The model apparently only considers that the pit wall chemistry, as determined with either MWMP or humidity cells, affects only the rainfall hitting the pit wall or the pit lake water as it rises and saturates the pit wall.

9-44 **It is critically important that the modeling consider how groundwater changes from the background, as represented by chemistry from a well outside the pit area, to the point it actually flows into the pits. At the proposed Gold Hill pit, the tuff surrounding the pit consists of mostly** potentially acid generating (PAG) rock. Groundwater inflow represents more than 95% of the total inflow to the pits and will flow through the PAG rock to the Gold Hill pit.

9-45 The DEIS claimed the DRZ at the Round Mountain Mine was 1.8 m thick based on a 1974 article. It also made several assumptions for specific surface area, porosity and bulk density. Rather than assumptions and literature values, RMX should collect actual data from the existing pit wall to improve the accuracy of the estimates.

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9-40 Figure 4.3-22 shows no discharge into the Gold Hill Pit above the lake water level. If a seepage face develops along the east side of the pit, any erosion that may occur would be minor and would result in pit wall rocks falling into the pit. This would not result in a water quality change in the pit lake.

9-41 Comment does not adequately summarize the 10 steps used in geochemical pit lake modeling as presented in the EIS. These 10 steps explain in summary from how loadings are derived and then mixed to form the estimated pit lake chemistry for each time step in the modeling of the pit lake filling. Additional details on the geochemical modeling can be found in Section 9.1.4 (Round Mountain Pit) and Section 9.2.2 (Gold Hill Pit) in WMC (2008).

9-42 Comment is incorrect. Step 4 explains that groundwater inflow water quality is combined with the estimated average chemistry of the altered pit wall rock (i.e., damaged zone or DRZ) in proportion to the surface area of the wall rock unit exposed. The chemistry of the altered wall rock is derived from the HCT tests. As stated in the EIS, geochemical modeling of pit lake water quality assumed that 3 pore volumes of pore water in the altered wall rock would be flushed and mixed with inflowing groundwater for each time step in the base case scenario and all other modeled scenarios, except the high pit wall loading scenario where 10 pore volumes were used. Page 9-11 of WMC (2008) also explains the geochemical modeling in detail.

9-43 Please see response to comment 9-42.

9-44 Please see response to comment 9-42.

9-45 The assumed thickness for the pit lake wall rock altered zone, or DRZ, is derived from published studies of wall rocks from various open pit mines. Also, the assumed thickness is a reaction thickness, which is the thickness of the fractured and altered wall rock that is expected to react with inflowing groundwater. It is not the total fractured thickness that would be measured in the field.

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9-46 Groundwater inflow chemistry for the Round Mountain mine is set based on the dewatering water chemistry for different geologic formations. Groundwater inflow chemistry at the proposed Gold Hill pit (Table 4.3-10) is based on observations at one monitoring well. It is critical the groundwater inflow chemistry at both pits be amended to reflect contributions from the pit wall to the groundwater inflow. Most of the inflow to the pit will be from the sinter (although the amount is questioned above). Table 4.3-10 shows pH from the sinter to be 3.07 and concentrations of aluminum, beryllium, chromium, cobalt, copper, iron, nickel, and silver are .089, .06, .0002, .0007, .015, 1.227, 000065, and .0001 mg/l, respectively; this list includes only those considered important which are higher than the groundwater inflow. Similarly, the PAG volcanics, which consist of 75% of the volcanic rock which will provide 30% of the inflow, have substantially higher concentrations for aluminum and arsenic. The groundwater inflow will be affected by flowing through these formations prior to reaching the pit.

9-47 Table D-1 supposedly provides the inflow chemistry, but it is difficult to interpret. It is meaningless data without relative flow rates, as well, because it ignores the chemical loads added to the pit lake.

9-48 The DEIS should justify the use of monitoring well GHB-03-04 for inflow chemistry at Gold Hill due to the large variation among the wells (DEIS Table A-3). GHB-03-04 lies upgradient of the proposed Gold Hill pit (DEIS Figure 3.3-23) while at least two wells lie within the proposed pit. All sample rhyolitic tuff with GHB-03-4 from 320 to 340 feet bgs, GHB-03-2 from 345 to 365 ft bgs, and GHB-03-3 from 260 to 340 ft bgs (WMC Appendix 5.A). The well logs describe color and extent of oxidation as varying significantly within the tuff which could explain the variation in Table A-3. Using the groundwater chemistry from one 20-foot sample of rhyolitic tuff does not adequately represent the range of groundwater chemistry discharging to the proposed Gold Hill pit.

Even though the pit lake modeling had many problems, the DEIS indicates the Gold Hill pit lake will have very poor water quality, with contaminant concentrations exceeding standards for eight constituents.

9-49 > Pit lake water quality in the proposed pit would exceed one or more Nevada water quality standards for TDS, alkalinity, sulfate, antimony, arsenic, boron, manganese, and especially fluoride. The water would be alkaline and consist primarily of sodium bicarbonate. The alkalinity and TDS, boron, sulfate, and chloride levels would be expected to increase with time beyond year 200 due to evapoconcentration. (DEIS page 4.3-50)

The quote mentions that alkalinity will exceed standards. This is unexpected considering the fact that PAG rock surrounds the pit and that the primary cause of it being PAG is extremely low neutralizing ability. The BLM should explain this conundrum and consider whether it is symptomatic of the model geochemistry simply being wrong.

Water Rights

9-50 The DEIS should include an up-to-date water rights summary for the valley rather than 1985, as shown on page 3.3-6. The Nevada Division of Water Resources publishes all water rights on the internet from which summarizing a hydrologic abstract of the water rights in a valley is easy. The DEIS should also present up-to-date pumpage data for the valley because 1985 is ancient history; the DEIS insufficiently describes the existing conditions because of the lag of recent data.

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9-46 The groundwater inflow water quality for the proposed Gold Hill Pit is based on the upgradient well to the east of the proposed pit. This well contains groundwater that represents bedrock water quality in the volcanic bedrock to the east of the pit that will be the source of groundwater flowing into the proposed Gold Hill Pit, as shown in Figure 4.3-22. Most of the groundwater inflow to the Gold Hill Pit will come from east or beneath the pit and will be derived from the Mt. Jefferson Tuff. Only 4 percent of the pit wall surface area consists of the Sinter Unit.

