

April 4, 2003

TO: Internal File

THRU: Priscilla Burton, Senior Soils Scientist, Team Co-Lead  
Dana Dean, P.E., Senior Reclamation Hydrologist, Team Co-Lead

FROM: Jerriann Ernstsens, Biologist  
Susan M. White, Senior Reclamation Biologist

RE: Lila Canyon Extension, UtahAmerican Energy Inc., Horse Canyon Mine,  
C/007/013-PM02B-2, Internal File

**SUMMARY:**

The Division received an application to include the Lila Canyon Mine area into the Horse Canyon Mine permit on February 11, 2002. There were deficiencies and the application was not approved. This memo reviews the mine's responses to the TA dated July 19, 2002.

**TECHNICAL MEMO**

**TECHNICAL ANALYSIS:**

**GENERAL CONTENTS**

**REPORTING OF TECHNICAL DATA**

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

**Analysis:**

Some of the names and qualifications of those participating in Biological Resource data collection, inventory, and analysis are provided in Appendix 3-1 through 3-7.

<b>Survey</b>	<b>Date</b>	<b>Org/Persons</b>
Vegetation Study Horse Canyon; App 3-1	1983 & 1985	Official names not provided
Vegetation Study South Lease Area; Kaiser Steel; App 3-2	Growing season: 1982	Official names not provided
Lila Canyon Vegetation Inventory; App 3-2A	Growing seasons: 1998, 1999	Environmental Industrial Services (EIS): Coonrod, Salt, Cook
Lila Canyon Vegetation Survey; App 3-2A	Nov. 2000	EIS: Coonrod, Varner
Threatened and Endangered Species (TE) Inventories; App 3-4 1. Plant inventory 2. Plant assessment 3. Plant inventory 4. Plant inventory 5. Plant inventory 6. Proposal for a Mexican Spotted Owl (MSO) flyover survey	May 1998/9? August 2002 April 2002 May 2002 Sept. 2002 Proposed for fall 2002	EIS: Official names not provided EIS: Official names not provided EIS: Official names not provided EIS: Official names not provided OGM: Susan White Proposed to contract EIS: Official names not provided
Raptor Surveys; App 3-5:	1999 - 2002	DWR: Chris Colt
UDWR Wildlife Report; App 3-6	Not provided	DWR: Official names not provided
Productivity Within And Around The Permit Area; App 3-7	June 25, 1998	Range Conserve: G. Cook EIS: Coonrod

For appended documents retained within the PAP, provide the names and organization of participants who conducted the surveys in Appendices: 3-1, 3-2, 3-4 (#1-4 and #6; numbers refer to table above), and 3-6 (R130).

## Findings:

Information provided in the application is not considered adequate to meet the minimum Reporting of Technical Data requirement of the regulations. Before approval, the Permittee must provide the following in accordance with:

**R645-301-130**, The PAP must contain the names, organizations, and qualifications of all contributors who conducted the following surveys: (1) Vegetation Study Horse Canyon; App 3-1 (Unless omitted - see Vegetation Information R121.100) (2) Vegetation Study South Lease Area; Kaiser Steel; App 3-2 1 (Unless omitted - see Vegetation Information R121.100) (3) TE Inventories; App 3-4 (#1-4, and #6; numbers refer to table above) (4) MSO flyover survey (5) Raptor Surveys; App 3-5 (6) UDWR Wildlife Report; App 3-6 (7) Productivity Within And Around The Permit Area; App 3-7.

## 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:

The PAP states that Appendix 4-1 (Confidential Files) contains information from cultural resource surveys. Currently, the surveys include:

- Keith Montgomery 1998 Cultural resource inventory of the soil testing area for the Lila Canyon coal project.
- “Appendix X1” BLM Cultural resource information.
- EA #UT-066-93-28, Price river resource area File #3451.
- Rebecca Rauch 1981 Cultural resource inventory of the Kaiser Steel Corporation south lease mine property and a test excavation (42EM1343) in Emery county.
- Keith Montgomery 1999 Cultural resource inventory of transportation corridors and power line route for the Lila canyon mine project.

The PAP states that Southworth and Nielson (1986) conducted a survey, but this survey is missing from Appendix 4-1 (Confidential Files). Provided the missing Southworth and Nielson survey (R411.140). The Environmental Assessment (EA) conducted by the BLM (USDI EA No.UT-070-99-22) states that Miller (1991) conducted an additional survey. The mine refers the reader to contact BLM to obtain the Miller file. The Division, however, requests the mine operator to provide relevant portions of referenced published materials of the Miller file. The document must include a brief and concise abstract and explicit citations. (R411.140; R122).

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The EA states that archaeological inventories of the area identified eight sites and several artifacts. Seven of the eight sites are “located in Little Park, above the mine’s surface facilities” (EA pg. 46; July 2000). Site 42EM2517, a Fremont component rock shelter, is adjacent to and visible from the Lila Canyon Road and the proposed mining facilities. The Fremont site is eligible for the Nation Register of Historic Places under Criterion (d) of 36CFR60.4 (EA pg. 46, July 2000). According to the EA, UEI will submit a data recovery plan for site 42EM2517 to the BLM. This PAP, however, states that this site does not meet National Register Criteria for age, unique architecture, historic persons or events. The mine operator must clarify this inconsistency between documents and must provide supporting evidence in the form of official documentation (R121.200).

Plate 4-3 shows the permit area with only three sites in Little Park grazing allotment. The Fremont site is discussed in the PAP and shown on Plate 4-3 (registered 12/3/02). This site is shown outside of the permit area in the Cove grazing allotment. There are still three of the seven sites identified in the EA that are not shown on Plate 4-3. Identify all seven sites on Plate 4-3 (R411.143). According to the EA, there should be seven sites located above the mine’s surface facilities. No determination can be made at this point that the resource data is adequate until all studies that have been conducted are included in the PAP.

SUWA commented that cultural surveys must be performed for all areas subject to subsidence. R645-301-411 requires that cultural and historic surveys conducted in the permit area are included in the PAP so this determination can be made. The surveys found cultural resource sites in the vicinity, but only an isolated artifact was found in the proposed disturbed area.

In Horse Canyon, a tree is inscribed by Sam Gilson, a prominent rancher, and promoter of the uses of Gilsonite. According to the Division of State History, the application, and the text of the current mining and reclamation plan, this site is not listed on the National Register of Historic Places but is eligible for listing. A 1986 report from Don Southworth and Asa Nielson in the existing mining and reclamation plan indicates it is listed.

Maps and reports on archaeological resources have been marked confidential.

There are no cemeteries in or within 100 feet of the proposed addition to the permit area, and it contains no units of the National System of Trails or Wild and Scenic Rivers system.

**Findings:**

Information provided in the application is not adequate to meet the minimum Historic and Archeology Resources requirement of the Regulations. Prior to approval, in accordance with:

**R645-301-121.200**, Clarify the inconsistency between documents concerning 42Em2517

and provide supporting evidence in the form of official documentation.

**R645-301-411.140; R301-122**, The Permittee must provide the following: (1) Miller (1991) survey (2) Southworth and Nielson (1986) survey.

**R645-301-411.143**, Present, on Plate 4-3, all archaeological inventoried sites located on or near the permit area.

## GETATION RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.19; R645-301-320.

### Analysis:

The PAP describes the vegetative resources of the permit and disturbed areas by referring the reader to Plate 3-2 and the Appendix. The numbering system for the three entries of Appendix 3-2 is confusing because two surveys have the same header 3-2A. Clarify appendix numbers to read 3-2, 3-2A<sub>1</sub>, and 3-2A<sub>2</sub> (R121.200). The appendices include the following:

- Appendix 3-1: Vegetation Study Horse Canyon (1983 and 1985). Report does not provide official names.
  - Survey covers the Horse Canyon mine permit area, but not the proposed “Permit area B” (Plate 4-3).
  - Appendix includes pages VIII-1 through VIII-8, but not pages 9-46, tables, appendices, or plates (R121.200).
  - Existing pages include discussions on community types, four TE plant species, and a pinyon-juniper reference area.
- Appendix 3-2: Vegetation Study South Lease Area (1982); Kaiser Steel. Report does not provide official names.
  - Survey covers the South Lease permit area, but not the proposed “Permit area B” (Plate 4-3).
  - Appendix includes pages IX-1 through IX-107, but not cited plates (R121.200).
  - Existing pages contain discussions on eight community types. Data includes species lists, density, cover, productivity, and TE species for each community.
- Appendix 3-2A<sub>1</sub>: Lila Canyon Vegetation Inventory (1998 and 1999). Coonrod, Salt, Cook.

To distinguish the two entries for Appendix 3-2A, the Division noted the entries as 3-2A subscript 1 and 2.

  - Survey covers potential disturbance and reference areas in Lila Canyon (20 acres – lower boundary and 20 acres – upper elevation). Report includes exact locations of survey sites (see Appendix [App.] 3-2A<sub>2</sub>).

