



# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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February 14, 1994

TO: Daron Haddock, Permit Supervisor

FROM: Paul Baker, Reclamation Biologist 

RE: Revised Chapter 8, AMAX Coal Co., Castle Gate Mine, ACT/007/004, Folder #2, Carbon County, Utah

## SYNOPSIS OF PROPOSAL

AMAX has proposed to modify Chapter 8 of its mining and reclamation plan so that it conforms with other sections, particularly Chapter 3. There are few, if any, substantive changes in this chapter. AMAX has retained the baseline information from the old plan. For the most part, the revised chapter refers to appropriate sections of Chapter 3 for reclamation plans.

## ANALYSIS

I have some concerns about the soils reclamation plan for Crandall Canyon and the refuse pile in Schoolhouse Canyon. Most of the soil in Gravel Canyon would be used to cover the Schoolhouse Canyon refuse pile, but the most of the soils in Gravel Canyon came from Crandall Canyon. Also, the present Crandall Canyon reclamation plan says that the upper topsoil pile has been deleted. Only 18,000 cubic yards of topsoil remain available for Crandall Canyon reclamation. This would be enough to cover about 22 acres with six inches of topsoil. The surface disturbance in Crandall Canyon is at least 28 acres, and this figure may not include the access road. These concerns will be addressed in the review of the Crandall Canyon mining and reclamation plan.

Table 8-3 on page 8-24 has the analysis of a sample of coal refuse deposited at Goose Island. The analysis shows the boron level at 200.4 with no units. Samples taken at Schoolhouse Canyon in 1982 show boron levels of 58.0, 58.4, 176.4, and 224.4 parts per million (ppm). Division guidelines allow up to 5.0 ppm. Obviously, these boron levels are well above the guidelines recommendations and would be very toxic to even the most tolerant plants.

More recent sampling of the Schoolhouse Canyon refuse pile has not shown any elevated boron levels. The more recent sampling appears to have been more comprehensive than the previous sampling regimen, and it includes a map documenting sampling locations.



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On page 8-18 of this submittal of Chapter 8 is a statement that refuse materials at the Castle Gate Coal Mine have been found to be non-toxic and non-acid forming. This statement is not changed from the previous plan. Although it is very, perhaps overly, broad, I believe that the Division can base a determination of no toxic materials in the Schoolhouse Canyon refuse pile on the more recent analyses. However, it must be understood that there is a potential for phytotoxicity problems.

## **RECOMMENDATIONS**

This submittal of Chapter 8 can be approved. Anticipated problems with a topsoil deficit for Crandall Canyon can be addressed in the review of the mining and reclamation plan for that area.