



GARY R. HERBERT  
Governor

SPENCER J. COX  
Lieutenant Governor

# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
Executive Director

### Division of Oil, Gas and Mining

JOHN R. BAZA  
Division Director

August 31, 2018

Tony Welch, Resident Agent  
Castle Valley Mining, LLC  
P.O. Box 475  
Huntington, Utah 84528

Subject: Deficiencies in Application for Permitting the Castle Valley Waste Rock Site, Castle Valley Mining, LLC, C/015/0036, Task ID #5721

Dear Mr. Welch:

The Division has reviewed completed a review of your application for permitting the Castle Valley Waste Rock Site which was determined to be administratively complete on July 27, 2018. The Division has identified deficiencies that will need to be corrected before approval of the application can be granted. Our Technical Analysis and Findings document is enclosed which discusses the Division's review and outlines the deficiencies that will need to be addressed. The initials of the deficiencies author are provided so that your staff can communicate directly with that individual should questions arise.

The plans a submitted are incomplete. Please revise the application accordingly and resubmit the entire package in order for us to complete the processing of your permit revision.

If you have any questions, please call me at (801) 538-5325.

Sincerely,

Daron R. Haddock  
Coal Program Manager

DRH/sqs

cc: Jaren Jorgensen, CVM

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## Technical Analysis and Findings

### Utah Coal Regulatory Program

**PID:** C0150036  
**TaskID:** 5721  
**Mine Name:** CASTLE VALLEY WASTE ROCK SITE  
**Title:** PERMIT APPLICATION

## Summary

This site is currently under permit to PacifiCorps as part of the Deer Creek Mine operations (C/015/018). In September 2015, the site was proposed for transfer to BRC Wellington, LLC (Task 4966). The transfer was approved in August 2016, but a bond was not posted for the new permit. The site was then returned to the PacifiCorps permit. The site is now of interest to Castle Valley Resources to provide a waste storage location for the Bear Canyon Mine (C/015/025). This proposal was received on July 5, 2018. The site was assigned a new permit number C/015/0036.

pburton

## General Contents

### Identification of Interest

#### Analysis:

The application does not meet the State of Utah requirements for R645-301-112 Identification of Interest.

The applicant has identified the names, addresses and telephone number of the applicant and the applicant's resident agent, the person responsible for paying the abandoned mine land reclamation fee, Appendix 1-4 ownership and control, permits held by the applicant, the legal or equitable owner of record of the surface and mineral property to be mined, the owners of record on property contiguous to the proposed permit area and the MSHA ID number.

An AVS Evaluation was generated on August 14, 2018 with the ownership information provided. There was one outstanding violation listed in the system. The outstanding violation is a State Civil Penalty issued to Central Appalachia Mining LLC, linking entity is Yorktown VII Associates LLC.

The application ownership & control information (Appendix 1-4) requires updating to coincide with the information listed in the AVS system.

#### Deficiencies Details:

The application does not meet the State of Utah requirements for R645-301-112 Identification of Interest.

An AVS Evaluation was generated on August 14, 2018 with the ownership information provided. There was one outstanding violation listed in the system. The outstanding violation is a State Civil Penalty issued to Central Appalachia Mining LLC, linking entity is Yorktown VII Associates LLC.

The application ownership & control information (Appendix 1-4) requires updating to coincide with the information listed in the AVS system.

ssteab

## Right of Entry

### Analysis:

The application meets/does not meet the State of Utah R645 requirements for Right of Entry, because only a temporary right of entry agreement between Pacificorp and Castle Valley Mining LLC is included in App. 1-1 of the application. The effective date is 6/11/2018. The application must contain documents giving legal right to enter the permit area for operations and reclamation. These documents must be detailed in the application by date, type of document, land description and rights claimed.

### Deficiencies Details:

The application does not meet the R645-301-114, right of entry requirements. The following deficiency must be addressed prior to final approval: Only a temporary right of entry agreement between Pacificorp and Castle Valley Mining LLC is included in App. 1-1 of the application. The application must contain documents giving legal right to enter the permit area for operations and reclamation. These documents must be detailed in the application by date, type of document, land description and rights claimed.

pburton

## Legal Description

### Analysis:

The application meets the State of Utah requirements for R645-301-115, Legal Description. The legal description accurately describes the entire 49.05 acre parcel included within the permit area as described on updated page 1-8 and also located in Appendix 1-1 Right of Entry Agreement, Exhibit A Legal Description of the Property.

ssteab

## Public Notice and Comment

### Analysis:

The application meets the State of Utah requirements for R645-301-117, Public Notice and Comment. The applicant provided a proposed public notice (Appendix 1-6). The application was determined administratively complete on July 27, 2018 and was given approval to publish as required by R645-300-121. A copy of the affidavit is required to be submitted to the Division as soon as it becomes available. The Division notified in writing local governmental agencies and all Federal or State governmental agencies involved in or with an interest in the permit process on July 27, 2018.

ssteab

## Filing Fee

### Analysis:

The application meets the State of Utah requirements for R645-301-118 Filing Fee. The applicant paid the \$5 new permit filing fee on July 27, 2018.

ssteab

## Permit Application Format and Contents

### Analysis:

The application does not meet the requirements of R645-301-120 for Application format and content.

The application should identify the site name as Castle Valley Mining Waste Rock Site rather than the Deer Creek Waste Rock Site. This update should be done throughout the application.

The application should identify and name the chapter numbers throughout the application.

Appendix 1-5 Permit Description contains the proposed public notice identified in Appendix 1-6. Appendix 1-5 should be updated to contain the permit description as identified.

*Deficiencies Details:*

The application does not meet the requirements of R645-301-120 for Application format and content.

The application should identify the site name as Castle Valley Mining Waste Rock Site rather than the Deer Creek Waste Rock Site. This update should be done throughout the application.

The application should identify and name the chapter numbers throughout the application.

Appendix 1-5 Permit Description contains the proposed public notice identified in Appendix 1-6. Appendix 1-5 should be updated to contain the permit description as identified.

ssteab

## **Environmental Resource Information**

### **General**

*Analysis:*

The amendment meets the State of Utah R645 requirements for environmental resource information as required by R645-301-300.310, .311 and .312. *#Chapter three provides a general description of the biological resources found in the vicinity of the Castle Valley Mining, LLC waste rock site (the "CVM site" or the "site"), and describes measures that will be taken to protect biological resources within and adjacent to the permit area. Vegetative, fish, and wildlife resources in the vicinity of the CVM site are discussed in Section 320. Additional information regarding vegetative resources is provided in Appendices 3-1 and 3-2. Potential impacts to vegetative, fish and wildlife resources and the associated mitigation plans are presented in Sections 330 and 340 of the application."*

jhelfric

### **Historic and Archeological Resource Information**

*Analysis:*

The amendment meets the State of Utah R645-301-411.140 requirements for cultural and historic resources information. Section 4.1.1.1 on page 4-2 provides a narrative that describes the absence of cultural and historic resources listed or eligible for listing in the National Register of Historic Places within the permit area. A summary report of cultural resources antiquities permit 87-UT-54937 is located in Appendix 4-2 with a map on page 10-4. There are no public parks or cemeteries within 100 feet of the permit area and there are no National System of Trails or Wild and Scenic Rivers in the permit or adjacent area. Coordination with the State Historic Preservation Officer (SHPO) is evidenced by letter dated August 1, 1988 from The Division of State History and includes concurrence on National Register of Historic Places eligibility findings. No cultural sites were found.

