



# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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TO: Daron Haddock, Permit Supervisor

FROM: Paul Baker, Reclamation Biologist *PAB*

DATE: April 14, 1992

RE: Response to Technical Deficiency Review, Genwal Mining and Reclamation Plan Amendment Chapter 3, Genwal Coal Company, Crandall Canyon Mine, Folder #2, ACT/015/032/91F, Emery County, Utah

## SUMMARY

On February 18, 1992, Genwal Coal submitted a revised Chapter 3 of its mining and reclamation plan in response to technical deficiency reviews sent in January. Some major changes to revegetation methodology are proposed, but several of the other issues discussed in my review were either not addressed or were addressed inadequately.

This memorandum is organized in the following manner: The deficiency from the January 6, 1992, technical deficiency review is first stated as "TDR Compliance". Next is the Operator's response and an analysis of the response. The analysis section is sometimes eliminated if it is not needed. Finally, a revised deficiency is stated based on the response. These deficiency items are numbered under each regulation.

## ANALYSIS

**R645-301-322. Fish and Wildlife Information**

### TDR Compliance:

The recent response to Division Order DO 91-B proposes an annual helicopter survey for golden eagles to be done in conjunction with the Division of Wildlife Resources.

Operator's Proposal:

Surveys have been conducted of the entire permit area, and one golden eagle nest or aerie was located. One year prior to pillaring in any known location of these aeries, Genwal will contact the Division of Wildlife Resources (DWR) and notify them of their intent and request recommendations. The Division will be contacted for approval of plans that are thus formulated. Aerial surveys will only be conducted if DWR recommends it, the survey will not unduly harass the birds, and if the survey is found to be prudent to ensure the safety and /or habitat of the eagles.

Analysis:

The plan states on page 10-3, "Commencing in May of 1991, and continuing on an annual basis, aerial surveys will be conducted in conjunction with the Division of Wildlife Resources to monitor nesting activity." I discussed the current and proposed plans with Ken Phippen of DWR, and he stated that, after talking with Bill Bates, also of DWR, it was decided that monitoring the nest yearly was probably not necessary. DWR felt that the best plan would be to monitor the nest through aerial surveys every three years or on request of DWR or the Fish and Wildlife Service.

Deficiency:

1. By May 14, 1992, the plan must be revised to say that aerial surveys of the eagle nest will be conducted every three years or on request of the U. S. Fish and Wildlife Service or the Utah Division of Wildlife Resources.

**R645-301-340.**

**Reclamation Plan**

TDR Compliance:

The definition of cover used for determining if irrigation is needed on contemporaneously reclaimed slopes that report to the sediment pond must be given.

Operator's Proposal:

80% vegetative cover compared to adjacent undisturbed areas will be achieved on contemporaneously revegetated areas.

Analysis:

Vegetation types of adjacent undisturbed areas are mountain shrub-conifer-aspen and spruce-fir-aspen. Vegetative cover figures presented in Chapter 9 for these areas are 34.2% and 45.2% respectively. The vegetative cover requirements for these areas would be 27.4% and 36.2%.

The sediment pond runoff calculations were based on 80% cover by vegetation and litter. The amount of cover proposed for contemporaneously reclaimed areas reporting to the sediment pond is not adequate.

Deficiency:

1. By May 14, 1992, the plan must be revised to show that contemporaneously reclaimed areas will achieve 80% cover of vegetation and litter.

TDR Compliance:

Discussion of the temporary seeding must delineate between work that has and will be performed.

Operator's Proposal:

Page 3-22 states that disturbed areas within the mine plan area that contribute directly to the sediment pond have been contemporaneously reclaimed. Page 3-30 says that the temporary seeding *will* (emphasis added) be observed by a representative from the Division, the Forest Service, and Genwal.

Analysis:

The temporary seeding discussed on page 3-30 needs to be discussed further. As stated in the last review, I believe that this seeding has already taken place, but this needs to be clarified. The Operator would be in violation of the regulations if seeding has not been performed during the first normal period for planting following regrading.