9-47 Table D-1 provides the average solution chemistry used in geochemical modeling. Flow rates come from the groundwater model for pit refilling. Chemical loadings are a combination of the solution chemistry, flow rates, pore volumes flushed, and the mixing of components such as wall rock runoff and the flushing of the altered wall rock, before the water enters the pit lake.

9-48 GHB-03-04 was chosen to represent the estimated water quality of groundwater flowing into the Gold Hill Pit because it lies upgradient of the pit and is screened in bedrock that is not altered or mineralized. Wells in the area of the proposed pit have water quality reflective of alteration and mineralization and would not be representative of the post-mining groundwater inflow.

9-49 The average alkalinity of groundwater entering the Gold Hill Pit would be around 177 mg/L at the end of dewatering (WMC 2008). This should be sufficient to neutralize the acidity predicted to be released from the pit walls, based on HCT tests. Also, evapoconcentration will increase alkalinity over time as the pit fills and the pit lake reaches its equilibrium water level.

9-50 The data in Table 3.3-6 is from Handman and Kilroy (1997) and was used to show the overall water balance for the basin under pre-mining conditions. Current pumping rates for agricultural wells in the basin were used in the groundwater model (WMC 2008).

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9-51 RMGC, with various names, owns significant dewatering rights in northern Big Smoky Valley. The DEIS should discuss these as part of Chapter 3 because the existing water rights are part of the existing conditions. A quick survey of the hydrologic abstract for North Smoky Valley shows that as of January 8, 2009, RMGC holds 13,910 af/y in dewatering permits. This number is published on the permits issued to RMGC that date. It summarizes apparently all of their permits and specifies the total. Each permit is supplemental to each other so that total pumping cannot exceed certain amounts.

RMGC therefore has rights to dewater at rates about twice what they have been pumping. The permits specify that once dewatering, mining, milling, and closure activities using this water have been completed, the water rights will revert back to the source, meaning become available for appropriation in the relevant basin.

9-52 *Water Rights for Pit Lake*: As just noted, once RMGC has closed the mine, its water rights revert back to the system. For the two pits with their base case scenario, the evaporation rate at 200 years will equal 1,011 gpm – over a year 1630 af/y. The BLM should ascertain in this permitting process that RMGC will dedicate sufficient water rights to pit lake evaporation.

Water Quality

The proposed Gold Hill pit lake would degrade waters of Nevada because the water quality will violate many standards and because, as discussed above, the pit lake will be a flow-through system. The BLM must not allow the pit lake to form or must require that RMMC plan for mitigation measures that will prevent the degradation of water of the state.

9-53 It is not acceptable to plan to monitor the pit lake as it forms and then for the BLM to determine what to do with the evolving water quality, as suggested in the DEIS. "The monitoring and revised groundwater modeling discussed in Section 4.3.6, Monitoring and Mitigation Measures, would assist the BLM in reevaluating the expected nature of the post-mining pit lake near the end of mining. The final long-term residual impacts of the Gold Hill Pit lake would be determined at that time" (DEIS, page 4.3-69). The BLM must establish a range of alternatives to implement depending on the potential range of water quality and flow-through rates. If these alternatives are not technically feasible or are too expensive, then the pit lake must not be created and RMMC must be denied the Gold Hill pit. Unless RMMC or BLM can propose a solution that will minimize the chances of degrading waters of the state, the BLM must deny a permit to construct the facility.

Waste Rock Dumps

The Round Mountain expansion and Gold Hill pit would generate a total of almost a billion tons of waste rock at Round Mountain and about 150 million tons at Gold Hill. The Gold Hill waste rock is predominately acid-generating which if not handled properly could degrade surrounding waters of the state with acid mine drainage (AMD).

RMMC proposes to encapsulate the PAG waste rock between 20 feet of alluvium or non-PAG rock above and below. It is perhaps more accurate to describe the system as sandwiching the PAG rock between 20-foot layers of non-PAG material. There is about 70 mt of PAG rock which they claim will be encapsulated with 42 mt of non-PAG rock and fill (page 2-62). The encapsulation will be 20 feet and the PAG rock will be placed an average of 24 feet from the edge of the dumps.

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9-51 Comment noted. Water rights presented in the EIS are current water rights and were obtained from NDWR.

9-52 RMGC will coordinate with the State Engineer to ensure that sufficient water rights are dedicated to cover evaporative losses for both Round Mountain and Gold Hill. Evaporative losses from pit lakes estimated by WMC (2008) and presented in the EIS would be reported to the Nevada State Engineer's Office. RMGC's dedication of water rights or acquisition of the appropriate permits to offset evaporative losses from pit lakes would be done under applicable Nevada law with the approval of the State Engineer. However, the appropriation of water rights for evaporative losses would not need to occur until immediately prior to pit lake formation (i.e., before the evaporative losses begin). RMGC would coordinate with the State Engineer to dedicate water rights to maintain the water balance in Northern Big Smoky Valley, accounting for water losses due to pit lake evaporation.

9-53 Please see response to comment 1-15.

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The system intends to prevent AMD by preventing seepage from reaching the PAG rock rather than neutralizing any acid generated by seepage through the PAG rock. This is because there is little neutralizing potential in encapsulating NAG rock. The DEIS relies on infiltration modeling by SRK (2009) to suggest there will be no seepage to the waste rock, therefore that modeling will be considered below.

RMGC (2009) is the waste rock management plan for the site. Based on acid/base accounting (ABA), approximately 69% of the future waste rock at Gold Hill will be PAG. They propose to treat PAG waste as designated, meaning it will be segregated from portions of the waste rock dumps. They have also determined that only the sinter and Mt. Jefferson tuff will be classified as designated (RMGC, 2009, page 50, Table 15) based on these formations being largely PAG. This is about 60% of the future waste rock, or about 70 Mt (RMGC, 2009, Table 12).

However, not all of the Mt. Jefferson tuff is PAG; Table 14 shows that 25% of the samples, based on NP:AP is classified as NAG. Based on NNP, very little of the Mt. Jefferson tuff would be NAG, however, which means that the tuff has very little neutralizing potential.

