



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**REGION IX**

**75 Hawthorne Street**

**San Francisco, CA 94105-3901**

**AUG 2 2010**

Ken Miller, Manager  
Elko District Office  
3900 Idaho Street  
Elko, NV 89801-4211

Subject: South Operations Area Project Amendment Cumulative Effects Final Supplemental Environmental Impact Statement (SEIS), Elko County, Nevada [CEQ# 20100237]

Dear Mr. Miller:

The U.S. Environmental Protection Agency (EPA) has reviewed the South Operations Area Project Amendment Cumulative Effects Final Supplemental Environmental Impact Statement (SEIS). Our review and comments are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) Regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act (CAA).

Together, the South Operations Area Project Amendment (SOAPA) Cumulative Effects Final Supplemental Environmental Impact Statement (SEIS) and the 2002 SOAPA Final Environmental Impact Statement (EIS) constitute the overall SOAPA EIS. In our June 4, 2002 comments on the SOAPA Final EIS and our November 9, 2007 comments on the Draft SEIS, we expressed our continuing belief that the project poses potential significant adverse impacts to water quality, and recommended that the Bureau of Land Management (BLM) provide additional information on this issue. Based on our review of the SEIS, we continue to believe that the proposed project does not include sufficient measures to ensure against acid rock drainage and other contaminated leachate. Neither the original 2002 Final EIS/Record of Decision (ROD) nor the current Final SEIS contains sufficient information to confirm that the SOAPA waste rock will not generate contaminated mine drainage and result in adverse impacts to water quality over the long term.

While we understand that the SOAPA project has been ongoing for several years, the Bureau of Land Management's (BLM) preparation of this SEIS provided an opportunity for reevaluation of, and adjustments to, some project components that we believe, to date, remain unaddressed and pose threats to environmental resources. Given the significant amount of potentially acid generating (PAG) waste rock being mined for the SOAPA project, we do not believe it can be adequately neutralized under the alternative selected in BLM's 2002 ROD. Furthermore, several serious questions remain regarding the sufficiency of the geochemical characterization conducted for this mine, and we believe the potential impacts of waste rock and pit lake geochemistry on water and biological resources may be significantly under-predicted.

We have never received the geochemistry information we requested from BLM, and it was not provided in either the original EIS nor the current Final SEIS.

We urge BLM to ensure protection of all environmental resources, both during mine operation and after mine closure, by immediately pursuing updated geochemical testing at the mine using Nevada BLM's 2010 Rock Characterization and Water Resources Analysis Guidance for Mining Activities, and updating facilities designs, controls, and mitigation measures to prevent uncontrolled contaminated leachate from waste rock, tailings, and pit walls. We believe a reassessment of the geochemistry and, subsequently, the facilities designs may result in the need for an updated reclamation bond and the establishment of a long-term trust fund for post-closure management. The ROD should provide the existing geochemistry information that we previously requested, specify in detail how and when this information will be updated to support development of appropriate and protective measures at the mine, and commit to updating the bond and establishing long-term financial assurance, if necessary, based on the findings of the updated assessment. Our detailed comments are enclosed.

We appreciate the opportunity to review this Final SEIS, and would like to continue working with you to ensure protection of environmental resources in the project area. We also request a copy of the ROD when it becomes available. If you have any questions, please call me at (415) 972-3843, or have your staff contact Jeanne Geselbracht at (415) 972-3853.

Sincerely,

A handwritten signature in black ink, appearing to read 'Enrique Manzanilla', with a long horizontal flourish extending to the right.

Enrique Manzanilla, Director  
Communities and Ecosystems Division

Enclosure: EPA Detailed Comments

cc: David Gaskin, Nevada Division of Environmental Protection

**SOAPA Final SEIS**  
**EPA Comments – August, 2010**

**Geochemistry and Water Quality**

Responses 6-1 and 6-2 in the Final SEIS indicate that EPA's comments regarding mine geochemistry and associated potential impacts were addressed in the original SOAPA Draft and Final EISs. However, our comments were not addressed in the original Draft and Final EISs, which led us to reiterate them in our November 2007 comments on the Draft SEIS. Response 6-1 also states that because the purpose of this SEIS is to expand on the *cumulative* impacts of the project, our previous comments are outside the scope of this SEIS. We disagree because cumulative impacts include direct and indirect impacts. We believe the cumulative impacts of the SOAPA Project are significant and adverse, in part, because the geochemistry appears to pose significant adverse direct impacts to water resources, and these have not been sufficiently evaluated in either the original EIS or the current SEIS.

