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# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt  
Governor  
Kathleen Clarke  
Executive Director  
Lowell P. Braxton  
Division Director

1594 West North Temple, Suite 1210  
PO Box 145801  
Salt Lake City, Utah 84114-5801  
801-538-5340  
801-359-3940 (Fax)  
801-538-7223 (TDD)

November 16, 2000

TO: Internal File

THRU: Dave W. Darby, Team Lead 

FROM: Wayne H. Western, Senior Reclamation Specialist

RE: Lila Canyon Round IV, Utah American Energy, Inc., Horse Canyon Mine,  
C/007/013-SR98(1)-4

## SUMMARY:

On September 25, 2000, the Division received the fourth round of the Lila Canyon PAP. The Division reviewed the submittal and found several deficiencies outlined below.

## TECHNICAL ANALYSIS:

# ENVIRONMENTAL RESOURCE INFORMATION

## GENERAL

Regulatory Reference: R645-301-411, -301-521, -301-721.

### Analysis:

The permittee gave the Division information in Section 521 of the PAP that describes the lands subject to coal mining and reclamation over the estimated life of mine. The general requirements of R645-301-521 have been met with respect to environmental resource information. The specific requirement of R645-301-521 will be addressed in the sections that follow.

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**Findings:**

The permittee has met the minimum requirements of this section.

**PERMIT AREA**

Regulatory Requirements: R645-301-521.

**Analysis:**

Plate 1-1, Permit Area Map, shows the permit boundaries for the Horse Canyon Mine. The permit boundaries are divided into Permit Area A, which is the Horse Canyon project that is now being reclaimed and Permit Area B, which is the proposed Lila Canyon project.

The legal description of the permit area is shown in Table 4-2. The table shows the acres of State, federal and fee land.

**Findings:**

The permittee met the minimum requirements of this section.

**MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION**

Regulatory Reference: R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

**Analysis:**

**Affected Area Boundary Maps**

Plate 1-1, Permit Area Map, shows the permit boundaries that are the same as the affected area boundaries for the Horse Canyon Mine. The Horse Canyon Mine includes the Horse Canyon project and the Lila Canyon project. Plate 5-5, Mine Map, shows the affected area boundaries for the Lila Canyon project and the timing and sequence of mining.

**Existing Structures and Facilities Maps**

Plate 5-1A, Pre Mining Contours, shows the existing structures in the proposed Lila Canyon disturbed area. The only existing structure is a 36" culvert scheduled to be replaced when the mine facilities area constructed. A description of the culvert is given in Section 526.110 and 521.120 of the PAP.

### **Existing Surface Configuration Maps**

The pre mining contour map Plate 5-1A. That plate has a scale of 1 inch equals 100 feet and 5 foot contour intervals. Other maps such as Plate 1-2, Plate 5-2 and Plate 5-6 also show the pre mining contours.

If the revised maps were made from aerial photography then the permittee needs to give the Division a copy of those photographs. The photographs would be important if the Division were to reclaim the site under forfeit. A permit can change hands several times during the life of the mine, therefore the Division wants to get the aerial photograph while the current permittee has access to the photographs.

The permittee shows the existing surface contours on Plate 5-1A. The contours on Plate 1-2, Plate 5-1A, Plate 5-2 and 5-6 have been done with scales of 1 inch equals 100 feet and 5 foot contour intervals. The permittee is responsible for giving the Division all relevant information including aerial photographs.

### **Mine Workings Maps**

Plate 5-1 shows the old mine workings in and around the permit area, including the Horse Canyon project and the Lila Canyon project. The mine openings at the Horse Canyon surface facility have been sealed and are scheduled to be backfilled. The proposed portals and mine workings for the Lila Canyon Mine will be discussed in the operation and reclamation sections of this TA.

### **Permit Area Boundary Maps**

Several maps including Plate 1-1 show the location of the permit boundaries for the Horse Canyon mine. The permit boundary has been divided into Permit Area A (the Horse Canyon project) and Permit Area B (the Lila Canyon project).

### **Contour Maps**

The permittee gave the Division premining, operational and reclamation contour maps of the Lila Canyon site. The scale of the maps and the contour intervals are adequate, they are 1 inch equals 100 feet and 5 foot contour intervals.

