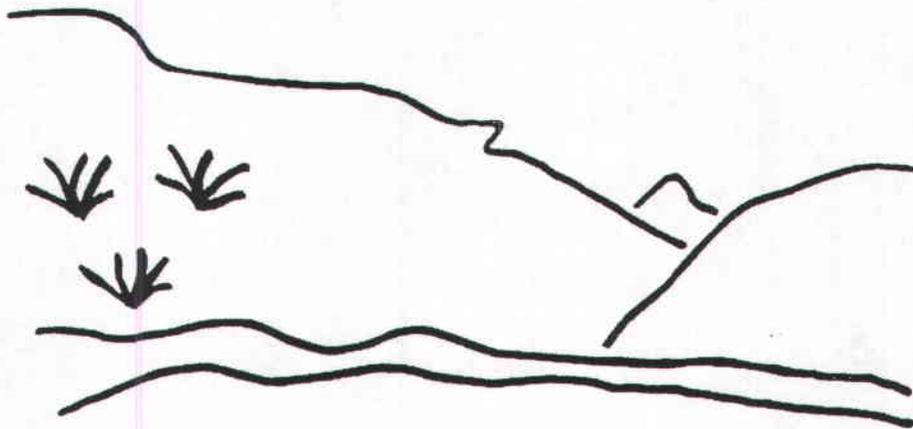


State of Utah



Utah Oil Gas and Mining

Coal Regulatory Program

Des Bee Dove Mine
Phase 2 Reclamation
C/015/017-AM01D-2
Technical Analysis
December 19, 2002

File in:

- Confidential
- Shelf
- Expandable

Refer to Record No. 0014

Date 12/20/2002

In C 0150017 2002

For additional information Outgoing



State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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December 20, 2002

Chuck Semborski, Environmental Supervisor
Energy West Mining Company
P.O. Box 310
Huntington, Utah 84528

Re: Conditional Approval of Phase 2 Reclamation, PacifiCorp, Des-Bee-Dove Mine,
C/015/017-AM01D-2, Outgoing File

Dear Mr. Semborski:

The above-referenced amendment is conditionally approved upon receipt of seven clean copies and updated C1/C2 forms prepared for incorporation. Please submit these copies by January 20, 2003. Once we receive these copies, final approval will be granted, at which time you may proceed with your plans.

A stamped incorporated copy of the approved plans will also be returned to you at that time, for insertion into your copy of the Mining and Reclamation Plan. A copy of our Technical Analysis is enclosed.

The Permittee will eliminate the duplication of Appendix XV in the MRP with a subsequent submittal removing the current contents of Appendix XV to another location and updating the Table of Contents as needed.

If you have any questions, please call me at (801) 538-5268 or Jim Smith at (801) 538-5262.

Sincerely,

Pamela Grubaugh-Littig
Permit Supervisor

an
Enclosure
cc: Price Field Office
O:\015017.DBD\FINAL\COND_APP01D-2.DOC



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TECHNICAL ANALYSIS

TECHNICAL ANALYSIS

The Division ensures compliance with the Surface Mining Control and Reclamation Act of 1977 (SMCRA). When mines submit a Permit Application Package or an amendment to their Mining and Reclamation Plan, the Division reviews the proposal for conformance to the R645-Coal Mining Rules. This Technical Analysis is such a review. Regardless of these analyses, the permittee must comply with the minimum regulatory requirements as established by SMCRA.

Readers of this document must be aware that the regulatory requirements are included by reference. A complete and current copy of these regulations and a copy of the Technical Analysis and Findings Review Guide can be found at <http://ogm.utah.gov/coal>

This Technical Analysis (TA) is written as part of the permit review process. It documents the Findings that the Division has made to date regarding the application for a permit and is the basis for permitting decisions with regard to the application. The TA is broken down into logical section headings that comprise the necessary components of an application. Each section is analyzed and specific findings are then provided that indicate whether or not the application is in compliance with the requirements.

Often the first technical review of an application finds that the application contains some deficiencies. The deficiencies are discussed in the body of the TA and are identified by a regulatory reference that describes the minimum requirements. In this Technical Analysis we have summarized the deficiencies at the beginning of the document to aid in responding to them. Once all of the deficiencies have been adequately addressed, the TA will be considered final for the permitting action.

It may be that not every topic or regulatory requirement is discussed in this version of the TA. Generally only those sections are analyzed that pertain to a particular permitting action. TA's may have been completed previously and the revised information has not altered the original findings. Those sections that are not discussed in this document are generally considered to be in compliance.

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December 19, 2002

TECHNICAL ANALYSIS

INTRODUCTION

INTRODUCTION

The Deseret, Beehive, and Little Dove Mines were temporarily sealed in 1987. In 1999 the permit was taken out of temporary cessation, and reclamation began with demolition of surface facilities and sealing of the portals. The reclamation plan is being modified because the Tipple pad, which was to have been left basically unreclaimed under the old plan, was excavated to recover the coal that had been incorporated during its construction.

Initial reclamation of the Phase 1 area was completed in May 2002. Phase 1 involved reconstruction of three drainages in the location of the Little Dove/ Beehive pads and reshaping the water tank pad and the substation pad and access roads.

Proposed amendment C/015/017-AM01D is for reclamation of what Energy West calls the Phase 2 area, 22 acres that include the remaining roads within the Des-Bee-Dove permit area, the Deseret Mine portals and pad, the Bathhouse pad, the remainder of the Tipple pad, and all other disturbed areas within the disturbed-area boundary. Most of this area is pre-SMCRA disturbance. The access road will be reclaimed to the cattle guard that marks the end of the county road, but reclamation will include conversion of a portion of the road to a cattle trail.

During Phase 2, a drainage will be carved out of the Deseret Mine pad and Tipple yard and the storage yard area (where coal mine waste was recently removed, see AM01B). The Bathhouse pad will be the repository of coal mine waste and a source of cover material, including substitute topsoil. A mixture of coal mine waste and soil will also be used as fill in the main drainage. A testing plan has been proposed to ensure adequate cover over coal mine waste throughout the site, including the drainage.

Substitute topsoil will be reapplied to approximately 8.4 acres of regraded slopes on the Bathhouse pad and in the lower main drainage and at the Deseret portal and access road to the Beehive portal. The Bathhouse pad and outslope will be the repository of coal mine waste and a source of cover material, including substitute topsoil. An undisturbed slope west of the tipple yard will be used as a last resort to supply cover and substitute topsoil material, leaving a 1.5h:1v face. Neither Phase 1 nor Phase 2 includes reclamation of the sedimentation pond.

Technical Analysis (TA) AM01-D for the Phase 2 reclamation plan at the Des-Bee-Dove Mine identified several deficiencies to the plan and was forwarded to the Permittee on January 15, 2002. The Division received the response on May 2, 2002. TA AM01-D-1, sent to the Permittee on August 14, 2002, found that all information required to approve the amendment was not included in the May 2 submittal and the amendment still could not be approved. The response to TA AM01D-1 was submitted by the Permittee on October 11, 2002, with an addendum to that response received December 13, 2002.

INTRODUCTION

With this TA, AM01D-2, the Division has found the amendment adequate to be incorporated into the Mining and Reclamation Plan for the Des-Bee-Dove Mines. The amended plan supersedes appropriate sections of the currently approved MRP, Volume 2, including the plan for the salvage of substitute topsoil.

The Permittee will eliminate the duplication of Appendix XV in the MRP with a subsequent submittal removing the current contents of Appendix XV to another location and updating the Table of Contents as needed.

GENERAL CONTENTS

GENERAL CONTENTS

PERMIT APPLICATION FORMAT AND CONTENTS

Regulatory Reference: 30 CFR 777.11; R645-301-120.

Analysis:

The Table of Contents identifies the Phase 2 Reclamation Plan as a separate booklet (binder) that is Appendix XVI of Volume 5.

However, the binder cover indicates that the submittal is Appendix XV. And, the submittal also includes a laminated title page indicating that Appendix XV is the Phase 2 Reclamation Plan. And, a page has been created for insertion into Volume 2, Part 4, Reclamation Plan to indicate that information in Appendix XV supersedes that in Volume 2, Part 4. As a result, the Division requested that the Permittee consistently identify the location of the Phase 2 information. **In response, the Permittee has indicated that Phase 2 reclamation plans will be located in Appendix XV and information currently in Appendix XV (Sediment Pond Access Road Plans and Written Text) will be relocated in a separate amendment after the approval of the Phase 2 plans.** This approach is acceptable to the Division. In fact Appendix XV could hold information on both topics as long as the Table of Contents is accurate.

The Phase 2 Plan refers frequently to Appendix XIV Phase 1 Reclamation Plan for soils information from trenching of the site during the week of December 3, 2001.

Information in the Phase 2 submittal contradicts information in the Mining and Reclamation Plan (MRP). A notice stating Appendix XVI will take precedence over contradictions to Volume 2 Part 4 is provided at the beginning of Volume 2 Part 4.

Findings:

Information provided in the proposed amendment and attached cover letter, dated October 9, 2002, is adequate to meet the requirements of the Permit Application Format and Contents section of the regulations.

REPORTING OF TECHNICAL DATA

Regulatory Reference: 30 CFR 777.13; R645-301-130.

Analysis:

Mr. Dan Larsen, Soil Scientist, EIS Environmental & Engineering Consulting, conducted the soils investigations as a basis of forming a reclamation salvage and replacement strategy. Mr. Larsen's report is found in Appendix XIV Phase 1 Section 200, Appendix C. Appendix C is referred to in the submittal under "Reporting of Technical Data.