Response 6-2 also states that Newmont Mining Corporation's (Newmont) *Refractory Ore Stockpile and Waste Rock Dump Design, Construction and Monitoring Plan* (2003) is designed to ensure that water resources are not adversely affected by acid generation within the waste rock dumps. As we have informed BLM's Elko office several times on this project, the Leeville Project, and the Emigrant Project, EPA does not believe that Newmont's waste rock dump design will effectively neutralize potentially acid generating (PAG) waste rock or prevent and control the generation of acidic or neutral leachate at these mines. We believe this design poses a significant threat to surface water quality and, possibly, to groundwater quality in the project vicinity. We also, therefore, believe that the mine may be under-bonded and that establishment of a long-term trust fund for post-closure monitoring and management may be necessary.

**Recommendation:** We reiterate our Draft SEIS comments (numbers 6-1 and 6-2 in the Final SEIS) and urge BLM to thoroughly address them in the Record of Decision (ROD). We strongly recommend that BLM immediately pursue updated geochemical testing of waste rock, tailings, ore, and wall rock at the mine, using Nevada BLM's 2010 Rock Characterization and Water Resources Analysis Guidance for Mining Activities and, based on the results, update facilities designs, controls, and mitigation measures to prevent uncontrolled contaminated leachate from waste rock, tailings, and pit walls. We believe a reassessment of the geochemistry and, subsequently, the facilities designs may result in the need for an updated reclamation bond and the establishment of a long-term trust fund. The ROD should provide the existing geochemistry information that we previously requested, specify in detail how and when this information will be updated to support development of appropriate and protective measures at the mine, and commit to updating the bond and establishing long-term financial assurance based on the findings of the updated assessment.

Response 6-3 states that "the agencies" require installation of monitoring wells to determine if leachate is affecting the environment, and that discovery of leachate releasing trace metals to the environment could lead to mitigation measures involving removal of portions of waste rock disposal facilities and reconstruction of the facility to arrest the problem areas. However, it is

unclear whether wells or other sampling devices have actually been installed in appropriate locations for the purpose of monitoring mine drainage and leachate from mine facilities. Table 3-19 in the 2002 Final EIS lists the wells that have been sampled to characterize regional water quality, all of which are outside the SOAPA boundary. While the original EIS and Draft SEIS identify several water *quantity* monitoring plans applicable to the SOAPA project, it is unclear whether and where groundwater *quality* is currently being monitored on a regular basis. It is also unclear whether or how inspections for, and sampling of, surface or shallow subsurface seeps are regularly conducted to provide data that would be useful in determining whether any of the mine's facilities are generating mine drainage or leachate. For example, does the water quality monitoring plan require regular, comprehensive surveys at the toes of waste rock dumps, heap leach pads, and tailings facilities for any unanticipated seeps, springs or vegetation changes, especially near Maggie Creek and in other creeks or topographic low areas within the project area? What measures will be taken if contaminants exceed action thresholds or trend analyses indicate degradation is occurring?

**Recommendation:** In accordance with 40 CFR 1505.2(c), the ROD should adopt a monitoring and enforcement program and summarize it where applicable for any mitigation. Therefore, the ROD should include a summary of the entire groundwater and surface water quality monitoring and management program for the South Operations facilities, including specifying how and where groundwater and surface water will be regularly monitored to determine the quality and source of any contaminated leachate or mine drainage. The monitoring plan should require regular, comprehensive surveys at the toes of waste rock dumps, heap leach pads, and tailings facilities for any unanticipated seeps, springs or vegetation changes, especially near Maggie Creek and all other creeks or topographic low areas within the project area. We are also interested in reviewing the monitoring data, to date, and respectfully request this information.

**Recommendation:** The water quality monitoring and management plan should include the following:

- Provide a map depicting all monitoring sites, including monitoring wells, piezometers, sedimentation basins, seeps, springs, as well as surface water diversion structures, all intermittent and ephemeral streams, and areas of shallow groundwater overlaid on a mine facilities map.
- Describe all monitoring facilities.
- Identify appropriate, reliable, and representative sampling and analytical protocols that will be used for the life of the mine and during closure and post-closure.
- Provide and evaluate all water monitoring data for the entire mine area to distinguish baseline conditions versus any water quality and quantity impacts from mining thus far, and conduct a trend analysis.
- Describe how monitoring information will be fed into the water quality monitoring and management plan for decision-making purposes.
- Identify action thresholds and describe mitigation measures that would be implemented if water quality is degraded.