### **Findings:**

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the permittee must provide the following in accordance with:

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**R645-301-521.190** The permittee must give the Division copies of the aerial photographs that show the predisturbed area. If the Division were to reclaim the site, those photographs would be helpful in restoring the area. The permittee is responsible for giving the Division copies of all relevant data including aerial photography.

## **OPERATION PLAN**

### **MINING OPERATIONS AND FACILITIES**

Regulatory Reference: R645-301-231, -301-526, -301-528.

#### **Analysis:**

##### **General**

The permittee proposes to develop a surface facility and mine portals in Lila Canyon. The permittee wants to develop the Lila Canyon facilities because access to the coal through the Horse Canyon portals is not feasible.

Access to the coal will be through two 1,200 foot slopes that will be driven from a cliff base. The ventilation portal will be driven from underground workings to the surface. See Plate 5-2 for the locations. Mining will be conducted by room-and-pillar methods in the Sunnyside Seam. Production in the first year is estimated to be 200,000 tons, the second to fifth year 1,000,000 to 1,500,000 tons per year. If demand increases, the permittee will install longwall equipment and production could peak at 4,500,000 tons per year.

##### **Type and Method of Mining Operations**

Mining will begin in Section 15, T16S, R14E, in the Sunnyside seam. Development of the Sunnyside seam will be in a down dip direction toward the east. The seam will be accessed by two 1,200 foot slopes driven up at 12% from the base of the cliffs. The ventilation fan portal will be driven from underground workings to the surface.

Mining will be conducted by room-and-pillar methods in the Sunnyside Seam. Production in the first year is estimated to be 200,000 tons, the second to fifth year 1,000,000 to 1,500,000 tons per year. If demand increases, the permittee will install longwall equipment and production could peak at 4,500,000 tons per year. The mine is scheduled to end operations in 2024, the life-of-mine will be 20 years.

In Appendix 4-3, Air Quality, the permittee stated in a letter dated August 27, 1999 to the Division of Air Quality that a maximum of 1,500,000 tons will be produced every year. In Section 523 the permittee states that a production in the first year should be 200,000 tons. In the second through fifth year production will be between 1,000,000 to 1,500,000 tons. If market condition warrant the permittee could choose to use longwall equipment and production could increase to 4,500,000 tons per year. Before the use of longwall mining the permittee would have to get Division approval.

Mine development will start with tunnel being constructed. Once the coal is encountered development will continue using continuous miners and various types of haulage equipment.

Ventilation of the mine will be by an exhaust type system. The permittee estimates that 900,000 cfm will be required at full production. Intake air will be supplied by slopes and entries from the surface.

Dust suppression will be accomplished by sprays on all underground equipment as required. Sprays will also be used along sections of the conveyors and some transfer points.

No major de-watering concerns are anticipated at this property. The workings are expected to produce some water with more water being produced as the depth of mining increases. Part of this water will be used for dust suppression. The remainder will be collected in sumps and pumped to mined out sections of the mine or to the surface and treated when necessary.

In Section 523 of the PAP, the permittee listed the major mining equipment that will be used. The equipment is consistent with a major operation.

### **Facilities and Structures**

The new support facilities are described in Section 520 of the PAP, shown on plate 5-2 and in the appendixes in Chapter 5 of the PAP. Appendix 5-4, New Facility Design, shows the design for the roads and sewage system. Appendix 5-7 has the designs for the refuse pile. The new structures and facilities listed in Section 520 are as follows:

- Mine Facilities Road
- Security Shack
- Mine Substation
- Office/Bathhouse/Warehouse Parking Area
- Office/Bathhouse
- Mine Parking
- Shop Warehouse
- Non-Coal Waste Area
- Equipment & Supplies Storage Area
- Sewer Tank & Drain Field

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Water Treatment Plant  
Potable Water Tank  
Process Water Tank  
Topsoil Pile  
Refuse Pile  
Sediment Pond  
Slope Access Pond  
Rock Slopes  
Ventilation Fan  
ROM Underground Belt  
ROM Storage Pile  
Crusher  
Coal Storage Bin  
Truck Scale and Loadout

The permittee proposes to construct one impoundment, a sediment pond show on Plate 5-2. Since Lila Canyon is an underground mine, no overburden or spoil will be removed. The permittee does not plan on cleaning or processing the coal beyond crushing. Any coal mine waste produced from crushing will be placed in the refuse pile shown on Plate 5-2.

