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**TO:** PAUL BAKER **DATE:** 12/8/00

**DEPT:** **PAGES:** 3
(INCLUDING THIS COVER SHEET)

**FROM:** Vicky Miller

**FAX No.:**

**SUBJECT:** CRANDALL CANYON SEEDING/MULCHING

**COMMENTS:**

Here is the text I discussed with you last week.

Please give me your opinion.

Thanks

Vicky

## 3.7.5(3)(7) Seeding and Mulching

Following placement of the growth media and prior to application of the reclamation seed mix, hay will be incorporated into the growth media at a rate of 2 tons per acre. This will be done to improve soil structure for aeration purposes, increase micropore space, and improve the water holding capacity of the soil. Incorporation of the mulch will occur through deep gouging.

No fertilizer will be used during the reseeding activities associated with the main canyon reclamation project. It has been observed, in Sowbelly Gulch and No. 4 Mine areas, that when fertilizers are used, it encourages the proliferation of annual weeds that compete initially with the desired vegetation thereby hindering and/or delaying revegetation success.

Following seeding, an additional 1 to 1.5 tons per acre of straw mulch will be spread over the seeded growth media mostly by mechanical blowers with occasional hand spreading. The straw mulch will then be sprayed with a tackifier and mulch mixture at about 500 lbs per acre following spreading to retain it on the reseeded slopes. The tackifier and mulch methodology provided a better means for retaining the straw mulch onto the reseeded areas than did the crimping methodology.

Following deep gouging, the respiled areas will be seeded using the Crandall Canyon Reclamation Seed Mix. The seed mix will be mechanically or hand broadcast according to the accessibility of the area to be seeded. When species shown in the seed mix are not available for planting, substitution of an equivalent species will be made in cooperation with UDOGM and reported in the annual report

The riparian areas will be revegetated to a condition similar to those in the Crandall Canyon riparian reference area using the best technology available. The channels to be reclaimed with soil covered riprap will be seeded with the seed mix below, however they will not be compared to a reference area as a success standard (verbal agreement made at a meeting with UDOGM personnel, 8/31/95).

Ponderosa pine and Douglas fir seedlings will be concentrated within approximately 200 feet on either side of the reclamation channel and on the slopes in the canyon containing CCRD-3 at the rate of 100 Ponderosa pines and 150 Douglas fir seedlings per acre. Bigtooth maple and cottonwood seedlings will be spaced every 20 feet along the channel. Specific planting locations will be determined by the Applicant and UDOGM.

### CRANDALL CANYON RECLAMATION SEED MIX

| Description | Quantity (Pounds PLS/Acre) |
|---|---|
| **GRASSES** | |
| Indian Ricegrass | 2 |
| Western Wheatgrass | 2 |
| Bluebunch Wheatgrass | 2 |
| Basin Wild Rye | 1 |
| Thickspike Wheatgrass | 1 |
| Redtop | 0.5 |
| Kentucky Bluegrass | 0.5 |

| | |
|---|---|
| **FORBS** | |
| Rocky Mountain Penstemon | 0.5 |
| Blueleaf Aster | 0.25 |
| Lewis Flax | 0.5 |
| Yarrow | 0.1 |
| Louisiana Sage | 0.1 |
| **SHRUBS** | |
| Curlleaf Mountain Mahogany | 2 |
| Mountain Big Sage | 0.25 |
| Whitestem Rubber Rabbitbrush | 0.25 |
| SEEDS PER ACRE (# PLS) | 12.95 |
| **SEEDLINGS** | |
| Ponderosa Pine[1] | 100 per acre |
| Douglas Fir[1] | 150 per acre |
| Bigtooth Maple[2] | 225 (approximate) per acre |
| Cottonwood[2] | 225 (approximate) per acre |
| | |

(1) Seedlings will be concentrated within approximately 200 feet on either side of the channel.
(2) Seedlings will be spaced approximately every 20 feet adjacent to the channel.