Response 6-4 states that pit lake water in Nevada is not required to be of sufficient quality to support aquatic life. However, fish and wildlife do use pit lakes in Nevada, and contaminated pit lakes can and do pose risks to these resources. Predictions of Gold Quarry pit lake water quality are based on analytical methods that we believe may underestimate concentrations of parameters that can pose ecological risks. It appears that the anticipated Gold Quarry pit lake could have elevated concentrations of some metals; but, as we stated in our Draft SEIS comment letter, the ecological risks have not been fully assessed. For example, an ecological risk assessment has not been conducted. In addition, Table 4-4 in the Final EIS estimates concentrations for several parameters in the pit lake at equilibrium (250 years), but not for other phases (e.g., during infilling and post-equilibrium under the effects of evapoconcentration).

**Recommendation:** We recommend that an ecological risk assessment be conducted based on the updated geochemical analyses we have recommended above, and that measures be developed to prevent ecological risks in the future pit lake. We urge BLM to commit to immediate commencement of this in the ROD.

Response 6-4 also states that real-time measurement of pit chemistry by Newmont during pit lake development will provide data to assess potential water quality issues and allow effective management of lake chemistry, and that monitoring data will be used to interactively plan the management program. We agree that the pit lake monitoring and management plan should include actively feeding results back into the plan and making revisions as necessary. However, in accordance with 40 CFR 1502.14 and 1502.16, the management program should have been developed and described in the EIS, either as a part of the proposed action or as a separate mitigation measure, and should not be deferred until mining is completed. Since this has not yet been done, EPA believes the pit lake management program should be developed as soon as possible, rather than after mine closure, while the company still has a strong financial interest in the mine and when early and adequate contribution into a long-term trust fund can assure that funds will be available to cover the full cost of implementing the monitoring and management plan for as long it will be needed. New pit lake modeling, upon which the management program will be based, should be conducted using the updated geochemistry recommended above.

**Recommendation:** The ROD should require the immediate development of a detailed monitoring and mitigation plan upon completion of the updated geochemical analyses and ecological risk assessment, and identify the costs and funding mechanisms associated with implementing this plan.

### **Air Modeling**

We note that projections for PM<sub>2.5</sub> (particulate matter smaller than 2.5 microns) concentrations have been added to the Final SEIS. PM<sub>2.5</sub> modeling should be conducted in accordance with EPA's March 23, 2010 memorandum, "Modeling Procedures for Demonstrating Compliance with PM<sub>2.5</sub> NAAQS" (available at <http://www.epa.gov/ttn/scram/>). We have the following comments regarding the PM<sub>2.5</sub> analysis conducted for this Final SEIS.

While it appears fence line receptors were included in the source-specific modeling (Final SEIS, p. 3-19), it is not clear whether the cumulative modeling included fence line receptors. Without

them, the 1000-meter spacing appears too sparse to adequately capture maximum concentrations. SOAPA fence line receptors, or at least a far tighter receptor grid near the fenceline, should be included in the cumulative modeling (e.g., 100-meter receptor spacing or less).

In lieu of PM<sub>2.5</sub> modeling, PM<sub>10</sub> modeling was performed and the results scaled in ways that are not sufficiently justified in the Final SEIS. It is not clear why a monitored ambient PM<sub>2.5</sub>/PM<sub>10</sub> ratio was deemed sufficient for this purpose, and the difference between that 0.428 ratio and the cited 0.10 - 0.15 ratios for fugitive dust from mining operations suggests that sources other than fugitive dust are affecting the monitor. Nor is the 0.85 ambient ratio between 98th percentile and maximum PM<sub>10</sub> sufficiently justified for scaling PM<sub>2.5</sub> modeling results. Finally, it is not clear that the distant Great Basin National Park monitor is adequate as a PM<sub>2.5</sub> background concentration.

**Recommendation:** For the 24-hour PM<sub>2.5</sub> National Ambient Air Quality Standard (NAAQS), PM<sub>2.5</sub> modeling should be conducted using a receptor grid with closer spacing where appropriate, PM<sub>2.5</sub> emissions for the various sources, and an appropriate PM<sub>2.5</sub> background concentration. The PM<sub>2.5</sub> modeling procedures memo referenced above calls for using the maximum from the source, added to a monitored value that applies the 3-year 98th percentile form of the standard, although alternative approaches can be considered, if justified.

We also wish to alert you that recent guidance on the new 1-hour NO<sub>2</sub> NAAQS is available in a June 29, 2010, EPA memorandum, "Guidance Concerning the Implementation of the 1-hour NO<sub>2</sub> NAAQS for the Prevention of Significant Deterioration Program" (available at <http://www.epa.gov/ttn/scram/>). We recommend that BLM refer to this guidance for future NO<sub>2</sub> analyses.