In Section 528.100 the permittee describes how the coal will be handled and stored. The permittee outlined the coal storage area on Plate 5-2. The maximum amount of coal that can be stored on the site will be determined by the air quality permit or by the size of the coal storage area on Plate 5-2.

In Section 528.300 the permittee described how spoil, coal processing waste, mine development waste, and noncoal waste removal, handling, storage, transportation, and disposal areas and structures. Since the Lila Canyon is an underground mine, the permittee does not expect any excess spoil. Coal mine waste will be disposed in facilities shown on Plate 5-2.

The water pollution facilities include the drain fields and sediment pond.

**Findings:**

The permittee met the minimum requirements of this section.

**EXISTING STRUCTURES:**

Regulatory Reference: 30 CFR Sec. 784.12; R645-301-526.

**Analysis:**

One existing culvert is shown on Plate 5-1A to be in the proposed disturbed area. The

permittee states in Section 526.110 and Section 521.120 of the PAP that a 36" culvert exists in the proposed disturbed area. The culvert is in poor condition and will be replaced during construction.

**Findings:**

The permittee met the minimum requirements of this section.

**RELOCATION OR USE OF PUBLIC ROADS**

Regulatory Reference: 30 CFR Sec. 784.18; R645-301-521, -301-526.

**Analysis:**

In Section 521.133.1 of the Lila Canyon Amendment the permittee states:

“Emery County has given permission to conduct coal mining or reclamation operations within 100 feet of the county road. (See Appendix 1-4)”

Appendix 1-4 contains a letter dated February 23, 2000 from the Emery County Planning Commission. The commission states that they will require the permittee to install a 6' chain link fence around UEI's activities at a distance of 100' from the public road as protection from any normal hazards generally associated with coal mining activities. Map 5-2 shows that the chain link fence will be next to the county road not 100' from the county road. The symbol for the chain link fence is not clearly identified on the map.

The Division is concerned about how close the sediment pond is to the public road (County Road 163). The Division needs to know what measures will be taken to protect the public from the hazards associated with the sediment pond and other mine facilities.

**Findings:**

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the permittee must provide the following in accordance with:

**R645-301-526.116.1,** The permittee must show how the public will be protected from mining and reclamation activities constructed within 100 feet of the county road. Specifically the permittee must address how the public will be protected from the hazards associated with the sediment pond and other mine facilities.

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**R645-301-526.116.1**, The permittee must modify the mine plan so that no mining activities occur within 100' of the county road. In the letter dated February 23, 1999 the Planning Commission required the permittee to place a 6' high chain link fence at a distance of 100' from the county road to protect the public. Map 5-2 shows that the chain link fence will be next to the road not 100' away from the road.

**R645-301-121.200**, The permittee must identify the symbol for the chain link fence on Map 5-2.

## COAL RECOVERY

Regulatory Reference: R645-301-522.

### Analysis:

The BLM developed an R2P2 for the Lila Canyon Mine. Part of the R2P2 is evaluation of the maximum economic recovery. The BLM determined that the proposed mine plan and mining system will offer the greatest possible economic recovery of the Sunnyside Seam in the LMU area given the anticipated mining conditions. As development and mining of the reserves proceeds, the mine plan and associated mining system will be continually reevaluated to ensure that an optimal approach is being taken for the relevant factors.

The coal contained in the LMU is high sulfur and currently difficult to market. Contracts for the coal are very limited at this time. It is possible that areas within the identified recoverable reserves may be extremely high in sulfur and cannot be marketed. Some high sulfur coal may be left in place due to economic reasons.

### Findings:

The permittee met the minimum requirements of this section.

## SUBSIDENCE CONTROL PLAN

Regulatory Reference: R645-301-521, -301-525, -301-724.