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- Report includes data on grass/sage community species, ground cover, and woody plant densities for disturbed and reference areas.
- Mine operator removed the pinyon/juniper study and reference areas from the report. This community types was deemed unfavorable for rangeland habitat (pg. 2)
- Appendix 3-2A<sub>2</sub>: Lila Canyon Vegetation Survey (Nov. 2000). Coonrod, Varner.
  - Cover sheet titles are confusing – one reads “Appendix” the other “Attachment” (R121.200).
  - Ground cover survey covers pinyon-juniper areas of Lila Canyon surface facility disturbed site.
  - Survey includes two attachments:
    - Table summarizes data for percent ground cover.
    - Data sheets for percent ground cover and listed species and numbers.
  - Survey also includes a map (Fig.1 of App. 3-2A) that shows locations of survey sites.
- Appendix 3-4: Threatened and Endangered Species Inventories (1998 and 2002). Report provides official names for only one - Susan White, DOGM.
  - Appendix contains five separate entries: four surveys and one assessment.
  - None of the surveys in 3-4 provides exact locations or a map of survey sites (R121.200).
  - EIS conducted a TE survey in May 1998
    - Survey covered the surface facilities and access/utility corridor areas.
    - Survey focused on four species.
  - EIS compiled an assessment in August 2002.
    - Assessors evaluated potential impacts to TE species from construction, maintenance, and operations.
    - Assessment focused on five animal and seven plant species.
    - Plant species data came from a survey conducted in either 1998 or 1999 survey. The assessment shows the survey date as 1999, yet the survey report shows the date as 1998. Provide the correct date (R121.200).
  - Surveyors conducted three TE surveys in 2002 that focused on selected species.
    - April 2002
      - Follow up of the 1998 surface facility survey.
      - Survey focused on ten plant species.
    - May 2002
      - Follow up of the 1999 and 2000 surface facility surveys. The PAP does not include a 1999 TE survey (R121.200).
      - Survey focused on 16 plant species.
    - September 2002: Survey focused on a single plant species.
- Appendix 3-7: Productivity Within and Around the Permit Area (1999). Cook.
  - Surveyors measured productivity for two reference areas and one disturbed area.

- Report did not provide detailed locations of survey sites (R121.200).

SUWA commented about a lack of current data for the entire permit area. The PAP (sec. 320) infers that all vegetation resources of the entire Lila extension have been described.. The mine operator states that the Lila Canyon permit area includes “a portion of the reclaimed Horse Canyon Mine and virtually all of the South Lease Tract” (pg. 3; sec.321.100). Corresponding Appendices 3-1 and 3-2 do not include specific locations or maps of the survey sites. The mine operator must clearly detail survey sites in order for the Division to ascertain whether vegetation resources have been adequately surveyed for the Lila Canyon permit area (R121.200).

Appendix 3-1 lists nine community types for the Horse Canyon permit survey area. The mine operator states that, of the nine types, pinyon/juniper community is the only major type present in the proposed permit area (pg. VIII-4). The mine operator reports that all 63.6 acres of the disturbed land consists of “this” vegetation type and refers the reader to VIII-2 for community descriptions (pg. VIII-5). However, the word “this” is vague and the community type is not explained on page VIII-2. These references in Appendix 3-1 either do not match community types represented in Plate 3-2 or are confusing.

Kaiser Steel Corporation submitted the South Lease survey (App. 3-2), which the area is south of the current application area. Plate IX-1 Vegetation Map of the South Lease Property (1983) shows that none of the Lila Canyon permit area was included in the South Lease Property vegetation study. The vegetation survey conducted for South Lease, therefore, does not cover Lila Canyon. A single map that shows the area of the South Lease Property vegetation study and Lila Canyon permit area would solve this discrepancy. Appendix 3-2 lists eight community types for the South Lease permit survey area. These community types, also do not match community types represented in Plate 3-2. The Division reviewed this survey in the early 1980’s, but never issued a permit.

In summary, omit Appendices 3-1 and 3-2 because information is unclear, missing, outdated, or unrelated (R121.100;-200).

The two studies “Lila Canyon Vegetation Studies” (1998/1999 Coonrod, Salt, Cook; App. 3-2A<sub>1</sub>) and (2000 Coonrod and Varner; App. 3-2A<sub>2</sub>) are confusing, inconsistent, and incomplete. The survey in Appendix 3-2A<sub>1</sub> is a compilation of data taken over a period of three years:

- 1998: field survey
- 1999: follow-up field survey
- 2000: density and revegetation predictability surveys.

The proposed disturbed area grass/shrub community and a corresponding reference area to the west of the proposed disturbed area was sampled some time between 1998 and 2000 for vegetative cover and shrub density (App. 3-2A<sub>1</sub>). It is unclear when this sampling was conducted. (R121.200).

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The Figure 1 of Appendix 3-2A<sub>1</sub> shows the reference area as a grass shrub community, which corresponds to the inventory tables. This depiction of the reference site, however does not agree with the Vegetation map (Plate 3-2). The map shows the site as a sagebrush grass community, which the inventory tables do not report any type of sagebrush. These differences do not clearly show the existing plant community type for the reference area. Similarly, the Vegetation map shows a very small portion of the disturbed area as sagebrush grass, which the data in the inventory tables or Figure 1 do not correspond. (R121.200).

The inventory (App. 3-2A<sub>1</sub>) found the shrub and grass dominant species to include “Cheat Grass”, Rabbitbrush (*Chrysothamnus viscidiflorus*), and “Lichen”. Interestingly, rabbitbrush (*Chrysothamnus viscidiflorus*), and “Lichen” were not encountered in the sampling of the disturbed area or reference area (data sheet, App. 3-2). (R121.200).

Appendix 3-2A<sub>1</sub> provides a plant inventory list, density, ground coverage, and physical site characteristics for 15 transects. The raw data sheets (App. 3-2A<sub>2</sub>) and accompanying map (Fig. 1 of App. 3-2A) provides a location of the survey transects. The map indicates there were over 50 transects surveyed, yet only 15 transects reported (R121.200).

There are inconsistencies between the text and Tables 1 and 2 (App. 3-2A<sub>1</sub>). For example, the text mentions *Elymus salinus*, *Tamarix pentandra*, *Sarcobatus vermiculatus*, *Chrysothamnus viscidiflorus*, and Lichen sp., yet these species are not included in Tables 1 and 2. Both tables list *Elymus elymoides*, which is not discussed in the text. It is unclear why this species is in the table given that the sum number of plants is zero for all transects. These tables also have unknown or misspelled plant species. (R121.200). Total vegetative cover of the proposed grass/shrub community for the disturbed and reference areas are approximately 43 percent.

The survey in Appendix 3-2A<sub>2</sub> summarizes the percent cover for pinyon-juniper stands. This appendix contains two attachments: a table describing cover (A<sub>1</sub>) and raw data sheets for the inventory surveys conducted in 1998/99 (A<sub>2</sub>). Only ten samples were taken, which is below the Division’s “Vegetation Information Guidelines” of a 15-sample minimum. Sample sizes were 0.01 acres, which is six times larger than the Division’s recommendation. Large sample plots are difficult to accurately estimate vegetative cover. The mine operator states in an accompanying letter to this PAP,

- Mine contracted a qualified surveyor in plant taxonomy.
- Operator contacted DOGM about the data collection procedures.
- Surveyor used the Guidelines as guidelines and not regulations.

The surveyors conducted the percent cover study from October 28<sup>th</sup> through November 2<sup>nd</sup>, 2000 (App. 3-2A<sub>2</sub>). Woody plants had retained some of its leaves and were reportedly easy to survey. The herbaceous plants, however, were difficult to survey because it was questionable whether the plants were alive or dead. A survey conducted during this season would underestimate plant cover, which will influence success standards. The mine operator states in an accompanying letter to this PAP, that the operator contacted DOGM for approval to survey

during September and received approval. Irrespective, the undocumented approval was for September and not late October early November. (R121.200 and -132)

For the November survey, surveyors examined ten sites and calculated an average percent cover at 33 for the pinyon-juniper community type. The cover was dominated by Utah juniper; other species included Salina wildrye, fourwing saltbush, prickly pear cactus, snakeweed, and galleta.

Woody plant density was 5,006 plants per acre for the grass/shrub disturbed and reference areas, as well as the "PJ" area (App. 3-2A<sub>1</sub>). Snakeweed is the dominant woody plant in these areas. Five samples from each type were taken. Sampling does not meet the minimum regulatory requirements; the Division's Vegetation Information Guidelines call for 15 samples from each community using this sampling technique. The mine operator states in an accompanying letter to this PAP, that the surveyor used the Guidelines as guidelines and not regulations.

Vascular plant cover (3-2A<sub>2</sub>), woody plant density (3-2A<sub>1</sub>), and productivity (App. 3-7) were the only parameters measured in the pinyon/juniper area. The Permittee did not measure cover from rock, litter, or biologic soil crusts. Regulation R645-301-321 requires a description of the plant communities in the proposed disturbed area adequate to predict the potential for reestablishing vegetation. The preamble to the federal coal regulations permanent program discusses the use of the word "vegetation" in the regulations. The following is an excerpt from the preamble:

*In the context of the regulations, reference to vegetation normally means the higher forms of plants. It would not generally include lesser forms which do not provide cover or forage for wildlife, or contribute to erosion control, except those lesser plants which are threatened or endangered or are an essential component of a habitat critical to the survival of a threatened or endangered species (44 Fed. Reg. 14,902).*

Biologic soil crusts are an important component of erosion control for soils. Baseline data must include measurements of this crust. Lack of biological crust evaluations was also a concern of SUWA. (R321.100)

In summary, the Division requests to omit the surveys in Appendix 3-2A<sub>1</sub> and 3-2A<sub>2</sub> from the PAP and conduct a new study (R321.100). The disturbed and reference area communities must be defined and sampled by a person qualified in the field of plant taxonomy and quantitative ecology and according to the Division's Vegetation Information Guidelines.

The vegetation map (Plate 3-2) locates "land feature" of the permit area. These "features" include the following plant communities and geologic formations: salt desert shrub "shale", pinyon/juniper, spruce/fir, mancos, and mountain brush. The PAP must describe all plant communities and the map must show all the communities' (R323.400). The vegetation map shows only a small area for shrub and grass community in the disturbed area. This drawn area does not agree in size with Figure 1 Appendix 3-2A, or to a visual approximation of size during a field visit March 2003 by the Division. The map also does not clearly define the tall

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shrub community of the lower drainages. The vegetation map (Plate 3-2) does not correlate with the community descriptions provided in the South Lease study. However, if it is confirmed that the Lila Canyon permit area was not included in the South Lease Property vegetation survey, then this lack of a correlation really does not matter. A single map that shows the area of the South Lease Property vegetation study and Lila Canyon permit area would solve this discrepancy.

