

Technical Memorandum

To: Jamie Sturgess
Cc:
From: Kathy Arnold
Doc #:
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1.0 INTRODUCTION

The letter from the Forest Service dated October 19, 2007 listed the following as an additional information need:

“Details on procedures to be implemented in the event of a temporary shut-down in operations.”

This item can be covered a number of different ways under a number of different programs. However, in general, the design and plan for operation of the Rosemont mine lends itself to managing shut down of operations whether temporary, permanently during an interim period, or at planned closure. This plan is especially noticeable when you examine the phased plan for reclamation which ensures that at all times during the operational period reclamation activities are taking place.

Operational requirements for temporary shut-down of operation are addressed in three programs:

1. Mine Plan of Operations under the Forest Service;
2. Arizona Mined Land Reclamation Program; and
3. Arizona Aquifer Protection Permit Program.

2.0 FOREST SERVICE MINE PLAN OF OPERATIONS

Temporary shutdown of operations is addressed in the updated guide for estimating reclamation bonds issued by the USFS in April 2004. This guide is entitled *Training Guide for Reclamation Bond Estimation and Administration for Mineral Plans of Operation* authorized and administered under 30 CFR 228A (Guidance). The specific section dealing with this is included in:

Interim Operations and Maintenance. The plan must include any operations and maintenance needed to ensure the integrity of the project facilities and systems whose failure could potentially endanger human health and the environment in the unlikely event that there is no operator and the Forest Service is responsible for the site.

The Reclamation Plan specifically addressed this section in the following manner:

“Operational and maintenance controls necessary to ensure the integrity of the facilities at Rosemont, whose failure could potentially endanger human health and the environment, are limited with this Project. In general, the layout of the operating facilities is internal to the waste rock and tailings storage areas and/or they are confined to a limited area. This reduces the opportunity for endangering human health and simple security measures such as fencing ensure human safety.

“The anticipated layout and design of the facilities also helps to protect the environment. Process ponds associated with the leach facility are sized with sufficient freeboard and operating volumes to manage process flows and storm runoff volumes. The process ponds are double-lined to ensure protection of surface and groundwater sources. An emergency diesel generator will also be available in the pond area in case of power failure.”

In the event of a longer term duration of shutdown that would encompass a permanent shut-down of operations rather than a cessation of operations, Rosemont has proposed bonding for the highest level of disturbance and has included the removal and shut-down of operating facilities in the bond calculation. In this event a temporary shut-down of operations would precede closure.

3.0 ARIZONA MINED LAND RECLAMATION PROGRAM

The Arizona Mined Land Reclamation Act (AMLRA) was designed to provide a mechanism to require the reclamation of mined land in Arizona. The State Mine Inspector’s Office approves plans and sets requirements; the primary function is to leave a mining operation in a safe and stable condition that is appropriate for a specified post-mining land use (PMLU). Because a temporary shut-down of operations is not part of a post-mining land use, this statute would not apply for closure. However, the site would need to be maintained in a safe and stable manner to comply with mining operational requirements both on the state and federal level.

In the event of a longer term duration of shutdown that encompasses a permanent operational closure, all requirements of the Arizona Mined Land Reclamation Program as set out in the Reclamation Plan would apply regardless of when activities at the site are terminated.

4.0 AQUIFER PROTECTION PERMIT (APP) REQUIREMENTS

4.1 Temporary Cessation

The Arizona Administrative Code (A.A.C.) R18-9-A209 Temporary Cessation, Closure, and Post-closure requires that:

- A. Temporary cessation.
 1. A permittee shall notify the Department before a cessation of operations at the facility of at least 60 days duration.
 2. The permittee shall implement any condition specified in the individual permit for the temporary cessation.
 3. If the permit does not specify any temporary cessation condition, the permittee shall, prior to implementation, submit the proposed temporary cessation plan for Department approval.

As stated above in A.2, specific requirements for temporary cessation will be itemized in the individual Aquifer Protection Permit, which has not yet been issued. However, there are some general requirements that will need to be met regardless of permit specific requirements. Those will include the following steps:

- Water quality monitoring and measuring must continue as required in the terms of the permit or until a different schedule is approved during closure/post-closure.
- Any facility covered under the APP permit such as ponds wells, liners, etc. must be maintained during the life of the permit or until such facilities can be closed under a closure plan. This would include freeboard in ponds, maintaining power and pumping systems, diversions, etc.
- Monitoring for operations required in the permit, such as pond or liner inspections must continue as required in the terms of the permit or until a different schedule is approved for closure/post-closure.

4.2 Closure and Post-Closure

The Arizona Revised Statutes (A.R.S.) §49-252 Closure Notification and Approval requires that:

- A. The Director must be notified if a facility will permanently cease an activity for which the facility, or portion of the facility, was designed or operated.
- B. Within ninety days of the notification, the owner/operator shall submit a closure plan to the Director.
- C. If the Director determines that the closure plan is for a clean closure, the director shall send a letter of approval to the owner/operator and no aquifer protection permit shall be required.

- D. If the Director determines that the proposed closure plan achieves a closure condition other than clean closure, the owner/operator shall submit an application for an APP or request to modify a current APP to address closure activities and post-closure monitoring and maintenance at the facility.

In addition, a closure/post-closure strategy must be drafted and submitted to the Arizona Department of Environmental Quality (ADEQ) for preliminary approval. The closure strategy must eliminate, to the greatest extent practicable, any reasonable probability of further discharge from the facility and of exceeding Aquifer Water Quality Standards at the applicable point of compliance. At closure, different facilities will have different management strategies. There are a number of prescriptive strategies that were included in the Reclamation Plan and the closure specifics are itemized there.

5.0 CONCLUSION

The Rosemont facilities have been designed so the following operational issues can be accommodated.

- Operations are contained within a single drainage and any facilities that can discharge are upgradient of a control structure whether it is a berm or a pond.
- All ponds have been designed to contain operational flows that may occur plus a designed storm event therefore if there is a temporary shut down of operations or power, the ponds will handle the flow without overtopping.
- Emergency power in the form of generators has been anticipated.
- Facilities that receive gravity feed have ponds designed to contain the operational flows plus a storm event. All other facilities can be managed by terminating or staging pumping until the temporary shutdown condition is resolved.

Because this project is new, the opportunity to design for a temporary power outage or other emergency situation has been designed into the facilities or into the emergency provisions such as pumps or generators. A longer term (greater than 3 days) temporary shutdown can be managed using emergency generators and eliminating operational discharges until normal operations are restored.