Mining activity, in the form of waste-rock disposal, has occurred in the permit area since the late 1980s. This activity has been conducted in accordance with a permit issued by the Utah Division of Oil, Gas and Mining to PacifiCorp and/or its predecessors or agents. The original approval for disposing of waste rock at the site was issued on September 13, 1988 (see Appendix 4-3) .

jhelfric

### **Climatological Resource Information**

*Analysis:*

The application meets the State of Utah R645 requirements for Climatological Information.

The average precipitation, temperature, and wind data is provided for the area where this site is. Supporting graphs and tables of the data are provided in Appendix 7-4.

kstorrar

### **Vegetation Resource Information**

*Analysis:*

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The permit application meets the State of Utah R645 requirements for vegetation resource information R645-301-300.321.

The application includes a vegetation survey of the permit area performed by Mt. Nebo Scientific in 1987 prior to site disturbance. The results of this survey are provided in Appendix 3-1. As indicated, vegetation in the permit area is characterized primarily as a Gardner Saltbush/Mat Saltbush plant community, with Pinyon/Juniper communities within the larger community. Dominant species in these smaller plant communities consist of pinyon and juniper trees, black sagebrush, and shadscale.

The general pre-disturbance distribution of vegetation in the permit area is shown on Plate 3-1. From data presented in Appendix 3-1, the vegetative species within the Gardner Saltbush/Mat Saltbush community in the permit area consist of the following:

Shrubs:

- Black sagebrush (*Artemisia nova*)
- Castle Valley saltbrush (*Atriplex gardneri* var. *cuneate*)
- Shadscale (*Atriplex confertifolia*)
- Mat saltbush (*Atriplex corrugata*)
- Rubber rabbitbrush (*Chrysothamnus nauseosus*)
- Low rabbitbrush (*Chrysothamnus viscidiflorus*)
- Mormon tea (*Ephedra viridis*)
- Corymb buckwheat (*Eriogonum corymbosum*)
- Utah juniper (*Juniperus osteosperma*)
- Greasewood (*Sarcobatus vermiculatus*)
- Cottonthorn horsebrush (*Tetradymia spinosa*)

Forbs

- Cryptantha (*Cryptantha flava*)
- Spring parsley (*Cymopterus purpureus*)
- Gordon's buckwheat (*Eriogonum gordonii*)
- James wild buckwheat (*Eriogonum jamesii*)
- Buckwheat (*Eriogonum* sp.)
- Goldenweed (*Haplopappus* ep.)
- Parthenium (*Parthenium* sp.)
- Phacelia (*Phacelia crenulata*)
- Phacelia (*Phacelia* sp.)

Grasses:

- Salina wildrye (*Elymus salinus*)
- Indian ricegrass (*Orizopsis hymenoides*)
- Squirreltail (*Sitanion hystrix*)

jhefric

## Fish and Wildlife Resource Information

### Analysis:

Undisturbed lands in the area generally support wildlife habitat. The poor soil and sparse vegetation of the area limit the degree to which wildlife frequent the area. There is no fish habitat within the permit area.

A site-specific evaluation of wildlife within the permit and adjacent areas was conducted on the permit area in 1988 prior to disturbance of the site. The results of this survey, which was conducted by Val Payne of Utah Power and Light Company in consultation with Larry Dalton of the Utah Division of Wildlife Resources, are provided on Plate 3-2. As indicated, portions of the permit area serve as critical winter habitat for mule deer (*Odocoileus hemionus*) and elk (*Cervus canadensis*). Specific wildlife use areas associated with the site include migration routes, open areas, and bedding areas as indicated on Plate 3-2.

A review of information maintained by the Utah Conservation Data Center<sup>1</sup> indicates that no threatened or endangered species, nor habitat for such species, are present within the permit area. However, this site indicates that the following species of concern may be present within the USGS quadrangle in which the CVM site is located (i.e., the Hiawatha 7.5 minute quadrangle):

- Ferruginous Hawk (*Buteo regalis*): According to the Utah Conservation Data Center this species of concern was last observed in the Hiawatha quadrangle on December 13, 2008. It is identified as a Utah species of concern, with a global status rank of G4 (indicating that it is a species that is widespread, abundant, and apparently secure, though it may be

quite rare in parts of its range, especially at the periphery) and a State status rank of S3B (indicating that it is a species that is either very rare and local throughout its range or found locally [even abundantly at some of its locations] within a restricted range, or vulnerable to extinction or extirpation because of other factors, particularly during breeding season).

- Colorado River Cutthroat Trout (*Oncorhynchus calkii pleuriticus*): According to the Utah Conservation Data Center, this species was last observed in the Hiawatha quadrangle on October 19, 2005. This species is receiving special management under a Conservation Agreement in order to preclude the need for Federal listing. It has a global status rank of 04T3 (indicating that some infraspecific taxa of the species may warrant a global numeric ranking of 3 rather than 4) and a State status rank of S3.

- Western Toad (*Bufo boreas*): According to the Utah Conservation Data Center, this species of concern was last observed in the Hiawatha quadrangle on July 25, 1964. It is identified as a Utah species of concern, with a global status rank of 04 and a State status rank of S3.

Although the Ferruginous Hawk may be present in the general area of the CVM site, its preferred nesting sites (cliffs, buttes, and creek banks) do exist within the area where waste rock storage operations will be conducted. Furthermore, dust will be suppressed during operations, thereby minimizing the potential for impacts from this source. Therefore, no significant impacts are anticipated for Ferruginous Hawks in the area from the planned site activities. No perennial streams occur within the permit area. Furthermore, site activities will be conducted in a manner that minimizes contributions of sediment and other pollutants to the closest perennial source of water (Huntington Creek). Therefore, waste rock storage operations at the site should not adversely impact Colorado River Cutthroat Trout in the region.

The Western Toad habitat consists primarily of slow-moving streams, wetlands, and other perennial sources of water. Since these sources are absent within the permit area and protected from contributions of sediment and other pollutants outside of the permit area, waste rock storage operations at the site should not adversely impact Western Toads in the region.

The IPaC Trust Resource Report and associated Section 7 letter obtained from this web site are provided in Appendix 3-4. The Resource Report and the Section 7 letter indicate that the following threatened or endangered species may occur in the region of the permit area:

- Birds:

- o Mexican Spotted Owl (*Strix occidentalis lucida*)
- o Southwestern Willow Flycatcher (*Empidonax traillii extimus*)
- o Yellow-billed Cuckoo (*Coccyzus americanus*)

- Fishes:

- o Bonytail Chub (*Gila elegans*)
- o Colorado Pikeminnow (*Ptychocheilus lucius*)
- o Humpback Chub (*Gila cypha*)
- o Razorback Sucker (*Xyrauchen texanus*)

- Flowering Plants:

- o Bameby Reed-mustard (*Schoenocrambe barnebei*)
- o Jones Cycladenia (*Clycladenia humilis var. jonesii*)

The report and letter further state that no critical habitats occur within the permit area for these threatened or endangered species. None of these species are known to exist in the permit area.

According to information provided in the CVM Mine mining and reclamation plan, the nearest known raptor nests are approximately 1.3 miles northeast of the site.

jhelfric

## Soils Resource Information

### Analysis:

The application meets the requirements of R645-301-220, Environmental Description.

