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State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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May 20, 1996

Dr. Jayne Belnap
Research Biologist
National Park Service
Southeast Utah Group
125 West 200 South
Moab, Utah 84532

Re: Cryptobiotic Soil Study, J.B. King Mine, Western States Mineral Corporation, ACT/015/002, Folder #2, Emery County, Utah

Dear Dr. Belnap:

Thank you for your contribution and participation in the recent cryptobiotic soil study at the J.B. King Mine site located in Emery County, Utah. Your input, technical and laboratory support is much appreciated. Enclosed please find a summary sheet outlining the study with field notes.

As per your instructions, the collected samples are enclosed for analyses. Sample descriptions are included on page 3 of the summary sheet. In addition to performing your regular analyses, we would appreciate if your laboratory would also analyze the 3, 10-cm depth soil samples for the following:

- % CaCO₃
- % Sulfur (non-SO₄-S)
- Soil density
- pH

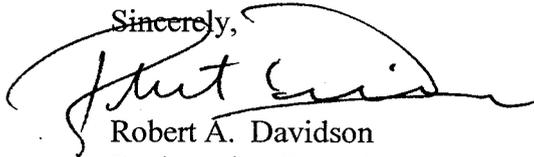
Since we added elemental sulfur in the treatments, we need to account for all acid forming materials added to the soil. The Acid Base Potential (ABP) must be quantified for all underground development waste and overburden materials, which includes reclaimed soils. The ABP is calculated by difference between the neutralizing potential (NP) as % CaCO₃ and the acid potential (AP) as % S, nonSO₄-S. We need soil density to determine the % sulfur added in the elemental sulfur treatments. The pH will verify the soil acidity before and after treatment. Preliminary calculations based on previous soil sampling indicates that acidity will not be a problem with these treatments, but we need to verify the results.



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We will be collecting the post-treatment samples during the June or July inspections. We will follow the same sampling protocol unless you direct us otherwise. We would appreciate any further guidance you may give and look forward to the future results of this and other cooperative studies.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert A. Davidson", with a large, sweeping flourish that extends to the left and underlines the name.

Robert A. Davidson
Reclamation Specialist

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Enclosure

cc: Susan White
Sharon Falvey
Joe Helfrich
Pam Grubaugh-Littig
E.M. (Buzz) Gerick, V.P. Operations, Western States Mineral Corp.