The same can be said of the alluvium. Although the NP:AP ratio clearly shows there is little acid-generation in the alluvium, 89% of the alluvium samples classify as PAG based on the NNP (Table 14, RMGC, 2009). The NNP classification is based on there being very little neutralizing potential. Any source of acid, including inappropriate mixing with other waste rock types, could result in acid generation from these waste rocks. The alluvium used to encapsulate the designated waste rock will not neutralize acid.

9-54 *Waste Rock Testing*: RMGC's ABA testing is curious. They tested 72 samples of rhyolite tuff, more than the highly acid-producing Mt. Jefferson tuff, when it makes up just 3% of the future waste rock. Did RMGC expect the rhyolite tuff to produce acid? This sampling causes Table 14 (RMGC, 2009) to be very misleading. For example, the table claims that 69% of the samples are "classified as NAG" for NP:AP, which is correct[9] but misleading. RMGC should have sampled the waste rock so that rock type was approximately representative of the amount of rock present so that the table would represent future water rock dumps.

9-55 Appendix B shows the overall waste rock may be much more acid-producing than would be gleaned from reading the discussion. Fifty-nine of the Mt. Jefferson tuff have NNP less than -10, therefore the acid producing potential exceeds the neutralizing potential by at least 10 kg/$CaCO_3$/ton. RMGC (2009, page 47, emphasis added) acknowledges the low NNP "can be attributed to a relative lack of carbonate and an **overall deficit in neutralizing capacity** in the Gold Hill system". Taken as a whole the site has the potential to be significantly acid generating with pockets of very PAG rock. Acid generated anywhere within the waste rock will flow through the system without being neutralized, a fact which accentuates the importance of the capping.

9-56 Figure 3.3-28 shows a major section of the proposed Gold Hill pit was not sampled for geochemistry. At least a fifth of the pit on the east end has no sample points. This would be unacceptable in a pit expected to be mostly neutralizing rock, but in a pit for which the PAG rock exceeds NAG rock by 50%, it is a glaring deficiency in the data collection. The DEIS should be withdrawn until additional

[9] This may be verified by adding the number of samples for each rock type classified as NAG and then dividing by the total number of samples. Using the data in the table, it is possible to determine the number of samples by multiplying n for each rock type by the % classified. 69=(.96*47 + .9*72 + .84*19 + .25*71)/209 * 100.

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9-54 Table 3.3-14 presents a summary of ABA testing for Gold Hill waste rock. This table shows that 75 percent of the Mt. Jefferson Tuff is potentially PAG waste rock based on 71 samples analyzed.

9-55 The proposed alluvial cover for the Gold Hill waste rock is designed to prevent the infiltration of precipitation. The effectiveness of this cover will be evaluated with a pilot test over a period of at least 5 years. The BLM will re-evaluate the alluvial cover design after the field test and make required adjustments to the thickness of the cap to ensure that water does not infiltrate into the PAG waste rock.

9-56 Table 3.3-14 shows that 71 samples were taken from the Mt. Jefferson Tuff in the proposed Gold Hill Area and that the Mt. Jefferson Tuff is potentially acid generating. This is sufficient to demonstrate the expected acid-generating nature of the Mt. Jefferson Tuff.

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9-56 (cont'd) data, as necessary to adequately define the acid-producing characteristics of the waste rock, can be collected. This is especially important because a primary waste management strategy is to encase the PAG rock in 20-feet of NAG rock. Because the DEIS does not have data from so much of the pit, there is a huge uncertainty around whether there will be sufficient rock to carry out the plans. There is also a huge uncertainty around the amount of PAG actually present in the proposed pit.

Waste Rock Cap: RMGC will rely on 20 feet of alluvium to prevent seepage from reaching the PAG rock and forming AMD. SRK's (2009) one-dimensional model of infiltration through the liner has too many assumptions and ignores too many things to be accurate. Their conclusion that based on a variety of "realistic combinations of material properties and vegetation distribution, infiltration through an alluvium cover down to a depth greater than 2 ft is likely to be negligible" (SRK, 2009, page 9) is unlikely to be correct. They rely on various sensitivity analyses with changed hydraulic properties and climate properties to reach the conclusion.

Two huge assumptions inherent in the modeling may render the results incorrect. The first is the model was one-dimensional. This means the model effectively considers a column with infiltration entering at the top, evapotranspiration leaving the top, water being stored in the model layers, and seepage exiting at the bottom. Infiltration is the difference between precipitation and runoff. They

9-57 spread storm events over a day rather than considering more intense storms. They claim that this will allow more infiltration because runoff is lost to the model for one-dimensional situations. In reality, runoff flows downstream where it may infiltrate. Most infiltration likely occurs due to runoff collecting or ponding at low points or flowing through the small drainages which will form on top of the waste rock dump. Ponding especially could cause the effective infiltration over small areas to be many times the average annual precipitation. The BLM should require RMGC to reconsider this modeling in three dimensions with runoff routing and an allowance for ponding and channel formation.

The second assumption is the infiltration will flow vertically through the waste rock in a wetting front. By necessity, that's how a one-dimensional model operates. The reality is there will be zones of preferential flow due to seepage around embedded rocks which will erode smaller particles and enlarge the pathway. There will also be finger flow.

The BLM cannot rely on the model results of the cover system to prevent AMD. The BLM should require a better water balance cap that can accommodate runoff to prevent AMD.

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9-57 As stated in the EIS, RMGC is committed to a field pilot test of the proposed alluvial cover for the Gold Hill waste rock. Following this 5-year field test, the potential for infiltration of precipitation will be re-evaluated by the BLM and adjustments will be made to the alluvial cover design, as needed, to ensure that water will not infiltrate into the underlying PAG waste rock.

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MERCURY ANALYSIS

9-58 The analysis of the potential for mercury releases for the expansion is incomplete. The DEIS contain figures for current stack emissions of mercury (see Table 4.7-2), gives various deposition figures, and indicates the need for RMGC to comply with the State of Nevada Mercury Control Program.] In addition the DEIS needs to contain an analysis of the mercury content in the ore itself to assess the

9-59 potential to release mercury through thermal processes and by fugitive emissions. The ore analysis is needed to develop a complete mass analysis accounting for mercury. In particular, how does the Gold Hill deposit compare with the existing ore that has been extracted? An increased amount of mercury will require RMGC to apply more effort in achieving mercury control.