Within the 49.05 acre permit area (identified on page 1-5 and shown on Plate 5-1) there are two soil map units: Gerst and Strych. Chapter 2 provides a summary of the NRCS Web Soil Survey data found in Appendix 2-1. Figure 1-1 is the corresponding soils map. Soils are predominantly Gerst/Strych/Badland soils (NRCS map unit 051) derived from

Mancos Shale on colluvial slopes. According to the NRCS Order 3 survey, a typical Map Unit 051 Gerst soil profile is only two feet or less to bedrock. However, within the permit area, a typical Gerst soil profile is described at greater than four feet in depth (Section R645-301-222.300, p. 2-2). In the typical profile, a shallow loam A horizon (5 inches) topsoil lies above a 9 inch loam C1 horizon zone of carbonate illuviation, which lies above a buried strongly alkaline stony loam Bk3 horizon. Underneath all the above is a hard, massive stony sandy loam C horizon.

Average annual precipitation is 10 inches distributed evenly throughout the year, with a slight increase from July - October. Elevation is above 6,000 feet. Slopes range from 2 to 70 percent.

Order 1 soil survey sample data is provided in Appendix 2-2. Sample locations are shown on Plate 2-1. Soil samples were taken in April 1981. There were some very high EC and SAR values encountered. The maximum recorded values were 17 mmhos/cm EC and 35.80 SAR.

Soil productivity for the Semi-Desert Shallow Loam (Utah Juniper-Pinyon) range site is listed as 63 lbs/ac in a favorable year and 44 lbs/ac in a normal year and only 19 lbs/ac in an unfavorable year (Section R645-301-222.400), p. 2-3)). Productivity is dependent on soil moisture and the soil is dry 50 - 65% of the time when the soil temperature is greater than 41 degrees F (App. 2-1).

There is no prime farmland in this location. There are agricultural lands at the mouth of Huntington Canyon. Years ago, there were also fruit orchards at the mouth of Huntington Canyon.

pburton

## Geologic Resource Information

### *Analysis:*

The application meets the requirements of the R645 rules for geological resource information.

Geology resource information is found in section 621-627 of the application. This site is an existing permitted waste rock site that is now being permitted by another operator. The surface of the entire site, with the exception of a small area covered by a thin veneer of tertiary gravel on the southeast edge of the site, is composed of the Masuk member of Mancos shale of the Cretaceous period. The Mancos shale, which is over 200 feet thick in most of the area, will act as a barrier to the migration of deleterious materials into the groundwater. Appendix 6-1 contains an evaluation of the acid and toxic forming characteristics of the waste rock deposited at the site. pH of the waste rock is moderately alkaline. Electrical conductivity of the waste rock is less than 4mS/cm. Sodium adsorption ration is less than 4, Boron concentration is less than 5mg/kg. Soluble selenium concentration of the waste rock is 0.098 mg.kg.

There is no mining planned to take place on the waste rock site and thus no need for stratigraphic column information. The applicant has supplied a geology map (Plate 6-1) of the permit area. No faults are known in the permit area.

dhaddock

## Hydro Baseline Information

### *Analysis:*

The application meets the State of Utah R645 requirements for Baseline Information.

The application provides a background on the quantity and quality of groundwater within the permit area. Groundwater was encountered in a test hole at 33 feet and it rose up to 23 feet below ground level. The surficial shale within the permit area is not considered a water producing unit because of its extremely low hydraulic conductivity and very poor water quality. Groundwater is monitored at the site by a well cased near the waste rock pile. This well has been monitored quarterly since it was installed in 1989. This well adequately characterizes the groundwater resources within the permit area.

No surface water exists within the permit area. Precipitation is the only surface water introduced to the permit area. The nearest surface water features are a couple manmade ponds and Huntington creek. There is no baseline data to collect on surface water resources within or adjacent to the permit area. The application includes a narrative on the surrounding surface water resources including Huntington creek and the San Rafael river.

kstorrar

## Probable Hydrologic Consequences Determination

### Analysis:

The application meets the State of Utah R645 requirements for Probable Hydrologic Consequences Determination.

The application provides a narrative and additional Appendices addressing potential impacts to the hydrologic balance. Sediment will be contained on site by directing all runoff either to the total containment sediment pond or to areas where the Best Technology Currently Available (BTCA) is implemented. These runoff controls will prevent impacts to surface waters within and adjacent to the permit area.

The waste rock site rests upon an impervious shale rock unit. The quality and quantity of groundwater will not be impacted by the placement of waste rock material on top of this unit.

Petroleum products utilized onsite will be covered under an SPCC.

kstorrar

## Hydro GroundWater Monitoring Plan

### Analysis:

The application meets the State of Utah R645 requirements for Groundwater Monitoring.

The well at the site will continue to be monitored quarterly as it has been since its inception by the Permittee until site reclamation.

kstorrar

## Hydro SurfaceWater Monitoring Plan

### Analysis:

The application meets the State of Utah R645 requirements for Surface water monitoring.

There are no proposed surface water features that will be monitored within or adjacent to the permit area. This is because there are no perennial or intermittent surface water bodies within or directly adjacent to the permit area. All precipitation will be fully contained within the total containment pond, so no runoff is anticipated to occur from the permit area.

kstorrar

## Maps Affected Area Boundary Maps

### Analysis:

The application meets the State of Utah R645 requirements for Affected Area Boundary Maps.

Plate 5-1 details all relevant surface structures within the permit area, including the location of roads, culverts, diversion ditches, fences, disturbed area boundary, and the permit boundary line, satisfying the requirements of R645-301-521.122 through -521.125.

jeatchel

## Maps Coal Reasource and Geologic Information

### Analysis:

The application meets the requirements of the R645-301-622 rules regarding geologic cross sections, maps and plans.

A Geology map (Plate 6-1) has been provided that describes the general geology of the permit area. Since no coal mining or exploration will occur at the site, coal seam data is not shown. The map contains one cross section showing the extent of the Masuk member of the Mancos Shale formation, which overlies the entire waste rock site.

dhaddock

## Maps Existing Surface Configuration

### Analysis:

The application meets the State of Utah R645 requirements for Existing Surface Configuration Maps.

The application meets the minimum requirements of R645-301-521.150 because narrative in section 5-3 states that the topography noted on Plate 5-1 was prepared from the results of a site survey conducted in September 2014. There has been no additional waste placed at the site since that time.

jeatchel

## Maps Monitoring and Sampling Locations

### Analysis:

The application meets that State of Utah R645 requirements for Monitoring and Sampling Locations Maps.

The application provides Plate 7-2 showing the location of the water monitoring well within the permit area. This well is the only water monitoring point within the permit area.

kstorrar

## Maps Permit Area Boundary

### Analysis:

The application meets the State of Utah R645 requirements for Permit Area Boundary Maps.

The application meets the minimum requirements of R645-301-521.140 because Plate 5-1 clearly identifies the full extents of the permit boundary line beginning at State Highway 31 on the south and encircling the entire permit area.

jeatchel

## Maps Subsurface Water Resources

### Analysis:

The application does not meet the State of Utah R645 requirements for Subsurface Water Resources Map.

The application directs the reader to Figure 7-1 identifying the groundwater resources within and adjacent to the permit area, however this map cannot be found in the application.

### Deficiencies Details:

R645-30-722.100: Figure 7-1 appears to be missing from the application. The reader is only referred to the map, but it cannot be found in the Hydrology section R645-301-700 or any of the hydrology appendices. This map should be added to the application to show the extent of the groundwater resources within and adjacent to the permit area.

kstorrar

## Maps Surface and Subsurface Manmade Features

### Analysis:

The application satisfies the State of Utah R645 requirements for Surface and Subsurface Manmade Features Maps.

