Technical Memorandum
Barrel Only Alternative
Viewshed Analysis

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Date: March 8, 2010
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Doc #: 066/10-320871-5.3

1.0 Introduction

This Technical Memorandum presents a Viewshed Analysis for the Barrel Only Alternative being considered in the US Forest Service Environmental Impact Statement (EIS) for the proposed Rosemont Copper Project (Project). The analysis quantifies the visible disturbance areas associated with each of the alternatives, including the Mine Plan of Operations (MPO). Besides the MPO, the alternatives considered under this viewshed analysis were:

- Barrel and McCleary Alternative;
- Barrel Only Alternative;
- Scholefield Tailings and McCleary Waste Alternative;
- Sycamore Tailings and Barrel Waste Alternative; and
- Partial Backfill Alternative (assumes Barrel and McCleary Alternative as base).

To determine the visible areas associated with each alternative and the MPO, viewshed analyses were performed. Viewshed analyses were performed from a select set of key observation points (KOPs) determined for the Project. Shown below, and illustrated on Figure 1, is the list of KOP locations associated with the Project.

- KOP 1: Milepost 46;
- KOP 2: Milepost 44;
- KOP 3: Arizona Trail;
- KOP 4: Mount Wrightson – Four Spring Trail;
- KOP 5: North of Sonoiita Junction;
Rosemont Copper is pleased to present a series of Technical Memoranda on Viewshed Analysis prepared by Tetra Tech and based on criteria specified by Debby Kriegel of the Coronado and Marcie Bidwell of SWCA. The electronic files used in this analysis have been provided as part of the electronic transmittal from Tetra Tech. These analysis include the following alternatives:

1. Mine Plan of Operations
2. Barrel and McCleary Alternative
3. Barrel Only Alternative
4. Scholefield and McCleary Alternative and
5. Sycamore and Barrel Alternative

There is also a discussion of the Visual Analysis as it relates to Partial Backfill.

Rosemont did not participate in the final selection of the visual key observation points and therefore I wanted to register my concern on the ranking system that appears to have been used in this analysis. The analysis shows those areas that are visible from a selected set of seven observation points. Because there was only one observation point chosen on the west side of the ridge rather than the six chosen on the east it appears that the Sycamore Tailings site is not visible. However, after a field trip on the west side the of Santa Rita Mountain ridge, where there were three Forest Service personnel present, it is very apparent that the Sycamore Tailings site will be seen from the all communities and neighborhoods on the west side which would increases the number of affected viewers. Rosemont is concerned that this not be the only measure of visual impact for the Sycamore Alternative.

These Technical Memoranda are dated March 8, 2010 and were provided with the electronic files on the ftp site. Because these were already provided electronically, I am providing two hardcopies and one electronic file to the Forest Service and one hardcopy and one electronic file to SWCA.
A select set of these KOPs was used in the viewshed analysis for each of the alternatives, including the MPO.

- KOP 1: Milepost 46;
- KOP 2: Milepost 44;
- KOP 3: Arizona Trail;
- KOP 6: Las Cienegas BLM Kiosk/Empire Ranch Entry;
- KOP 7: Hilton Ranch Road Rural Residential Area; and
- KOP 8: Box Canyon/Arizona Trail Crossing.

Additionally, the following KOP was also used in the viewshed analysis of the Sycamore Tailings and Barrel Waste Alternative.

- KOP 9: Sahuarita Road.

For each of the alternatives and the MPO, viewshed analyses were run on the following phases:

- Operational Year 10; and
- Ultimate Year.

For both Operational Year 10 and the Ultimate Year, a cumulative viewshed was prepared from all of the select KOP locations. Viewsheds were generated from a point six (6) feet above the KOP location. Raw or unsmoothed facility shapes were used in all of the analyses.

2.0 **Barrel Only Alternative Viewshed Analysis**

Figure 2 shows the cumulative viewshed analysis results for the Barrel Only Alternative associated with Operational Year 10. Figure 3 provides the viewshed analysis results for the Ultimate Year. As indicated above, the following KOP locations were used in generating the cumulative viewshed analysis associated with the Barrel Only Alternative:

- KOP 1: Milepost 46;
- KOP 2: Milepost 44;
- KOP 3: Arizona Trail;
- KOP 6: Las Cienegas BLM Kiosk/Empire Ranch Entry;
- KOP 7: Hilton Ranch Road Rural Residential Area; and
- KOP 8: Box Canyon/Arizona Trail Crossing.

The figures show the areas seen from one (1) or more of the KOP locations in the vicinity of the Project.
FIGURES