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State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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OK

November 21, 2001

TO: Internal File *DRH*
THRU: Daron R. Haddock, Permit Supervisor *DRH*
FROM: Paul B. Baker and Joseph C. Helfrich, Sr. Reclamation Biologists *JCH*
RE: Technical Field Visit to Look at Vegetation in Hardscrabble Canyon, Castle Gate Holding Company, Castle Gate Mine, C/007/004

Other Attendees: Vicky Miller, Johnny Pappas, and Patrick Collins

Date & Time: June 15, 2001, 11:30 AM to 12:45 PM

PURPOSE:

To look at revegetated areas in Hardscrabble Canyon and make a general assessment whether it is likely the site would meet the vegetation requirements for Phase II bond release and also to discuss whether the revegetation success standard needs to be changed.

OBSERVATIONS:

With a few exceptions, the vegetation in Hardscrabble Canyon continues to do very well. Without actual vegetation cover measurements, it is impossible to tell whether it will meet the requirements for Phase II bond release, but a cursory look indicates it would. Areas with the least vegetation are those that were seeded in December 1999: the redisturbed area at the Goose Island refuse pile, the bench above the cliff near the gate, and the area below the cliff in this same area. These areas are relatively small compared to the entire site, but they will reduce the mean and increase variability and sample size.

After this visit, Messrs. Pappas and Collins and Ms. Miller went to Sowbelly Gulch to look at two undisturbed reference areas that were established many years ago but which are no longer approved as success standards. One is in a grass/sage community on a southwest-facing hillside, and the other is in a mountain brush or Salina wild rye community on a northeast-facing slope.

RECOMMENDATIONS/CONCLUSIONS:

The vegetation in Hardscrabble Canyon probably meets the requirements for Phase II bond release, and we decided it would be worthwhile to measure it for bond release.

The approved revegetation success standard includes a large area of reclaimed abandoned mines. When these sites were originally established as success standards, the Division took vegetation measurements in several of the areas and decided they would be appropriate standards. However, since then, the vegetation in some of these areas has changed markedly. Much of the fourwing saltbush has died, and alfalfa has become the dominant species.

In 2000 when the permittee measured vegetation in Sowbelly Gulch for Phase II bond release, a portion of the approved reference area in Sowbelly Gulch was used as a reference area. While this site had good diversity and good vegetation cover, we are concerned how stable the plant community is. We are also concerned about comparing areas reclaimed using only spoil as substitute topsoil with undisturbed areas.

As long as a portion of the existing reference area has suitable vegetation, it can still be used as a standard. If the vegetation community in the current reference area changes, the reference area will need to be reevaluated.