

October 2, 1987

041/002 112

TO: File

FROM: Lynn Kunzler, Reclamation Biologist *LK*

RE: ICR for SUFCO's Waste Rock Disposal Site, Convulsion Canyon Mine, ACT/041/002, Folder #2, Sevier Co. Utah

SUFCO's August 3, 1987 submittal for the Waste Rock Disposal Area was reviewed for initial completeness and adequacy for sections UMC 783.18, 783.19, 783.20, 783.22, 784.13(b)(5), 784.15, 784.21, 817.97, 817.100, 817.111-.117 and 817.133. Comments are as follows:

UMC 783.18. Climatological Information - lk

This section is complete and adequate.

UMC 783.19 Vegetation Information - lk

The submittal proposes the use of a reference area for establishing revegetation standards. However, as discussed on September 14, 1987 on site, the baseline data method would be acceptable provided an adequate productivity sample had been made. This would remove concerns raised with the proposed reference area regarding similarity between it and the area to be disturbed, and ownership and control of the reference area location. On September 18, 1987 it was confirmed over the phone that the productivity sample met adequacy requirements (Mean = 1008 lbs/acre dry wt., Sample Size = 10 and Standard Deviation = 29.8.  $N_{min} = 1$  (@90% confidence)).

The Following items are needed to have a complete and adequate vegetation survey for the site:

1. Table 4 in Appendix IV needs to be revised to include Sample Size and Standard Deviation,
2. The current range condition of the disposal site needs to be determined (preferably by the U.S. Soil Conservation Service,
3. Reference to using a reference area for the success standard need to be changed to reference baseline data, and
4. For clarity, Tables 3, 5, & 7 and discussions regarding the reference area should be removed from the submittal.

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UMC 783.20 Fish and Wildlife Information - 1k

This section is complete and adequate.

UMC 783.22 Land Use Information - 1k

This section is complete and adequate.

UMC 784.13(b)(5) Revegetation Plan - 1k

The applicant needs to provide plans to reclaim each section of the waste rock disposal area as contemporaneously as possible after completion of each section. Also, the applicant needs to provide a timetable as to when each major step in reclamation will be completed (i.e. grading, topsoiling, seeding, mulching, fertilizing, etc.).

Seeding rates must be in terms of Pure Live Seed (PLS). The proposed seed list has several introduced species with no demonstration that they meet the criteria of UMC 817.112. Also, more shrub species should be added to the mix. Attached is a recommended seed mix for your consideration, which would be acceptable for this site.

The proposed mulching rate is not adequate. A minimum of 2,000 pounds per acre should be used. Please clarify how mulch will be applied and anchored (if mulch is not anchored, its effectiveness is greatly reduced).

Please clarify whether irrigation will be used or not. Will pest/disease control (including weed control) be used? (See comments under UMC 817.97 also).

The applicant needs to identify baseline data as the criteria for determining revegetation success (see comments under UMC 783.19). Methods used to measure revegetation success should be the same as those used to collect the baseline data. Also, the level of confidence (90%) for sampling needs to be identified.

The applicant needs to provide a monitoring plan for reclaimed areas, identifying parameters to be sampled and the year of sampling. Attached are the Division's monitoring guidelines to assist you in developing an acceptable plan.

The applicant needs to provide a plan and commit to repairing rills and gullies as per UMC 817.106.

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UMC 784.15 Reclamation Plan: Postmining Land Use - lk

This section is complete and adequate.

UMC 784.21 Fish and Wildlife Plan - lk

See comments under UMC 817.97.

UMC 817.97 Protection of Fish, Wildlife and Related Environmental Values - lk

The applicant must commit to promptly report any threatened or endangered species (plant or animal) or golden eagles not previously reported to the Division of which he becomes aware of in the permit area.

The applicant must commit to not use persistent pesticides unless approved by the Division in advance.

The applicant must commit to prevent, control and suppress range, forest and coal fires not approved by the Division.

UMC 817.100 Contemporaneous Reclamation - lk

See comments under UMC 784.13(b)(5).

UMC 817.111-.117 Revegetation Plan - lk

Until a complete plan is submitted (See comments under UMC 784.13(b)(5)), compliance under these regulations cannot be determined.

UMC 817.133 Postmining Land Use - lk

This section is complete and adequate.

1255R/31-34

Recommended Seed Mix  
Waste Rock Disposal Area  
SUFCO Coal Company  
ACT/041/002

<u>Species</u>	<u>Rate</u> <sup>1</sup>	<u>Rate</u> <sup>2</sup>
GRASSES:		
<u>Agropyron dasystachyum</u> Thickspike wheatgrass	3.0	5.0
<u>Agropyron smithii</u> Western wheatgrass	3.0	5.0
<u>Agropyron spicatum</u> Bluebunch wheatgrass	3.0	5.0
<u>Bromus marginatus</u> Mountain brome	3.0	5.0
<u>Elymus cinereus</u> Great Basin wildrye	2.0	4.0
FORBS:		
<u>Achillea millifolium</u> Western yarrow	0.1	0.1
<u>Artemisia ludoviciana</u> Louisiana sagewort	0.1	0.1
<u>Linum lewisii</u> Blue flax	1.0	1.5
<u>Melilotus officinalis</u> * Yellow sweetclover	1.0	1.5
<u>Penstemon strictus</u> Rocky Mountain penstemon	0.5	0.5
SHRUBS:		
<u>Amelanchier alnifolia</u> Serviceberry	2.0	2.0
<u>Artemisia tridentata vaseyana</u> Mountain big sagebrush	0.2	0.2
<u>Chrysothamnus nauseosus albicaulis</u> Whitestem rubber rabbitbrush	0.5	0.5
<u>Sambucus cerulea</u> Blue elderberry	1.0	1.0
<u>Symphoricarpos oreophyllis</u> Snowberry	1.0	1.0
TOTAL	21.4	32.4

1 - Pounds Pure Live Seed (PLS) per acre for drill seeding.

2 - Pounds PLS per acre for broadcast or hydro- seeding.

\* Melilotus officinalis is an introduced species. However, It is highly recommended for reclamation of disturbed soils due to it soil building and stabilizing characteristics, growth characteristics and compatibility with other species. The Division has determined that this species meets the criteria of UMC 817.112 without the operator needing to provide additional documentation.