



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Norman H. Bangerter
Governor
Dee C. Hansen
Executive Director
Dianne R. Nielson, Ph.D.
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340

TO: Daron Haddock, Permit Supervisor

FROM: Paul Baker, Reclamation Biologist *PAB*

DATE: November 30, 1992

RE: SUFCO Response to Permit Renewal Technical Deficiency Review, Southern Utah Fuel Company, Convulsion Canyon Mine, Folder #2, ACT/041/002

SUMMARY

SUFCO has responded to the technical deficiency review and Division Order that were issued at the time of permit renewal.

This memorandum is organized with the technical deficiency review deficiency stated first and underlined. This is followed by a response and analysis section. Further deficiencies that pertain to the Division Order are then stated. All of the remaining deficiencies are summarized in the recommendations section at the end of the memorandum.

ANALYSIS

R645-301-321

Vegetation Information

Deficiency:

1. The plan must clarify if the information from vegetation sampling site 13 is to be used as a reference area, to validate similarity to a reference area, or if the baseline data method is to be used for the riparian area by the pond.

Response and Analysis:

Site 13 will not be used as a reference area; it will simply be used to describe the vegetation that existed at the sediment pond location prior to disturbance.

This change in reference areas was approved on a site visit. The pond area did not have vegetation typical of a riparian area prior to disturbance.

Deficiencies:

None.

Deficiency:

2. The plan must contain productivity information for the riparian reference area and adequate information to predict the potential for reestablishing vegetation in riparian areas. This should consist of, minimally, productivity estimates, woody species density, and vegetative cover by species measured by methods contained in the "Vegetation Information Guidelines Appendix A".

Response and Analysis:

Since this site is no longer considered a reference area, the information required in the deficiency is not needed.

Deficiencies:

None.

Deficiency:

3. The plan must include a map which shows locations and boundaries of reference areas which will be used in determining revegetation success. Plates 5-2A and 5-2B are suggested.

Response and Analysis:

Plate 3-1 has been modified to show the pinyon-juniper reference area.

On September 2, 1992, a reference area near the waste rock disposal site was chosen and analyzed for vegetation parameters. This submittal does not include a proposal to change the revegetation success standard from the baseline method, however. Wess Sorensen of SUFCO has indicated that this proposal should be submitted separately.

Deficiencies:

None.

R645-301-322

Fish and Wildlife Information

Deficiency:

1. The plan must contain a plan for monitoring known raptor nests.

Response and Analysis:

The plan says on page 7-7a that known raptor nests will be monitored on a yearly basis using a helicopter flight near the end of May. Personnel from Wildlife Resources or the Fish and Wildlife Service will be included on the flight. This response adequately addresses the concerns of the deficiency.

Deficiencies:

None.

2. The plan must clarify the commitment for future monitoring of biological aquatic resources.

Response and Analysis:

The plan has not been modified, but the response to the deficiency states that the baseline has been compiled and that there is no need to monitor these resources because no fisheries exist in the permit area.

The existing plan indicates that construction of the sediment pond has had beneficial impacts on biological aquatic resources. These resources are important for reasons other than for fisheries. However, there does not appear to be a good reason for aquatic biological resource monitoring now, but if some disruption of water quality or quantity is found in the future, Wildlife Resources would be consulted to determine what monitoring might be needed.

Deficiencies:

None.

Deficiency:

3. The application must identify whether or not there are crucial periods of deer and elk use at the waste rock site and what steps the operator will take to protect wildlife during critical periods.

Response and Analysis:

The response refers to a Wildlife Resources letter stating that deer and elk may use the area.

The most recent information available to the Division is that the area is deer and elk winter range but that it is not considered to be critical. SUFCO employees should avoid harassing animals that may congregate in the area of the waste rock pile, particularly during the winter.

Deficiencies:

None.

R645-301-330

Operation Plan

Deficiency:

1. SUFCO must include a plan for monitoring effects of underground mining on vegetation within the permit area to satisfy the requirements of federal leases. Color infrared photography is recommended.

Response and Analysis:

SUFCO has included a commitment to monitor vegetation with CIR every five years.

Deficiencies:

None.

Deficiency:

2. The Applicant must present a plan to mitigate loss of wildlife habitats lost

due to disruption of surface and ground water by subsidence. Water rights that may be used for this should be identified, but, more importantly, appropriate agencies, such as the Division of Wildlife Resources and Division of Water Rights should be involved at this time in identifying possible problems and planning the mitigation.

Response and Analysis:

SUFCO has committed to cooperate with regulatory authorities to develop and provide alternative water supplies for wildlife if mine-related subsidence disrupts the present sources. R645-301-333.300 indicates that monitoring water quantity and quality can be considered a measure to protect wildlife. The commitments made in the plan appear to satisfy the requirements of the biology regulations.