### Analysis:

#### Renewable resources survey

The permittee acknowledges that renewable resources exist in the proposed subsidence

area. Grazing is identified as a land use in the Lila Canyon tract, and there is at least some recharge to aquifers. Since renewable resources exist in the permit area, the permittee conducted a subsidence survey.

### **Subsidence control plan**

- (1) Coal will be removed by room-and-pillar methods. If the demand for coal increases, then longwall methods may be used. Details of the mining plan are given in Section 522 and 523. Plate 5-5 shows the mine layout and the sequence and timing of mining.
- (2) On Plate 5-5 the permittee shows the proposed underground workings and the areas of potential subsidence. **Plate 5-5 shows that mining and subsidence will occur outside the permit area.** The permittee needs to revise the mine plan so that all mining and subsidence activities will occur inside the permit area.
- (3) R645-301-525.440 requires that the permittee describe the subsidence monitoring plan. The plan is inadequate because it does not give enough details. The proposed plan calls for monitoring points to be established before any 2<sup>nd</sup> mining. The location of the control points will be determined to within  $\pm 6''$  of the actual location. The survey will continue until subsidence measure is less than 10% from the previous years measurement.

**The Division needs to know the approximate location of the monitoring points before mining begins. The Division wants to avoid issuing a permit with stipulation because of the complications that occur. The permittee also needs to commit not to begin mining before the monitoring stations have been installed.**

**The permittee originally committed to conduct a ground survey but then eliminated it from the subsidence plan. The Division usually requires a permittee to conduct ground surveys to check for subsidence cracks and damage to surface water.**

**The Division requires subsidence monitoring to continue for 5 years after mining to insure that subsidence has ceased. Additional monitoring may be needed if the ground has not stabilized.**

- (4) The permittee state that the escarpments will be protected from subsidence by allowing first mining only within 200 ft. of the outcrops. The permittee refers to the R2P2 for information about why 200 ft. barrier pillars will be used. The anticipated effects of

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planned subsidence may include tension cracks, fissures, sinkholes and lowering of the ground surface.

The permittee does not plan to take steps to prevent subsidence except escarpment protection. The permittee states in the amendment that if subsidence causes damage then he will restore the land to a condition capable of maintaining the value and reasonable foreseeable uses that the land was capable of supporting before subsidence.

- (5) The permittee states that the anticipated effects of subsidence are:

Anticipated effects of planned subsidence may include tension cracks, fissures, or sinkholes. Areas of minimal ground lowering may be anticipated.

The Division has received comments from the public that subsidence might damage seeps and springs in the area. Landowners near the Lila Canyon project have concerns about water lose.

- (6) The permittee describes the measures to be taken to mitigate or remedy any subsidence-related material damage to, or diminution in value or reasonably foreseeable use of the land, or structures or facilities to the extent required under State law as follows:

The land will be restored to a condition capable of maintaining the value and reasonable foreseeable uses that it was capable of supporting before the subsidence.

The permittee commits to mitigate any damage to water rights.

**Performance standards for subsidence control**

The permittee is required to meet all the subsidence performance standards.

**Findings:**

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the permittee must provide the following in accordance with:

- R645-300-141**, The permittee must revise Plate 5-5 and the mine plan so that all mining activities and planned subsidence occur inside the permit area. Plate 5-5 shows that mining and subsidence will occur outside the southern permit

boundary area.

**R645-301-525.440,** The permittee does not give details of the subsidence monitoring plan. The permittee needs to show the approximate location of the proposed monitoring points and commit to installing the monitoring points before mining begins.

**R645-301-525.440,** The Division finds the monitoring program inadequate because the survey time is too short. The Division usually requires the permittee to monitor 5 years after mining stops and subsidence stabilizes before allowing the permittee to stop subsidence monitoring.

**R645-301-525.440,** The subsidence monitoring program must include a ground survey. The ground survey is needed to find crack that could affect surface water. Note: the Division did require the permittee to remove a phrase from the amendment that involved a ground survey being needed to verify subsidence damage before mitigation could occur. The Division did not want the ground survey to be removed rather than mitigation would only occur after a ground survey was conducted.

## **SLIDES AND OTHER DAMAGE**

Regulatory Reference: R645-301-515.