As reported in Appendix C of Appendix XIV Phase 1, laboratory work was performed by Intermountain Laboratories, Inc., Sheridan Wyoming.

Findings:

Information provided meets the requirements of Reporting of Technical Data section of the Regulations.

MAPS AND PLANS

Regulatory Reference: 30 CFR 777.14; R645-301-140.

Analysis:

Drawing #: CS1813E, Surface Yard Area Pre/Post SMCRA Development Map shows aerial photographs from 1977, 1978, and 1999. The photographs are marked to show current, pre-SMCRA and post-SMCRA disturbance. The only post-SMCRA disturbance is the parking lot extension at the Bathhouse pad. It is difficult to compare one photograph to the next and determine disturbance because the photographs were not taken from the same location but they are sufficient to determine pre and post-SMCRA disturbances.

Findings:

Information provided meets the minimum requirements of the Maps and Plans section of the regulations.

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.12; R645-301-411.

Analysis:

An archeological and cultural survey was conducted in the area in 1980. Early cultural and historic surveys did not consider structures and facilities on the mine site during the survey. Structures that were not eligible because of age in initial surveys could have been prior to demolition. Unfortunately demolition occurred prior to re-survey.

Findings:

Information provided in the proposed amendment meets the requirements of the Historic and Archeological Resource Information section of the regulations.

FISH AND WILDLIFE RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.21; R645-301-322.

Analysis:

The Phase 1 application contains a map titled Des-Bee-Dove Mines Phase 1 Reclamation Raptor Location Map. The map shows Golden Eagle nest #952 and 937 are both within the half-mile buffer zone radius of the proposed work area. Chris Colt, DWR Biologist, surveyed these nests. Nest 952 is in direct line of site of the mine facilities and less than 1000 feet away. The following data are available for this nest:

2001- Inactive
2000- Active
1999 – N/A
1998 – N/A

Findings:

The information provided in the application meets the minimum Fish and Wildlife Resource Information requirements of the regulations.

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.21; 30 CFR 817.22; 30 CFR 817.200(c); 30 CFR 823; R645-301-220; R645-301-411.

Analysis:

Elevation is 7,630 feet on a southeast exposure and slopes of 1½ H:1V to 2H:1V. The plant community is Utah juniper and pinyon pine. Plants within this community include Salina wildrye, western wheatgrass, and Indian ricegrass.

Soils have been described in the MRP as either

- Typic Ustochrepts (50%), which are characterized by a 35 cm thick (13 inches) sandy loam surface layer with 25% coarse fragments. Underlying this layer is a stony loam layer 100 cm thick (39 inches) with up to 50% coarse fragments

or

- Lithic Ustorthents (25%), which are characterized by rock within 50 cm or 19 inches.

Also present are small areas of Mollisols on the north and east facing slopes. In general, Mollisols are deep, well drained, with a well developed A horizon. See the General Soil Map of the Permit Area, Drawing #CE-10502-DS.

Deseret Pad and Tipple Area Soils information

Soil and Refuse sample sites are shown on Map 200-1. The following samples have been taken of the soils adjacent to the Deseret pad and represent undisturbed soil quality: SS8A, collected in 1990 and SS5 and SS10 collected in 2001. Laboratory Data Sheets for these sites are found in Appendix A of Appendix XIV Phase 1 Reclamation Plan. The 1990 soil samples were collected by Val Payne in April 1990 and analyzed by ACZ Laboratories in Steamboat Springs, CO. The 2001 samples were collected by Dennis Oakley and Chuck Semborski in March 1990 and analyzed by Inter-Mountain Laboratories in Sheridan, WY.

ENVIRONMENTAL RESOURCE INFORMATION December 19, 2002

Sample depths were not reported for the 1990 samples and profile descriptions are not available. Information from the year 2001 indicates that samples were taken from 0 – 6 inches, 6 – 12 inches and 12 – 18 inches of the surface at each sample site. No field notes were taken and it is not known whether a lithic contact was encountered at eighteen inches.

The undisturbed soils of the Deseret pad are represented by sample sites SS5, SS8A, and SS10 as shown on Map 200-1. Qualities of the undisturbed soils are summarized in the Deseret pad and Tipple Area Soils Information Summary table below. The Deseret pad soils in the location of SS10 were found to have much less sand (21%) than the other sites with texture bordering on clay loam (28% clay and 51% silt). As expected, this site had the highest saturation percentage.

Disturbed soils in the Deseret pad area are described by samples SS8 and SS9. The characteristics of these sites are also summarized in the Deseret pad and Tipple Area Soils Information Summary table below.

Refuse quality is represented by sites SS6 and 1117. Characteristics of the refuse are summarized in the Deseret pad and Tipple Area Soils Information Summary table below. In some instances, the refuse is unsuitably high in pH, SAR, and EC. In most instances the refuse is too sandy for use in the top four feet of the reclaimed profile. Samples were taken of refuse/soil mixtures during trenching (December 3, 2001) and this combined mix may be more useful than straight refuse.

Deseret Pad and Tipple Area Soils Information Summary

	Undisturbed (sites SS5, SS8A, SS10)	Disturbed (sites SS8 and SS9)	Refuse sites (sites SS6 and 1117)
PH	7.2 – 7.6	7.0 – 7.3	7.0 – 10.0
EC			
mmhos/cm	0.32 – 0.63	0.55 – 3.0	2.1 – 13.3
SAR	0.5 – 0.6	0.81 – 1.76	8.5 – 9.1
NO ₃ – N ppm	0.3 – 1.9	0.78 – 10.3	5.1 – 6.7
P ppm	2		2.46 – 10.1
NP (t/1000t)	180 -350	314 - 421	275
AP (t/1000t)		4	1.25
Texture	sl, ls, l, cl	loam	Sandy loam
%clay			
%sand	21 - 84	35 -55	73
SP (%)	27 - 34	31 - 35	26
Coarse frag %	25 - 40	19 - 43	29 – 34%

Bathroom pad soils information

Bathroom pad soils are represented by sample sites SS2, SS4, #19, and #22 all taken in 2001. Site #19 is also known as DBD 3600, a composite taken from 0 – 18 inches, and site #22 is also known as DBD 3700, a composite taken from 0 – 5 feet. Undisturbed soils in the vicinity of the Bathroom pad are represented by SS1, collected in 2000, and SS6A, collected in 1990. Laboratory Data Sheets for these sites are found in Appendix A of Appendix XIV Phase 1 Reclamation Plan. The 1990 soil sample was collected by Val Payne in 1990 and analyzed by ACZ Laboratories in Steamboat Springs, CO. The 2001 samples were collected by Dennis Oakley and Chuck Semborski and analyzed by Inter-Mountain Laboratories in Sheridan, WY.

Qualities of the pad soils and adjacent, undisturbed soils are summarized in the Bathroom pad Soils Information Summary table below. The most significant difference between the pad soils and undisturbed sites was the SAR, percent coarse fragments, and the neutralization potential. Soils in the vicinity of site #20 or DBD3700 with high SAR can be avoided as a source of substitute topsoil.

Bathroom Pad Soils Information Summary

	Undisturbed (sites SS1 and SS6A)	Disturbed (sites SS2, SS4, #19 and #20)
PH	7.2 – 7.4	7.0 – 7.4
EC		
mmhos/cm	0.71 – 3.1	0.96 – 2.4
SAR	0.3 – 0.96	0.47 – 11.7
NO ₃ – N ppm	0.8 – 7.84	0.74 – 4.8
P ppm	2 – 3.28	1 – 2.48
NP (t/1000t)	277 -308	4.5 – 662
AP (t/1000t)	0 – 5.31	0 – 1.56
TOC	(2.6%OM) 2.9 – 3.6	1.5 – 5.9
Texture	SL	L - SL
%clay	9 – 16	12 – 20
%sand	54 - 63	40 - 64
SP (%)	27 - 30	23 - 29
Coarse frag %	29	24 - 40

ENVIRONMENTAL RESOURCE INFORMATION December 19, 2002

Main access road soils information

Cut slope soils along the main access road are presented by samples SS3 (a 2001 sample) and SS5A (a 1990 sample). The qualities of the soil are shown in the table below entitled Main Access Road Soils.

Main Access Road Soils Information Summary

	Cut slope (sites SS3 and SS5A)
PH	6.8 – 7.3
EC	0.67 – 2.17
mmhos/cm	
SAR	0.22 – 2.17
NO ₃ – N ppm	0.1 – 1.4
P ppm	0.38 - 2
NP (t/1000t)	155
AP (t/1000t)	0 – 5.62
TOC	(4.1%OM)
	2.3
Texture	SL to L
%clay	14 – 16
%sand	46 - 57
SP (%)	29 - 30
Coarse frag %	14.8 – 34.5

A soil survey of the Des Bee Dove mine site by Dr. A.R. Southard, Soil Scientist, Utah State University was included as Appendix B of Appendix XIV Phase 1 Reclamation.

Findings:

The information provided meets the requirement of Environmental Resources Soils section of the Regulations.

LAND-USE RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.22; R645-301-411.

Analysis:

The postmining land use for the mine site will be the same as the premining land use, and that is wildlife and livestock grazing. The East Mountain allotment of the Ferron Ranger District is approximately 21,000 acres and supplies about 2500 animal unit months of grazing. Twice a year local ranchers use the Church Mine Trail (a portion of the mine access road) to drive cattle to and from the East Mountain grazing area.