In addition to this commitment, a typographical error was corrected to give the correct location of the discussion of monitoring with respect to wildlife watering sources.

Deficiencies:

None.

Deficiency:

3. The Applicant must develop an impact avoidance or mitigation plan for the protection of raptor nests that could be affected by subsidence.

Response and Analysis:

The plan states on page 3-34 that any raptor nest that has a potential to be disturbed by subsidence will be evaluated with Wildlife Resources and the Fish and Wildlife Service, and an appropriate plan of action will be developed on a case-by-case basis. This plan satisfies the deficiency.

Deficiencies:

None.

R645-301-341

Revegetation

Deficiency:

1. The plan must adequately address the revegetation requirements for final reclamation at the breakout areas.

Response and Analysis:

The response submittal did not address this requirement. The reasons given in the original review for this requirement are that two of the breakouts are in different vegetative types than the main portal area and that the breakouts are not in very accessible locations. Some of the revegetation techniques to be used at the portals, particularly hydromulching, may not be practical at the breakouts. The plan has been modified to include hand broadcasting as a method of seed application. It should be possible to use this method at the breakouts. The revegetation plans for these areas do not need to include a lot of detail but should at least show what seed and planting mixes will be used, how seed will be applied, and what type and rate of mulch will be used.

Deficiencies:

1. The plan must adequately address the revegetation requirements for final reclamation at the breakout areas.

R645-301-341.210 Species and Quantities of Seeds and Seedlings

Deficiency:

1. The unit for the quantity of seed to be planted at the portal area needs to be further specified, i.e. pounds of pure live seed per acre.

Response and Analysis:

The seed mix on page 3-36 contains a footnote that the seed amounts are pure live seed per acre.

Deficiencies:

None.

Deficiency:

2. Pinyon and juniper must be replaced in the tree and shrub seedling planting mix by other more desirable species. Saskatoon serviceberry.

Gambel oak and curlleaf mountain mahogany are recommended.

Response and Analysis:

Pinyon and juniper have been replaced in the plan by Utah serviceberry and curlleaf mountain mahogany. The quantity of seedlings to be planted has been reduced from 1000 to 500 per acre.

Since some of the shrubs are to be established from seed, it should still be possible to achieve the standard for reclamation success for trees and shrubs (see discussion under R645-301-341.250 below) and only plant this many seedlings. It may be difficult, however, and some supplementary planting which could restart the bond liability period might be needed. SUFCO should consider either transplanting more than 500 seedlings per acre or trying to establish other species from seed.

Deficiencies:

None.

R645-301-341.220 Seeding and Planting Methods

Deficiency:

1. Hydromulch must not be mixed with seed in hydroseeding operations except that a small amount could be used for the hydroseeding equipment operator to determine where seed had been broadcast. Fertilizer must not be mixed in the slurry.

Response and Analysis:

The plan states has been modified to include hand broadcasting and drilling as possible seeding methods. Under hydroseeding, the plan includes the required commitments that fertilizer and hydromulch (except for a small amount of hydromulch applied as a visual indicator to verify the area covered) will not be mixed with seed.

Although these commitments are not specific requirements of the regulations, the regulations do require that the seeding rates specified in the plan be used. If fertilizer is mixed with seed in the hydroseeding slurry, seed viability could be reduced by 50%. Depending on the quantity of seed used, this could be a violation of the regulations, but the actual loss of viability would probably not be known. Therefore, it would be impossible to know if the plan had actually been followed.

Deficiencies:

None.

R645-301-341.230 **Mulching Techniques**
R645-301-341.240 **Irrigation and Pest and Disease Control**

Deficiency:

1. The amount of straw mulch to be used at the waste rock site needs to be increased to 1.5 to 2 tons per acre unless the Applicant can demonstrate that using a lower quantity is adequate.

Response and Analysis:

The synopsis of responses to the deficiencies states that recommended quantities of mulch by Endangered Plant Studies and in the literature is in the 1500 to 2000 lbs. per acre range. This quantity has been adequate in the construction disturbance reclamation performed to date. Reports on monitoring of the vegetation at the waste rock disposal site and vegetation sampling of the reference area are included.

The plan includes changes to the mulching methodology for the waste rock disposal site from straw or hay to hydromulch. One ton per acre of hydromulch is adequate.

The monitoring reports mentioned were not found. Wess Sorensen stated that they will be submitted later.

Deficiencies:

None.

Deficiency:

2. Unless the Applicant demonstrates that hydromulch is at least as effective in controlling erosion and assisting in establishing seedlings, the mulching method for the portal site needs to be changed to 1.5 to 2 tons per acre of straw or hay anchored through netting or using a chemical tackifier.