SUWA commented that the PAP should identify important plant communities such as riparian areas. The spring-associated plant communities are explained in Appendix 7-8. The PAP, however, must also include a brief description characterizing the resources that occur in or near the permit area for each of these spring (R321.100). The vegetation map must also show plant communities that may be influenced by the springs or seeps (R323.200). The reference area is not shown on the vegetation map (R323.100).

In summary, replace the vegetation map with a map that accurately represents the reference area, all plant communities, and special habitats. A map drawn on a scale of 1"=4000' shows the entire area, which is beneficial. However, an additional map drawn at a more detailed scale, such as 1"=400', of the reference and disturbed areas will help during evaluation processes. The Division requests two vegetation maps: one that shows the entire area and one that details the reference and disturbed areas. (R323).

The study "Productivity Within and Around the Permit Area" (1999 Cook and Coonrod; App. 3-7) contains productivity estimates of proposed disturbed and associated reference areas. The grass/shrub and pinyon/juniper communities had production levels of about 850 and 250-300 pounds per acre, respectively.

**Findings:**

Information provided in the application is not considered adequate to meet the minimum Vegetation Resource Information requirement of the Regulations. Before approval, the Permittee must provide the following in accordance with:

**R645-301-121**, The PAP (Section [Sec.] R6450301-320) infers that all vegetation resources of the entire Lila extension are included. Information needed to predict the potential for reclamation, however, is either missing or is not presented clearly. To present required information more clearly, the mine operator should:

- Omit Appendix 3-1 and 3-2 because:
  - Information does not directly and entirely relate to permit area.
  - Reports have missing pages, plates, appendices, and tables.
  - Information on community types in text does not directly match those shown on Plate 3-2.
  - Reports do not include exact locations of survey sites.
  - Reports do not cover riparian areas.
  - Data is outdated.

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- Clarify Appendix 3-2A (unless omitted):
  - Clarify appendix numbers to read 3-2, 3-2A<sub>1</sub> , and 3-2A<sub>2</sub>.
  - Clarify cover sheets.
  - 3-2A<sub>1</sub>: Provide survey dates of the vegetation inventory.
  - 3-2A<sub>1</sub>: Provide accurate and corresponding representations of the plant communities in the Vegetation map (Plate 3-2), Figure 1 of Appendix 3-2A, and Tables 1 and 2.
  - 3-2A<sub>1</sub>: Document whether or not *Chrysothamnus viscidiflorus* is found in the disturbed and reference areas.
  - 3-2A<sub>1</sub>: Describe why the map (Fig. 1) shows over 50 survey sites, yet text describes only 15.
  - 3-2A<sub>1</sub>: Remove inconsistencies between Tables 1 and 2 and text.
  - 3-2A<sub>1</sub>: Correct unknown or misspelled plant species.
  - 3-2A<sub>2</sub>: Describe the value for the percent cover survey of the pinyon juniper community.
  - 3-2A<sub>2</sub>: Justify the reason why surveying in November for percent cover is acceptable.
- Clarify Appendix 3-4
  - Provide survey site locations for the TE and productivity studies (Appendices 3-4 and 3-7).
  - Provide correct year in the August 2002 survey submittal.
  - Provide missing 1999 TE survey mentioned in May 2002 study.
- Provide survey site locations for the productivity studies (App. 3-7).

**R645-301-321.100**, Conduct a new vegetation survey. Clearly define the disturbed and reference area communities. Include biologic soil crusts in the vegetation sampling. Before sampling, the Division must review more thoroughly the proposed location of the reference area. A qualified person in the field of plant taxonomy and quantitative ecology must conduct the survey and analysis according to the Division's Vegetation Information Guidelines. Perform vegetation sampling during a time of greatest species diversity, preferably in late spring. Provide raw data sheets.

**R645-301-323**, Provide a brief description characterizing the resources that occur in or near the permit area for each of these spring.

**R645-301-323**, Provide accurate vegetation map(s): (1) Include all plant communities (shale and escarpments are not plants communities) (2) Show accurate dimensions and aspects of the communities (3) Detail areas around springs and seeps (4) Include the reference site (5) Submit two vegetation maps.

**R645-301-323.400**, The PAP must describe all plant communities.

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## FISH AND WILDLIFE RESOURCE INFORMATION

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

### Analysis:

Wildlife habitat is discussed in section 322.220 and shown on Plate 3-1. The disturbed area contains habitat for Rocky Mountain bighorn sheep and mule deer, and pronghorns (Plate 3-1). Raptors nest in the cliffs surrounding the proposed disturbed area. The permit area includes areas of critical habitat for elk and deer.

The mine operator must present raptor information clearly and correctly. The mine operator must update reference to the peregrine falcon in section 322.210 in the PAP (pg. 4; sec. 322.210). This species is not a TE species. The text on page seven refers the reader to Appendix 3-3, but that list also does not represent current TE species. Provide a current and complete list of TE species for Emery County. Raptor maps are confusing concerning nest numbers 946 and 820. Correct nest number labels on the map in Appendix 3-5 and map - Plate 3-1. PAP does not include the raptor survey conducted in 2002 (sec. 322.220; pg. 6; para 6). Add the 2002 survey to the listed dates. (R121.200).

Appendix 3-5 contains unnecessary and unrelated information (R121). Remove the following:

- 1980 DWR letter on raptors: information is not current, and relates to Horse Canyon and not to Lila Canyon.
- 1990 Letters: letters pertain to the removal an abandoned migratory bird nest located at the Horse Canyon surface facilities site and not to Lila Canyon.
- 1990 Raptor survey: survey pertains to the Horse Canyon surface facilities site and not to Lila Canyon.

The PAP provides data from raptor surveys conducted in the area in 1990 (unrelated area), 1998, 1999, 2000, 2001 and 2002. The 2002 survey map (Plate 3-1) shows locations of five nests (yet six corresponding numbers R301-121.200) within about one mile of the proposed surface facilities. Section 322.220 (pg. 10) states the areas surveyed include the entire Book Cliffs escarpment within the permit area plus a one-mile buffer zone around potential development areas. The ARC/GIS file obtained from Division of Wildlife Resources (DWR) shows the flight line for the 2002 survey. DWR concentrated the survey in areas within township quadrants 9, 10, 15, 16, and 22, but marginally surveyed potential habitats within quadrants 23 and 26. These two quadrants are located in the southwest portion of the permit area and may be suitable cliff habitat. These quadrants are outside the subsidence buffer zone, but within the permit area and immediately adjacent to the buffer zone. The mine operator must request a thorough survey during the 2003 and subsequent-year raptor surveys of these southwest quadrants as well as other rock outcrops within and near the permit area (R322.100). The table below provides a summary of the 2002 and 2001 raptor helicopter surveys:

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<b>Nest ID</b>	<b>Species</b>	<b>2002 Status</b>	<b>2001 Status</b>
455	Golden Eagle	Inactive	Dilapidated
456	Golden Eagle	Inactive	Inactive
719	Golden Eagle	Dilapidated	Dilapidated
946	Golden Eagle	Inactive	Dilapidated
947	Golden Eagle	Inactive	Inactive
1280	Unknown	Inactive	NA

The Permittee commits to conduct raptor surveys one year before all proposed new construction or potentially disruptive mining activity. These surveys should be conducted in all suitable habitats within a one-mile radius of activity and the main facilities area.

The PAP indicates the Permittee consulted with United States Fish and Wildlife Service (USFWS), DWR, and BLM concerning raptor nests near the mine. Five nests are close to the proposed surface facilities. The Golden Eagles have not used or tended these nests within the last three years. The agencies decided there is a high probability the birds will abandon the nests because the nests will be near surface facilities. The mine operator agrees to first, contact the Division and second, initiate a mitigation plan if any of the five nests are destroyed due to mining operations (pg. 10/11; sec. 332.220). The plan includes increasing prey-based habitat in the area.

Lila Canyon mine plans to have aboveground power lines (pg.5; sec. 322.210). The mine operator commits to construct all lines following the guidelines developed by the Environmental Criteria for Electric Transmission Systems or the Division. Provide the Division with the proposed power pole design for the mine site. Also, provide a drawing for the power pole and line locations. New power pole configuration must be designed to maintain adequate spacing. A minimum distance of 60 inches between energized hardware or between phases or between phases and ground wires is required to provide safe perching for large raptors (eagles). This information will assist the Division in determining whether best technology is proposed and if it will minimize electrocution hazards to raptors. (R358.510).

SUWA commented that the PAP does not contain site-specific resource information, fails to address high value wildlife habitats, and lacks sufficient information to design the protection plan. SUWA commented that the Permittee failed to specifically inventory species dependent on seeps and springs, especially amphibians. The application only addresses amphibian occurrences or potential occurrences through reference to the DWR publication "Fauna of Southeastern Utah and Life Requisites Regarding their Ecosystems" (App. 3-6 provides only a cover page of publication). The application describes the vegetation surrounding each spring, but does not address the potential for amphibian occurrences especially those on the state sensitive species list (R322).

BLM, DWR and DOGM wildlife specialists held a meeting on June 6, 2002 to discuss the level of detail required for wildlife information. The agencies discussed the improbability of high densities of snake populations because the permit area is dry and provides little prey base.

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The group also discussed the findings of big horn sheep in Lila Canyon and in an unnamed canyon located in the southwest corner of the permit area. These animals were spotted during the raptor survey conducted in May 2002. Furthermore, the agencies discussed the need for additional wildlife surveys. The list below provides the groups conclusions:

- Not require UEI to:
  - Provide additional information regarding the big horn sheep numbers or use.
  - Conduct bat surveys because mining activities in the permit area are unlikely to affected bats.
  - Conduct Merriam’s Kangaroo Rat and Ringtail studies although these are two Utah sensitive mammal species likely to occur within the permit area.
  - Conduct formal surveys or monitoring programs for any amphibians.
  - Conduct reptile surveys.
  