The application meets the minimum requirements of R645-301-521.122 since narrative on page 5-9 details the following features depicted on Plate 5-1: Buildings, soil stockpiles, roads, drainage ditches, existing waste rock piles, and the sedimentation pond. No major electric transmission lines, pipelines, or other similar subsurface man-made features exist within, passing through, or passing over the permit area, and the only coal development waste within the permit area is the waste rock pile noted on Plate 5-1. R645-301-521.124 is also satisfied because reference to the dimensions of diversion ditches and the waste rock pile is made in section 5-9. The location of the sediment pond is detailed in section 5-9 and Plate 5-1 as required in R645-301-521.125.

## Maps Surface and Subsurface Ownership

### *Analysis:*

The application meets the State of Utah R645 requirements for Surface and Subsurface Ownership Maps.

The application satisfies the minimum requirements of R645-301-521.131 through -521.132 since Plate 1-1 clearly shows the location of the permit area over the township and range sections of a State Plane map. The ownership of the lots within the vicinity of the permit area is also depicted. The permit area consists of approximately 49.05 fee acres, and no Federal or State lands exist within the permit area.

jeatchel

## Maps Surface Water Resource

### *Analysis:*

The application meets the State of Utah R645 requirements for Surface Water Resources Map.

There are no surface water resources within or directly adjacent to the permit area. This is provided on Plate 7-4 'Surface Body Water Locations'.

kstorrar

## Operation Plan

### Mining Operations and Facilities

#### *Analysis:*

The application meets the State of Utah R645 requirements for Mining Operations and Facilities.

The application satisfies the minimum requirements of R645-301-523 because a narrative describing the mining operation is given in sections 5-9 through 5-13. This site is designated as a waste rock storage facility, and as such, no underground or surface mining of coal will occur anywhere within the permit area. Since there are no underground openings anywhere within the permit area, no subsidence is anticipated.

The only facilities that exist within the permit area are roads, a sedimentation pond, and soil stockpile areas. No buildings, utility corridors, or other facilities are to be installed within the permit area.

jeatchel

### Existing Structures

#### *Analysis:*

The application meets the State of Utah R645 requirements for Existing Structures.

The application satisfies the minimum requirements of R645-301-526.110 because narrative in section 5-14 states that no permanent structures were present at the site prior to application submittal, nor will there be any structures installed in the future. No permanent equipment or utilities will be constructed at the site, and all support facilities will consist of only mobile equipment.

jeatchel

### Relocation or Use of Public Roads

#### *Analysis:*

The application meets the State of Utah R645 requirements for Relocation or Use of Public Roads.

The application meets the minimum requirements of R645-301-521.133 since no relocation or mining operations exist within 100 feet of a public road as detailed in section 5-9 and Plate 5-1.

jeatchel

## **Air Pollution Control Plan**

### *Analysis:*

The amendment meets the State of Utah R645-301-422 requirements for the air pollution control plan. Evidence of coordination and compliance efforts with the Utah Division of Air Quality is noted in Section 4.2.2 on page 4-5 and Appendix 4-4. Controls to be implemented at the site to suppress dust consist of watering roadways, material-handling operations, and loading operations. Storage piles will also be sprayed with water as necessary to minimize dust emissions.

jhelfric

## **Coal Recovery**

### *Analysis:*

The application meets the State of Utah R645 requirements for Coal Recovery.

The application satisfies R645-301-522 because section 5-13 reiterates that no underground or surface mining of in-place coal will occur anywhere within the permit area.

jeatchel

## **Subsidence Control Plan Renewable Resource**

### *Analysis:*

The application meets the State of Utah R645 requirements for Renewable Resource Subsidence Control Plans.

The application satisfies the minimum requirements of R645-301-525.130 because of narrative in section 5-13 which states that no subsidence will be anticipated since there will be no underground or surface coal mining conducted on site.

jeatchel

## **Subsidence Control Plan Subsidence**

### *Analysis:*

The application meets the State of Utah R645 requirements for Subsidence Control Plan.

The application satisfies the minimum requirements of R645-301-525.400 because of narrative in section 5-13 which states that no subsidence will be anticipated since there will be no underground or surface coal mining conducted on site.

jeatchel

## **Subsidence Control Plan Slides and Other Damage**

### *Analysis:*

The application meets the State of Utah R645 requirements for Subsidence Control Plan Slides and Other Damage.

The application satisfies the minimum R645-301-515.100 requirements for reporting emergency procedures. Section 5-8 and 5-9 state that although the potential for a slide within the permit area is extremely minimal, should a slide occur the Division will be contacted immediately upon discovery. Remedial measures required by the Division will be adhered to at that point.

jeatchel

## **Fish and Wildlife Protection and Enhancement Plan**

*Analysis:*

The amendment meets the State of Utah R645-301-332 requirements for describing impacts of subsidence to fish, wildlife, and vegetative resources. As described in Section 3.3.2 on page 3-6, no underground mining operation has or will occur within the permit area. The planned actions will not result in subsidence.

The amendment meets the State of Utah R645-301-333 requirements to describe how using best technology currently available to minimize adverse impacts to fish and wildlife, including compliance with the Endangered Species Act. The fence surrounding the permit area was designed to be compatible with wildlife migration. This fence will be maintained during operations. No disturbance will occur outside of that fenced area. Runoff control measures will be maintained to preclude off-site surface-water impacts. Other protective measures within the disturbed area boundary will include adhering to clean industrial hygiene procedures, properly disposing of all waste (papers, cans, bottles, etc.), and instructing employees not to hunt or harass wildlife in the permit and adjacent areas.

jheltric

## **Fish and Wildlife Endangered and Threatened**

*Analysis:*

Calculations provided in Appendix 3-5 estimate that less than 2 acre-feet of water will be used for dust-suppression and moisture conditioning purposes during the course of this project. This water may be obtained from the sedimentation pond (if available and practical) but more likely will be obtained from nearby municipal or industrial sources. The total estimated project water usage (1.16 acre-feet) represents just 0.002% of the annual flow for Huntington Creek.

jheltric

## **Topsoil and Subsoil**

*Analysis:*

The application does not meet the State of Utah R645 requirements for soil operation plan, because there is no interim seed mixture listed in the event of future topsoil salvage or for the purpose of reseeded the existing stockpiles. In addition, there is no indication of the volume of subsoil to be salvaged for use as cover over Phase II waste.

The first waste rock cell is already developed. Section R645-301-230-231.400 (p. 2-6) states that there is 33,900 CY of subsoil and 2,300 CY of topsoil in two stockpiles. Plate 2-1 and Plate 5-1 outline the locations of two soil stockpiles (the North and South soil stockpiles). Section R645-301-234.100 (p. 2-9) states that the upper foot of these stockpiles is topsoil and below is subsoil. The stockpiles are protected by silt fences. The stockpiles have identifying signs. The Permittee will inspect the soil stockpiles annually and fill, regrade, seed or otherwise stabilize the stockpiled soil (Section R645-301-230-231.300, p. 2-6). However, an interim seed mix is not described.

There is topsoil stored along the road embankments (Section R645-301-230-231.100, p.2-5). This road outslope seeding was evaluated for reclamation success (Appendix 3-2, e-pg 134). One of the outstanding species previously seeded was thickspike wheatgrass (*Elymus lanceolatus*, formerly *Agropyron dasystachyum*).

Phase II is described in Section R645-301-536.900 (p. 5-26). Phase II will be developed after removal of 6 inches of topsoil and/or underlying horizon (R 645-301-232.100 and R645-301-232.300 (p. 2-7). Vegetative material removed prior to topsoil will be used as mulch on the topsoil stockpile (Section R645-301-528.100, p. 5-16). The volume of subsoil to be salvaged as cover for future cell construction is not specified.