Currently, the Church Mine Trail is used to reenact the migration of white settlers to the Huntington area. Eight hundred to a thousand youth per year are involved in this trek (phone call with Montell Seely, August 8, 2002). In 1959, Montell Seely took a bulldozer, 2 tons of dynamite, a jackhammer and a compressor to the top of East Mountain to widen and improve the Church Mine Trail. The Permittee was requested to include this information in the MRP and unfortunately it was not.

Findings

Information in the proposed amendment meets the minimum requirement of this section.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Analysis:

Affected Area Boundary Maps

Currently, the mine area disturbed drainage leaves the disturbed area and permit area below the Tipple Valley Fill and then re-enters the permit area and the disturbed area for treatment in the sediment pond. In a letter dated August 29, 2001 to the Permittee the Division allowed the Permittee to not permit this drainage.

Findings:

The information provided in the application meets the minimum Maps, Plans, and Cross Sections of Resource Information requirements of the regulations.

OPERATION PLAN

OPERATION PLAN

AIR POLLUTION CONTROL PLAN

Regulatory Reference: 30 CFR 784.26, 817.95; R645-301-244, -301-420.

Analysis:

State air quality regulations at R307-205-5 Mining Activities requires mining activities to control fugitive dust by watering, paving, restricting speed, restricting travel, or by other methods. The applicant states that they will meet the requirements of the Clean Air Act. The permit states that dust will be controlled by reducing the rate of vehicle travel to 10 mph and watering on an as needed basis.

Findings:

The information provided in the application meets the minimum Air Pollution Control Plan requirements of the regulations.

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-230.

Analysis:

Topsoil Removal and Storage

Trenching at various locations on the site (as required to abate N.O.V. 01-7-1-1) has provided the Permittee with information on the depth to bedrock, rock content and available soils material in the pad fills at the site. Trenching information was gathered during the week of December 3, 2001 and is presented in Appendices A and C of Chapter 2 of Appendix XIV Phase 1 Reclamation Plan.

The Deseret Mine, Tipple and Bathhouse cover about 8.4 acres, not including the reconstructed drainages. To cover the 8.4 acres with six inches of substitute topsoil will require 6,900 cubic yards (Table 4 of Section 200 Soils). Sources of substitute topsoil are outlined in Table 5 Substitute Topsoil Excavation and shown on Drawing #200-1. In total, 20,500 cu yds of substitute topsoil may result from the sources identified in Table 5. These sources are:

- 1) Substitute topsoil transferred from Phase 1 (500 cu yds);

OPERATION PLAN

- 2) Bathhouse pad outslope (8,700 cu yds);
- 3) Bathhouse pad trenches (8,400 cu yds);
- 4) Undisturbed slope within the disturbed area (2,900 cu yds).

Five hundred cubic yards of substitute topsoil was transferred from the Phase 1 area to the Deseret pad in the Phase 2 area. This material is the northern most substitute topsoil pile shown on Drawing 200-1. This substitute topsoil pile has been identified with a sign.

Drawing 200-1 shows a fifty-foot wide band along the length of the Bathhouse pad as a source of substitute topsoil. This swath is expected to yield 8,700 cu yds from 1.02 acres, which calculates to a salvage depth of 5.5 feet from the 50 wide band. The band, as shown on Drawing 200-1 encompasses about 20 feet of the outslope and the remainder is from the pad surface, overlapping two proposed excavations. Table 5 indicates that the two excavations in the Bathhouse pad may yield 8,400 cubic yards of soil. This estimate may be overstated by about 500 cubic yards due to the overlap.

The quality of the material within the proposed excavations is illustrated by the laboratory analyses for trenches T6, T7A, T8, T8A, see Appendix C, Chapter 2 of Appendix XIV Phase 1 of the MRP. The surface 2-3 feet of soil on the Bathhouse pad outslope is the best available material in the permit area. Below this depth, the Bathhouse pad material was rated only marginal by the soils consultant due to its high carbonate content, SAR, and EC. Although marginal as a surface soil, this material may be a good source of clean fill.

Using only the surface soil from the Bathhouse pad as substitute topsoil, approximately 5,000 cu yds could be salvaged and stored, based upon a swath that is 900 ft x 50 ft x 3 ft deep. This surface soil, along with the 500 cu yds brought down from Phase 1 reclamation, could supply 80% of the six-inch topsoil requirement for the 8.4 acres. Because this has been identified as the best available material in the permit area, the Permittee has made a commitment on page 14 of Section 200 to separately salvage and store the surface three feet of Bathhouse pad outslope from the other subsurface colluvial material to be excavated from the Bathhouse pad.

A third area proposed for substitute topsoil salvage is the undisturbed "island" below the access road and west of the Bathhouse pad, represented by soil sample site SS5 (see Appendix XIV Drawing #CM-10336-DS and Appendix XIV Appendix A, Soils Analysis 2001). Disturbing 0.89 acres of this ground may yield approximately 2,900 cu yards of material, assuming half of the material is useful as soil. This calculates to three additional inches to the entire 8.4-acre disturbed area. The Division recommends that all other sources be exhausted before utilizing this area. For instance, a similar amount of topsoil may be gained from increasing the reach of substitute topsoil salvage in the vicinity of the southern portion of the Bathhouse pad (post-SMCRA disturbance).

OPERATION PLAN

Consequently, in the second Technical Analysis of this submittal, dated August 14, 2002, the Division requested the following:

R645-201-232.200, (2) The submittal must indicate the Permittee's intention to utilize the undisturbed "island" south of the Tipple yard for substitute topsoil as a last resort after other alternatives have been exhausted and after consulting with the Division and obtaining the Division's concurrence. (3) The Permittee must evaluate increasing the area of substitute topsoil salvage from the southern portion of the Bathhouse pad outslope.

The Permittee has committed to use the materials in the "undisturbed island" as a last resort (see asterisk in Table 5, of Section 230). If this area is disturbed, it is the Permittee's intention to eliminate the undisturbed island and reclaim the road cut completely (see attached cover letter dated October 9, 2002). The Division has recommended first utilizing the soils on the southern portion of the Bathhouse pad outslope (represented by sample sites SS1 and SS2 and Trench T6 that were rated as the best available in the permit area by the soils consultant) for use as substitute topsoil (see Appendix A of Appendix XIV Phase 1 Reclamation Plan for soils analyses).

The Permittee indicated in a telephone conversation on December 17, 2002 (conversation between Dennis Oakley and Priscilla Burton) that materials on the southern portion of the Bathhouse pad outslope are limited due to a rock outcropping and a drainage that cuts down the slope. Mr. Oakley agreed during this conversation that the material on the Bathhouse pad outslope should be salvaged whenever it was encountered. Further, Mr. Oakley indicated that if field changes in the reclamation work require unanticipated disturbance to the outslope, the surface soils will be salvaged and separately handled for use as substitute topsoil.

Cut slopes at cross sections -1+00, 0+00, 1+00, 2+00, 3+00, 8+00, 9+00, 10+00 and 11+00 will not receive topsoil coverage, instead the cut face will be roughened and seeded. Areas of Phase 2 that will receive topsoil coverage are shown on Drawing 200-2.

The submittal indicates on page 14, Section 200 that the excavated topsoil will be segregated and stored separately from spoil material, in a location to be chosen by the contractor as the reclamation progresses. Division recognizes the need for flexibility in handling materials, and will not require a description of topsoil storage because prompt redistribution of substitute topsoil is expected (R645-301-234.100).

However, given the approximate nature of the substitute topsoil projections and the necessity of providing adequate cover for the coal mine waste, the Permittee has made the commitment on page 12 Section 200 to keep a weekly written accounting of the volume of substitute topsoil separated and stored and the volume of topsoil redistributed. The weekly accounting will be available on-site for review by DOGM staff.

OPERATION PLAN

In the second Technical Analysis of this submittal, dated August 14, 2002, the Division requested the following:

R645-301-242.120, -242.130, The Permittee should include in Section 500 Table 1, Procedural Steps of Reclamation Timetable instruction for the contractor to handle soils only when they are in a loose or friable condition or when the moisture content is an optimal 10 – 15%. Generally, two rules apply: a) If the soil sticks to the equipment, wait until the soil has dried to a friable state. b) If the soil is too dry and hard to handle, resembling flour, add water until the soil is wetted to a loose, friable condition.

The Permittee has included the following statement: "*materials will be handled as required by R645-301-242.100 through R645-301-242.130*" in Table 1 of Section 500. Although this statement does not make it very clear to a contractor what performance standards are to be achieved, it does comply with the requirements of the regulations. The Permittee will need to interpret the meaning of this statement to the contractors. The Division will hold the Permittee responsible for the contractor's handling of the soil. To avoid compaction soils should not be handled when they are too dry and powdery or too wet and sticky. The optimum moisture content is between 10 – 15%.

Findings:

Information provided in the proposed amendment is considered adequate to meet the requirements of Operations Plan Topsoil and Subsoil section of the regulations.

VEGETATION

Regulatory Reference: R645-301-330, -301-331, -301-332.

Analysis:

Fill slopes were vegetated with an interim seed mixture in 1981 through 1988. Given the arid climate, the vegetative cover on most of these fill sites was very good after 13 to 20 years of plant establishment. Slopes on these fills are considered very steep and are comparable to the fill slopes to be reestablished in reclamation. The active rooting zone of the fill material should be suitable as a growth medium in reclamation.

Findings:

Information provided in the application meets the minimum requirements of this section.