### **Analysis:**

The permittee committed to phone the Division if a slide occurred. The Division would then be informed of the remedial plan. If the Division believed the remedial plan to be inadequate, they would tell the permittee what additional steps were needed. The permittee committed to report any potential hazards of impoundments that are found during an inspection.

### **Findings:**

The permittee met the minimum requirements of this section.

## **ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES**

Regulatory Reference: R645-301-521, -301-527, -301-534, -301-732.

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**Analysis:**

**Road Systems**

*Road Classification System*

The permittee states in Section 527.200 that all roads for the Lila Canyon project are shown on Plate 5-2. All of the mine roads shown on Plate 5-2 are classified as primary roads. No ancillary roads are associated with the Lila Canyon project. The information about road classification systems meets the minimum requirements of this subsection.

*Plans and Drawings*

- (1) In Section 527.200 of the amendment the permittee states that detailed designs and descriptions for each road within the permit area are included in Appendix 5-4 and all roads are shown on Plate 5-2. Appendix 5-4 does not contain information about the road embankment safety factor. The road embankment stability analysis is in Appendix 5-5.

Appendix 5-5 has information about slope stability for the roads. The permittee states that a slope stability analysis was done for the road embankment and road cut slope.

The permittee used the Hoek method for calculating slope stability factors. The stability analysis shows that the road embankment and cut slope are stable.

Appendix 5-4 has a drawing labeled "Typical road section." The drawing is an enlargement of part of the area identified as 12+00 to 20+00 on Plate 5-2.

- (2) The permittee does not propose to locate a road in the channel of an intermittent or perennial stream.
- (3) The permittee does not propose to locate a temporary ford in the channel of an intermittent or perennial stream.
- (4) The permittee does not propose to alter or relocate a natural stream channel.
- (5) The permittee does not propose a low-water crossing of a perennial or intermittent stream channel.
- (6) The permittee states in Section 542.600 that there will be no roads left after final reclamation within the mine facilities permitted area. All roads will be reclaimed upon cessation of mining.

### **Performance Standards**

The permittee will be responsible for insuring that the roads meet the performance standards.

### **Primary Road Certification**

The road plans and cross sections in Appendix 5-5 and Plate 5-2 were certified by a registered professional engineer.

### **Other Transportation Facilities**

The general plans for the conveyor system are given in the text and shown on the surface facilities maps.

### **Findings:**

The permittee met the minimum requirements of this section.

## **SPOIL AND WASTE MATERIALS**

Regulatory Reference: R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

### **Analysis:**

#### **Disposal of noncoal waste**

The permittee showed the location where noncoal waste would be stored on Plate 5-2. In Section 528.332 the permittee states that final disposal of noncoal mine wastes except for concrete will be disposed in an area designed and constructed to ensure that leachate and drainage does not degrade surface or underground water. The permittee also states that all noncoal mine waste except for concrete will be shipped to ECDC for final disposal.

The reference to disposing of noncoal waste in an area designed and constructed to ensure that leachate and drainage does not degrade surface or underground water is confusing. **If the permittee proposes to dispose of noncoal waste on site then they must have designs for the storage facility. If the permittee intends to ship the material off site to a state approved facility then no designs are needed.**

The Division usually allows an operator to dispose of concrete on site. The on site disposal of concrete is usually done by placing the concrete in areas that will be backfilled and graded. The Division usually requires that at least 4 feet of material is place over the concrete to allow for proper vegetation growth. **The permittee must show where the concrete will be disposed and how the**

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**area will be reclaimed.**

**Coal mine waste**

The permittee states in Section 528.320 that coal mine waste will be placed in new disposal areas within the permit area. The permittee refers to the coal mine waste disposal areas as the rock/coal waste storage areas, rock slope/coal waste storage areas, the pad and refuse pile. The permittee needs to be consistent in the name for the coal mine waste disposal area.

The permittee shows storage areas called rock storage areas. The Division is not sure what materials will be placed in the rock storage areas. If the material is from coal mining or coal processing activities then the material is refuse. All refuse must be placed in approved refuse piles. The rock storage areas are not approved refuse piles.

