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State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

ACT/007/004
#2

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TO: Richard Allison

FROM: Paul Baker, Reclamation Biologist *PAB*

DATE: October 18, 1993

RE: Soil Tests Conducted on Spoil from the No. 4 Mine Canyon Area of Hardscrabble Canyon, AMAX Coal West, Castle Gate Mine, Folder #2, ACT/007/004, Carbon County, Utah

On September 14, 1993, Dave Buckner of Esco Associates took soil samples in the canyon of the No. 4 Mine in Hardscrabble Canyon. These samples were composites to a depth of four feet and were intended to show whether or not there was a potential for acid formation or toxicity problems. Also, they were meant to show if there might be any nutrient deficiencies for plants growing in this area.

The analyses showed adequate levels of most nutrients; however, phosphorous is considered to be low. Esco recommended and a Division soil specialist concurred that 30 lbs. per acre of phosphate fertilizer needs to be added to the soil. It was recommended that this amendment be incorporated into the soil, but, because of the difficulty with incorporating the fertilizer in the No. 4 Mine area, the fertilizer will be applied hydraulically.

The Division soil specialist recommended a light application of nitrogen fertilizer in the spring. This is not required. The rate and form recommended are 15 lbs. per acre of elemental nitrogen from an ammonium-based fertilizer, such as ammonium sulfate or ammonium nitrate. This is a fairly low level of nitrogen fertilization which, hopefully, will not overly encourage weed or grass growth.

The sodium adsorption ratio and electrical conductivity, boron, selenium, and metals levels are not considered to be toxic. In fact, the boron level in sample D is slightly lower than traditional agricultural requirements for boron. However, addition of a boron supplement is not recommended.