Deficiency:

2. By May 14, 1992, the plan must be revised to clarify the seeding proposed on page 3-30 and when it will or did take place.

TDR Compliance:

The statement about the seed mix agreement between the Forest Service, the Division, and Genwal must be clarified or could be deleted altogether.

Operator's Proposal:

The statement discussed in the deficiency has not been deleted or modified.

Deficiency:

3. By May 14, 1992, the statement about the seed mix agreement between the Forest Service, the Division, and Genwal must be clarified or deleted.

TDR Compliance:

Genwal must commit to only use seed sold in compliance with the Utah Seed Act and with this commitment could eliminate plans to use seed with high germination percentage and low in weed content.

Operator's Proposal:

The commitment to only use seed with high germination percentage and low in weed content has been eliminated from the plan.

Analysis:

This requirement is actually a performance standard that Genwal does not need to commit to. Seed that is used in reclamation needs to have been recently tested for germination and also needs to have a purity analysis label to assure that requirements

of the plan are being met. Reestablished plant species must meet the requirements of seed and noxious weed laws.

Deficiency:

None.

TDR Compliance:

Drill seeding rates must be shown for those areas with slopes of less than 30% unless the Operator accepts the suggestion to hydroseed all areas.

Operator's Proposal:

The Operator has proposed to hydroseed all areas, but an area of about 0.3 acres would be drilled before hydroseeding.

This submittal includes several changes to general reclamation methodology. The area should be thoroughly scarified leaving as many depressions as possible. Contour trenching (plowing) will be done where the slope is not too great. A crawler tractor will run up and down the slopes in other areas leaving grouzer marks. Large rocks, dead trees, and brush should be strewn about the site.

On page 3-34, the plan states that seeded areas will be oversprayed with a wood fiber mulch in combination with fertilizer and additional tackifying agents.

Analysis:

A drill seeding rate still needs to be shown.

A few clarifications and wording changes need to be made in this section. Overall, however, the changes are good and should help to ensure revegetation success.

Page 3-31 says that the area "should" be scarified to leave as many depressions as possible. Genwal needs to commit to this plan.

The last paragraph on page 3-33 says that hydroseeding combines the

advantages of applying seed uniformly over all areas, plus, with the addition of both fertilizer and a tackifying agent, insures a greater degree of stability and seed-ground contact. Although later statements clarify the order in which seed, fertilizer, and hydromulch will be applied, this sentence implies that fertilizer, seed, and tackifier could be mixed which must not be done.

Fertilizer would be best applied and incorporated into the soil before seeding. In this way, the fertilizer would be less likely to come into direct contact with the seeds, and, with the incorporation, there would be less loss through erosion, nitrification, or other means.

Deficiency:

4. By May 14, 1992, the plan must be revised to show drill seeding rates for those areas which will be drill seeded.
5. By May 14, 1992, Genwal must commit to the scarification plan presented in the revised Chapter 3 and must change wording to not imply that seed will be mixed with fertilizer or tackifier.
6. By May 14, 1992, the plan must be revised to show how fertilizer will be incorporated into the soil. Plans to apply fertilizer with the hydromulch must be eliminated.

TDR Compliance:

The plan for anchoring straw must be clarified. Genwal must commit to using certified noxious weed free straw.

Operator's Proposal:

The plan has been changed so that the entire area would be hydromulched with varying degrees of tackifier depending on the slopes. Chapter 8, however, still contains plans to use straw or hay, *apparently* before topsoil is spread.

Analysis:

If Genwal still plans to use hay or straw, a commitment to only use certified noxious weed free hay or straw needs to be included. Although this may be a performance standard, the commitment should be included in the plan because the Forest Service is also expected to make this requirement beginning in 1994.

Deficiency:

7. By May 14, 1992, Genwal must commit to only using certified noxious weed free straw or hay where straw or hay are used as mulch.