- Require UEI to:
  - Survey all seeps and springs. The report must describe:
    - Riparian habitat.
    - Vegetation for all seeps and springs.
    - Presence of any amphibians.
  - Monitor south canyon water source(s) (see paragraph below).
  - Commit to replace consumed water.
  - Incorporate all surveys and reports into the PAP.

On June 12, 2002 Division staff and DWR visited the unnamed south canyon and found four seeps. No water was found in the lower one mile of Lila Canyon. The entire canyon showed evidence of big horn sheep use. The seeps appear to be a significant water source for ewes and lambs. The mine operator states in an accompanying letter to this PAP, that a ground survey was conducted to determine unidentified water sources along the face of the Book Cliffs and none were identified. The mine operator also agrees to monitor L-16-G and L-17-G on a quarterly basis beginning the second quarter of 2002. The appendix to the hydrology section provides data for the third quarter for these springs for 2002.

*Threatened and Endangered Species*

Table 3-1 lists threatened or endangered species that potentially occur in Emery County. Appendix 3-3 contains an outdated letter (February 4, 1998) from the USFWS to EIS, consultants to the BLM, during development of the Environmental Assessment.

The Division initiated Section 7 consultation with the USFWS on May 9, 2002. They responded with a list of endangered (E), threatened (T), and candidate (C) species that may occur in the area of influence. The T & E species are listed below and each species is evaluated for permit adequacy.

<b>Common Name</b>		<b>Habitat</b>	<b>PAP</b>
Barneby Reed-	E	Chinle Formations.	Appendix 3-4. BLM Biological Assessment

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mustard			<p>(Aug. 2000). No plants located within permit area. No suitable habitat.</p> <p>Appendix 3-4. Survey (May 2002). No plants located within surface facilities.</p> <p>DOGM: Suitable habitat assessment inadequate (R322.220).</p>
Jones Cycladenia	T	Gypsiferous saline soils on the Chinle, Cutler, and Summerville Formations.	<p>Appendix 3-4. BLM Biological Assessment (Aug. 2000). No plants located within permit area. No suitable habitat.</p> <p>Appendix 3-4. Survey (May 2002). No plants located within surface facilities.</p> <p>DOGM: Suitable habitat assessment inadequate (R322.220).</p>
Last Chance Townsendia	T	Salt desert shrub and PJ on clay or clay silt soils of Arapien and Mancos Shale.	<p>Appendix 3-4. BLM Biological Assessment (Aug. 2000). No plants located within permit area. No suitable habitat.</p> <p>Appendix 3-4. Survey (April 2002). No plants located within surface facilities.</p> <p>DOGM: Suitable habitat assessment inadequate (R322.220).</p>
Maguire Daisy	T	Sands from Wingate, Chinle, and Navajo Sandstone Formations.	<p>Appendix 3-4. BLM Biological Assessment (Aug. 2000). No plants located within permit area. No suitable habitat.</p> <p>Appendix 3-4. Survey (May 2002). No plants located within surface facilities.</p> <p>DOGM: Suitable habitat assessment inadequate (R322.220).</p>
San Rafael Cactus	E	PJ limestone gravels.	<p>Appendix 3-4. BLM Biological Assessment (Aug. 2000). No plants located within permit area. No suitable habitat.</p> <p>DOGM: Occurrence assessment inadequate (reference to 1998 survey does not show results for this species (R301-322.200).</p> <p>DOGM: Suitable habitat assessment inadequate</p>

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			(R322.220).
Winkler Cactus	T	Salt desert shrub communities.	<p>Appendix 3-4. BLM Biological Assessment (Aug. 2000). No plants located within permit area. No suitable habitat.</p> <p>Appendix 3-4. Survey (April 2002). No plants located within surface facilities.</p> <p>DOG M: Suitable habitat assessment inadequate (R322.220).</p>
Wright Fishhook Cactus	E	Salt desert shrub to Juniper on the Mancos Shale.	<p>Appendix 3-4. BLM Biological Assessment (Aug. 2000). No plants located within permit area. No suitable habitat.</p> <p>Appendix 3-4. Survey (April 2002). No plants located within surface facilities.</p> <p>DOG M: Suitable habitat assessment inadequate (R322.220).</p>
Bonytail Chub	E	Colorado River.	<p>Appendix 3-4. Addressed in BLM Biological Assessment (Aug. 2000). No fish located within permit area.</p> <p>Section 322.220 (pg. 11). No perennial streams. No potential threat to aquatic species. Table 1 (pg. 7). Theoretical impact.</p> <p>DOG M: Impact assessments inadequate (R322.100; 333).</p>
Colorado Pikeminnow	E	Colorado River.	<p>Appendix 3-4. Addressed in BLM Biological Assessment (Aug. 2000). No fish located within permit area.</p> <p>Section 322.220 (pg. 11). No perennial streams. No potential threat to aquatic species. Table 1 (pg. 7). Theoretical impact.</p> <p>DOG M: Impact assessments inadequate (R322.100; 333).</p>
Humpback Chub	E	Colorado River.	<p>Appendix 3-4. Addressed in BLM Biological Assessment (Aug. 2000). No fish located within permit area.</p> <p>Section 322.220 (pg. 11). No perennial streams.</p>

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			<p>No potential threat to aquatic species. Table 1 (pg. 7). Theoretical impact.</p> <p>DOGM: Impact assessments inadequate (R322.100; 333).</p>
Razorback Sucker	E	Colorado River.	<p>Appendix 3-4. Addressed in BLM Biological Assessment (Aug. 2000). No fish located within permit area.</p> <p>Section 322.220 (pg. 11). No perennial streams. No potential threat to aquatic species. Table 1 (pg. 7). Theoretical impact.</p> <p>DOGM: Impact assessments inadequate (R322.100; 333).</p>
Bald Eagle	T	Tall trees such as Cottonwoods.	<p>Appendix 3-4. Addressed in BLM Biological Assessment (Aug. 2000). Action outside range for species.</p> <p>Section 322.220 (pg. 10). Suitable habitat within range of permit area.</p> <p>Table 1 (pg. 7). Nests in Utah.</p> <p>DOGM: Occurrence assessments inadequate (R322.200).</p> <p>DOGM: Impact assessment inadequate (R322.100).</p>
Mexican Spotted Owl	T	Slopes >40% with mixed conifer, all rugged areas, and 2x2 rule.	<p>Appendix 3-4. Proposed survey.</p> <p>DOGM: Proposal inadequate.</p> <p>Table 1 (pg. 7).</p> <p>DOGM: Suitable habitat assessment inadequate (R322.220).</p> <p>DOGM: Occurrence assessment inadequate (R322.200).</p> <p>DOGM: Impact assessment inadequate (R322.100).</p>
Western Yellow-	C	Riparian areas at least	DOGM: Not addressed in PAP.

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billed Cuckoo		30 feet wide.	
Black-footed Ferret	E	Historically within range.	Appendix 3-4. BLM Biological Assessment (Aug. 2000). No prairie dog towns in disturbed area. Table 1 (pg. 7). No confirmed sitings in Utah for years.  DOGM: Extirpated from Emery County.

The USFWS did not identify the southwestern willow flycatcher as a species that may occur in the area of influence. The PAP (Sec. 322.210) discusses the potential occurrence of the southwestern willow flycatcher on the permit area. No large riparian area exists to support the southwestern willow flycatcher on the permit area. SUWA commented that this species should be addressed because of the influence of mining on Range Creek. The mine operator must address more thoroughly, in the hydrology section, the affects of mining operations on Range Creek. If mining is determined to affect Range Creek, then the mine operator must also address how the mining effects to Range Creek will affect the southwestern willow flycatcher at Range Creek. (R322.100).

SUWA commented to update surveys for sensitive, threatened and endangered species. The USFWS suggested (e-mail from Laura Romyn to Susan White, 4/22/02) to conduct annual TE and sensitive species surveys for proposed disturbed areas until construction begins. As a follow up, the mine operator conducted two plant surveys at the surface facility site in 2002. The April 2002 results showed no occurrence of five federal TE plant species or five BLM candidate and sensitive plant species. The May 2002 results showed no occurrence of seven federal TE plant species or nine BLM candidate and sensitive plant species. Susan White (DOGM) and Wayne Luddington (BLM) also conducted a survey in portions of Columbia, Utah and Lila Canyon. The September 2002 results showed occurrences of Book Cliff's blazing star in probable habitats. Although the mine operator conducted surveys of many TE and sensitive species, prior to the Division continuing with Section 7 consultation, the mine operator must conduct the following: (R301-322; 333)

- Habitat impact assessments for the bald eagle.
- Occurrence surveys and habitat impact assessments for Mexican spotted owl.
- Occurrence surveys and habitat impact assessments for the San Rafael cactus.
- Quantitative water consumption impact assessment for bonytail chub, Colorado pikeminnow, Humpback chub, and razorback sucker.
- Suitable habitat assessment.

For the Suitable habitat assessment, provide detailed descriptions as to why the disturbed area is not suitable habitat for the TE and sensitive species. The table above shows that the mine operator addressed suitable habitat with the following statement: "No suitable habitat". The Division does not believe this kind of response is adequate.

During the September 2002 survey, sweetvetch was observed in the drainages adjacent to the disturbed area, but identification was not possible due to the plants early phenology. Conduct a survey of this sweetvetch, located in the drainage to the south of the pediment) to

determine if this plant is the Canyon sweetvetch (R322). During the April 2002 survey, the Creutzfeldt plant, a BLM sensitive species, was not observed. The surface facility area, however, was determined to have suitable habitat for this species. The surface facility area must be resurveyed prior to construction for Creutzfeldt cryptantha and the results provided in the PAP prior to construction (R322).