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SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

Analysis:

Coal Mine Waste

Coal spills fall into the category of coal processing waste as a product of physical processing and preparation of the coal. The coal spills are required by general regulation, R645-301-542.730, to be placed in a controlled manner. Reclamation plans have more specific requirements: coal processing waste must be disposed of according to R645-301-553.260 that refers to R645-301-553.252 which requires that the coal mine waste will be covered with a minimum of four feet of the best available, nontoxic and noncombustible material. Regulation R645-301-553.510 clarifies that continuously mined areas subject to AOC provisions will comply with the requirements of R645-301-553.260. Lesser cover may be allowed if the Permittee can show that lesser cover will be adequate to prevent erosion and provide adequate soil stability.

In addition, the Division is required by R645-301-553.300 to ensure that combustible materials produced during mining will be adequately covered with nontoxic and noncombustible materials and to minimize adverse effects on plant growth.

Potential sources of cover for the coal mine waste include the soil/coal mixture found in trench T4A, native soil beneath the access road to the tippie area in trench T5 and fill beneath the main access road in trench T10, and the Bathhouse pad (see Appendix C of Appendix XIV Phase 1 of the MRP).

Clean up of all coal waste is the second reclamation step described by Table 2, page 11 of Section 500, Engineering. This process will be ongoing as the reclamation of the Deseret pad and the Tippie yard proceeds and pockets of waste and less desirable material are unearthed.

In accordance with R645-301-731.311, the application indicates that areas of minor coal spills will be removed and buried in the cuts of the access road and portal pads and in the two trenches to be excavated from the Bathhouse pad (Reclamation Plan, Engineering Section 542.730). The volume of the two trenches is 8,400 cu yds. **The submittal indicates in Section 731.300 that material with a high carbon content excavated during the backfill and grading process will also be buried in the trenches and/or used to develop pad slopes.** The submittal indicates in Sections 240 and 553.100 that excess yardage will be hauled from the Deseret pad and Tippie pads to the Bathhouse pad or to the waste rock site for disposal.

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In accordance with R645-301-542.730, the application indicates there will be a net cut from the Deseret and Tipple pads of approximately 91,382 cu yds (Section 553.100). This will be partially offset by the requirement for 64,600 cu yds of net fill at the Bathhouse pad. There is a requirement for 58,000 cu yds of fill in the main drainage between cross section 3 + 00 and 8 + 00 (based on the cross-sections of Drawing 500-4). The application does not clearly indicate the source of the fill in the drainage, but the Division assumes from the figures that the source of fill will be from the Tipple yard. Mr. Oakley confirmed this assumption during a conversation with Priscilla Burton on August 13, 2002. Mr. Oakley indicated that spoil and coal mine waste from the Tipple area would be pushed down to fill the low spot in the drainage, compacted, and covered with clean fill from the side slopes.

The information provided in section R645-301-731.300 Acid and Toxic-Forming Materials states that "Material with a high carbon content excavated during the backfill and grading process will be hauled to the Bathhouse pad buried in the excavated soil trenches or used to develop pad slopes." To solve the recurring issue of adequate cover over the coal mine waste and of avoiding placement of coal mine waste in the drainage, the Permittee has provided a commitment to sample the main drainage and the Bathhouse pad as written in the "Substitute Topsoil Distribution" portion (page 14) of Section 230. Sampling the surface four feet of soils for acid/toxic characteristics and suitability for plant growth will ensure that the requirements of R645-301-553.260, -553.252, are met.

The Permittee indicates on page 14 of Section 200 their intention to sample the near surface waste materials in the bathhouse area for the parameters outlined in the Division's 1988 Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining. The plan for sampling the near surface waste was further explained by Dennis Oakley in a telephone conversation with Priscilla Burton on December 17, 2002 as follows: Four separate samples will be taken randomly across the Bathhouse pad. Each sample will be a composite of the material in the 0 - 4-foot depth. Four separate samples will be sent for analysis to evaluate the parameters as listed in Table 2 of the Division's 1988 Guidelines.

The Division is in agreement that a mixture of soil/coal is far more productive than coal alone. A clean fill depth of 3.5 feet mixed coal/soil plus six inches of topsoil will provide adequate cover after the pocking procedure (described in Section 350, Performance Standards) to ensure that adverse effects on plant growth are minimized (R645-301-553.300).

The reclamation plan does not describe a method to measure the depth of topsoil and mixed soil/coal fill over all coal processing waste and underground development waste. In a telephone conversation between Dennis Oakley and Priscilla Burton on December 17, 2002, the Permittee agreed to utilize stakes to ensure this depth of cover.

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Findings:

Information provided in the proposed amendment is adequate to meet the Spoil and Waste Materials requirements of the Regulations.

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POSTMINING LAND USES

Regulatory Reference: 30 CFR Sec. 784.15, 784.200, 785.16, 817.133; R645-301-412, -301-413, -301-414, -302-270, -302-271, -302-272, -302-273, -302-274, -302-275.

Analysis:

The landowner for Phase 1 of the reclamation is PacifiCorp, the Permittee. Because the landowner and applicant are the same no requirements for landowner concurrence is required. The landowner for Phase 2 is PacifiCorp and Forest Service. The Forest Service is involved in the reclamation plan and the Division has received verbal concurrence and will follow-up and request written approval of the reclamation.

A cattle trail will be established from the county road to access the grazing allotments on East Mountain. The trail will follow the reclaimed haul road to the pre-law waterline and then back to the reclaimed mine access road.

Findings:

The information provided meets the minimum regulatory requirements of this section.

PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES

Regulatory Reference: 30 CFR Sec. 817.97; R645-301-333, -301-342, -301-358.

Analysis:

Golden eagle nest #952 is within the half-mile buffer zone suggested by the U. S. Fish and Wildlife Service (USFWS). Restricted dates are January 1 to August 31, although these dates vary according to region. The Permittee has not proposed a start date for the work at the mine. If the project is started inside the restricted dates, after on site activities have been idled then the Division will consult with the USFWS and DWR to insure compliance with the Bald Eagle Protection Act. If the eagles are nesting then construction can begin but a biologist will need to monitor the nest. If the eagles appear to be disrupted because of the construction activity then all reclamation work will need to stop until the young have fledged. Abandonment of a nest

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with eggs or chicks is a violation of the Migratory Bird Treaty Act and the Utah Coal Mining Rules.

Findings:

The information provided in the application meets the minimum Protection of Fish and Wildlife and Related Environmental Resource requirements of the regulations.

APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR Sec. 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

Analysis:

The deficiency aired by this reviewer in the January 15, 2002 Division document was stated as follows:

“The information provided does not meet the minimum regulatory requirements of this section.

R645-301-542.600 and -553.110, Prior to a recommendation for approval, the permittee must clarify what maximum slope gradients will be utilized in the reclamation of the main access and ancillary access roads. The permittee must also commit to conducting and verifying the compaction of the backfill materials to at least 90% of the maximum laboratory density as determined by ASTM D 1557-91.”

The Permittee has responded in the May 2, 2002 submittal in the following manner; as committed to in the revised reclamation plan (as submitted on May 2, 2002), the Permittee will reclaim all slopes in the following manner; “**Overall reconstructed slopes** will be placed on a 2H: 1V or flatter configuration (refer to Map 500-4).”

An analysis of the cross sections depicted on Map 500-4 was conducted. Each evaluated cross-section will be discussed relative to the adequacy of its design specifications and the relevance of meeting the requirements of the R645 coal rules.

Cross Section -I+44.99

This cross section only contains a minor fill area that will be constructed to reclaim that portion of the primary access road that exists within that section. According to *Appendix B* (as submitted 05/02/2002), 323 cubic yards of fill will be required to reclaim this road section to

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AOC requirements. Analysis of the cross section on Map 500-4 indicates that the reclaimed "fill" slope will achieve a final slope configuration of 5.33H:1V. The minimum 2H:1V "or flatter" requirement has been met.

Cross Section -1+00

Cross section -1+00 consists of two reconstructed slopes, the first being the reclaimed access road fill area. Approximately 2700 yards of fill will be required to reclaim the road in this area, as well as a small fill at the head of the second reconstructed slope area. The final slope configuration depicted for the reclaimed access road is 3.33 H:1V.

The second reconstructed slope area exists at the southern end of what is usually referred to as the Bathhouse pad. A cut of approximately 350 cubic yards will be made at the toe of this reconstructed slope to achieve a final surface configuration of 2.75 H:1V.

Cross Section 0+00

Cross Section 0+00 contains three areas where reclamation efforts will take place. One area is the channel bottom that will not receive further discussion. The second area to receive reclamation activities will again be a section through the Bathhouse pad on the west side of the disturbed area. It will utilize both a cut at the head of the outslope and a fill at the base of this pad to achieve a final surface configuration of 2.15H:1V. Mass balance calculations included as *Appendix B* indicate that the cut will entail 600 cubic yards; the fill in section 0+00 will utilize approximately 4200 cubic yards. The access road portion of 0+00 will be reclaimed to a final slope configuration of 3.75H:1V.

Cross Section 1+00

Cross Section 1+00 will involve three reclamation areas, one of which will require work in the channel bottom. Similar to the previous two cross sections, reclamation work will also occur on the Bathhouse pad, and in a section of access road.

The Bathhouse pad reclamation work will utilize a cut at the head of the outslope, and a fill at the base of this cutbank to achieve a final surface configuration of 2.02H:1V.

The reclamation of the access road in Cross Section 1+00 will utilize but a small portion of the 3781 cubic yards of fill anticipated here. A final slope configuration of 2.3H:1V will be achieved at the access road reclamation.

