



# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

Norman H. Bangarter  
Governor

Dee C. Hansen  
Executive Director

Dianne R. Nielson, Ph.D.  
Division Director

355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
801-538-5340

July 25, 1989

TO: Rick Smith, Permit Supervisor

FROM: Henry Sauer, Reclamation Soils Specialist *HS*

RE: Review of the Technical Deficiency Response, Beaver Creek Coal Company, C. V. Spur Preparation Plant, ACT/007/022, Folder #2, Carbon County, Utah

## Synopsis

The following comments are technical deficiencies which remain to be adequately addressed. The response to the Division's technical deficiency review (June 6, 1989) was received July 10, 1989, but dated July 18, 1989.

## Analysis

### UMC 817.22 Topsoil: Removal-(HS)

The applicant must substantiate the suitability of the proposed topsoil substitute material (disturbed land fill) by creating revegetation test plots within the said material. The determination of reclaimability for the proposed substitute topsoil material will be based on the success or failure of the disturbed landfill revegetation test plots.

The disturbed landfill in question is saline (Electrical Conductivity > 4 mmhos/cm at 25°C)/sodic (Sodium Adsorption Ratio above 10) in nature. Excessive soluble salts within the root zone of most plant species inhibits water uptake. Additionally, exchangeable sodium in excess of a Sodium Adsorption Ratio of 10 exerts its greatest effect on plant growth by dispersing the soil. Given these circumstances extraordinary measures may be necessary to insure reclamation success. These measures may include low intensity/high frequency irrigation treatments to leach excess salts and incorporation of gypsum to remove sodium from within the root zone.

Page 2  
Memo to R. V. Smith  
ACT/007/022  
July 25, 1989

### Recommendations

The applicant must submit for inclusion in the PAP, seedbed preparation and planting methods and seed mixture, as well as revegetation monitoring methods (i.e., frequency of monitoring parameters analyzed, etc.) for the disturbed landfill revegetation test plot(s).

### Analysis and Recommendation

#### UMC 817.23 Topsoil: Storage-(HS)

1. The applicant's account of topsoil stored on site is contradictory. The topsoil mass balance table shown on page 8-37a indicates a stored topsoil volume of 58,663 cubic yards. The seedbed quality material volume table page 8-33 indicated an excavated topsoil volume of 22,590 Bank Cubic Yards (BCY). Swell factors for the excavated topsoil were not given.

To accurately estimate the quantity of topsoil stored on-site, the applicant must submit an as-built survey of the soil stockpiles. This survey shall include the volume of topsoil stored, maximum and minimum heights, slopes, and all other pertinent diversions.

2. The plan for reseeding the topsoil stockpiles in the fall of 1989 is insufficient. The applicant must submit the seed mixture employed to reseed the topsoil stockpiles. The applicant states that fertilizer and seed will be applied in a combination slurry. This is unacceptable. The applicant must apply seed and fertilizers separately. It is also recommended that fertilizer be applied in the spring of 1990. Additionally, the applicant must verify the germination rate of the applied seed. This shall be accomplished through the assistance of a state agriculture inspector.

Page 3  
Memo to R. V. Smith  
ACT/007/022  
July 25, 1989

**Analysis and Recommendation**

**UMC 817.48 Hydrologic Balance: Acid- and Toxic-Forming  
Materials-(HS)**

Coal processing waste material (refuse) produced on site must be analyzed annually for the following constituents: pH, Electrical Conductivity, Sodium Adsorption Ratio, Selenium, Boron, and Acid-Base Potential to include percent Pyritic-Sulfur and percent Organic-Sulfur. Laboratory methodologies may be located in Table 6 of the Division's Guidelines for Management of Topsoil and Overburden.

djh  
AT23/38-40