The *Summary of Mexican Spotted Owl Habitat Survey Within the Lila Canyon Coal Lease Area* (App. 3-4) provides a plan for surveying owl habitat. The plan commits to an overview of the areas deemed suitable, based on the 1997 model, during the Spring 2002 raptor survey with an additional ground-truth survey in fall 2002. Suitable habitat will only be surveyed if impacts from subsidence are expected. The surveys will be submitted to DWR and USFWS for comments. To date, the PAP does not include the 2002 survey results or summary report specifically relating to the MSO. The mine must address the following requests of the plan (App. 3-4) for surveying owl habitat (R322.100):

- Survey all sites within a half mile radius of the mine permit area that are identified in the 1997 model as potential MSO habitat during the 2003 raptor flyover survey.
- Conduct a ground-truth survey.
- Address the following parameters during flyover and ground-truthing surveys:
  - All rugged areas including south-facing cliffs, ridgelines, and escarpments.
  - Steep-slope mixed conifer habitats.
  - 2x2 rule – canyons less than 2 km wide and at least 2 km long.
- Provide the Division with results of flyover and ground-truthing surveys. The Division will coordinate with USFWS and DWR to review the results.
- Submit a report that includes:
  - Map of the mine permit and buffer zones areas surveyed specifically for the MSO.
  - Raw data from the surveys.
  - Analysis or summary discussing actual and potential MSO habitat.

### Findings:

Information provided in the application does not meet the minimum Fish and Wildlife Resource Information requirement of the Regulations. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-121**, Present raptor information clearly. The mine operator must: (1) Update information on peregrine falcon (2) Provide a current and complete list of TE species (3) Provide accurate information pertaining to raptor surveys: (a) Correct nest number on the raptor map in Appendix 3-5 and map - Plate 3-1 (b) Add 2002 survey date (4) Remove unrelated entries in Appendix 3-5: (a) 1980 DWR letter on raptors (b) 1990 Letters (c) 1990 Raptor survey.

**R645-301-322**, Append the modified plan in Appendix 3-4 to include the Division's requests for conducting and reporting the MSO surveys. Conduct occurrence

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surveys, habitat impact assessments, and suitable habitat assessment.

**R645-301-322.100**, The entire area that may be affected and adjacent areas must be surveyed for raptors. The southwest section of the permit area appears as suitable cliff habitat. This area is outside the subsidence buffer zone but within the permit area and immediately adjacent to the buffer zone. Other rock outcrops are within the permit area and require surveys. Conduct a thorough survey during the 2003 (and subsequent-years) raptor survey of the southwest quadrants as well as other rock outcrops within and near the permit area.

**R645-301-322**, Describe the riparian habitat, and amphibian presence or the potential for amphibian occurrences for all springs and seeps. Submit all results and summary in the PAP.

**R645-301-322(.000-.200)**, Address how the mining effects to Range Creek will affect the southwestern willow flycatcher at Range Creek.

**R645-301-322(.000-.200)**, Provide the following: (1) Habitat impact assessments for the bald eagle (2) Quantitative water consumption impact assessment for bonytail chub, Colorado pikeminnow, Humpback chub, and razorback sucker. (R333; see below) (3) Occurrence surveys and habitat impact assessments for the San Rafael cactus, Creutzfeldt cryptantha, and Canyon sweetvetch (4) Suitable habitat assessments for the TE and sensitive plant species.

**R645-301-358.510**, Provide structural information and map layout of power poles and lines.

## **LAND-USE RESOURCE INFORMATION**

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

### **Analysis:**

Premining land uses of the proposed extension to the permit area include grazing, wildlife habitat, coal mining, and limited recreation (Appendix 4-2). Grazing allotment boundaries are shown on Plate 4-2, and wildlife habitat is shown on Plate 3-1. Production in the grazing allotments in terms of animal unit months is shown in Table 4-3. Portions of the permit area fall within the boundaries of the Turtle Canyon Wilderness Study Area, the Desolation Canyon Inventory Unit #8, and Turtle Canyon Inventory Unit #4 (Plate 4-4).

Lila Canyon is within an area identified by the BLM as the Range Valley Mountain Habitat Management Plan Area (Vol. 4, page 3). A habitat management plan was adopted in 1991 to provide management of wildlife and for access management.

The PAP states that the proposed extension to the permit area does not support a wide variety of land uses because of the limited access and remote location, rugged topography, limited soils, and lack of rainfall and surface water. Water rights are discussed in Chapter 7, and water uses include stock watering and various uses for coal mining.

The land is zoned by Emery County for mining and grazing. A small portion of the proposed permit area extension overlaps with the Turtle Canyon Wilderness Study Area. The application states that a copy of the BLM's 1993 environmental assessment prepared for management of the Turtle Canyon Wilderness Study Area is found in Appendix 4-1. Appendix 4-1 is the cultural resource information.

Boundaries of the Desolation Canyon Inventory Unit have been changed by the BLM (January 2002). Plate 4-4 shows areas for:

- Turtle Canyon Inventory U#4
- Turtle Canyon WSA
- Desolation Canyon Inventory U#8
- Permit Area with the proposed surface facilities demarcated.

The permit area boundary overlaps areas of: Turtle Canyon Inventory U#4, Turtle Canyon WSA, and Desolation Canyon Inventory U#8 boundaries. The proposed surface facilities boundary follows along the Desolation Canyon Inventory U#8 boundary, but does not overlap. Almost all of the permit area is in a wilderness inventory unit or study area, only the Little Park Wash road and the mine site have been excluded. Lease readjustment for U-0126942 restricts surface occupancy in the Turtle Canyon Wilderness Study Area. The lease readjustment can be modified if it interferes with the lessee's right to explore, access, and extract the coal resource, because the lease is a valid existing right.

The BLM's 1999 Utah Wilderness Inventory identifies areas with wilderness character in addition to the previously identified wilderness study areas. Two of these areas overlap the proposed extension to the permit area including the proposed disturbed area. The application includes copies of two memoranda from the BLM. One of these says, "While the planning process is being completed on lands found to have wilderness characteristics in the 1999 Wilderness Inventory, the management prescriptions of existing land management plans do not change." Therefore, it appears the BLM will be managing these lands as in the past until further assessment has been completed.

There have been previous mining activities in Lila Canyon. The road at the bottom of Lila Canyon was built in the 1950's to provide access for coal exploration. The PAP discusses an unknown road leading up an undefined "left fork" to a coal outcrop. The coal seam was exposed and mined. There is also mention of an old portal used for ventilation, two sealed breakouts, and a site for 1950's Lila Canyon fan (sec. 411.200; pg. 16). Two sealed breakouts are located in the left fork of the canyon where the Sunnyside Coal Seam was exposed. Coal was transported back through the Horse Canyon Mine. It is not clear if the coal prospect and the breakouts are the same. It is believed the breakout was opened during the 1950's. This breakout

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was utilized post-1977 and is included in the permit area. The Coal Regulatory Program, therefore, has jurisdiction over this disturbance. Clearly define and map (on Plate 4-1) all of these mining structures and the partial road(R121.200).

**Findings**

Information provided in the application is not considered adequate to meet the minimum Land Use Resource Information requirement of the Regulations. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-120**, Clearly define and map (on Plate 4-1) all of the mining structures and the partial road(R121.200).

**OPERATION PLAN**



**PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES**

Regulatory Reference: 30 CFR784.17; R645-301-411.

**Analysis:**

A determination of the existence of known cultural resources listed or eligible for listing in the National Register of Historic Places, public parks, or units of the National System of Trails or the Wild and Scenic Rivers system within the proposed permit extension cannot be made until all cultural resources information is provided.

The Turtle Canyon Wilderness Study Area overlaps with the proposed addition to the permit area in the following locations:

Township 16 South, Range 14 East  
Section 13, E $\frac{1}{2}$  NW $\frac{1}{4}$ , NE $\frac{1}{4}$   
Section 24, NE $\frac{1}{4}$  NW $\frac{1}{4}$ , N $\frac{1}{2}$  NE $\frac{1}{4}$

Township 16 South, Range 14 East  
Section 19, SE $\frac{1}{4}$  SW $\frac{1}{4}$ , Lots 3 and 4  
Section 30, SW $\frac{1}{4}$  NE $\frac{1}{4}$

The EA addresses wilderness study areas and the anticipated effects of subsidence in these areas.

In January 2002 the BLM published a document titled *Revisions to the 1999 Utah Wilderness Inventory*. In this document, the BLM addresses questions and concerns raised

during the initial scoping project, which began March 1999. The BLM received public comments concerning the Turtle Canyon and Desolation Canyon Inventory Units. Many of these comments questioned the wilderness character determinations made in the *1999 Utah Wilderness Inventory*, for instance, questions concerning: impact from surface structures due to past mining; access for water monitoring; areas degraded due to coal mining activities and drill stem pipes. The BLM found that the impact associated with past mining activity was found substantially unnoticeable. Access for water-monitoring sites were determined to be a “vehicle ways” and not roads because the “ways” are not maintained or regularly used. The area associated with the Lila Canyon Extension facilities has been removed by the BLM from the inventory.

### **Findings:**

Information provided in the application is not sufficient to meet the minimum Protection of Public Parks and Historic Places requirement of the regulations. Refer to the deficiency in the Historic and Archaeological Resource Information section of this TA.

## **ISH AND WILDLIFE INFORMATION**

Regulatory Reference: 30 CFR Sec. 784.21, 817.97; R645-301-322, -301-333, -301-342, -301-358.