*Deficiencies Details:*

The application does not meet the requirements of R645-301-234. The following deficiency must be addressed prior to final approval:

R645-301-234.230, Please describe an interim seed mix which will provide an effective, quick growing vegetative cover over the topsoil stockpiles.

R645-301-232.500, Please describe Phase II subsoil salvage and storage to ensure 48 inches of cover over the refuse as required by R645-301-553.252.

pburton

## Vegetation

*Analysis:*

The amendment meets the State of Utah R645-301-331 requirements for protection of vegetation. The operation plan is described in Section 3.3 on page 3-6. The site is previously disturbed and there will be no new surface disturbance.

jhelfric

## Road Systems Classification

*Analysis:*

The application meets the State of Utah R645 requirements for Road Systems Classification.

The application satisfies the minimum requirements of R645-301-527.100, and -527.110 by classifying each road within the permit area as either primary or ancillary. Narrative in sections 5-4 and 5-15 state that the main access road leading into the site from State Route 31 is classified as a primary road, and will be used to transport waste rock. Temporary roads within the interior of the permit area that are used to transport waste rock within the site are considered ancillary.

jeatchel

## Road System Plans and Drawings

*Analysis:*

The application meets the State of Utah R645 requirements for Road System Plans and Drawings.

The application satisfies the minimum requirements of R645-301-534 because narrative in section 5-21 and 5-26 give a description of the design and construction of the roads contained within the permit area. Plate 5-1 shows a plan view of all roads within the permit area, including inset cross section views of the primary road. The locations of culverts and drainage ditches associated with the permit area roads are also shown on Plate 5-1. The main access road was built over 25 years ago and no slope stability issues have been observed during this time.

Since the site access road was designed and constructed to meet the requirements of the Utah Administrative Rules, it has the following characteristics: It is located on a stable surface, the surface is sufficiently durable for the intended traffic volume, is maintained as needed, and culverts have been designed and sized to withstand the loads imparted by the vehicle traffic.

A slope stability analysis for all embankments has been included in Appendix 5-3.

jeatchel

## Road System Performance Standards

*Analysis:*

The application meets the State of Utah R645 requirements for Road System Performance Standards.

The application satisfies the minimum requirements of R645-301-534.120 and -534.150 because narrative in sections 5-21 and 7-26 detail how roads are built and maintained to prevent and control erosion. The main site access road is surfaced with compacted rotomilled asphalt, and no toxic or acid forming materials have been nor will be used in the road surfaces.

The main access road is not located in the channel of an intermittent or perennial stream, and the surfaces were constructed to promote adequate drainage. All roads have been located to minimize downstream sedimentation and flooding.

jeatchel

## Road System Certification

*Analysis:*

The application meets the State of Utah R645 requirements for Road System Certification.

The application satisfies the minimum requirements of R645-301-512.200 because all plans and plates for the roads within the permit area have been prepared under the direction and certification of a qualified registered professional engineer. Appendix 5-1 includes a stamped and certified document by Richard B. White, P.E. verifying that the roads meet the requirements of R645-301-534 and R645-301-742.

jeatchel

## **Spoil Waste Disposals of Noncoal Mine Wastes**

*Analysis:*

The application meets the State of Utah R645 requirements for Disposal of Spoil and Non-coal Waste.

The application satisfies the minimum requirements of R645-301-528 because narrative in sections 5-3, 5-9, 5-17, and 5-33 repeatedly state that no non-coal waste (including hazardous waste) exists nor will be generated at the site. If such waste is generated in the future, it will be handled and disposed of in accordance with the regulations of the Resource Conservation and Recovery Act.

A waste container will be provided for the disposal of general miscellaneous trash, and disposed of at an off-site location that is permitted to accept such waste.

jeatchel

## **Spoil Waste Coal Mine Waste**

*Analysis:*

The application does not meet the State of Utah R645 requirements for Coal Mine Waste.

The application satisfies the minimum requirements of R645-301-536 because narrative in sections 5-23 through 5-26 detail the design and construction of the waste rock pile, and how operations will be conducted to maintain safety and stability.

State of Utah R645-301-536.110 regulations state that waste rock disposal facilities must be designed to attain a long-term minimum safety factor of 1.5. Two separate waste rock geotechnical evaluations were conducted in 1988 by Rollins, Brown and Gunnell, Inc. - one in August, 1988 and another in March, 1988. The results of these evaluations are found in Appendix 5-2 and 5-3, respectively. The evaluation conducted in August 1988 determined that the waste rock slopes obtained a factor of safety of 1.5 or higher for side slopes of 2h to 1v. The evaluation conducted in March 1988 determined that the waste rock slopes obtained a factor of safety of 1.80 for a dump constructed in two foot lifts and side slopes of 2h to 1v.

The application does not satisfy the minimum requirements of R645-301-528.350 because narrative on page 5-17 states that waste rock is non-acid and non-toxic as per Appendix 6-1 and section 623 of the MRP. But Appendix 6-1 and section 623 are referencing toxicity reports for coal waste from the Deer Creek mine, not from the Bear Canyon mine, where material will be reporting from going forward. Permittee must also include similar toxicity reports for material from Bear Canyon since that is where fill material will originate from once operations are resumed.

*Deficiencies Details:*

The application does not meet the State of Utah R645 requirements for Coal Mine Waste. The following deficiency must be addressed prior to final approval:

R645-301-528.350: Narrative on page 5-17 states that waste rock is non-acid and non-toxic as per Appendix 6-1 and section 623 of the MRP. But Appendix 6-1 and section 623 are referencing toxicity reports for coal mine waste from the Deer Creek mine, not from the Bear Canyon mine, where material will be reporting from going forward. Permittee must also include similar toxicity reports for material from Bear Canyon mine since that is where fill material will originate from once operations are resumed.

jeatchel

## Spoil Waste Refuse Piles

### Analysis:

The application meets the State of Utah R645 requirements for Spoil Waste Refuse Piles.

The application satisfies the minimum requirements of R645-301-536.900 because of narrative in sections 5-6 and 5-25 which reference the appropriate sections of the MRP that deal with design, stability, operation, maintenance, and eventual reclamation. The waste rock pile was designed and constructed in accordance with MSHA requirements. This application provides a description of operations for Phase I. Once capacity has been reached in Phase I, it will be necessary to proceed with construction on Phase II, which will require a drainage system be set up to divert runoff into a sediment basin designed for this area. Maintenance on ditches and sediment ponds will be completed as needed.

Quarterly inspections will be conducted by a qualified individual throughout normal operations and continue until final grading and revegetation. Reports of these inspections will be provided to the Division in accordance with R645-301-514.

jeatchel

## Spoil Waste Impounding Structures

### Analysis:

The application meets the State of Utah R645 requirements for Spoil Waste Impounding Structures.

The application satisfies the minimum R645-301-533 requirements because narrative in sections 5-7 and 5-17 through 5-21 that describes the construction, operation, and maintenance of all sediment control and runoff structures within the permit area. The sedimentation pond was constructed by excavating approximately 6 feet of soil, resulting in a below-grade impoundment. According to the attached Appendix 5-3, a minimum safety factor for the embankment slopes is 1.8, exceeding the safety factor of 1.3 required in R645-301-533.110. The slopes of the pond are periodically inspected for signs of erosion, and the inlets and outlets are armored with rip rap, satisfying the requirements of R645-301-533.400. The sedimentation pond does not meet the size criteria of 30 CFR 216(a). Inspections are to be completed on a quarterly basis to ensure the pond is maintained in good working condition. Sediment will be removed from the pond once the 60 percent design sediment storage volume has been achieved.