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Cross Section 2+00

Cross Section 2+00 utilizes three fill areas and two cuts to reclaim three areas within the section. This section will utilize a cut 25 feet in depth to establish the proper longitudinal gradient for the reclamation channel at this section.

The area of the Bathhouse pad to be reclaimed within Section 2+00 will incorporate both a cut and a fill to reclaim the area to a final surface configuration having a slope of 3.5H:1V.

The reclamation channel in this section will require a cut approximately twenty-five feet in depth to establish the proper channel gradient here. A small fill is required on the East slope to make the final surface configuration aesthetically pleasing. The toe of this fill will be twenty-eight feet above the channel bottom, so that the potential for stream flow to erode the fill material will be minimal.

Section 2+00 also contains a section of the primary access road that will be reclaimed utilizing a fill. The final surface configuration of the slope will achieve a 2.8H:1V gradient.

Cross Section 3+00

This cross section will also utilize three areas in its reclamation, the Bathhouse pad, the reclamation channel, and the access road reclamation. These reclamation areas will be discussed going from West to East.

The Bathhouse pad will be reclaimed utilizing a cut at the head of the outslope, with a fill making up the remainder of this reclamation. The final surface configuration will achieve a 3.37H:1V gradient.

The reclamation channel will utilize a fill with a maximum depth of approximately thirty feet to establish the proper gradient for channel flow. It will be necessary to armor this area to provide adequate protection for the design event.

The access road reclamation will utilize a small amount of fill to reclaim the area to a 2H:1V gradient.

Cross Section 4+00

This section will also utilize reclamation in three areas. The Bathhouse pad area will use a small cut at the head of the outslope; the remainder of the reclamation here will utilize fill. A final surface slope configuration of 2.85H:1V will be achieved.

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The reclamation channel in Cross Section 4+00 will be constructed on fill having a forty-foot depth. Once again, adequate armoring will be necessary to prevent any flows up to the 100 year six hour design event volume from impacting the reclamation channel.

The road section in Cross Section 4+00 will be reclaimed by cutting down the head of the outslope and filling the base of the cut bank. A final surface configuration of 2.73H:1V will be achieved on the reclaimed slope.

Cross Section 5+00

Cross Section 5+00 has only two major reclamation areas; the access road in this section will be reclaimed with the East slope of the reclamation channel.

The Bathhouse pad area will utilize a small cut at the head of the outslope and a large fill to reclaim the cut slope and what appears to look like either a safety bench, or an ancillary road. The final slope gradient at this reclamation area will be 2.6H:1V.

The proper gradient for the reclamation channel will be established by filling the existing drainage with approximately 33 feet of material. The access road will be reclaimed by removing 28 vertical feet of material. The west slope of the re-established drainage will be configured by filling until a slope of gradient of 2H:1V is achieved. The toe of this fill will be the West bank of the reclamation channel.

Cross Section 6+00

All reclamation work in Cross Section 6+00 will occur on either the west slope or in the reclamation channel itself.

The Bathhouse pad area, which sits on the upper West slope, will utilize two minor cuts and a significant fill to achieve a 2.27H:1V finished slope.

The proper slope gradient for the reclamation channel in Cross Section 6+00 will be established by adding approximately 28 feet of material to the existing channel. The center of the reclamation channel will be moved about 45 feet to the West. This will place the center of the reclamation channel on the toe of the currently existing West slope. Once again, armoring is necessary to prevent erosion of the fill from events up to and including the 100 year six hour event.

Cross Section 7+00

This cross section will reclaim two areas, the extreme north end of the Bathhouse pad, and the channel bottom.

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The reclamation of the Bathhouse pad will be completed by filling the section until a final slope configuration of 2.36H:1V is obtained.

The proper slope gradient in the channel will be achieved by filling the existing configuration with a maximum of 15 feet of material. Armoring of the fill will be necessary to prevent erosion.

Cross Section 8+00

This cross section will utilize a cut at the head of the outslope and two fills to achieve a final surface configuration on the West slope of 2.07H:1V **in the fill areas only**. Overall, the finished surface configuration of the West slope will be established at 1.77H:1V.

A section of roadway will be reclaimed with the West slope. The reclamation process will entail making a cut halfway through the roadway width, and backfilling the remaining width at the base of the cut bank. Although the overall slope gradient on the West slope (1.77H:1V) is steeper than 2H:1V, the 1.77H:1V gradient is aesthetically more pleasing to the eye as it is very nearly collinear with the disturbed slope. The volume of fill to be utilized in the road reclamation is small; the bulk of this volume will rest directly on the road surface, and as such should remain stable even if saturated.

The reclamation channel and the reclamation of the East slope will be accomplished in the following manner:

- 1) A ten-foot cut will be made to establish the slope gradient for the channel.
- 2) A cut 136 feet in width ranging in depth from zero to nineteen feet will be made to establish the gradient of the East slope. A final configuration of 3.17H:1V will be achieved.

Cross Section 9+00

Cross Section 9+00 will utilize a cut process through 90% of the 350-foot cross-section width. The remaining 10% will use a fill approximately halfway up the West bank. **The final configuration of this fill, as depicted on drawing #500-4, and calculated to utilize 458 cubic yards of material, will be 1.88H:1V.** The overall slope gradient of the West slope, which will consist of mostly cut (84%), will achieve a final surface configuration of 1.55H:1V.

The slope on the East side of the reclamation channel will be established by removing material until a 3.7H:1V gradient is established overall. The area will be established as relatively flat adjacent to the channel, but will become concave as the slope reaches the last forty feet of its run.

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The ancillary access road will be reclaimed as part of the west slope. The finished configuration of this fill is 1.88H:1V.

Cross Section 10+00

Cross Section 10+00 will also utilize a small fill on the West bank (789 cubic yards). The West slope will be filled at the toe of the Cut on the West Slope. A cut approximately 170 feet in width and about 22 feet in depth will be made to establish the correct longitudinal gradient for the reclamation channel. The East slope will travel on a near horizontal run until it ties into the east slope with a 25-foot convex radius. No reclamation activities will occur on the East slope above the channel bottom.

Two sections of ancillary access road will be reclaimed as part of the West slope. The lower road will be filled to achieve a final surface configuration of 2.22H:1V. A cut on the outslope between the two roads will reclaim the upper road to a final configuration of 1.25H:1V. Because this is a cut, there will be no stability concerns with this final gradient.

Cross Section 11+00

Cross Section 11+00 will utilize both minor cuts and fills to reclaim the West slope to a final surface configuration of 1.46H:1V. The reclamation slope will nearly parallel the existing slope, with minimal redisturbance. Material stability should not present a problem. This West slope will reclaim the ancillary access road by filling it to a final configuration of 2.8H:1V.

A large cut will be made to establish the proper longitudinal slope gradient in the reclamation channel bottom. To blend this cut in, it will be extended up the East slope a horizontal distance of 115 feet. A vertical rise of about 55 feet will establish a final slope gradient at 2.1H:1V.

Cross Sections 12+00, 13+00, 14+00 and 15+00

These cross sections will not be analyzed as all depict large cuts in the head of the channel. As cuts will be made in these sections to provide part of the fill for other areas, the stability of material relative to gravitational failure will not be a problem.

Regulatory Reference: R645-301-542.600. Roads

Pages 18 and 19 of APPENDIX XVI, Phase 2 Area Reclamation Plan, section 500, Engineering discusses the proposed reclamation requirements committed to for the **Main Access Road Reclamation** and the **Ancillary Access Road Reclamation**. A deficiency aired in the Division's January 15, 2002 document required the Permittee to clarify the maximum slope gradients to be utilized in the reclamation of the main access and ancillary access roads. The

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Permittee has committed to constructing the reclamation areas associated with the roads to a 2H:1V gradient "or flatter". An analysis of the cross sections depicted on drawing #500-4 confirms that all road reclamation activities will be accomplished to a 2H:1V or flatter slope configuration. This commitment adequately addresses the deficiency aired in the Division's January 15, 2002 document.

Other text stated on these pages is adequate to indicate that it is the Permittee's intent to immediately reclaim the access roads as reclamation work is completed and the site is retreated. Cross Section 9+00 is the only area that will reclaim a road at a gradient steeper than 2H:1V. The amount of material to be used here is small; therefore, if a rotational failure did occur, it would have to travel approximately seventy feet down slope to impact the channel flow. It is felt that the Permittee's commitment is adequate to address the requirements of -542.600.

The Division's January 15, 2002 document also required the Permittee to commit to conducting and verifying the compaction of the backfill materials to at least 90% of the maximum laboratory density as determined by ASTM D 1557-91. Adequate compaction is crucial in meeting the requirements necessary to ensure a minimum long-term static safety factor of 1.3, as required under R645-301-553.130. As noted in the Permittee's 05/02/2002 response, previous experience gained during the Phase 1 reclamation of the Des-Bee-Dove Mine has shown that adequate compaction of the backfill can be achieved by making a minimum of four passes over the material using a rubber tired dozer or sheep's foot. Appendix XIV Phase 1 Reclamation R645-301-500, Engineering Section: Appendix C, contains the Rollins, Gunnell, and Brown slope stability analysis that was developed for the reclamation of the Des-Bee-Dove Mine. Conclusions determined via the RG&B report have determined that adequate compaction of back-placed fill can be achieved by making four passes of a D-9 or equivalent dozer. This is in reference to fills utilizing lift thickness not exceeding three feet with a material gradation of +4" to 8".