### **Analysis:**

#### **Protection and Enhancement Plan**

Section 332 (pg. 13) states: “[UEI] employees and consultants...have numerous years of experience mining the Book Cliffs and Wasatch areas and none have observed nor are aware of any negative impacts on wildlife on vegetation, as a result of subsidence, with the exception of escarpment failure and disruption of surface or ground water”. The mine operator will protect escarpments from subsidence with a minimum of 200’ barriers. There should be no effects of subsidence on surface or ground waters because the permit area has only ephemeral flow associated with precipitation events. (pg. 13). The mine operator supports to:

- Monitor mined portions each spring for evidence of subsidence according to the subsidence control plan in section 525 (pg. 14).
- Monitor ephemeral stream channels in areas of potential subsidence. No monitoring program provided. (pg. 13).
- Monitor vegetation in areas of potential subsidence according to the following program:
  - Monitor vegetation using of infrared aerial photography every five years.
  - Ground-truth loss of vegetation.
- Develop a mitigation plan and submit the plan to the Division for approval (pg. 14) if vegetation and wildlife are impacted. Mitigation may include:
  - Enhance habitat by increasing forage productivity in undisturbed areas.
  - Provide water sources.

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The PAP states that the “Applicant does not plan to monitor any wildlife species during the life of the operation with the exception of raptors” (pg.18; sec. 333.200). SUWA commented that all key wildlife species, not only raptors, should be monitored. The Division consulted with DWR and BLM and no additional monitoring of key wildlife species will be required at this time. The Division may reassess the need to monitor key wildlife species during mining and as conditions, change or information becomes available. Although the mine operator plans to continue to monitor raptors, the Division distinguishes and requires additional requirement to survey the Mexican spotted owl according to USFWS.

SUWA submitted comments concerning the coal haul road and impacts to wildlife. SUWA stated that the mine operator’s statement “The mine operator states that “... operational activities at the site will impact the wildlife slightly. But ... most of the wildlife...will either accept or adjust their behavior to coexist with the operation” (pg. 16; sec. 333) is dismissive and unsupported, and does not satisfy the rules. The PAP now provides observations that may support this “dismissive” statement. These observations include ungulates and a few other mammals using mine facilities/area for habitat and sediment ponds for drinking water.

The Division is concerned that the few species noted as adapted to mining operations is limited. There may be other wildlife species that are less adaptable to mining impacts and may not coexist with mining operations. The mine operator states in an earlier section (pg. 9; 322.220) that “Rocky Mountain big horn sheep appear to have a low tolerance for disturbance. Considering the low population density and the abundance of suitable similar habitat this impact appears to be minuscule”. Lila Canyon and the drainage in the southwest corner of the permit are important canyons and used by the sheep. Although Table 3-2 (pg. 9) shows 800 acres of sheep habitat, this statement is contradictory because any impact may be significant to a species of low population density (approximately 25 according to EA UT-070-99-22). Remove this incorrect and contradictory statement (R121.200). Furthermore, the PAP states (pg. 9; 322.220) that the proposed 40.77 disturbed acres is also not critical to elk or deer winter range. Plate 3-1, however, shows that this disturbed area is critical habitat for mule deer. Clarify the inconsistency between the paragraph on page 9 and habitat representation on Plate 3-1 (R121.200).

According to the DWR, Rocky Mountain bighorn sheep spend all year along the escarpments in the Lila Canyon area of the Book Cliffs. DWR and the Division visited the proposed disturbed area on June 11, 2002. Prior to the visit, the DWR representative was concerned that sheep may need to move further up the cliff when traveling the escarpments because of the mine and that sheep would likely leave the area. After the visit, the DWR representative felt that the sheep use of Lila Canyon may not be affected. The change in opinion may be because the DWR representative was not familiar with the specifics of the mine plan until the site visit. (pg. 9; sec. 322.220).

All suitable water encountered during mining will be discharged in a manner that it becomes available to wildlife. Ensuring water quality suitability is a requirement of the UPDES discharge permit. The application discusses the possible benefits of water in the sediment pond

to wildlife in Chapter 3, page 20, as follows: "In the event water in the pond were to contain any material which would be hazardous to wildlife (ex: oil, grease), the material would be removed by the use of petroleum selected filtration material...when an apparent sheen is visible. The pond will be monitored visually daily...for oil and grease" (pgs.19/20; sec. 333.200).

The DWR commented that Lila Canyon, more particularly the water sources up the canyon, are heavily used by chukars, and they feel the mining operations near the mouth of the canyon will affect these birds. No mining is planned under Lila Canyon. Effects will be from the disturbance at the mouth of the canyon. (pg.19; sec. 333.200).

The Permittee plans to construct a culvert and sediment pond in the southwest portion of the disturbed area. This drainage is used by wildlife as a transportation corridor. It is not obvious to the Division that the mine needs to disturb this drainage, when there are islands of undisturbed areas on the pediment within the disturbed area boundary. Regulation R645-301-358 requires minimizing disturbances and adverse impacts. The Division recommends that operation activities are kept out of the drainages. (R358.400; R521.141; R526.222).

The conveyor from the rock tunnel to the run of mine coal stockpile is elevated to avoid restriction of large mammal movement. Other conveyors are close enough to the loadout and other facilities that it is unlikely that large mammals will use these areas. The only fence shown on the surface facilities map is along the road. It is about 1000 feet long. The fence will not impede large mammal movement up-canyon, but will restrict movement in the drainage to the south. If the sediment pond is moved as recommended above, the fence can remain out of the drainage.

The Permittee developed a mitigation plan during the EA process (Sec. 333). The plan is a habitat enhancement project for about 70 acres of pinyon-juniper woodland, shrubs, forbs, and grasses, as well as to install two guzzlers. The mitigation will profit both big game and raptors. SUWA commented on the need for cultural resource and T & E clearances on mitigation projects. Any requirements for Cultural Resource and T & E clearances will be addressed by the BLM and DWR prior to disturbance. The Division did not participate in this mitigation development. Furthermore, the Division would have suggested other alternatives than those that have been chosen.

The Permittee committed to annually train mine employees on environmental awareness (pgs. 17/18; R333). Training topics include:

- Adherence to firearm and off road vehicle laws.
- Avoidance during stress periods, such as fawning times.
- Caution while driving during dawn, dusk, and nighttime hours.
- Recognition of threatened or endangered species.
- Instructions to remove wildlife carcasses well off the road.

The Permittee agrees to notify DWR and request that large carcasses are moved to safeguard raptors. The Permittee will instruct personnel as to current regulations pertaining to off-road vehicle and firearm use.

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### Endangered and Threatened Species

The Division cannot fully analyze the operational effects on T & E species until all the baseline resource information is provided. As mentioned above, the mine operator must provide:

- Habitat impact assessments for the bald eagle.
- Occurrence surveys and habitat impact assessments for Mexican spotted owl.
- Occurrence surveys and habitat impact assessments for the San Rafael cactus.
- Quantitative water consumption impact assessments for bonytail chub, Colorado pikeminnow, Humpback chub, and razorback sucker.
- Suitable habitat assessment for specific TE and sensitive plant species.

The Fish and Wildlife Service commented in a letter dated April 14, 1999 (App. 3-3), that there should be an evaluation of effects on the Colorado pikeminnow (formerly the Colorado squawfish) on a water discharge line to the Price River. This discharge line was apparently proposed early in the planning process for the mine, but it is no longer being planned.

Water consumption by the proposed operation could jeopardize the continued existence of or adversely modify the critical habitat of these species. Although the PAP briefly addresses water discharge (pg. 14; sec. 332), it must address the adverse effects to the four Colorado River endangered fish species: the Colorado pikeminnow, the humpback chub, the bonytail chub, and the razorback sucker. Effects must be addressed by calculating the amount of water used by the mine (R333). Quantitative water consumption impact assessment should include evaporation from ventilation; coal preparation; sediment pond evaporation; subsidence effects on springs; alluvial aquifer abstractions into mines; postmining inflow to workings; coal moisture loss; and direct diversions. Mitigation is required if the loss is estimated to be greater than 100 acre-feet per year.

SUWA commented that UEI has not assessed the potential impact of mine water discharge increasing salinity by running over the Mancos Shale before it drains to the Price River. Increasing salinity is in conflict with the Colorado River Basin Salinity Control Program and potentially could affect the Colorado River endangered fish. The Division contacted the USFWS and they stated salinity is not a concern to the fish, however, selenium is a concern. The Permittee should address the potential for increased selenium and perhaps commit to monitor at the point of discharge into the Price River should waters ever reach that point. (R333)

The Division concerning the mine water discharge and the Colorado River Basin Salinity Control Program contacted the Bureau of Reclamation (BOR). The BOR has no regulatory requirement for salinity control. However, if the mine discharges and contributes to salinity, then BOR would be interested in working with the mine to reduce the output. Working with the mine could include the BOR paying to pipe the water to the Price River. The BOR also stated that since the BLM has salinity mandates, they should be the agency that addresses this issue.

The Mexican spotted owl protection plan cannot be addressed until all resource information has been provided.

### **Bald and Golden Eagles**

Plate 5-3 shows raptor nests and includes subsidence limits. Two golden eagle nests are within the subsidence area. The Permittee's consultant, EIS, discussed the nests near the facilities with USFWS, DWR, and BLM during the EA process (Volume 2, page 11). There is a high probability that these nests will be abandoned and subsidence is a moot point. However, if the USFWS determines in the future that the loss of the nest due to subsidence is a "taking", then a permit must be obtained before subsidence is allowed. The mitigation plan for 70 acres of habitat improvement described above was developed for loss of these nests.