9-60 Stating a compliance with the State of Nevada Mercury Control Program is not sufficient especially since the MACT standard has been determined for any of the Nevada Gold mines. The DEIS should contain estimates of anticipated emissions from the thermal processes – what emission rate does RMGC expect to achieve?

9-61 There are other sources of potential mercury contamination to the environment such as from waste rock dumps, heap leach pads, and tailings impoundments. The mass accounting calculation will yield the amount of mercury that ends up each of these facilities, and allow a more complete mercury impact analysis.

ADHERENCE TO FEDERAL LAWS, REGULATIONS, AND POLICIES

9-62 Overall, the Project as proposed violates numerous federal laws, regulations, and policies. As such, BLM cannot legally approve the Project. As detailed below, the Project and EIS would violate the Federal Land Policy and Management Act of 1976 (FLPMA), the National Environmental Policy Act (NEPA), the Clean Air Act, the implementing regulations of these laws, as well as numerous other laws, regulations, and policies. At a minimum, due to the inadequacies of the DEIS, BLM must prepare and

9-63 circulate for public comment and Native American consultation, a revised DEIS. BLM must respond to each issue in detail as required by NEPA and other federal law. Some issues may overlap, yet each must be responded to regardless of its location in these comments.

The Project Violates FLPMA

Failure to Prevent Undue Degradation of Public Land Resources

9-64 The Project's adverse impacts to environmental, cultural, and religious resources, including violations of environmental standards, violate FLPMA's mandate that BLM "prevent unnecessary or undue

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9-58 Please see Table 4.7-2, in Section 4.7.1.1.

9-59 As discussed in Section 4.7.1.1, mercury emissions would be in compliance with NVMACT standards to control mercury emissions at Gold Hill.

9-60 As indicated in Table 4.7-2, the current emission rate is 8.3 pounds per year. This value is not expected to increase under the proposed expansion since the amount of ore processed will remain the same. Please see response to comment 9-59 relative to Gold Hill mercury emissions.

9-61 Mercury emissions from waste rock dumps, heap leach pads, and tailings impoundments would be primarily particle bound. All forms of mercury deposition from these sources is accounted for in the model results shown in the report (Figures 4.7-1, 4.7-2, and 4.7-3).

9-62 Please see the responses to the individual comments that follow.

The BLM has complied, and will comply, with all applicable laws in considering the impacts of the proposed project.

9-63 Please see the response to comment 9-62. There is no new information or deficiencies in the Draft EIS that would require a revised Draft EIS.

9-64 The Federal Land Policy and Management Act (FLPMA) and the 3809 regulations require that BLM prevent unnecessary or undue degradation of public lands by operations authorized under the mining laws, and anyone intending to develop mineral resources on public lands must prevent unnecessary or undue degradation of the land and reclaim disturbed areas. "Unnecessary or undue degradation" is defined at 43 CFR § 3809.5.

As discussed in Section 1.5.2 of the EIS, in order to use public lands managed by the BLM's Battle Mountain District Office, RMGC must comply with the BLM Surface Management Regulations (42 CFR 3809) and other applicable statutes, including the Mining and Mineral Policy Act of 1970 (as amended) and FLPMA. Also as discussed, the BLM must review RMGC's plans for expanding and developing the proposed project to ensure: (1) adequate provisions are included to prevent unnecessary or undue degradation of Federal lands; (2) measures are included to provide for reclamation of disturbed areas; and (3) proposed project activities comply with all applicable state and Federal laws.

In assessing compliance with the unnecessary or undue degradation standard, BLM looks at the law, the regulations, and agency guidance. The federal district court decision referred to in the comment, Mineral Policy Center v. Norton, 292 F.Supp. 2d 30 (D.D.C. 2003), affirmed the

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9-64 (cont'd) degradation," or UUD. In addition, the loss of water flows in springs, seeps, and streams constitutes UUD.

9-65 In order to prevent UUD, BLM must ensure that all operations comply with the Performance Standards in the 3809 regulations found at § 3809.420. *See* 43 CFR § 3809.5 (definition of UUD, specifying that failing to comply with the Performance Standards set forth at § 3809.420 constitutes UUD). One of the most important of these Performance Standards regards BLM's duties to protect cultural resources. "Operators shall not knowingly disturb, alter, injure, or destroy … any historical or archaeological site, structure, building or object on Federal lands." 43 CFR § 3809.420(b)(8)(i). In limited circumstances, BLM may permit operations to proceed after the agency becomes aware of the threatened resource, but only after "[t]he authorized officer … take[s] action to protect or remove the resource…." § 3809.420(b)(8)(ii). Here, the Project as proposed, even with the so-called "mitigation" measures listed in the DEIS, fails to "protect the resource" of Western Shoshone religious areas, uses and values.

9-66 The DEIS states that the Project will not adversely affect Western Shoshone cultural or religious resources or uses. That is wrong. The Project will expand onto, and adversely affect lands and resources valued and used by Western Shoshone for traditional religious and cultural uses – in violation of FLPMA's UUD requirements. At a minimum, the sites eligible for inclusion on the National Register must be protected. However, just because areas are not eligible for the National Register (even if BLM's limited view of what should be included is true) does not mean that those sites are not protected from adverse impacts under BLM's duties pursuant to FLPMA and other applicable laws and policies.

9-67 Further, the DEIS admits that the Project, particularly the pit lakes, will violate numerous Nevada water quality standards, including for toxic arsenic. Both the Round Mountain and Gold Hill pit lakes will violate these standards. *See, e.g.,* DEIS at ES-5 (Round Mountain violations); ES-8 (Gold Hill violations). Under FLPMA and the 3809 regulations, such violations of water quality standards constitute UUD, thus requiring BLM to deny the plan of operations. *See, e.g.,* 3809.5 (definition of UUD includes "fail[ure] to comply with one or more of the following: … Federal and state laws related to environmental protection."); 3809.420(b)(5) (listing performance standards that must be met, including the requirement that "All operators shall comply with applicable Federal and state water quality standards ….").

