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Department of  
Agriculture

Forest  
Service

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Supervisor's Office

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File Code: 1950/2810

Date: March 3, 2012

Katherine A. Arnold, PE  
Vice President, Environmental and Regulatory Affairs  
Rosemont Copper Company  
P. O. Box 35130  
Tucson, AZ 85740-5130

Dear Ms. Arnold:

On February 21, 2012, the U.S. Environmental Protection Agency (USEPA) provided their comments to the Coronado National Forest on the Rosemont Draft Environmental Impact Statement (DEIS). In order to respond to USEPA comments and address their concerns, the Coronado has identified several items that need to be provided by Rosemont for incorporation into the document. Further data needs may also be identified later, as certain technical analyses are completed such as air quality and geochemical modeling.

#### HEAP LEACH

The USEPA raised concerns over the appropriateness of encapsulation of the heap leach, as well as the details of collection and treatment of heap leach drainage that occurs after encapsulation (see page 10 of USEPA letter).

The DEIS provides a conceptual description of possible treatment of the heap leach drain down, but states: "The details of collection and treatment of the heap leach seepage would be established by the aquifer protection permit; the technology and techniques are not known at this time." (page 289). However, review of the draft Aquifer Protection Permit (APP) now available from the Arizona Department of Environmental Quality shows that these details are not part of the draft APP.

Therefore, the Forest requests that Rosemont provide:

- Further elaboration on the proposal to encapsulate the heap leach pile with waste rock, including information on any analog sites with similar climatic and geologic conditions where this method has been utilized, the benefits and risks of doing so, and an explanation of whether encapsulation would prevent infiltration and seepage.
- An explanation as to why the burying of the heap leach pile with several hundred feet of waste rock is not a concern in terms of pressure on the pile, and accelerated seepage from pressure on the pile. Also, an explanation as to why the additional pressure on the pile would not create the potential for damage to the liner.
- Provide a specific design to capture and treat any heap leach drain down and possible seepage after encapsulation has occurred.



- USEPA suggests that closure of the heap leach to incorporate an engineered, sloped, low permeability cap to help preclude infiltration of precipitation. Indicate whether this method of closure is feasible, and if so, whether it will be incorporated either in conjunction with or instead of encapsulation.

## MODELING OF INFILTRATION SCENARIOS

The USEPA raised several technical concerns regarding infiltration into tailings and waste rock facilities, the increased amount of seepage that might result if infiltration is actually greater than that modeled, and the geochemistry of the resulting seepage (see pages 5 and 9 of the USEPA letter). The Forest is pursuing several lines of inquiry into these concerns. At this time, the Forest requests that Rosemont conduct modeling scenarios in response to several of the USEPA comments; the results of these modeling scenarios would be treated as part of a range of possible impacts. Models should be based on facilities with similar geologic, procedural, and climatic conditions as that of the Rosemont project.

The following modeling scenarios are requested:

- USEPA raised concerns over the use of averaged precipitation data over the course of a single year, rather than modeling the entire actual climatic record over the last 50 years, without averaging. The Forest requests that a modeling scenario be conducted that incorporates precipitation inputs based on actual precipitation records, rather than averaging of precipitation. Modeling should also consider situations with a large amount of concentrated precipitation falling in a short period of time, such as rain events common to the summer rainy season (monsoon) of Southern Arizona.
- USEPA raises concerns that the modeling does not address the potential for preferential pathways to develop through mine features; their concern extends to waste rock, tailings, and heap leach facilities. The Forest requests that qualitative analysis be provided by Rosemont that considers the potential for preferential pathways to develop due to varying lithologies, clast size, or structural weakness in portions of the waste facilities.
- In general, the Forest is looking for Rosemont's response to the entirety of USEPA concerns about underestimating infiltration and seepage. If warranted, the Forest recommends that internal review meetings be scheduled between Rosemont and their consultants, Forest specialists and their consultants (such as SRK), and possibly USEPA specialists to discuss details of modified approaches to infiltration and seepage.

## FURTHER DESCRIPTION OF MITIGATION

Overall, a common concern heard from both the USEPA and the U.S. Fish and Wildlife Service (USFWS) is that insufficient mitigation has been proposed for the project, particularly to offset impacts to riparian resources, streams, and springs. The Forest understands that the description of compensatory mitigation has been difficult to convey to date except in general, because of pending purchasing and contractual arrangements. The Forest also understands that Rosemont is undertaking a more comprehensive compilation of mitigation measures proposed for the project,



as agreed during the February 14, meeting with the USFWS concerning the draft Biological Assessment.

These considerations aside, in light of the USEPA letter, the Forest requests that Rosemont provide as much additional detail as possible regarding both off-site compensatory and on-site direct mitigation, especially for riparian and aquatic resources, in order to be able to fully and fairly describe the environmental effects of the proposed project.

#### ADDITIONAL SPRINGS DATA

The USEPA suggests that a functional assessment of springs and seeps potentially impacted by the project be incorporated into the document (see page 16 of USEPA letter). One of the difficulties encountered in preparation of the DEIS is the lack of ground-truthing for many of the springs. Based on Rosemont's response to the last data request letter, the Forest understands that additional field checking of the inventoried springs used in the DEIS is underway by Rosemont. The Forest requests that additional spring data be submitted to the Forest as soon as it is available.

#### RECLAMATION AND CLOSURE PLAN

The USEPA indicates that they believe the Reclamation and Closure Plan should be completed and fully incorporated into the document (see page 19 of USEPA letter). In the last data request (December 20, 2011), the Forest had requested an update to this plan from Rosemont; the response given by Rosemont was that the plan was indeed going to be updated, but that any changes from incorporating geomorphic design would necessarily cause changes to the plan, and therefore a meeting was requested to discuss these components.

As you know, the Forest has recently conducted several meetings both internally and with external experts in order to further define what geomorphic design components could be incorporated into the Preferred Alternative. Significant progress has been made on this issue; at least one additional meeting is scheduled in March with the specific purpose of considering changes to storm water management arising from the incorporation of geomorphic design; this meeting is also expected to consider comments from the USEPA about storm water management based on the current design as described in the DEIS.

Given the continued work on geomorphic design and storm water management, the Forest recognizes that some components of the Reclamation and Closure Plan may be premature to include. However, the Forest wants to reiterate the importance of this plan being incorporated into the document, and agrees that meetings should occur in the near future to discuss the content of the plan. At this time, the Forest requests that Rosemont provide an outline of the draft plan and a schedule for when the bulk of a draft Reclamation and Closure Plan would be ready for review and discussion.

Thank you for your continued assistance in providing information needed for the analysis of your proposal. I would like to ask that you keep me apprised of the anticipated timeframes for completion of these tasks. If you have questions, contact Mindee Roth, who will coordinate with specialists from the Forest and/or SWCA to provide any clarification that may be required. Ms. Roth can be reached at (520) 388-8319 or [mroth@fs.fed.us](mailto:mroth@fs.fed.us).

Sincerely,

*/s/ Jennifer M. Ruyle*  
JIM UPCHURCH  
Forest Supervisor