The deficiency aired in the Division's January 15, 2002 document specifically requests that the Permittee commit to meeting a compaction requirement determined by ASTM testing method ASTM D 1557-91. As indicated by the RG&B report, this method is only utilized where lift thickness not exceeding one foot of minus 4" to 8" granular material has been used. The Permittee's May 2, 2002 submittal does not address material gradation anywhere within that submittal. Therefore, it is assumed that the Permittee intends to utilize three-foot lift thickness in all areas requiring rock fills. Fills meeting the criteria shown on Page 2 of the RG&B report will achieve internal angles of friction equal to or greater than 45 degrees.

Regulatory Reference: R645-301-553.110. Approximate Original Contour

As noted above, the Permittee's commitment to reclaim the access roads to a finished slope gradient of 2H:1V "or flatter" is crucial to help meet the requirements relative to a post mining slope achieving a minimum long term static safety factor of 1.3. The stability of the

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reclamation takes precedent over the meeting of requirements to achieve approximate original contour, which is essentially established as meeting or not meeting the requirements by aesthetic or "pleasing to the eye" justification. The reestablishment of stable drainages is part of meeting the requirements of AOC. The analysis of the various cross sections performed above has revealed that very nearly all of the reconstructed slopes will achieve 2H:1V or flatter gradients **where fill material has been utilized to establish an overall slope configuration.** The cross sections depicted on drawing #500-4 show that approximate original contour is being achieved because the areas where slope reconstruction has been necessary very nearly follow the slope as it existed during mining activities. There are no pre-mining surface topographic maps or aerial photographs available as initial construction activities at this site occurred prior to the development of modern mapping technology. Where large cuts have been made, the justification to do so has come from the need to either establish the proper longitudinal channel gradient or a need to provide clean fill material for other areas of the site. The requirements necessary to adequately meet approximate original contour have been met.

Findings:

The Permittee has adequately responded to the deficiencies relative to **R645-301-542.600** and **-553.110**. The information provided meets the minimum regulatory requirements of this section.

BACKFILLING AND GRADING

Regulatory Reference: 30 CFR Sec. 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

Analysis:

General

During a discussion held at the Energy West offices on December 18, 2001 between Division personnel (Priscilla Burton, Pete Hess, Dana Dean, Susan White, Pam Grubaugh Littig and Jim Smith); Brian McClelland, Geologist with the U.S. Forest Service; and Energy West Mining Co representatives (Dennis Oakley and Chuck Semborski), Division personnel inquired as to the location of slopes that would be steeper than 2h:1v, as these steeper slopes will not receive topsoil treatments.

The submittal indicates that all **fill** slopes will be graded to 2h:1v. **Slopes formed by cuts may be steeper.** Areas of topsoil placement are shown on Drawing 200-2. **The Division has noted that there are cut slopes at cross sections -1+00, 0+00, 1+00, 2+00, 3+00, 8+00,**

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9+00, 10+00 and 11+00. These cut slopes will be roughened and seeded; no substitute topsoil will be applied to the cut slopes.

During a discussion held at the Energy West offices on December 18, 2001 between Division personnel (Priscilla Burton, Pete Hess, Dana Dean, Susan White, Pam Grubaugh Littig and Jim Smith); Brian McClelland, Geologist with the U.S. Forest Service; and Energy West Mining Co representatives (Dennis Oakley and Chuck Semborski), Division personnel inquired after the fill sources that would be used to fill the drainage in the re-mined section of the "valley fill." Mr. Semborski suggested fill sources such as the abutment at cross-section 1+00 and material under the access road at the location of the last trench.

In the Technical Analysis dated January 15, 2002, the Division requested the following:

R645-310-535, Determine the total volume of fill required to raise the level of the main drainage in the "Valley Fill" location and show sources of fill in Appendix C in Section R645-500 and on the cross-sections of Sheet 500-1 and 500-3 and 500-4.

The Permittee indicated in the cover letter (dated April 29, 2002) that there would be approximately 47,000 cu yds of fill required to establish the grade of the lower section of the main drainage. During a conversation with Dennis Oakley on August 13, 2002, the Division learned that the Permittee's intention is to push refuse down the drainage and compact it beneath fill from the cut slopes above the drainage.

In the last technical review, the Division requested that the Permittee be mindful of the requirements for cover over the waste (R645-301-553.260) and that the waste must be placed in a controlled manner to minimize adverse effects of leachate on the surface and groundwater (R645-301-746.120, -731.310, -731.311). The waste in the Tipple yard was represented by Trench T4, T5, T7, T9 and T10 (Appendix C of Chapter 2 of Appendix XIV of the MRP) and the re-mined coal of the storage yard is represented by samples #5, #8, #9, and #17 from the 200 Soil Sampling Program (Appendix A of Chapter 2 of Appendix XIV of the MRP). Coal/spoil mixtures analyzed in the trench-sampling program have SAR values around 3.5 to 4.0, and positive Acid/Base Potential. **The trench sampling program did not include Boron or Selenium analysis, but the 2000 soil-sampling program did. No elevated Boron or selenium values were noted in the four samples that were provided to the Division (out of fifteen taken from the waste).** Based on the previous sampling, the Division agreed not to require sampling of the coal processing waste as it is backfilled in the drainage. But the Division did request on August 14, 2002 that the surface four feet of the drainage is sampled prior to placement of the Type II filter bedding as restated below:

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R645-301-746.120, -731.310, -731.311, The plan must include a commitment to sample the surface four feet of the drainage prior to placement of the Type II filter bedding as follows: (1) The surface four feet of the drainage will be composite sampled at the location of each cross section from 3+00 through 12+00 prior to placement of filter fabric. (2) Analysis will include laboratory measurement of pH, EC, SAR, acid/base accounting, Boron, Selenium.

This arrangement was agreed to by Dennis Oakley in a meeting with the Division on August 19, 2002. And so, the statement in the cover letter that there will be no change to the reclamation plan as a result of this deficiency came as a surprise to the Division. Subsequently, the Permittee has provided an update to the submittal indicating on page 14 of Chapter 2 in Section 230 Substitute Topsoil Storage that the fill in the main drainage will be sampled at four locations to a depth of four feet to determine suitability according to the 1988 Division *Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining*.

Sampling of the coal refuse to date has demonstrated that it is far less suitable for use in the rooting zone than other soils due to its texture (sand), organic carbon content (70 – 90%) and elevated SAR values.

Because the six-inch substitute topsoil layer of six inches will serve as a seedbed, it is imperative that SAR values are kept low, less than 2.0. Low SAR values will also increase resistance to erosion (lower K factor).

Findings:

Information provided in the proposed amendment is adequate to meet the Reclamation Backfilling and Grading requirements of the Regulations.

MINE OPENINGS

Regulatory Reference: 30 CFR Sec. 817.13, 817.14, 817.15; R645-301-513, -301-529, -301-551, -301-631, -301-748, -301-765, -301-748.

Analysis:

Mining in the Des-Bee-Dove area predates SMCRA, going back to the late 19th century. Although it is not clear when the Beehive Mine was initially developed, a shaft from the Deseret Mine up to the Beehive was constructed sometime in the 1950's to transport coal from the Beehive Mine to the surface by way of the Deseret Mine. The portals associated with the Deseret Mine were temporarily sealed in 1987. In 1999 the portals were backfilled and the

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surface facilities removed. The planned reclamation will place additional fill and growth medium over the sealed portals. Water will not drain towards the sealed portals.

The currently approved mining and reclamation plan for the Des-Bee-Dove Mine shows Figure 1, Des-Bee-Dove Coal Mines, Typical Portal Seal, drawing # CM-10319-WB, (See Volume 2, Part 4, Appendix 1) that depicts a keyed double course concrete block seal hitched into the coal ribs and mine floor, with twenty five feet of noncombustible backfill placed and compacted out by the seal. This method was approved as part of C/015/017-98BR, as approved for incorporation into the mining and reclamation plan on September 1, 1998.

As observed on the March 19, 2001 site visit by DOGM personnel, and as can be seen from Photos #9, #10, and #11 included in Appendix A, "Pre-Reclamation Site Photos", noncombustible fill does exist out to the surface contour of the highwall. In order to meet the requirements of R645-301-551, Casing and Sealing of Underground Openings, and 30 CFR 75.1711-2, Sealing of Slope or Drift Openings, it was necessary for the Permittee to provide adequate verification that the eight mine openings associated with the Deseret Mine were permanently sealed. The Permittee submitted a reclamation plan for the Phase 2 area for the lower pad areas associated with the Deseret Mine portals, and the tippie and bathhouse facilities. That submittal, which has been designated as C/015/017-AM01-D, includes drawing # CS1660B, "Des-Bee-Dove Mines", Surface Facilities Map Highwall Survey, which shows that eight of the nine portals associated with the Deseret Mine were sealed with double block wall seals and backfilled at least twenty-five feet. The drawing also contains a note that "all seals were backfilled and constructed to MSHA regulations at least 25' inby opening". The drawing is P.E. certified by Mr. John Christensen, who is Utah registered professional engineer.

Drawing #CS1660B adequately addresses the requirements of R645-301-551 relative to the horizontal Mine openings, there is no verbiage relative to the method used by the Permittee to bar access to the Mine workings through the vertical shaft previously mentioned. There is no access to this shaft from anywhere on the surface, thus no safety hazard exists to wildlife or the general public

Findings:

The information provided in the application meets the minimum Mine Openings section of the regulations.

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TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-240.

Analysis:

During the Technical Review dated January 15, 2001, the following deficiency was written:

R645-301-233, Please provide information from the trenching activity conducted during the week of December 3, 2001 and utilize the information to present a coherent plan for substitute topsoil salvage and redistribution.

