



State of Utah

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TO: Daron Haddock, Permit Supervisor

FROM: Paul Baker, Reclamation Biologist *PAB*

DATE: September 16, 1992

RE: Reclamation Plan for Sowbelly Canyon, Amax Coal Co., Castle Gate Mine, Folder #2, ACT/007/004, Carbon County, Utah

SUMMARY

Portions of the reclamation plan for Sowbelly Canyon have been reviewed for compliance with the regulations and consistency with the newly-submitted Chapter 9. The Sowbelly Canyon reclamation plan does not address all of the regulations. Comment on these regulations is reserved for another memorandum dealing with Chapter 9.

ANALYSIS

R645-301-341

Revegetation Plan

Proposal:

Species list 1 will be used for Sowbelly Canyon. The seed will be mixed with a small amount of wood fiber mulch and water to form a slurry which will be applied to the reclaimed surface using a hydroseeder. The balance of the mulch, mixed with a tackifier and the fertilizer in a slurry, will then be sprayed over the same area. The total coverage of mulch will be at the rate of 2000 pounds per acre. In areas inaccessible to the hydromulcher, seed will be broadcast by mechanical means and mulched with 2000 lbs. per acre of straw. The straw will be tacked with nylon or other suitable netting.

Exhibit 3.2-5 shows reclamation treatments for areas to be reclaimed in Sowbelly Canyon.

Analysis:

The Sowbelly reclamation plan in Section 3.2 states that any deviation from the seeding and mulching plan will be done in accordance with the requirements given in

Chapter 9. Chapter 9 states that tub mulching followed by crimping will be used where areas are accessible to such equipment. Native hay or straw will be applied at a rate of no less than two tons per acre, and crimping will be done along the contour. Where tub mulching is not practical, wood fiber, paper fiber, or wood/paper fiber mulch will be used. The methods shown in Chapter 9 need to be used, and if Section 3.2 discusses mulching, it needs to be consistent with Chapter 9. Also, the Universal Soil Loss Equation calculations presented in Appendix 3.2G need to incorporate these plans.

On page 3.2-26, the plan states that upon completion of the grading in accordance with the plan depicted in Exhibit 3.2-4, and ripping of the soil, the reclaimed area will be seeded with grasses and legumes. This statement is unclear. Seed mix 1 which is planned for Sowbelly Canyon includes, in addition to legumes and grasses, other forbs and shrubs. Also, no provision is made in the plan to plant grasses and legumes and the other species in two operations.

Seed mix 1 does not meet the requirements of the performance standards of R645-301-353. It contains introduced species that are not necessary or desirable for this location. Seed mix 3 has been revised in a fax received by the Division on September 14, 1992. The species in this seed mix would be expected to provide adequate diversity and cover to meet the requirements of the performance standards. It should be used in place of mix 1.

The existing plan includes measures for establishing riparian vegetation within 20 feet on both sides of reclaimed drainages. This commitment needs to be restored. Two possibilities for this plan are: 1) Seed could be planted as planned and planting mix 2 from the existing Chapter 9 could be added; or, 2) Riparian areas could be seeded as planned and planted with the seedling list from species mix 4 in the proposed Chapter 9. If the second option is used, willows and possibly cottonwoods could be deleted from this mixture.

Exhibit 3.2-5 contains a footnote indicating that cut slopes will not be seeded. To comply with R645-301-353, a vegetative cover in accordance with the approved permit and reclamation plan needs to be established on all areas except water areas and roadways. Therefore, all areas within the range of seeding equipment should be seeded.

Deficiencies:

1. The mulching plan presented in the revised Chapter 9 must be used at Sowbelly Canyon, and Section 3.2 of the plan must be revised to be consistent with Chapter 9. Universal Soil Loss Equation calculations contained in the appendices must also be revised to reflect the plan in Chapter 9.

2. The statement on page 3.2-26 that reclaimed areas will be seeded with grasses and legumes needs to be clarified to be consistent with plans to use shrubs and non-leguminous forbs.
3. The seed mix to be used at Sowbelly Canyon must meet the requirements of the performance standards. Seed mix 1 may not be used unless Amax can demonstrate that the introduced species in it are necessary and desirable to achieve the postmining land use. The use of the revised seed mix 3 is recommended.
4. This section must include plans to restore riparian vegetation within 20 feet of stream channels. The existing plan to use planting mix 2 or a modified version of the seedling planting list in species mix 4 of the proposed Chapter 9 are suggested.
5. In accordance with R645-301-353, all areas within the range of seeding equipment must be seeded.

RECOMMENDATIONS

Approval of this section of the Castle Gate reclamation plan is not recommended unless the deficiencies contained here are resolved.