



# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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## TECHNICAL FIELD VISIT

**Date :** June 4, 1997  
**Mine:** Cottonwood/Wilberg Mine  
**File Number:** ACT/015/019  
**DOGMA Staff:** Robert Davidson RAD  
**Other Attendees:** Dick Northrup, Pacificorp

### Purpose:

- Appraise the east facing hillside for topsoil salvage at the Cottonwood/Wilberg waste rock disposal site.

### MRP Information:

- The soils are mapped as Lithic Ustic Torriorthents, 5-30% slopes with a Gardner saltbush community. Soils were originally characterized in the MRP as Pedon #4, which was actually a composite sample from 3 different locations. No Pedon description exists for #4 except for chemical and general characterization. The soil is a silty-clay loam having a 74 percent saturation

### Field Observations:

- The toe of the east facing hillside slope is located immediately above and adjacent to the Cottonwood/Wilberg waste rock disposal site. Soils are derived from mancos shale and therefore have a heavy mancos influence. Vegetation on the southern portion of the slope is mixed with Gardner saltbush, grasses, and sagebrush. Vegetation in the mid portion of the slope is mainly Gardner saltbush with some grass and very little sagebrush.
- The soil surface is crusted and cracked with a friable and loose consistency to a depth of about 8 to 12 inches. At this depth, we encountered a hard clay layer with the soil having a very firm consistency. Soil moisture was present at about 4 to 6 inches.
- Two composite samples were taken using a hand held 18" sample probe. Approximately 20, 12" cores were taken for each sample while randomly probing across the midslope at high and low points. The samples were mixed and soil pastes were prepared and allowed to stand for about an hour before making pH and electrical conductivity measurements. 25 grams of soil were used to make the soil pastes and the paste was weighed afterwards to calculate percent saturation. The pH was measured directly in the paste while the EC was measured on the paste extract after filtering thru a Whatman #45 paper. The pH/EC meter was calibrated before making measurements using pH and EC standards.

Composite Sample	Paste Temp °C	pH	EC μs/cm	SP %
south slope	80	7.6	2120	37.0
mid slope	80	7.7	2910	38.4

**Recommendations/Conclusions:**

- Per DOGM's soil guidelines, the measured soil parameters for both samples are good for pH, and saturation %, and fair for EC.
- Discussion in the field with Dick Northrup focused on salvaging the soil to a 10 inch depth across the entire slope. The salvaged soil would be used as subsoil, thus adding increased depth to the now approved 18" subsoil depth. Salvage would be done in lifts as the waste rock pile ascends while live hauling the soil to the newly constructed soil berm.
- Pacificorp will provide an MRP amendment for salvaging the additional soil at the Cottonwood/Wilberg waste rock site.

Signature:  on June 12, 1997  
Robert A. Davidson, Reclamation Specialist III (Soils)

cc: Daron Haddock  
Joe Helfrich  
Susan White  
Bill Malencik  
Dick Northrup  
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