The submittal indicates on page 14, Section 200 that the excavated topsoil will be segregated and stored separately from spoil material, in a location to be chosen by the contractor as the reclamation progresses. Sources of cover material have been discussed in the Operations Topsoil/Subsoil section of this technical review. Drawing #200-2 identifies substitute topsoil placement.

Phase 2 reclamation covers 22 acres (Section 310). The area of cut and fill activity is 8.4 acres as outlined in the submittal Section 553.100:

- Deseret Mine portal pad/material storage (1.1 acres)
- Bathhouse pad (2.0 acres),
- Tipple pads (3.4 acres),
- Ancillary access roads (0.76 acres)
- Access road from the mine site to the cattle guard (4.3 acres).

This leaves 10.44 acres out of the 22 acres total area that by default must fall within the reconstructed main drainage.

Drawing #200-2 shows substitute topsoil will be redistributed over 5.25 acres of reconstructed fill slopes on the Bathhouse pad and in the lower main drainage and at the Deseret portal and access road to the Beehive. Another 3.16 acres of cut slope area may receive substitute topsoil depending upon the rock outcrop and "native ground" exposed.

Redistribution

Deseret Portal Area

The Deseret Portal area is approximately 1.1 acres. The Deseret Portal area will be graded utilizing in place material. Six inches of substitute topsoil will be applied to the surface and the soil will be pocked to a depth of 18 inches.

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Bedrock exists at a depth of about 5 feet below the surface in the pad area. Little suitable substitute topsoil exists in this area (see field report dated December 17, 2001), although the soils consultant did comment that the soil/coal mixture found in trenches T4A would be suitable substitute topsoil.

Tipple Area

The Tipple area is approximately 3.4 acres. The Tipple area will be graded utilizing in place material. Six inches of substitute topsoil will be applied to the graded surface and the soil will be pocked to a depth of 18 inches.

A source of cover material exists beneath the access road to the tipple area in trench T5 and beneath the main access road in trench T10, see Appendix C of Appendix XIV Phase 1 of the MRP.

Bathhouse Pad Area

The Bathhouse pad area is approximately 2.2 acres. The area will be filled using spoil and coal processing waste from the Deseret and Tipple pads. Six inches of substitute topsoil will be applied to the graded surface and the soil will be pocked to a depth of 18 inches.

Pad access road

The pad access road is an area of 0.73 acres. The area will be filled with spoil and coal processing waste from the Deseret pad and Tipple pad. No substitute topsoil will be replaced. The cover material will come from the adjacent berm and outslope.

Main access road

The main access road to be reclaimed is 4.3 acres. The area will be filled with the adjacent berm and outslope. No substitute topsoil will be replaced.

Findings:

Information provided in the submittal meets the Reclamation Plan Topsoil and Subsoil requirements of the Regulations.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

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Analysis:

Hydrologic Reclamation Plan

Sediment control measures

Contouring, pocking, and vegetation are the methods to be used to keep sediment in place on reclaimed surfaces. Weed-free alfalfa hay will be incorporated into the soil at a rate of 2,000 lbs/acre (R645-301-341). Surfaces will be roughened by pocking or deep gouging to retain sediment and moisture and to mix the straw mulch into the upper portion of the soil. Hydroseeded areas will receive wood-fiber mulch. A soil tackifier will be applied to protect against erosion until vegetation is established (R645-301-244). Rock litter on the surface will also aid in sediment control, enhance vegetation establishment, create microhabitats, and help provide a natural aesthetic appearance (R645-301-244). If erosion is identified during routine monitoring or monitoring after precipitation events, silt fence will be installed and, if needed, the surface will be enhanced and reseeded.

Revegetation that matches the characteristics of the undisturbed reference areas will be a major factor in determining successful reclamation sediment control. Sediment control measures will also be evaluated by field assessment of erosion and off-site transport of sediment. No other method or standard is proposed to directly determine the success of the reclamation sediment-control measures.

Sediment concentrations above background are not expected (R645-301-242.130); however, background levels for this site are not known. The only site monitored for water quality is the UPDES outfall of the sedimentation pond, so there are no water-quality or sediment load baseline data for this Des-Bee-Dove drainage that allow a comparison similar to the one done at Deer Creek Mine: this lack of baseline or background data will need to be considered in any evaluation of the effectiveness of sediment control measures. Such an evaluation may indicate that the measures are not adequate and more robust methods of sediment control are needed for this steep, dry, rocky, exposed site.

RUSLE Estimates of Soil Loss

In the following discussion, "Appendix B" and "Appendix C" refer respectively to:

- Appendix B of Section R645-301-700 – Hydrology in Appendix XIV - Phase 1 Reclamation Plan; and
- Appendix C of Section R645-301-200 - Soils in Appendix XIV - Phase 1 Reclamation Plan.

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The Applicant used RUSLE, developed by the NRCS, to estimate sediment contribution from undisturbed and reclaimed watersheds at Des-Bee-Dove, similar to what was done at the nearby Deer Creek Mine. RUSLE is not intended for calculations of soil loss from steep slopes, but provides at least a calculated estimate of the expected sediment levels as a starting point should further evaluation be needed.

A brief discussion of RUSLE and the calculation results are found in Appendix B. The map in Appendix B shows two of the profiles used to calculate soil loss - DBDA31D and DBDA32D - are in the Phase 2 area.

One basic formula used by RUSLE is $A = R * K * LS * C * P$, where:

- A = calculated annual soil loss in tons/year/acre;
- R = rainfall /runoff erosivity;
- K = soil erodibility factor;
- LS = hillslope length and steepness;
- C = cover management; and
- P = support practices.

Because all input parameters except K remained the same during the various runs of RUSLE, only input parameter K and the resulting variation in A are discussed here. Input values used by the Permittee were checked and appear reasonable.

RUSLE - All Undisturbed Areas

For all undisturbed areas, a value of $K = 0.206$ was used in the RUSLE soil-loss calculations. This value was based on information for the Kenilworth Series in the Soil Survey of the Carbon - Emery Area. RUSLE calculated A to be 0.05 tons/year/acre for all undisturbed areas because there was little variation between undisturbed areas for any of the input parameters. K and A for the undisturbed areas are labeled K_U and A_U in the following tables.

RUSLE - All Disturbed Areas: K and A calculated without using the very-fine sand fraction from the soil analyses

For the disturbed areas, RUSLE calculated K based on input of other, detailed information. One input parameter needed by RUSLE to most accurately determine K is the very-fine sand fraction in the soil. The very-fine sand fraction in soils from the Des-Bee-Dove disturbed area was measured but was not initially reported in Exhibit B of Appendix C; therefore, the first run of RUSLE did not account for the effects of very-fine sand on soil loss. Table TA-1 summarizes the results of the initial RUSLE calculations.

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TABLE TA-1 RUSLE Calculated Soil Loss based on information in Appendix B and soil analyses from the superseded version of Exhibit B of Appendix C that lacked the very-fine sand fraction.					
K – RUSLE Soil Erodibility Factor					
A - RUSLE Calculated Soil Loss in tons/year/acre					
Disturbed Areas			Undisturbed Areas		
Soil Profile ID from Appendix B	K Calculated by RUSLE Using Soil Analysis Data <u>Without the Very-fine Sand Fraction</u>	A	K _U For All Undisturbed Areas	A _U For All Undisturbed Areas	Difference Between A and A _U in lbs/year/acre
DBDA11D	0.394	0.092	0.208	0.05	+84
DBDA21D	0.394	0.044	0.208	0.05	-12
DBDA22D	0.361	0.03	0.208	0.05	-40
DBDA23D	0.262	0.054	0.208	0.05	+8
DBDA31D	0.262	0.034	0.208	0.05	-32
DBDA32D	0.389	0.052	0.208	0.05	+4

Disturbed soil profiles DBDA11D shows a predicted sediment loss 84 lbs/year/acre greater than the undisturbed areas, but soil loss is predicted to be somewhat lower in DBDA22D and DBDA31D than in the undisturbed areas. Predictions for the other three areas show soil loss might be roughly equivalent to that in the undisturbed areas. Based on the input values listed in Appendix B, longer slope-length and cover management appear to be important factors where predicted soil-loss is greater in disturbed areas than in undisturbed areas; support practice (surface roughening) to be an important factor where it is less.

RUSLE - All Disturbed Area: A calculated using Dan Larsen's generalized K value

The very-fine sand fraction is included in the soil analyses in the current Exhibit B of Appendix C. However, based on a recommendation from Dan Larsen of EIS Environmental and Consulting, the Permittee used K = 0.36 for all disturbed areas in the RUSLE calculations in Appendix B. Mr. Larsen estimated this value for K based on generalized soil texture and permeability for the entire disturbed area. The results of the RUSLE calculations using this value are in the current Appendix B, and Table TA-2 below summarizes the results of the calculations.

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TABLE TA-2					
RUSLE Calculated Soil Loss based on Dan Larsen's estimated K					
K - RUSLE Soil Erodibility Factor					
A - RUSLE Calculated Soil Loss in tons/year/acre					
Disturbed Areas			Undisturbed Areas		
Soil Profile ID from Appendix B	K Estimated by Dan Larsen of EIS	A	K _U For All Undisturbed Areas	A _U For All Undisturbed Areas	Difference Between A and A _U in lbs/year/acre
DBDA11D	0.36	0.09	0.208	0.05	+80
DBDA21D	0.36	0.04	0.208	0.05	-20
DBDA22D	0.361	0.03	0.208	0.05	-40
DBDA23D	0.36	0.07	0.208	0.05	+40
DBDA31D	0.36	0.05	0.208	0.05	±0
DBDA32D	0.36	0.05	0.208	0.05	±0

Disturbed soil profile DBDA11D again shows a high predicted sediment loss, 80% greater than the undisturbed areas. DBDA23D and DBDA31D have predicted soil losses 32% greater than calculated initially (Table TA-1). Prediction soil losses for the other three areas show little or no change.