The sedimentation pond is designed to be a total containment structure, with structures built into the pond to address discharge water in the event storm waters exceed design capacity. In areas that do not flow to the sedimentation pond, silt fences and straw wattles have been installed to prevent the discharge of sediment into undisturbed areas. These runoff control measures were designed to convey runoff in a non-erosive manner.

jeatchel

## Spoil Waste Excess Spoil

### Analysis:

The application meets the State of Utah R645 requirements for Excess Waste Spoil.

The application satisfies the minimum requirements of R645-301-512.210, R645-301-514.100, R645-301-521.143, R645-301-528, and R645-301-535.100 because narrative in sections 5-3, 5-5, 5-17, 5-24, and 5-33 all repeatedly state that excess spoil does not exist nor will be generated anywhere within the permit area.

jeatchel

## Hydrologic Ground Water Monitoring

### Analysis:

The application meets the State of Utah R645 requirements for Groundwater Monitoring.

The application will continue quarterly groundwater monitoring at the waste rock site. The location of the water monitoring well is shown on Plate 7-2 'Site Drainage Map'.

kstorrar

## Hydro Surface Water Monitoring

### Analysis:

The application meets the State of Utah R645 requirements for Surface Water monitoring.

There are no perennial or intermittent surface water resource that will be impacted by active operations at the waste rock site. Additionally, no surface water will leave the site prior to treatment by a BTCA BMP. No impacts to the surface water resources within or adjacent to the permit area are anticipated, so no surface water monitoring is required.

kstorrar

## Hydrologic Acid and Toxic forming Materials

### Analysis:

The application does not meet the State of Utah R645 requirements for acid/toxic forming materials, because information in the plan pertains to the existing refuse pile, but does not account for sampling and analysis of future placement of waste.

Total depth of cover will be 35 inches. This is less than the 48 inches required by R645-301-553.252. This lesser depth of cover is based on acid/toxic sampling described in the Deer Creek MRP and data from the Deer Creek Mine found in Appendix 6-1. Additional material will be brought from the Bear Canyon Mine to complete Phase 1 of the waste rock site. The reader is referred to the Bear Canyon mine for details on the chemistry of the Bear Canyon waste. These details must be provided in the CVWR MRP, along with a sampling plan. for the refuse brought to the CVWR site.

No information was found in MRP Sections R645-301-528.300 (pg. 5-17 or e-pg. 196), Section R645-301-536.600 (p. 5-24 or e-pg 203), Section R645-301-623 (p. 6-2 or e-pg. 249) or Section R645-301-728.300 (p. 7-10 or e-pg.. 267) concerning a sampling plan to identify and bury acid/toxic forming materials. Based on the results of the sampling, acid/toxic forming materials are required to have four feet of cover (R645-301-553.252).

### Deficiencies Details:

The application does not meet the R645-301-731.300 requirements. The following deficiency must be addressed prior to final approval:

R645-301-731.311, Provide a sampling plan for the refuse deposited at the waste rock site. Samples should be taken on a tonnage basis, with the density conversion to volume provided. Parameters for sampling should follow Tables 3 and 7 of the Utah Guidelines for Topsoil and Overburden handling. Sampling should be conducted during periods of activity and results must be reported with the annual report.

pburton

## Hydrologic Acid and Toxic forming Materials

### Analysis:

The application meets the State of Utah R645 requirements for Acid- and Toxic Forming Materials.

The waste rock to be placed at the site is not acid- or toxic-forming. Thus, this section is not applicable.

kstorrar

## Hydrologic Water Quality Standards

### Analysis:

The application meets the State of Utah R645 requirements for Water Quality Standards and Effluent Limitations.

The application states water from the sediment pond may be used for dust suppression. The water will be applied within the permit area on permeable surfaces so excess runoff will be minimal. Any excess that does occur will be captured by sediment control structures and be retained within the permit area.

kstorrar

## Hydrologic Diversion General

### Analysis:

The application meets the State of Utah R645 requirements for Diversions.

Diversions have been designed to safely convey runoff from design storms ranging from 10-year 24-hour to 100-year 24-hour events. The application provides supporting calculations and designs for the ditches and the location of the conveyance structures on Plate 7-3.

kstorrar

## Hydrologic Diversion Misc. Flows

### Analysis:

The application meets the State of Utah R645 requirements for Sediment Control Measures.

Plate 7-2 within the application shows the location of diversion ditches and any sheet flow on the refuse pile will be properly conveyed to the sediment pond, siltation structures that encompass the operational area during mining.

kstorrar

## Hydrologic Sediment Control Measures

### Analysis:

The application meets the State of Utah requirements for Sediment Control Measures.

The application implements both a sediment pond and BTCAs to prevent sediment from leaving the permit area. These measures are discussed in multiple locations within the hydrology section and designs and maps are provided in Plates 7-1 through Plate 7-4.

kstorrar

## Hydrologic Exemptions

### Analysis:

The application meets the State of Utah R645 requirements for siltation structures.

The Best Technology Currently Available will be implemented at two locations where runoff cannot be directed into the sediment pond. The first area, ASCA-1, will treat runoff with a sediment fence and the second area, ASCA-2, will treat runoff with a vegetative filter.

kstorrar

## Hydrologic Impoundments

### Analysis:

The application meets the State of Utah R645 requirements for Siltation Structures.

The application includes a narrative, designs, and calculations for the total containment sediment pond at the site. The structure is designed and maintained to fully contain the total volume of runoff from the waste rock pile that is produced by two subsequent 100-year 24-hour rain events.

kstorrar

## Hydrologic Ponds Impoundments Banks Dams

### Analysis:

The application meets the State of Utah R645 requirements for Impoundments.

The application provides a narrative, calculations, and designs of the sediment pond. The pond is designed for total

containment. The sizing takes into account sediment storage in addition to impounding two subsequent 100-year 24-hour event. The application includes a narrative and timeline for sediment removal from the pond. The impoundment includes an emergency spillway in the unlikely event that it discharges water.

kstorrar

## Signs and Markers

### Analysis:

The application meets the State of Utah R645 requirements for Signs and Markers.

The application satisfies the minimum requirements of R645-301-521.200 because in sections 5-12 and 5-13 narrative includes a general description of a permit identification sign at the junction of the access road and State Route 31. This sign will be maintained until after final bond release. Additionally, the disturbed area boundary will be marked with a fence, and all topsoil stockpiles will be marked with topsoil signs. Since there are no perennial or intermittent streams nearby, stream buffer zone markers are not required at this site.

jeatchel

## Explosives General

### Analysis:

The application meets the State of Utah R645 requirements for General Explosives.

The application satisfies the minimum requirements of R645-301-524 because section 5-13 asserts that explosives will not be used nor stored at this site.

jeatchel

## Reclamation Plan

### PostMining Land Use

#### Analysis:

The amendment meets the State of Utah R645-301-412 requirements for postmining land use. The description of the PMLU is located in Section R645-301-412.100 on pages 4-3 and 4-4. The proposed use is wildlife habitat. The plan explains how the proposed postmining land use is to be achieved through reclamation. The PMLU is consistent with county zoning ordinances and compatible with adjacent land uses. Castle Valley Mining LLC (CVM) owns the property where the site is located.

jhelfric

## WildLife Protection

### Analysis:

The amendment meets the State of Utah R645-301-342 requirements for a fish and wildlife plan for the reclamation and postmining phase of operation. Enhancement measures include seeding native and non-native plants that serve as valuable wildlife forage, (Page 3-20 Table 3-1). The Division finds the proposed operation will not affect the continued existence of wildlife or destruction or adverse modification of their critical habitats as noted in Appendix 3-3, Letter from DWR. I

jhelfric

## Approximate Original Contour Restoration

### Analysis:

The application meets the State of Utah R645 requirements for Approximate Original Contour Restoration.

