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State of Utah
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DIVISION OF OIL, GAS AND MINING

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TECHNICAL FIELD VISIT

DATE: April 30, 1998.
DOGM STAFF: Robert Davidson
ATTENDANTS: Chris Hansen, Canyon Fuels, Skyline Mine
Rick Olsen, General Manager, Soldier Canyon Mine
RE: Phase-II, Topsoil Stockpile Area Soil Survey, Dugout Mine, Canyon Fuel Company, ACT/007/039, Carbon County, Utah

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Purpose:
- Conduct an Order-I soil survey of the proposed topsoil stockpile area for the Phase II submittal of the Mining and Reclamation Plan.

Background:
- Phase I mining plans have been approved and the mining permit has been issued for the Dugout Mine. Mining activities are scheduled to begin May 1998. The current approved Phase I proposed topsoil stockpile area is located at the Soldier Canyon Mine topsoil stockpile. Phase II plans are currently being submitted; Phase II development will affect a greater extent of the canyon and the environmental resources within the disturbance area. The current approved area for soil salvage is inadequate for several reasons: First, the area is not adequately sized for additional soil salvage that will occur during Phase II. Second, the distance for soil haulage will add additional costs to soil salvage. Finally, the area is currently infested with cheat grass, although efforts are being made to control the cheat grass infestation.

Field Observations:
- Four soil pits were prepared using a backhoe. The pits were dug to represent the soils within the proposed stockpile area.
- Three of the four soil pits were characterized and sampled. The fourth soil pit was used to delineate soil boundaries between calcareous and gypsiferous soils.
- Two soils were identified: Calcareous and gypsiferous based soils.
- The separation of the two soils corresponded to the presence or absence of greasewood. The greasewood primarily occupy the gypsiferous based soils.
- The calcareous based soils primarily exist towards the base and lower toes of the pediment slopes and within the drainage areas. These areas are heavily influenced by the calcareous pediment gravels located above these soils.
- The gypsiferous soils exist adjacent and below the calcareous soil areas where there is a heavier influence of mancoes based materials.
- The A horizons in both soils are only about 4 inches thick and very susceptible to surface damage. Subsoils contain a much higher percentage of clay and salts.

Recommendations and Conclusions:
- Place the topsoil stockpile on the calcareous based soils. Since calcareous salts are much less soluble than gypsum salts, these calcareous soils are a much better choice for storing the topsoil on, thus helping prevent salt movement and possible salt contamination to the topsoil during storage.
- Use a geotextile fabric to separate the original undisturbed soil surface from the imported topsoil. Helping protect the thin topsoil layer from disturbance and mixing with the poorer quality subsoils will help promote better revegetation success during reclamation of the stockpile area. Place marker ribbons immediately above the geotextile to help locate the fabric and to help prevent surface damage to the original soil surface while removing the stockpile topsoil during reclamation.

Signature: _____ on May 5, 1998
Robert A. Davidson, Reclamation Specialist III (Soils)

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