RUSLE - Disturbed Areas DBDA31D and DBDA32D: K and A calculated using the very-fine sand fraction from the soil analyses

For profiles DBDA31D and DBDA32D in the Phase 2 area, the Permittee has done the RUSLE soil-loss calculations using the laboratory soil testing results as they are currently found in Exhibit B of Appendix C: these include the very-fine sand fraction. The calculation results are in the October 9, 2002 cover letter that accompanied the submittal, but they have not been incorporated into the MRP (mainly to avoid expanding this submittal to the amending of Appendix B in Appendix XIV). As seen in comparing Table TA-2 and Table TA-3, there is no change in the values for Profile DBDA32D. The K value for Profile DBDA31D is 0.276 rather than 0.36, and the resulting value for A is 0.04. The Permittee feels that this difference, which equates to a loss of 20 lbs/year/acre less than from the undisturbed areas, is negligible, and that Mr. Larsen's estimate of K results in a more conservative soil-loss estimate. The Permittee therefore is satisfied with the RUSLE calculations currently in Appendix B, which are based on Mr. Larsen's estimate of K.

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TABLE TA-3					
DBDA31D and DBDA32D only					
Based on information in Appendix B and October 9, 2002 cover letter					
K – RUSLE Soil Erodibility Factor					
A - RUSLE Calculated Soil Loss in tons/year/acre					
Disturbed Areas			Undisturbed Areas		
Soil Profile ID from Appendix B	K Calculated by RUSLE Using Soil Analysis Data Including the <u>Very-fine Sand Fraction</u>	A	K _U For All Undisturbed Areas	A _U For All Undisturbed Areas	Difference Between A and A _U in lbs/year/acre
DBDA31D	0.276	0.04	0.208	0.05	-20
DBDA32D	0.36	0.05	0.208	0.05	±0

Findings:

Reclamation Hydrologic Information is adequate to meet the minimum requirements of the Coal Mining Rules.

REVEGETATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

Revegetation: General Requirements

A total of 22 acres will be seeded in Phase 2 reclamation. Sheet No 300-1, Proposed Reseeded Area, shows the area to be seeded. Dates of seeding will need to be shown on the as built.

The greatest revegetation concern at this site is stabilizing the very steep slopes, which are commonly 2h:1v and up to 1½h:1v. The application states that these very steep slopes will be treated with roughening, seeding and mulching. During Phase I these very steep slopes were not effectively mulched and roughened. The Division is particularly concerned with the area identified on Drawing #200-1 labeled Proposed Excavated Substitute Soil near SS5. This area,

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although affected by coal mining has not been disturbed. Soil excavation will leave this area at a 1¼ h:1v slope. The Division proposed as an alternative borrow area the southern post-law portion of the Bathhouse pad and requested the Permittee not to disturb this area. The Permittee instead has stated that this area will only be disturbed as a last resort.

The Division is very concerned about the steep cut slopes to be left in reclamation. The Permittee was asked numerous times to identify these cuts and describe how they will be reclaimed. The Permittee's responses have been technically inadequate. The Permittee has stated that they will take full responsibility in meeting all performance standards for bond release. Given this commitment the Division should, under no circumstances, change or reduce any revegetation success standards. Vegetation sampling for final bond release must be done on a fully random selection criteria (not stratified random) so all areas on the ground, even if near vertical have an equal chance of being sampled. Vegetation consultants should be equipped with proper safety equipment, such as rock climbing gear, prior to sampling.

The seed mixture (section R645-301-353.120) was designed to establish and provide some erosion control on these slopes. Annual reports detailing prevalent species established from interim seeding were reviewed for species seed mix selection. All species in the mixture are native and most are native to this specific area. Unfortunately, Salina wildrye, the dominant grass, is not commercially available for reclamation. The application rate is 61 seeds /ft². This rate is consistent with recommendations for the Utah area. Aggressive species were used because of the concern with soil stabilization. Diversity of the native area is low. Transplants will be used to aid in the visual attributes of the area during vegetation establishment. These transplants will also be important to add to the species diversity.

Seed will be broadcast using a hurricane spreader or applied using a hydroseeder contemporaneously as possible after roughening. The seed will be raked to cover the seed if using a hand spreader. Generally raking is not necessary unless the soil has crusted. Crusted soil should be raked even if hydroseeding. Covering the seed with hydromulch does not substitute for soil seed coverage.

All noxious weeds will be eradicated either chemically or physically if they become established on site (Maintenance and Monitoring (R645-301-357.320 thru R645-301-357.332)). The Weed Web at: <http://extension.usu.edu/coop/ag/crops/weedweb/index.htm> is an excellent resource for current noxious weed lists and control methods.

Revegetation: Timing

The application commits to seeding immediately after the soil is roughened. The exact season is unknown but likely will be through out the year. Early spring and late fall is the normal time for seeding in this area. A summer seeding maybe successful because this area is subject to summer rains. Several seeding attempts may be necessary for successful germination

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and establishment. The Permittee should be aware that only under limit conditions is reseeding allowed that does not restart the bond liability period.

Revegetation: Mulching and Other Soil Stabilizing Practices

One ton per acre weed free alfalfa hay will be incorporated into the soil during roughening. (Generally noxious weed free alfalfa hay is specified. Weed free hay will be difficult to find.) This will provide a slight organic component to the soil and may reduce crusting for seed germination. All areas will be hydromulched with tackifier and applied at the rate of 1500 lbs./acre. Care must be taken to not leave the seed in the hydromulcher for longer than 30 minutes.

Rocks, shrub and tree debris, and other organic on site materials should also be used as a top covering for the seeded surface.

Revegetation: Standards For Success

Vegetation success of the reclaimed Des Bee Dove mine area will be compared to the pinyon-juniper reference area established in 1980. Success will be judged on production, shrub density and cover of the reclaimed site as compared to the reference area. The Permittee commits to tree and shrub numbers similar to the reference areas life forms.

Findings:

Information provided meets the minimum Revegetation requirement of the regulations.

STABILIZATION OF SURFACE AREAS

Regulatory Reference: 30 CFR Sec. 817.95; R645-301-244.

Analysis:

Slopes will be graded to 1¼ h:1v to 2h:1v. Extreme surface roughening will be used on all slopes (R645-301-350 Performance Standards, page 5). This is discussed as a deficiency in the Revegetation section. The roughening process can occur during topsoil placement or while incorporating organic materials (i.e. hay). Proper roughening is very important for the site stabilization and revegetation. Roughening is described in the technique sheets in the Division's reclamation manual, The Practical Guide to Reclamation in Utah, found at: ftp://dogm.nr.state.ut.us/PUB/MINES/Coal_Related/RecMan/Reclamation_Manual.PDF. The

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technique sheets are also useful to give to equipment operators to illustrate the degree of roughness required. Large boulders will be used as riprap.

One ton per acre of certified weed free alfalfa hay will be incorporated into the soil when pocking. A soil tackifier will be applied according to manufacturers specifications. Fifteen hundred lbs/acre of wood fiber mulch and tackifier will be spread on the soil surface for cover and protection.

The area will be monitored annually for rills and gullies. The Permittee commits to filling and seeding any rills and gullies. The Permittee should expect some rills and gullies during the initial site establishment period that may be as long as 5 to 10 years in this arid area.

Findings:

The information provided in the application meets the minimum Stabilization of Surface Areas requirements of the regulations.

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

Analysis:

Final Surface Configuration Maps

Cross sections, as submitted with the revised drawing #500-4 on May 2, 2002, are accurately depicted. As previously discussed, cross-sections 0+00, 1+00 and 2+00 were incorrect in that they showed reclamation work being conducted outside of the permittee's disturbed area. These have been corrected with the new drawing # 500-4.

Drawing #500-2, revised and submitted on May 2, 2002, depicts a "TYPICAL ROAD SECTION 9" (in reference to drawing #500-1). The revised section indicates that all reclamation work of access road area will be configured to a 2H:1V "or flatter" final configuration. This now coincides with the maximum slope gradient recommendation in the RB&G slope stability analysis for earth fills. If the road sections are reclaimed using rock fill, the maximum slope gradient utilized will still be 2H:1V "or flatter". This meets the requirements of the R645 coal rules.

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Findings:

The information provided is adequate to meet the minimum regulatory requirements for this section of the R645 coal rules as they relate to the reclamation of the Phase 2 area.

BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: 30 CFR Sec. 800; R645-301-800, et seq.

Analysis:

Determination of Bond Amount

The Des-Bee-Dove Mine site is currently bonded in the amount of \$1, 837,712.00 with the State of Utah through surety bond # 400 JN 6139. This amount was last reviewed prior to the August 2000 permit renewal, and is determined to be adequate.

Appendix XIV briefly discusses bonding on the last page included with the submittal. Included text indicates "upon completion of the reclamation project, PacifiCorp will revise the bond estimation by eliminating items related to the Beehive/Little Dove Mines. Bond reduction will not be requested until Phase 2 is complete (scheduled for the Fall of 2001)." This is adequate.

Findings:

The information provided in the application meets the minimum Bonding and Insurance Requirements section of the regulations.