Response and Analysis:

The plan includes a commitment to develop demonstration sites to investigate different seeding practices. Also, page 3-44 has been changed to include straw, hay, and wood fiber as mulching alternatives.

Deficiencies:

None.

Deficiency:

3. The commitment to use erosion matting on unstable slopes needs to be included in Chapter 3.

Response and Analysis:

Page 3-44 includes the required commitment.

Deficiencies:

None.

R645-301-341.250

Success Determination Measures

Deficiency:

1. If the "Vegetation Information Guidelines" are included in the plan, the most recent edition must be used.

Response and Analysis:

Page 3-45 states that sampling techniques will follow the currently approved "Vegetation Information Guidelines, Appendix A" and that Appendix 3-6 of the plan contains the guidelines that were in place when the permit was prepared.

Although DOGM biologists were not aware of it for several months, the guidelines contained in the plan were never approved. Since this section of the plan deals with a defined performance standard, however, the commitment contained in the plan is adequate.

Deficiencies:

None.

Deficiency:

2. If the plan is to give a level of confidence for determining revegetation success, the confidence interval specified in R645-301-356.120 must be used.

Response and Analysis:

The plan has been modified to state that the same statistical methods and sample adequacy levels used in establishing the reference areas will be used in monitoring percent cover and composition of revegetation attempts in disturbed *in as much as possible*. It also states that the Applicant will comply with the statistical confidence methods required in R645-301-356.120.

Deficiencies:

None.

Deficiency:

3. The plan must include the woody species density standards for success, 20,000 stems per acre for the waste rock site and 1000 trees and shrubs per acre for the mine site, that have been obtained through consultation with Wildlife Resources.

Response and Analysis:

The density standards specified have not been incorporated into the plan. The synopsis of responses states that the September 2, 1992, sampling done by Endangered Plant Studies found 7935 shrubs per acre at the waste rock reference area. This response states that it is recommended that 7900 shrubs per acre be used as the standard for the waste rock site and 500 rather than 1000 per acre at the mine site.

7900 shrubs per acre would be very difficult to establish at the waste rock site. The DWR habitat development specialist felt that this site probably contained more shrubs than were desirable and originally recommended a 20% reduction. After discussing the situation and the new data with him, it was decided to make the standard 5000 shrubs

per acre.

At the portal site, 1000 shrubs per acre is not considered an excessive number to establish. This is the equivalent of one shrub every 6.6 feet in a grid. SUFCO's proposal to reduce the standard to 500 per acre was also discussed with the DWR habitat development specialist, and he feels that 1000 shrubs per acre is the minimum that would achieve the wildlife postmining land use for a pinyon-juniper site even considering the harshness of the area.

Deficiencies:

1. Woody species density standards that were established in consultation with the Division of Wildlife Resources and approved by them need to be incorporated into the plan. These standards are 1000 woody plants per acre at the mine site and 5000 woody plants per acre at the waste rock site.

R645-301-341.300 Revegetation Feasibility Demonstration

Deficiency:

1. SUFCO must provide a schedule for establishing revegetation test plots to demonstrate the suitability of substitute topsoil and final revegetation techniques at the mine site.

Response and Analysis:

SUFCO has committed to develop a demonstration plot program with input from the Division so that seeding can be done in the fall of 1993.

Deficiencies:

None.

R645-301-342

Fish and Wildlife

Deficiency:

1. SUFCO must provide a discussion of enhancement measures that will be used during reclamation and the postmining phase of operations or a statement explaining why enhancement is not practicable.

Response and Analysis:

The plan quotes from the 1988 Forest Service Environmental Assessment for the Quitchupah Tract addition and discusses enhancement measures that have already been undertaken. SUFCO has also incorporated the suggestion from the technical deficiency review that rocks and dead trees and shrubs be used in the surface preparation at final reclamation to enhance the reclaimed area for wildlife habitat. Rock and brush piles will be constructed to make artificial habitat.

These commitments will not only serve to enhance wildlife habitat, but rocks and brush left on the surface will create microhabitat and "safe sites" for seed germination and seedling establishment. These methods should also decrease the potential for erosion.

Deficiencies:

None.

R645-301-411 Land Use Environmental Description

Deficiency:

1. The plan must contain a description of the land use classification, if any, under local law of the permit and adjacent areas.

Response and Analysis:

The synopsis of the responses states that local law does not classify land use or zoning in the permit area; therefore, it is not included.

Deficiencies:

None.

R645-301-412 Reclamation Plan

Deficiencies:

1. The plan must contain a copy of comments concerning the proposed postmining land use from the legal and equitable owners of record of the surface of the permit area.