9-68 In addition, the severe and long-lasting dewatering of the local and regional aquifer(s), and permanent loss of water to the system, constitutes UUD, as such losses will not be replaced.

9-69 Lastly, the failure to require mitigation measures to protect public land from these adverse impacts, including the violation of environmental standards, violates the duty to "take mitigation measures … to protect public lands." 3809.420(a)(4).

9-70 In addition, BLM's violation of NEPA as noted in these comments constitutes UUD and thus is another ground for Project denial.

Failure to Apply the Proper Level of BLM Authority Over the Project

9-71 Also violating FLPMA (as well as the 1872 Mining Law and the APA) is BLM's failure to ascertain the correct level of its authority over the Project. While the UUD standard under FLPMA applies where RMGC has demonstrated that it has statutory rights under the Mining Law (i.e. where operations are

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9-64 (cont'd) regulations, including the definition of "unnecessary or undue degradation" adopted in those regulations. Subsequent to the decision, BLM instruction memoranda have been updated to include the court's direction on this issue. BLM's analysis of RMGC's draft Amendment to the Round Mountain Plan of Operations (BLM NVN-072662) for the Round Mountain Expansion Project (RMGC 2008) complies with the statute, the regulations, and applicable guidance.

9-65 The performance standard referenced in this comment refers to unauthorized disturbance of historic resources. Not all historic resources, including properties eligible for the National Register of Historic Places, involve preservation in situ. Some properties, eligible under Criterion d, are eligible only for the information that they contain. In such instances, excavation, documentation, and curation are the preferred mitigation measure. A large portion of the eligible properties in the study area are eligible only under Criterion d.

As discussed in Section 4.4, the treatment plan intended to mitigate effects of the Proposed Action on historic properties would be developed by the BLM in coordination with and SHPO. BLM's Record of Decision would require RMGC to implement the finalized HPTP.

Please see the response to comment 9-62 relative to unnecessary or undue degradation.

9-66 Comment Noted. Please see the responses to comments 9-62 and 9-65.

The NHPA does not prohibit effects to historic properties after the BLM has considered the effect of an undertaking on such resources. The commenter's implication that the unnecessary or undue degradation standard requires permanent preservation of cultural Round Mountain Expansion Project Final EIS resources is not consistent with the NHPA.

9-67 Comment noted. Please see the response to comment 9-64.

9-68 Comment noted. Please see the response to comment 9-64.

9-69 Comment noted. Please see the response to comment 9-64.

9-70 Comment noted. Please see the response to comment 9-64.

9-71 Comment noted. Please see the responses to comments 9-64 and 9-72.

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9-71 (cont'd) conducted on valid claims), where Project lands have not been verified to contain, or do not contain, such rights, BLM's more discretionary multiple use authorities under FLPMA apply. *See* Mineral Policy Center v. Norton, 292 F.Supp.2d 30, 46-51 (D.D.C. 2003). The DEIS incorrectly assumes that only the FLPMA UUD standard applies on all Project lands, even on those lands where there is no compelling evidence that the claims are valid, in direct contradiction of the ruling and Order from the Court in that case. A proper application of FLPMA's multiple use, public interest, and sustained yield mandates to those areas not covered by valid claims would result in a very different Project review and level of protection for public land resources and values, as well as reducing or eliminating the adverse impacts to the use of these lands by members of GBRW and the Western Shoshone Defense Project (WSDP).

9-72 Here, BLM has not ascertained which of RMGC's mining and millsite claims are valid under the Mining Law, and the proper level of authority which derives from claim status. Further, BLM's recent revisions of its regulations issued in response to the Court's Order in Mineral Policy Center, especially regarding the BLM's authority over mining on claims that have not been shown to be valid and perfected, and the mandate to require the payment of Fair Market Value for the use of such lands, violates that Order. In this case, BLM has utterly failed to even consider the application of its multiple use authority, and related Fair Market Value requirements pursuant to the Court's Order in Mineral Policy Center – a violation of FLPMA and the Mining Law as well as an arbitrary and capricious decision under the Administrative Procedure Act (APA).

9-73 Here, the DEIS does not even state what type of claims cover the affected lands. For example, the vast majority of the proposed disturbance involves waste rock, heap leaching and other non-extractive uses. If these are proposed on lode or placer claims, these claims are essentially invalid by definition because these proposed uses demonstrate that the claims do not contain the required discovery of a valuable mineral deposit under the Mining Law. On the other hand, if the lands to be utilized by the new facilities are millsite claims, most of these claims would be invalid because they would exceed the limits imposed by the Mining Law, 30 U.S.C. §42. Under this provision, the operator is allowed 5 acres of millsite claims for each valid lode or placer claim (or approximate 20 acres of such claims) – a limit which would be clearly exceed here.

Air Quality and NEPA

9-74 The DEIS fails to adequately ascertain the air quality impacts from the Project. The DEIS simply lists the tons per year of a few air pollutants, without quantifying the emissions of criteria air pollutants (e.g., PM_{10}, $PM_{2.5}$, ozone, CO_2, NO_x, lead). This not only violates the Clean Air Act's and FLPMA/3809 requirements to ensure that all air quality standards will be met at all times, but also NEPA's requirement that all environmental impacts be fully analyzed. For example, there is no data or analysis of the Projects air emissions calculated from the perspective of meeting the NAAQS standards. A simple listing of the potential tons per year of emissions, DEIS at 4.7-3, does not satisfy the duty to determine the NAAQS emissions and compliance.

NATIVE AMERICAN ISSUES

9-75 GBRW and the WSDP do believe that sufficient consultation and outreach was done with Native communities. The DEIS indicates indicates that consultation proceeded with Timisha, Duckwater, Yomba, and Ely tribal representatives; however, the concerns mentioned do not cite the specific existence of an burial of special significance sites.

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9-72 Please see the response to comment 9-64. The 3809 regulations require a validity examination only when an applicant: (1) proposes operations on lands that have been segregated or withdrawn from the operation of the Mining Law or (2) applies for a patent.