The Permittee commits to conduct a raptor survey to ensure that raptors, their nests or young are not adversely affected through any mining or mine-related activity (Sec. 358.200). If any previously unknown nests are found, it may be necessary to develop protection or mitigation plan. A one-half mile buffer zone of no disturbance will be established during critical nesting periods for raptors. This buffer zone is adequate to protect eggs and chicks from abandonment. The buffer zone in combination with a mitigation plan, discussed above, should be adequate for the loss of most nests near the mine. If any nests are active when the Permittee plans to begin construction, it may be necessary to delay construction until the nesting season has ended.

As the mitigation projects are completed, a summary should be included in the MRP. If the MRP is not amended, it is easy to lose track of what was accomplished. If the Permittee or anyone else visits the mitigation sites, general comments on use should be noted and reported to DWR and the Division.

R645-301-358.510 requires that the operator ensure that power lines used for or incidental to coal mining and reclamation operations within the permit area are designed, constructed and maintained to minimize electrocution hazards to raptors. The application contains a commitment to this effect. The USFWS recommends application of power line designs, such as those in the Avian Power Line Interaction Committee's Mitigating Bird Collisions with Power Lines: the State of the Art in 1994, or Suggested Practices for Raptor Protection on Power Lines: the State of the Art in 1996, prepared for the Edison Electric Institute/Raptor Research Foundation, Washington, D. C. The West Ridge mine, a mine developed in the Book Cliffs coalfield in 1998, has located all power lines underground. The Division suggests UEI do the same.

### **Wetlands and Habitats of Unusually High Value for Fish and Wildlife**

According to the PAP, there are no wetlands or riparian areas within the proposed addition to the permit area. While there are a few springs in the area, there are no perennial drainages. The resource section of this TA contains a deficiency requesting additional information concerning the flora and fauna surrounding the springs.

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*Subsidence*

SUWA commented that subsidence could damage snake dens. DWR and BLM wildlife Biologist in consultation with the Division have determined that any loss of snake dens to subsidence would be random and a minor impact to the population of snakes. No surveys are required, but additional information is requested on the impacts of subsidence in areas of less than 1000 feet of cover. (see deficiencies written under R645-301-524.430 and R645-301-525.490.) Address the effects of mining on snakes and other wildlife species (R332).

The PAP describes the potential effects of subsidence as escarpment failure and disruption of surface and ground water. The effects on the seeps found in the unnamed canyon in the southwestern corner of the permit area must be addressed. As a valuable wildlife resource, these seeps must be protected from loss (R332).

A standard stipulation on federal coal leases is that the lessees monitor the effects of underground mining on vegetation. The application includes a plan to monitor vegetation with color infrared photography every five years. This commitment is consistent with Division requirements for other mines and is acceptable.

**Findings:**

Information provided in the application is not considered adequate to meet the minimum Fish and Wildlife Information requirements of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-333**, The PAP must include a quantitative water consumption impact assessment for the endangered fish of the Upper Colorado River Basin and methods of minimizing those effects.

**R645-301-333**, Address the potential for increased selenium and perhaps commit to monitor at the point of discharge into the Price River should waters ever reach that point.

**R645-301-121.200**, Remove the incorrect and contradictory statement “Considering the low population density and the abundance of suitable similar habitat this impact appears to be minuscule” (pg. 9).

**R645-301-121.200**, Clarify the inconsistency between the paragraph on page 9 and habitat representation on Plate 3-1.

**R645-301-358.400; R521.141; R526.222**, Protect the drainage immediately south of the disturbed area from construction. This drainage is used by wildlife as a transportation corridor. It is not obvious to the Division that the mine needs to

disturb this area when there are islands of undisturbed areas on the pediment.

**R645-301-332**, The effects of subsidence on the seeps found in the unnamed canyon in the southwestern corner of the permit area must be addressed. As a valuable wildlife resource, these seeps must be protected from loss. Other effects of subsidence must also be discussed particularly in areas with less than 1000 feet of cover. The effects to snakes and other wildlife species must be addressed.

## GETATION

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

### **Analysis:**

All incidental disturbances will be revegetated with an interim seed mix. Table 3.4/3.5 is a seed mix that will be used for both interim and final revegetation. The mixture contains a high proportion of Blue flax, a aggressive self-seeding native species.

Section 331 refers to the revegetation plan in section 340 for further information about revegetation methods. The details of this plan are discussed under Revegetation in the Reclamation Plan.

### **Findings:**

Information provided in the application is considered adequate to meet the minimum Vegetation section of the Operations regulations.

## **RECLAMATION PLAN**

### **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 postmining land uses will be the same as premining land uses. This will be accomplished through the reclamation plan presented in other sections of the application. Support activities to achieve the postmining land uses will include site monitoring; remedial actions, such as regrading, reseeding with species native to the area, and replanting; and fencing as necessary to restrict access and grazing. No roads will be left in the disturbed area. These actions will make the area compatible with any future wilderness designations.

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SUWA commented that the restoration plan is inadequate to ensure that the water sources and other wildlife habitats will be returned to the postmining land use. Additional information is requested in other sections of this TA to address reclamation and the postmining land use.

SUWA commented that the PAP fails to restore the land to a quality capable of supporting wilderness designation. The BLM's response to public comments in the January 2002 document titled *Revisions to the 1999 Utah Wilderness Inventory* addresses questions and concerns raised during the initial wilderness scoping project that began in March of 1999. The BLM received public comments concerning the Turtle Canyon and Desolation Canyon Inventory Units. Many of these comments questioned the wilderness character determinations made in the *1999 Utah Wilderness Inventory*. Questions concerning: impact from surface structures due to past mining; access for water monitoring; areas degraded due to coal mining activities and drill stem pipes. The BLM response was that the impact associated with past mining activity was found substantially unnoticeable. Accesses for water monitoring sites were determined to be vehicle ways, and not roads because they are not maintained nor do they receive regular use.

The postmining land use is in accordance with the BLM's management plans. Appendix 4-2 contains a letter from the BLM stating the postmining land use for the area is wildlife habitat, grazing, and incidental recreation, not "wilderness character".

**Findings:**

Information provided in the application meets the minimum Postmining Land Uses requirement of the regulations.

**PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES**

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

**Analysis:**

The application says the sediment pond will be maintained through the life of the operation and will be removed when effluent criteria are met after reclamation. Sections 761 and 763.100 indicate the sediment pond will remain in place until the stability and vegetation requirements for Phase II Bond Release are met and that this will be a minimum of 2 years after the last augmented seeding.

The species in the seed mixture will potentially provide good forage and cover for wildlife. The pinyon/juniper area will be reclaimed to a grass/shrub community; this could enhance the quality of habitat in the area if some of the pinyon/juniper areas, shown as undisturbed, remain undisturbed.

## Findings:

Information provided in the application meets the minimum Protection of Fish, Wildlife and Related Environmental Values requirement of the regulations.

## VEGETATION

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:

### General Requirements

It is vital for plants to have adequate soil rooting depth. Studies of plant phenology have clearly shown plants in arid areas use soil water from increasing depths as the growing season continues, and if there is inadequate rooting depth, production and vegetative cover will decrease.

Any soils not salvaged and protected are subject to contamination from mine operations, compaction, and mixing with unsuitable materials. Some of the deeper subsoils, below the roots, have very high (>65%) rock contents, and some are derived from marine shales that could severely limit vegetation establishment and growth. If these materials were in the rooting zone, it would be difficult or impossible to achieve revegetation success.

Following topsoil redistribution, the soil will be tilled until large clods on the surface are diminishing. Tilling the soil to reduce the number and size of clods has not been necessary at other Utah mines because clods are broken up as the soil is redistributed.

Surface preparation will include gouging on the contour (Sec. 341.220) to minimize the potential for erosion and to enhance vegetation establishment. Because of the limited precipitation, the Division considers surface roughening essential at this site. In conjunction with roughening, the track hoe can cast any vegetation, dead trees, and large rocks back onto the reclaimed surface (App. 5-8). This debris provides solar protection but also increases available moisture in small areas and increases topographic and vegetation diversity.

The seed mixture for final reclamation is shown in Table 3.4/3.5 and consists of 19 area native species. The BLM signed the Federal Native Plant Conservation Committee Memorandum of Understanding that recognizes the benefits of native plants and promotes the reestablishment of native plants. Thus, the landowner would likely be in agreement with such changes. The operator agrees to use noxious weed free seed.

The seed mixture does not replace the diversity found on site. The seed mixture must be

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modified to increase diversity (R342.230 and -353.120). Some suggestions are:

- Replace green rabbitbrush with Mormon tea.
- Add to the mix:
  - birchleaf mountain mahogany
  - greasebush
  - yucca spp.
  - white evening primrose
  - thicketleaf penstemon
  - sulfer flower buckwheat.

The seeding rate shown in Table 3.4/3.5 is about 165 seeds per square foot. This rate is about 1.65 times higher than the rate recommended by the *Interagency Forage and Conservation Planting Guide for Utah* and *The Practical Guide to Reclamation in Utah*. Reduce the seed rate when developing the adjusted seed mixture. Also, reclassify fringed sage as a shrub rather than a forb (see Table 3.4/3.5; R121.200).

Using transplants in a 9-inch precipitation zone is desirable and necessary to achieve the success standards required. Bareroot or containerized seedlings may be planted by the mine operator. After two years following seeding, if it “appears that woody plant density is lacking”, the mine operator plans to supplement with seedlings (App. 5-8). The application gives adequate details of when and how seedlings will be planted. The map mentions that BLM and DWR will determine the ratio and species appropriate for the postmine landuse. Remove the comment concerning species and ratios will be determined by the BLM and DWR (R121.200). Provide a tentative list of species and ratios and submit in Chapter 3 of the PAP (R341.210; R353; R356.210; R356.231).