Response and Analysis:

The plan now contains a reference in Chapter 4 to Appendix 1-1. This appendix contains a letter from UNELCO stating that this company has no objections to SUFCO conducting mining activities beneath any portions of lands described in the letter which might result in subsidence related surface movement.

The plan has also been updated to include portions of 1986 Forest Service Land and Resource Management Plans. Management prescription MMA states that the land surface in these areas is to be made available for existing and potential major mineral development, and, as the developments are removed and restoration is completed, these areas may be changed to other appropriate management units.

The comments from UNELCO and the Forest Service are adequate. The plan identifies Roger E. and Ruth Nielsen as owners of surface land within the permit area, and the plan does not include comments from them. In fact, right of entry information for the Nielsen's land could not be located in Chapter 1. Coastal States Energy owns the coal rights beneath the private surface lands in the permit area. R645-301-114.200 requires that where the private mineral estate to be mined has been severed from the private surface estate, an applicant will submit a copy of the written consent of the surface owner for the extraction of coal by certain coal mining and reclamation operations; a copy of the conveyance that expressly grants or reserves the right to extract coal by certain coal mining and reclamation operations; or, if the conveyance does not expressly grant the right to extract the coal by certain coal mining and reclamation operations, documentation that under applicable Utah law, the applicant has the legal authority to extract the coal by those operations. The right of entry information is outside of the scope of the Division Order, but it is still considered a deficiency and is listed below. The plan also needs to include comments from these land owners concerning the postmining land use.

Deficiencies:

1. The plan must contain a copy of comments concerning the proposed postmining land use from the legal and equitable owners of record of the surface of the permit area. This condition has been satisfied for the Forest Service and UNELCO but not for the land owned by Roger and Ruth Nielsen.
2. The plan needs to contain right of entry information in compliance with R645-301-114.200 for the lands owned by Roger and Ruth Nielsen where the private mineral estate and private surface estate have been severed.

Deficiency:

2. The Applicant must adequately address the requirements of R645-301-270 if approval of an alternative land use for retained highwalls is sought. To obtain approval without meeting the requirements for an alternative land use, the plan must demonstrate that retained highwalls replace cliffs eliminated due to mining activities or that the highwalls were created prior to SMCRA.

Response and Analysis:

On page 4-8, the plan refers to Section 5.5.3.6 for discussion of pre-SMCRA highwalls. This section refers to Appendix 5-2 for a discussion of the request for a variance from approximate original contour requirements. Section 5.5.3.5 states that no highwalls exist within the permit area that are the result of previous mining operations.

"Pre-SMCRA" highwalls (and cut slopes) are also considered to be "previously mined" highwalls (and cut slopes). Therefore, the statement in Section 5.5.3.5 is contradictory to other parts of the plan.

Although an alternative postmining land use is not being sought for areas with a variance from approximate original contour, the plan still needs to address some of the requirements of R645-302-270. R645-302-271.400 requires that Federal, Utah and local government agencies with an interest in the proposed land use have an adequate period of time in which to review and comment on the proposed use, and this requirement has been satisfied.

R645-302-271.600 requires that the landowner request, in writing and as part of the permit application that the variance be granted so as to render the land, after reclamation, suitable for an industrial, commercial, residential or public use (including recreational facilities). The request will be made separately from any surface owner consent given for the operations under R645-301-114 and will show an understanding that the variance could not be granted without the owner's request. This request from the Forest Service for the surface facilities area could not be found within the plan.

The plan should also address the requirements of R645-302-271.700 that the watershed of the area to receive a variance from approximate original contour requirements be improved compared to the premining condition or if the approximate original contour was restored.

The engineering requirements of R645-302-271.800 appear to have been addressed, but this review does not consider the adequacy of this portion of the plan.

Deficiencies:

3. The plan must adequately address appropriate sections of R645-302-270 for the variance from approximate original contour requirements.

RECOMMENDATIONS

The following deficiencies remain in the biology and land use and air quality section of the plan.

R645-301-341

Revegetation

1. The plan must adequately address the revegetation requirements for final reclamation at the breakout areas.

R645-301-412

Land Use Reclamation Plan

1. The plan must contain a copy of comments concerning the proposed postmining land use from the legal and equitable owners of record of the surface of the permit area. This condition has been satisfied for the Forest Service and UNELCO but not for the land owned by Roger and Ruth Nielsen.
2. The plan needs to contain right of entry information in compliance with R645-301-114.200 for the lands owned by Roger and Ruth Nielsen where the private mineral estate and private surface estate have been severed.
3. The plan must adequately address appropriate sections of R645-302-270 for the variance from approximate original contour requirements.