Neither of these conditions apply to the proposed project; therefore, BLM is not required to conduct a validity examination. This question also was addressed by a Solicitor's Opinion in 2005, which concluded that no law requires a claim validity determination before mine plan approval on lands open to the operation of the Mining Law (Solicitor's Opinion M-37012, November 14, 2005).

As clarification, the Mineral Policy Center decision cited in the comment does not require that BLM perform mineral validity examinations of unpatented mining claims or millsites, except where a plan of operations has been located on segregated or withdrawn lands, or an examination is necessary to determine whether the minerals are uncommon varieties (BLM Instruction Memorandum 2004-113 [March 11, 2004]).

9-73 Comment noted. Please see the response to comment 9-72.

9-74 Please see response to comment 1-12.

9-75 The BLM mailed information on the proposed Round Mountain Mine expansion to the Timbisha, Duckwater, Yomba and Ely tribes in December 2006. Tribal representatives and individuals attended scoping meetings for the project in January 2007. Several informal meetings were held at the Round Mountain Mine attended by tribal representatives and members of the newly formed Western Shoshone Descendents of Big Smoky Valley. Some of the meetings included field trips to inspect cultural sites discovered during cultural surveys of the proposed project area. Individual Native Americans participated in more intensive cultural surveys of selected areas adjacent to the proposed Transportation-Utility Corridor connecting the Round Mountain and Gold Hill mining areas. The above tribes and some Native American individuals received copies of the Draft EIS for the proposed mine expansion. Some tribal representatives and individuals attended the two BLM-hosted public meetings on the Draft EIS held on August 18 and 19, 2009. Written comments from Native Americans were received at the meetings and by mail during the public comment period (July 31 to September 14, 2009).

Also, please see response to comment 8-2.

As outlined in page 3.5-1, official tribal representatives were initially provided the opportunity to consult on September 27, 2004, and April 28, 2005.

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9-75 (cont'd) Several informal meetings were held between the project proponent and tribal representatives. These informal meetings were not part of the formal government-to-government consultation between BLM and the tribes.

The informal meetings were held on the following dates:

March 18, 2009,

November 6, 2008,

May 13, 2008,

November 1, 2007,

July 12, 2007, and

May 7, 2007.

Letter - 9 (Continued)

9-76 There is no mention of the potential for pine-nutting in the area, which could contribute to cumulative impacts as well.

Please, feel free to contact our office for any clarifications.

Sincerely,

John Hadder
Executive Director, Great Basin Resource Watch.

Larson Bill
Community Coordinator, Western Shoshone Defense Project

Cc Dave Gaskin (NDEP), Bruce Holmgren (NDEP), Bill Goodhart (Round Round Gold Corp.)

Responses to Letter - 9

9-76 Proposed surface disturbance in the Round Mountain and Gold Hill mine areas would not affect pinyon pine vegetation, which is present east of the mine in the Toquima Range. The maximum extent of the 10-foot groundwater drawdown isopleth, caused from the long-term effects of mine dewatering, may affect groundwater availability to trees at the westernmost edge of pinyon-juniper woodland in the Toquima Range. Groundwater modeling predicts this maximum effect in the year 2048. More precise groundwater modeling and estimation of potential drawdown impacts will be possible during and at the close of mining (and pit dewatering).

Businesses

Letter - 10

SCHMUESER SA ASSOCIATES

CIVIL & INDUSTRIAL CONSTRUCTORS

September 1, 2009

The Bureau of Land Management-Tonopah Field Station
P.O. Box 911
Tonopah, Nevada 89049-0911
Attn: Tom Seley

RECEIVED
SEP 08 2009
Bureau of Land Management
Tonopah Field Office

Re: Round Mountain Mine Expansion

Dear Mr. Seley;

Schmueser & Associates Inc. is a Colorado based Industrial General Contractor. From our branch office in Winnemucca, Nevada we have been providing direct hire construction services to the mining industry in northern Nevada for the past twenty years.

10-1

The mining industry is our mainstay in Nevada and is the life blood of the economy in the region. We have had the opportunity to provide our services to the operators of the Round Mountain Mine and know them to be conscientious and responsible business partners.

Our company, but more importantly its 100 employees who live in northern Nevada, strongly encourage the BLM to move forward quickly to issue the final EIS. We support this project because it makes sense, provides significant tax base in Nye County and will offer employment opportunities for people in Nevada.

Sincerely Yours,

Larry R. Schmueser II
President
Schmueser & Associates Inc.

CC: Tinker Evans, Kinross Round Mountain
Bob Grimmett, Schmueser & Associates Inc. Nevada Division Manager

SCHMUESER & ASSOCIATES, INC.
1901 RAILROAD AVE. • RIFLE, CO 81650 • (970) 625-5554 • FAX (970) 625-2610

Responses to Letter - 10

10-1 Thank you for your comment.

Individuals

Letter - 11

U.S. Department of the Interior
Bureau of Land Management
Tonopah Field Office

Draft Environmental Impact Statement Public Meeting for the
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August 18-19, 2009

RECEIVED
AUG 20 2009
Bureau of Land Management
Tonopah Field Office

PLEASE LEAVE YOUR COMMENTS AT THE REGISTRATION TABLE OR MAIL THEM TO: Thomas J. Seley, Field Office Manager, Bureau of Land Management, Tonopah Field Office, 1553 South Main Street, Tonopah, NV 89049. Comments must be postmarked or otherwise delivered by 4:30 p.m. on ***September 14, 2009***

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Name/Organization: Randy Burggraff / Self

Date: 8-18-09

Address: PO Box 1583 **Zip Code:** 89045

Comments: The Smoky Valley Community which includes Round Mountain, Tonopah, Kingston and Ione Austin, are totally dependent on the Round Mountain Gold mine for their livelihood. Without the mine, these communities will mostly disappear. Furthermore Round Mountain is a very environmentally sound operation. Therefore extending the life of this operation is the absolutely correct thing to do. Passing this permit will be the first step in doing just that.

11-1

Please feel free to use the back of this sheet for additional comments.

Responses to Letter - 11

11-1 Thank you for your comment.

Letter - 11 (Continued)

We appreciate your comments!