The application may satisfy the minimum requirements of R645-301-553.110 through -553.150 by completing the

following criteria: eliminating highwalls, spoil piles, and depressions, achieving a minimum long term static safety factor of 1.3 for final graded slopes, minimizing water pollution on and off the site, and support approved post-mining land use.

Page 5-34 states that highwalls and spoil piles do not exist at the site and the sediment pond will be removed and access road cut slopes backfilled to an extent feasible. Waste rock will be placed at a slope that achieves a minimum static safety factor of 1.8. Pages 5-27 through 5-29 describe in detail how surface treatments will be applied in order to minimize erosion and subsequent water pollution. Page 5-34 also states that reclamation efforts will be conducted in a manner that supports the post-mining land use of wildlife habitat.

jeatchel

## Backfill and Grading General

### Analysis:

The application does not meet the State of Utah R645 requirements for Backfilling and Grading.

The application does not satisfy the minimum requirements for reclamation earthwork as per R645-301-540. On pages 5-30 through 5-33 a detailed description of how the site will be backfilled and graded is given in accordance with R645-301-542.200. However, the entire narrative is devoted to how the Phase 1 areas of the site will be reclaimed, containing only materials exclusively from the Deer Creek mine. Permittee has plans to complete Phase 1 and expand into Phase 2 with material from the Bear Canyon mine, and a plan for backfilling, soil stabilization, and surface contouring required to establish the final surface configuration within the proposed Phase 2 areas is lacking. There is nothing in the narrative that specifies how much subsoil and topsoil will need to be salvaged to adequately establish final grade with four feet of cover as per R645-301-553.252.

### Deficiencies Details:

The application does not meet the State of Utah R645 requirements for Backfilling and Grading. The following deficiency must be addressed prior to final approval:

R645-301-540, R645-301-553: Although Permittee has adequately addressed how reclamation will be carried out for the current Phase 1 areas of the permit, there is nothing specifically addressing backfilling and contouring to establish final grade within Phase 2. Permittee must provide a plan for backfilling, soil stabilization, and surface contouring required to establish final surface configuration within the proposed Phase 2 areas.

jeatchel

## Mine Openings

### Analysis:

The application does not meet the requirements of R645-301-631.200 regarding the permanent sealing of boreholes.

The application states that no mining or coal exploration will occur in the permit area. While this may be true, there may be other boreholes that have not been accounted for. Plate 6-1 shows a water monitoring well and at least 3 drill holes (DH-1, DH-3 and DH-4) that are located within the permit boundary. There is no discussion of permanent closure methods for these boreholes. In accordance with R645-301-631.200 the operator must provide a discription of how each borehole will be plugged, capped, sealed, backfilled or otherwise properly managed.

### Deficiencies Details:

There is no discussion of permanent closure methods for the water monitoring well and drill holes DH-1, DH-3 and DH-4. In accordance with R645-301-631.200 the operator must provide a discription of how each borehole will be plugged, capped, sealed, backfilled or otherwise properly managed.

dhaddock

## Topsoil and Subsoil

### Analysis:

The application does not meet the requirements of R645-301-240 Reclamation Plan, because there is no plan for replacement of four feet of topsoil/subsoil cover over Phase II refuse.

Reclamation slopes will be 2h:1v (Section R645-301-536.200, p. 5-23 or e-pg. 202). Final reclamation topography maps are Plates 5-2 and 5-3. Section R645-301-542.300 states that cross sections are shown on Plates 5-4 and 5-5. (p.g 5-33 or e-pg. 212). Plate 5-5 (cross-sections F-F' to H-H') could not be found in with the application.

Section R645-301-240-242.100 (p. 2-10) describes Phase I reclamation wherein the first foot of topsoil is removed from the stockpiles to access the subsoil. Removed topsoil will be temporarily stockpiled while the waste is covered with subsoil. The subsoil will be scarified (R645-301-242.200, p. 2-11). Topsoil will be redistributed with track-mounted equipment. Topsoil redistribution will not occur when the soil is too wet to handle, due to the high clay content and sodicity of the soils. Total cover depth will be 35 inches (Section R645-301-542.200, p. 5-32, e-pg. 211). Fertilizer will be applied (R645-301-243, p. 2-11).

Phase II reclamation is discussed in Section R645-301-536.900. At the top of page 5-26 (e-pg. 205) the Applicant states that this application "deals with phase I of the operation." However, the paragraph continues with general details about Phase II location (East), ditches, and makes a statement about topsoil. "Topsoil will be removed according to this application." The Phase II general description must include a general statement about removal and storage of subsoil for placement over the waste, because this is a large volume of soil that must not be overlooked.

Reclamation of roads is described in Section R645-301-536.900 (p. 5-32 or e-pg. 211)

*Deficiencies Details:*

The application does not meet the requirements of R645-301-240. The following deficiency must be addressed prior to final approval:

R645-301-241, Update the general Phase II plans found in Section R645-301-536.900 with a statement of the depth of subsoil recovery required for the expected replacement cover depth for Phase II. Total depth of cover less than 48 inches must be demonstrated in accordance with R645-301-553.252.

R645-301-121.100, Please provide missing Plate 5-5 cross-sections F-F' to H-H'.

pburton

## Road System Reclamation

*Analysis:*

The application meets the State of Utah R645 requirements for Road System Reclamation.

The application satisfies the minimum requirements of R645-301-542.600 because narrative on page 5-32 describes how the main access road will be reclaimed once it is no longer needed for reclamation activities within the permit area. Plates 5-2 and 5-3 provide plan and cross-sectional views of the entire length of access road. The cross-sectional views on Plate 5-3 provide an illustration of both the existing ground surface as well as the reclaimed ground surface along the entire length of road.

jeatchel

## Road System Retention

*Analysis:*

The application meets the State of Utah R645 requirements for Road System Retention.

The application meets the minimum requirements of R645-301-534.140, R645-301-542.300, and R645-301-542.600 because narrative on pages 5-32 and 5-33 state that all roads will be removed during reclamation of the site. Since the approved post mining land use for this site consists of wildlife habitat, no structures will remain on site following reclamation.

jeatchel

## Hydrological Information Reclamation Plan

*Analysis:*

The application meets the State of Utah R645 requirements for Reclamation Hydrology.

The application includes a timetable for sediment pond removal and reclaimed channel designs and calculations for routing water off of the waste rock pile. Table 5-1 states the sediment pond will be left in place for two years following reclamation. The channel locations and designs for conveying water off the reclaimed waste rock pile are shown on Plate 5-2 and in Appendix 7-9, respectively.

kstorrar

## Revegetation General Requirements

### *Analysis:*

The amendment meets the State of Utah R645-301-341 requirements for a revegetation plan. The reclamation plan for final revegetation is located in Chapter three, R645-301-353, page 3-12. The plan describes how reclamation of the waste rock site meet the performance standards. The plan includes a schedule and timetable for seeding, seed mix (Table 3-1), planting methods, section 341.100, and mulching, section 341.200. Measures proposed to determine success of revegetation are identified in section 356.100, .200.