TDR Compliance:

The plan must be updated to show the seedling species and planting rates used in August 1990 as part of final reclamation south of the road and west of the pond. The plan must also include the planting of at least 30 blue spruce seedlings in the area where the August 1990 planting occurred. Additional planting of trees is necessary to make it possible to achieve the standard for success for tree density.

Operator's Proposal:

No changes have been made in this section of the plan.

Analysis:

The Operator has informed me, as documented by the February 13, 1992, inspection report, that the reclamation performed in this area may or may not be left as final reclamation. For now, the maps have not been changed to indicate that this area is anything but final reclamation, so there is no change in this requirement.

The reason for requiring 30 blue spruce seedlings to be planted is that the area in question is about 0.2 acres and that the plan calls for planting 150 blue spruce seedlings per acre. I contacted the Forest Service about the species that were planted, and this is the one that they specifically mentioned should be added to the planting.

Deficiency:

8. By May 14, 1992, the plan must be updated to show the seedling species and planting rates used in August 1990 as part of final reclamation south of the road and west of the pond. The plan must also include the planting of at least 30 blue spruce seedlings in the area where the August 1990 planting occurred. Additional planting of trees is necessary to make it possible to achieve the standard for success for tree density.

TDR Compliance:

The plan must include details of the watering schedule that was used on the trees and shrubs that were planted August 14, 1990, and statements that no irrigation will be used in final reclamation must be modified to show that irrigation was used for these transplants whether or not it will be used in the future. Genwal must appropriately change the planned number of seedlings to be planted in future wooded area reclamation according to the results of monitoring the wooded area that has received final reclamation.

Operator's Proposal:

The watering schedule that was used on the trees and shrubs was added to Appendix 3-16.

Analysis:

The area that received these transplants is shown on Plate 7-5c as having received final reclamation treatment. The text of the plan still does not propose irrigation at the time of final reclamation. As with the previous deficiency, the maps have not been changed to indicate that this area is anything but final reclamation, so there is no change in this requirement.

No results of monitoring the area are included. Unless the areas shown as have received final reclamation treatment are changed, the monitoring requirements for final reclamation will be enforced.

Deficiency:

9. By May 14, 1992, statements that no irrigation will be used in final reclamation must be modified to show that irrigation was used for the transplants which were planted in August 1990 between the road and the stream regardless of whether or not it will be used in the future. Genwal must appropriately change the planned number of seedlings to be planted in future wooded area reclamation according to the results of monitoring the wooded area that has received final reclamation.

**R645-301-356.           Revegetation: Standards for Success**

TDR Compliance:

The "t" test formula for comparing revegetated sites to the reference area must be corrected and must include a decision rule.

Operator's Proposal:

No changes were made to this section of the plan.

Deficiency:

1. By May 14, 1992, the plan must be revised to show the correct "t" test formula for comparing revegetated sites to the reference area, and a decision rule must be included.

TDR Compliance:

A quantitative comparison of revegetated areas with the reference area for species composition and diversity must be made using accepted similarity indexes. The final analysis must also include a narrative description of these parameters with species utility.

Operator's Proposal:

No changes were made to this section of the plan.

Deficiency:

2. By May 14, 1992, the plan must be revised to show that a quantitative comparison of revegetated areas with the reference area for species composition and diversity will be made using accepted similarity indexes. The final analysis must also include a narrative description of these parameters with species utility.

TDR Compliance:

The Operator must propose methods that are likely to produce the standard for success for tree density. The standard for success for shrubs must be consistent within the plan.

Operator's Proposal:

No changes were made to this section of the plan.

Deficiency:

3. By May 14, 1992, the Operator must propose methods that are likely to produce the standard for success for tree density. The standard for success for shrubs must be consistent within the plan.

## RECOMMENDATIONS

Approval of this revision of Chapter 3 is not recommended at this time. The Operator has made some changes to the reclamation plan that should be beneficial, but other items that need to be addressed have not been changed. Failure to do this with the next submittal will lead to enforcement action on some items.