Following earth moving and recontouring, the mine operator will apply seed, fertilizer, hydromulch, and tackifier to the site. Chemical analysis of the soil will determine the final recommended fertilizer rate. Currently, the recommended fertilizer rate is 100 pounds per acre of 16-16-8. A hydroseeder will apply the seed and fertilizer to the site on days with low wind velocities. It is not suitable to include fertilizer with seed during hydroseeding operations. The mine operator will apply 2000 and 100 pounds per acre of hydromulch and a dry-base tackifier, respectively. The reclamation plan does not include plans for irrigation. The Division does not anticipate the necessity to irrigate as long as water-harvesting methods are used.

SUWA commented that the Permittee should not use lethal means of control for weeds and wildlife. The PAP states that “no use of pesticides or chemical that have serious consequences to plants or wildlife will be used...unless recommended by a regulatory agency...” (pg. 18; sec. 333.200). If the mine operator determines that pesticide control of any kind is necessary, the proposed plan must be approved by the Division and incorporated into the MRP (see 301-357.301). At present, there are no plans in the MRP that specifies pest or disease control measures. The Division is not currently aware of pest problems in the area. It is not anticipated to implement pest control measures, except possibly chemical use after reclamation for the control of state listed noxious weeds.

Section 357.301 states the Permittee would like to reserve the right to apply for augmentation of reclaimed areas, thus extending the bond liability period on a site-specific case scenario. This statement is acceptable but unnecessary. The regulations in R645-301-357 are designed to allow a limited amount of reseeding and other work for specific purposes without lengthening the extended liability period.

### **Timing**

Table 3-3 in Chapter 3 is a general reclamation timetable. According to this timetable, seeding and mulching will begin about October 1, depending on the weather. Seedlings will be planted about November 1. Except as discussed below, these are the normal times for planting, and the schedule is acceptable.

Blue grama and galleta are two of the dominant grasses in the area proposed to be disturbed, and they are both warm season grasses. Other mines in Utah have found it difficult to establish these species on reclaimed sites, and this may be because they are often seeded in the fall. Mines in New Mexico and Arizona usually seed these species in the summer to take advantage of late summer rains, but, to the Division's knowledge, no Utah mines have attempted to establish these species by planting them in the summer.

The Permittee has committed to establish demonstration plots to test whether summer seeding will increase establishment of the warm season species (pg. 26; sec. 354). The proposed demonstration plot plan includes:

- Implement the demonstration plot on the sediment pond.
- Divide the test plot in two study areas:
  - West side: receives the warm season species.
  - East side: receives the cool season species.

The Division commends the mine operator for conducting this study, but requires the following minor adjustment (R341.300). Divide the demonstration plot in four study areas:

- Northwest side: receives the cool season species.
- Northeast side: receives the warm season species.
- Southwest side: receives the warm season species.
- Southeast side: receives the cool season species.

This orientation may prevent skewed results because of solar orientation. As the plan reads now, the warm season species will receive only western exposure, which may negatively affect the results. With this commitment, the Division is willing to accept the plan to seed in the fall.

### **Mulching and Other Soil Stabilizing Practices**

The site will be mulched with 2000 pounds per acre of wood fiber mulch with 100 pounds per acre of a tackifier. Appendix 5-8 says 500 pounds per acre of wood fiber mulch and 100 pounds per acre of tackifier will be applied with the seed followed by application of an additional 1500 to 2000 pounds per acre of mulch and 100 pounds of tackifier. While Appendix 5-8 presents detail not included in Chapter 3, the Division considers the plans consistent.

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Prior to disturbance, the area is currently stabilized, not only with vascular vegetation but also with biological soil crusts referred to as cryptogamic soil crusts. The use of mulch is only a temporary soil stabilizer. Reestablishing biological soil crusts is needed for long-term stabilization and plant community restoration. The Division recognizes the recovery rates for biological soil crusts are slow and will not occur completely within the period of extended liability; however, the Permittee can accelerate that recovery through best management practices (BMP) known at the time of reclamation. Some of the BMP we do know are to salvage the crustal organism as a separate layer and respread on the surface of the topsoil pile to allow photosynthesis. Biological soil crust organisms require moisture and prefer cool temperatures for growth. Other details are provided in the Soil Resources section of this TA.

The PAP states that if soil crusts form on topsoil stockpiles, then the operator will apply two ounces of sifted soil crusts to each load of Wood fiber mulch applied during reclamation. The soil section of this TA discusses concerns and suggestions to this planned procedure.

### **Standards for Success**

This section cannot be fully addressed until confusing and contradictory statements in the PAP, as referenced above, are resolved.

The general requirement section states that the mine operator will revegetate disturbed areas according to the approved permit (pg. 25; sec. 353). The findings in previous sections thoroughly discuss required changes to the revegetation plan, e.g., diversity and seeding amount.

Comparison surveys and analysis conducted between revegetated and reference areas determines the success of revegetation projects. As stated above, the surveys in Appendix 3.2A have confusing and inconsistent sections. There are also concerns of the applied sampling techniques. Sampling techniques for Performance Standards must follow the Vegetation Guidelines (see R356.110).

The Division visited the reference area on March 26, 2003. Although the reference area apparently represents the vegetation at the disturbed sites, the reference area is close to the county road and the main entrance to the mine. The location of the reference area may be negatively impacted by coal fines, road dust, and road traffic. The effectiveness of vegetation for approved postmining land use and extent of cover compared to the extent of cover of the reference area determines revegetation success. Any negative impacts to the reference area may confound statistical comparisons and analysis. The Division requires consultation with the Division to relocate the reference area prior to any surface disturbance. (R356.100).

The PAP states that tree and shrub stocking and vegetative ground cover will determine reclamation success. The mine operator will establish plant cover, woody plant density, and productivity at a minimum of 90% of the reference area. Parts of sections 356.230-.233 are confusing. The mine operator states that 1500 woody plants per acre will establish the area,

which this number is not documented in the PAP as approved by the Division (R356.231). “Minimum stocking and planting arrangements will be specified by the Division on the basis of local and regional conditions and after consultation with and approval by Utah agencies responsible for the administration of forestry and wildlife programs.” Sections 356.231-.233 refer to the Vegetation Inventory (App. 3-2A), but it is unclear where the intended information is located in the appendix (R121.200).

Section 357.320 is confusing and inaccurate. The uses of nurse crops are not known to be beneficial in precipitation zone of less than 14 to 16 inches and especially a 9-inch precipitation zone such as Lila Canyon. Provide an accompanying citation or remove the reference that Russian Thistle serves as a nurse crop to help shade undergrowth and stabilize soil (R131; R121.200; pg. 31; sec. 357.320). Also, clarify the repeated paragraphs from section 357.321 through 357.324 (R121.200).

Section 357.332 is confusing and incomplete. This section refers the reader to the “above” to find out about the animal control methods. It is unclear whether the reader is supposed to read about animal control in the “weed” section. Regardless, the “weed” section does not include topics on animal control. Clarify this section and include a discussion that the Division must approve animal control methods applied by the mine operator (R121.200 and R357.332).

Section 358.100 refers to Appendix 3-3, which contains a letter from the USFWS on threatened and endangered species. This letter provides a species list that is not current. Remove the letter in Appendix 3-3. Replace the list with a current TE species list as requested in Fish and Wildlife Resources section. This section also states that the environmental coordinator will identify possible TE species if they appear and “take what ever actions are necessary to safeguard both the species and its habitat”. The environmental coordinator must first report a finding of a TE species to the Division.

The mine operator states there are “no wetlands and / or riparian areas within the area of potential disturbance”. There are springs in the area that are considered habitats of high value for wildlife. The mine operator must address concerns about these springs (R358.400).

There are many references in Performance Standards that direct discussion of certain matters to previous sections. For example, “ 353.210 This section is addressed in 353.100”. These matters, however, are not specifically discussed in referenced sections. Clarify these references and sections (R121). Below is a table that provides a list of these sections, a brief description of matters, and section where matters should have been discussed.

<b>SECTION</b>	<b>CONCERN</b>	<b>SECTION REFERRED TO YET CONCERN NOT ADDRESSED</b>
353.140	Soil stabilization.	353.100
353.210	Post mine use.	353.100

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353.220	Seasonal characteristics.	353.100
353.300	Quick plant growth.	353.100
357.302	Husbandry practices.	357.301
357.303	Husbandry practices.	357.301
357.304	Responsibility period.	357.301
358.200	Section does not address nest taking.	-

**Findings:**

Information provided in the application is not considered adequate to meet the minimum Revegetation requirements of the regulations. Before approval, the Permittee must provide the following:

**R645-301-121**, Provide the following changes to make the revegetation success standards of this PAP more clear and concise:

- Reclassify fringed sage as a shrub rather than a forb (Table 3.4/3.5).
- Remove the comment concerning species and ratios will be determined by BLM and DWR. (General Requirements).
- Remove or provide citation for comments concerning Russian Thistle.
- Clarify the repeated paragraph from section 357.321 through 357.324.
- Clarify section 357.332 on animal control.
- Clarify sections 356.231-.233.
- Remove the letter in Appendix 3-3.
- Clarify all the misguided references in this PAP. See specifics in the table provided in the Standards for Success section of this TA.

**R645-301-341.210; R353; R356.210; R356.231**, Provide the tentative seedling species names, planting rate, and ratios.

**R645-301-341.300**, Adjust the warm and cool season species test plot to include four “quadrants” instead of two.

**R645-301-342.230; R353.120**, The final reclamation seed mixture must be modified to replace the diversity found on site.

**R645-301-356.231**, Remove “1500 woody plant per acre” statements concerning establishment. The Division must consult with area agencies and authorize the stocking number.

**R645-301-356.100**, Consult with the Division to relocate the reference area prior to any surface disturbance.

**R645-301-358.100**, Discuss that the environmental coordinator must first report a finding of a TE species to the Division before any actions are taken.

**R645-301-358.400**, Address concerns listed in this regulation about habitat, specifically the springs.

**RECOMMENDATION:**

Do not approve the application until all deficiencies have been addressed.