The amendment meets the State of Utah R645-301-353 requirements for vegetative cover. The revegetation plan is described in section 353.100 on page 3-12. The seed mix presented in Table 3-1 is intended to provide vegetative cover that will be diverse, effective, and permanent. The mix is comprised of species native to the area as well as introduced species recommended by the Utah Division of Wildlife Resources for enhancement of wildlife habitat. The seed mix was selected to be compatible with the climate, potential seedbed quality, and drought tolerance and should result in cover at least equal in extent to the reference site.

The amendment does not meet the State of Utah R645-301-356, 357.200 requirements for Standards for Success & Extended Responsibility Period. Chapter three, Section 301-356.100, page 3-15 needs to include a quantitative and qualitative vegetation monitoring schedule for the 10 year liability period. Years 9 and 10 are required by rule and the vegetation in the reclaimed area and reference area is typically monitored in years 4 and 6 to insure the vegetation is growing adequately and can be treated if need be.

The amendment meets the State of Utah R645-301-357 requirements for extended responsibility period. The period of extended responsibility will begin after the last year of augmented seeding, fertilization, irrigation, or other revegetation work, excluding husbandry if approved by the Division. The average annual precipitation is around 7-10 inches and therefore, the extended responsibility period will be 10 years.

### *Deficiencies Details:*

The amendment does not meet the State of Utah R645-301-356, 357.200 requirements for Standards for Success & Extended Responsibility Period. Chapter three, Section 301-356.100, page 3-15 needs to include a quantitative and qualitative vegetation monitoring schedule for the 10 year liability period. Years 9 and 10 are required by rule and the vegetation in the reclaimed area and reference area is also typically monitored in years 4 and 6 to insure the vegetation is growing adequately and can be treated if need be.

jhelfric

## Revegetation Timing

### *Analysis:*

The amendment meets the State of Utah R645-301-354 for revegetation timing. Reclaimed areas will be revegetated during the first favorable period for planting as discussed in Section 35?? and Reclamation Timetable identified as table 5-1.

jhelfric

## Revegetation Mulching and Other Soil Stabilization

### *Analysis:*

The amendment meets the State of Utah R645-301-355 requirements for mulching and soil stabilizing. Mulching and soil stabilizing practices are identified in Section 35?? on page 3-??. The area to be revegetated will be mulched during reclamation. The mulching, together with the seed mixture and surface roughening of the redistributed topsoil, should provide adequate erosion control.

jhelfric

## Revegetation Standards for Success

### Analysis:

The amendment meets the State of Utah R645-301-356 requirements for revegetation standards for success. Success standards are identified in Section 35?? on pages 3-??. Success will be determined by comparison to data obtained from the reference area shown on Plate 3-1. Final comparisons will involve random sampling of both the reference area and the revegetated site. Estimates of ground cover and density of woody plant species will be made for the revegetated areas and the reference areas. The PMLU is wildlife habitat.

jheltric

## Cessation of Operations

### Analysis:

The application meets the State of Utah R645 requirements for Cessation of Operations.

The application satisfies the minimum requirements of R645-301-515.300 because narrative on page 5-8 describes procedures that will be followed once it is known that a temporary cessation of operations will last 30 days or more. Permittee will submit a notice of intention to the Division which includes a description of reclamation activities completed prior to cessation as well as maintenance and monitoring activities that will be carried out during the period of cessation. The gate at the entry to the site will be maintained closed and locked to prevent unauthorized access.

jeatchel

## Maps Reclamation BackFilling and Grading

### Analysis:

The amendment meets the State of Utah R645 requirements for Reclamation BackFilling and Grading Maps.

The application satisfies the minimum requirements of R645-301-542 because Plates 5-2, 5-3, and 5-4 include plan and section maps of the anticipated reclamation configuration for the main access road as well as the Phase 1 waste rock pile and sedimentation pond. The Division recommends that once construction of Phase 2 begins that these plates be amended to accommodate the expansion of the main waste rock pile as well as the addition of more material to the east once those volumes are known.

jeatchel

## Maps Reclamation Facilities

### Analysis:

The amendment meets the State of Utah R645 requirements for Reclamation Facilities Maps.

The application satisfies the minimum requirements of R645-301-542 because Plates 5-2, 5-3, and 5-4 include plan and section maps of the anticipated reclamation configuration for the main access road as well as the Phase 1 waste rock pile and sedimentation pond. The Division recommends that once construction of Phase 2 begins that these plates be amended to accommodate the addition of supplemental diversion structures around the newer volumes to the east of the main waste rock pile.

jeatchel

## Maps Reclamation Final Surface Configuration

### Analysis:

The amendment meets the State of Utah R645 requirements for Final Surface Reclamation Configuration Maps.

The application satisfies the minimum requirements of R645-301-542 because Plates 5-2, 5-3, and 5-4 include plan and section maps of the anticipated reclamation configuration for the main access road as well as the Phase 1 waste rock pile and sedimentation pond. The Division recommends that once construction of Phase 2 begins that these plates be amended to accommodate the expansion of the main waste rock pile as well as the addition of more material to the east once those volumes are known.

## Maps Reclamation Certification Requirments

### Analysis:

The application meets the State of Utah R645 requirements for Reclamation Map Certification.

The application satisfies the requirements of R645-301-512.100 because all maps and plates have been stamped, signed, and dated by J. Thomas Paluso, a registered professional engineer in the State of Utah.

jeatchel

## Bonding and Insurance General

### Analysis:

The application meets the State of Utah R645 requirements for General Bonding and Insurance.

The application satisfies the minimum requirements of R645-301-800 because chapter 8 includes a narrative describing the earthwork and revegetation required to fully reclaim the site. Also included are maps that illustrate locations of stockpiles, diversion structures, and other facilities identified within the permit area. A series of pages containing bonding calculations detail the individual reclamation costs escalated at 1.78% for the following 5 year term (until 2023). The attached bonding calculations include overhead and profit in the direct costs as per the State of Utah Technical Directive 007.

jeatchel

## Bonding Determination of Amount

### Analysis:

The application meets the State of Utah R645 requirements for Determination of Bonding Amount.

The application satisfies the minimum requirements of R645-301-830 because chapter 8 includes a narrative describing the earthwork and revegetation required to fully reclaim the site. A series of pages containing bonding calculations detail the earthwork required in twelve different sections of the permit area, including the main refuse pile and access road. There are no demolition calculations because there are no concrete or steel structures anywhere within the permit area. The attached bonding calculations include overhead and profit in the direct costs as per the State of Utah Technical Directive 007.

Since Permittee has plans to disturb beyond the current surface disturbance, there will arise a need to amend the reclamation bond in the future. Additional surface disturbance requires additional reclamation bonding coverage, and the posted reclamation bond must reflect this. The Division may require an amendment to the posted reclamation bond upon midterm permit renewal depending on how much new disturbance has occurred.

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## Bonding Terms and Conditions Liability Insurance

### Analysis:

The application meets the State of Utah R645 requirements for Terms and Conditions for Liability Insurance.

The application satisfies the minimum requirements of R645-301-890 because appendix 1-2 contains a Certificate of Liability Insurance for the Insured, Castle Valley Mining, LLC. The policy is through National Union Fire Insurance Company Pittsburgh, PA, and Lexington Insurance Company, and was effective on 6/1/2018, expiring on 6/1/2019. It includes Commercial General Liability, Automobile Liability, and Umbrella Liability coverage.

Prior to final approval, the insured will be required to update the Description of Operations as Castle Valley Waste Rock Site C/015/0036, and indicate if XCU coverage (blasting insurance) is included.

Under Certificate Holder it would need to list the Division of Oil, Gas and Mining, 1594 West North Temple, Suite 1210, PO Box 145801, Salt Lake City, Utah 84114