Fold 1

Randy Burggraff
PO Box 1583
Round Mountain, NV 89045

Thomas J. Seley
Bureau of Land Management
Tonopah Field Office
1553 South Main Street
Tonopah, NV 89049

Fold 2

Responses to Letter - 11

Letter - 12

U.S. Department of the Interior
Bureau of Land Management
Tonopah Field Office

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August 18-19, 2009

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Name/Organization: Sheila Beery-Burggraff

Date: Aug. 19, 2009

Address: PoBox 1583 Round Mountain **Zip Code:** 89045

Comments: I believe that RMGC should be allowed to proceed with their expansion projects.

According to the fact sheet provided, the only environmental impact is the disturbance of land (approx. 4,698 acres as stated in last paragraph under proposed action.) I know that this disturbance, resulting in leach pads and waste dumps, will change the view of the valley. I can still see the mountains past the current mine and assume that the new pads and dumps will not block the mountain views either. So, bottom line, I see minimal impact/change to the valley with the expansions.

12-1

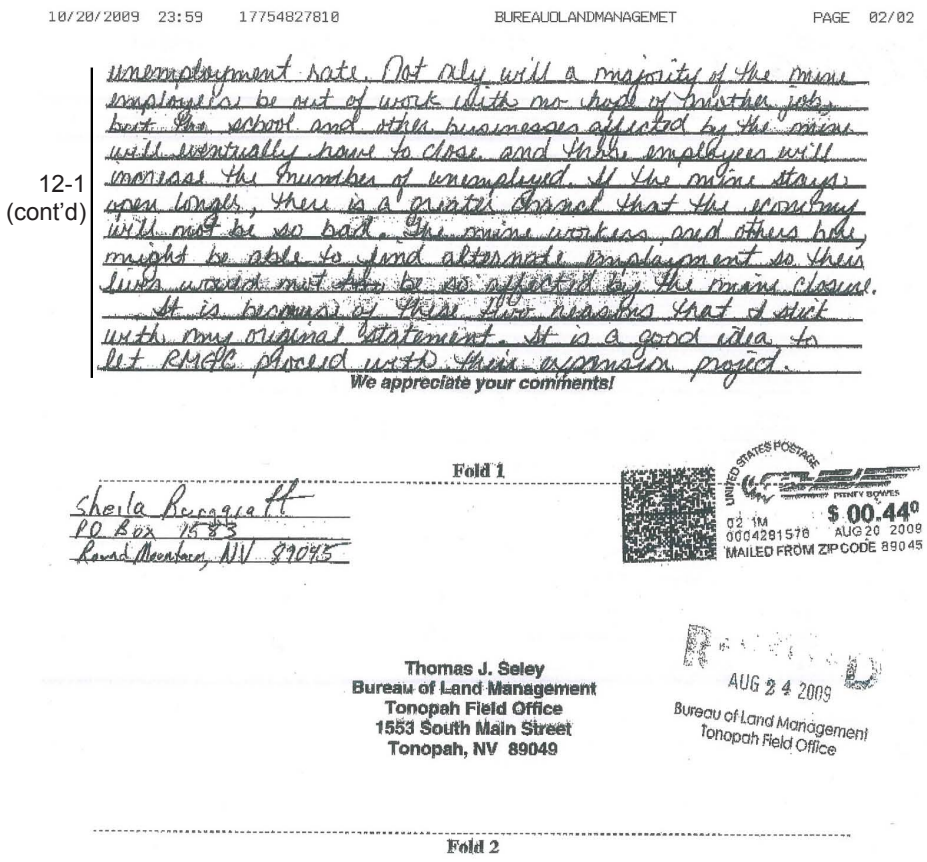
The greater gain, and I believe a priority, is the increase in mine life. Our economy right now is unstable and the unemployment rate high. Since no one can predict how long this will last, guaranteed jobs and job stability must be a priority! If the mine does not expand, in two years there will be a huge hit to the

Please feel free to use the back of this sheet for additional comments.

Responses to Letter - 12

12-1 Thank you for your comment.

Letter - 12 (Continued)



10/20/2009 23:59 17754827810 BUREAUOLANDMANAGEMET PAGE 02/02

12-1 (cont'd)

unemployment rate. Not only will a majority of the mine employees be out of work with no hope of further jobs, but the school and other businesses affected by the mine will eventually have to close and more employees will increase the number of unemployed. If the mine stays open longer, there is a greater chance that the economy will not be so bad. The mine workers and others who might be able to find alternate employment so their lives would not have to be so affected by the mine closure.

It is because of these two reasons that I stick with my original statement. It is a good idea to let RMDC proceed with their expansion project.

We appreciate your comments!

Fold 1

Sheila Ruggia
PO Box 1583
Round Mountain, NV 89045

UNITED STATES POSTAGE PITNEY BOWES
02 1M $ 00.44⁰
0004281578 AUG 20 2009
MAILED FROM ZIPCODE 89045

Thomas J. Seley
Bureau of Land Management
Tonopah Field Office
1553 South Main Street
Tonopah, NV 89049

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Fold 2

Responses to Letter - 12

12-1 Thank you for your comment.

Letter - 13

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Name/Organization: Audrey Casey

Date: 21 Aug 2009

Address: _____ **Zip Code:** _____

Comments: In regards to BLM trading Indian land to RMGC without title or title of use, please read the enclosed pages --

13-1

Please feel free to use the back of this sheet for additional comments.

Responses to Letter - 13

13-1 The Indian Claims Commission determined that Western Shoshone title had been extinguished. This issue and associated compensation have been the subject of numerous lawsuits. While all courts addressing the issues have rejected Western Shoshone claims to continued ownership of these lands, some Western Shoshone still maintain that title to their ancestral lands has not been extinguished.

Letter - 13 (Continued)

We appreciate your comments!

Fold 1

Audrey Casey
HC 60 Box 50902
Round Mountain, NV 89045

Thomas J. Seley
Bureau of Land Management
Tonopah Field Office
1553 South Main Street
Tonopah, NV 89049

Fold 2

Responses to Letter - 13

Letter - 14

September 09, 2009

Bureau of Land Management
Tonopah Field Station
P.O. Box 911
Tonopah, NV 89049

Dear Mr. Seley:

I am writing my comments in reference to: NV065-EIS06-163, 1790, NVN-072662, 3809. I received the Round Mountain Expansion Project Draft Environmental Impact Statement (DEIS), prepared by the Bureau of Land Management (BLM), Tonopah Field Office. Thank you for the copy you sent me.

14-1

14-2

14-3

14-4 For the reasons mentioned above, I am fully opposed to any plans for the expansion of the Round Mountain Gold Corporation at this time

Sincerely,

Barbara (Darrough) Culbertson
7870 Doi Dicutta
Fallon, Nevada 89406.

Responses to Letter - 14

14-1 Please see response to comment 8-2.

14-2 Please see response to comment 8-2.

14-3 Please see response to comment 8-2.

14-4 Thank you for your comment.

Letter - 15

To: Tom Seley, BLM

From: Felix Ike

Date: August 18, 2009

RE: RMX DRAFT EIS, BLM ,TONOPAH OFFICE

15-1 To comply with National Historric Preservation Act of 1986, as amended, BLM intitiated and conducted government-to-government consultation for this project. While the draft EIS mentions this process, it does not adequately address or describe the level of consultation conducted. Please provide a more thorough discussion of the consutation process conducted, including a list of who consultation was conducted with, what the consultation was comprised of, when the consultation occurred, and the current status of that consultation.

15-2 Consultation and cooperation be between all parties should be emphasized. As stated before, "Only in this way will we have achieved what Federal regulations require, and though the goal of these regulations is not always immediately evident, their intent is for the protection of all concerned."

Responses to Letter - 15

15-1 Please see response to comment 9-75.

15-2 Comment noted. Please see the response to comment 1-12.

Lette - 16

U.S. Department of the Interior
Bureau of Land Management
Tonopah Field Office

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Name/Organization: MELANIE JENSEN

Date: August 18, 2009

Address: [illegible] Round Mtn **Zip Code:** 89045

Comments: I am a resident of the valley now
16-1 for ten years - I have benefitted greatly
via the progression of the mining that has
& continues in this town. RMAD has had
a good environmental continual operation for years
I do support the proposed expansion projects

Please feel free to use the back of this sheet for additional comments.

Responses to Letter - 16

16-1 Thank you for your comment.

Letter - 17

U.S. Department of the Interior
Bureau of Land Management
Tonopah Field Office

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Name/Organization: DALE KOLSBRUCK

Date: 8-18-09

Address: Box 1453 ROUND MTN NV 89045 **Zip Code:** _____

17-1 **Comments:** LET'S DO IT ! ☺

Please feel free to use the back of this sheet for additional comments.

Responses to Letter - 17

17-1 Thank you for your comment.

Letter - 18

September 10, 2009

Thomas J. Seley
Field Manager
U.S. Dept. of the Interior
BLM
Tonopah Field Office
P.O. Box 911
Tonopah, NV 89049

RECEIVED
SEP 14 2009
Bureau of Land Management
Tonopah Field Office

RE: NV065-EIS06-163 1790, NVN-072662 3809
and Reference to Figure 2.4-1 map

Dear Mr. Seley:

18-1

18-2

18-3

18-4

18-5

Responses to Letter - 18

18-1 Please see response to comment 8-2.

18-2 Please see response to comment 8-2.

18-3 Please see response to comment 8-2.

18-4 Please see Section 4.5.6 for monitoring measures to be implemented during construction.

18-5 Please see response to comment 8-2.

Letter - 18 (Continued)

18-5
(cont'd)

Sincerely,

Darlene Darrough Murphy

Darlene Darrough Murphy
607 Wialaki St.
Carson City, NV 89703
775-884-0727

cc: Senator Harry Reid, Senate Majority Leader

Responses to Letter - 18

Letter - 19

U.S. Department of the Interior
Bureau of Land Management
Tonopah Field Office

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Name/Organization: JIM SHILLING

Date: 8/18/09

Address: HC 60 BOX 53F07 ROUND MOUNTAIN **Zip Code:** 89045

Comments: The proposed action should be carried out. The economic & employment benefits are greater than any potential drawbacks. Every thing that can be done to prolong the mine life at the RMGC operation should be done. The impacts to the environment and citizens are negligible compared to the benefits to the population.

19-1

Please feel free to use the back of this sheet for additional comments.

Responses to Letter - 19

19-1 Thank you for your comment.

Letter - 20

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Tonopah Field Office

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Name/Organization: KARLA SNIDER

Date: 8-18-09

Address: P.O. BOX 1598 ROUND MOUNTAIN NV **Zip Code:** 89045

Comments: THE EXPANSION ON THE EXISTING OPEN PIT AND GOLD HILL AREA IS GREAT FOR THE ECONOMY AND SUPPLIES MANY JOBS FOR THE COMMUNITY. ENVIRONMENTAL DOES A GREAT JOB KEEPING RMGC ENVIRONMENTALLY FRIE. WITH AN EXCELLANT RECORD. GROWTH IS A GREAT OPPORTUNITY FOR THE ECONOMY.

20-1

Please feel free to use the back of this sheet for additional comments.

Responses to Letter - 20

20-1 Thank you for your comment.

Letter - 21

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Name/Organization: DAN WORTON

Date: AUG 18 2009

Address: PO BOX 554 ROUND MOUNTAIN **Zip Code:** 89045

Comments: I support the Round Mountain Expansion Project. I believe RMGC will continue its excellent environmental management programs as it has done in the past. The economic impact will be realized more than just in the town of Round Mountain and the Smoky Valley to the county, the state and even the Country.

21-1

Please feel free to use the back of this sheet for additional comments.

Responses to Letter - 21

21-1 Thank you for your comment.

Letter - 22

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Name/Organization: Mary Wootton

Date: Aug 18/09

Address: PO Box 1554 Round Mountain **Zip Code:** 89045

Comments:

22-1
AECOM

I support the Round Mountain Gold Expansion project. I believe it to be a sound economic project with ~~vast~~ positive economic impact for the community, county & State. There is minimal environmental impact and the company has a strong history of being environmentally conscious and friendly.

Please feel free to use the back of this sheet for additional comments.

Responses to Letter - 22

22-1 Thank you for your comment.