Coal mine waste will be placed in a control manner to:

- (1) Minimize adverse effects of leachate and surface-water runoff on surface and groundwater quality and quantity. The effects of leachate and surface-water runoff should be controlled by covering the refuse with a minimum of 4' of subsoil and topsoil. Reclamation projects
- (2) Ensure mass stability and prevent mass movement during and after construction. The PAP does not contain detailed plans for the refuse pile.
- (3) Ensure that the final disposal facility is suitable for reclamation and revegetation compatible with the natural surroundings and the approved postmining land use. The plan calls for placing 30" of subsoil and 18" of top soil on the pile. That cover amount is usually considered adequate to meet vegetation requirements.
- (4) Not create a public hazard. The Division will inspect the disposal site during construction, operation and reclamation. If the facility becomes a public hazard, the Division will take action.
- (5) Combustion at the refuse pile should be minimized by proper compaction and cover.

The permittee does not propose to place coal mine waste material from other facilities in the coal mine waste disposal facility. If needed, the permittee can request that the permit be amended.

The Division will have an inspector monitoring the construction of the coal mine waste disposal facility. If any problems are encountered, the inspector will take action.

### **Refuse piles**

The plan for the refuse pile is in Appendix 5-7. No springs, water courses or wet weather seeps exist in the refuse piles area. The permittee committed to remove all vegetation and topsoil during construction. The permittee does not propose to use terraces for constructing the refuse pile. The pile will be reclaimed by placing 4 feet of material over the refuse. The permittee committed to having the refuse pile inspected as stated in the R645 rules.

### **Impounding structures**

The permittee does not propose to construct any impoundments from coal mine waste.

### **Burning and burned waste utilization**

The plan to extinguish coal mines fire is adequate and found in Appendix 5-3.

### **Return of coal processing waste to abandoned underground workings**

The permittee does not propose to dispose of coal mine waste underground.

### **Excess spoil**

The permittee does not anticipate that any excess spoil will be generated.

### **Findings:**

**R645-301-528.332**, The permittee needs to show the location of the on site concrete disposal areas and describe how the concrete will be placed and covered. If the permittee intends to dispose of noncoal mine waste in an area that is not a state approved facility then they must submit designs to show that no leachate will enter the groundwater or surface water. The general comment in Section 528.332 is inadequate to show that leachate will not degrade surface or underground water. **If the permittee intends to disposal of all noncoal waste except concrete at ECDC then they must modify the text.**

**R645-301-121.200**, The permittee must be clear, concise and consistent with the name used to refer to the disposal area for coal mine waste. The permittee refers to the area by several names such as the rock/coal waste storage areas, rock slope/coal waste storage areas, the pad and refuse pile. The permittee should avoid using terms to describe the coal mine waste that are not defined in the R645 rules. Those materials should be called coal mine waste, coal processing waste or underground development waste.

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**R645-301-121.200**, The permittee must be consistent when showing the areas labeled rock storage areas on all maps and plates.

**R645-301-536.100**, The designs for the refuse pile must include the detailed cross sections and maps.

**R645-301-536.110**, The designs for the refuse pile must include detailed slope stability analysis. The permittee must use a method that accounts for multiple soils with different physical properties.

## **HYDROLOGIC INFORMATION**

Regulatory Reference: R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

### **Analysis:**

#### **Impoundments**

- (1) The permittee proposes to construct only one sediment pond that will be in the southeast corner of the disturbed area (See Plate 5-2). The sediment pond will have a maximum storage capacity of 12 acre feet and a height of 11 feet. Therefore, the pond does not meet the criteria for an MSHA pond.
- (2) The permittee had the sediment pond design certified by Dan Guy, who is a registered professional engineer.
- (3) In Appendix 5-5 The permittee shows the results of the safety factor analysis. The lowest safety factor is 2.35 for the cut slopes under saturated conditions. The safety factor exceeds the 1.3 requirement.
- (4) The permittee did include the analysis of the physical and engineering properties of the foundation materials.
- (5) The permittee states in Appendix 5-5 that the pond is protected against sudden drawdown. The permittee list four reasons why the pond is protected against sudden drawdown. None of the reasons explain why the pond would be protected against pore pressure in the embankment due to rapid drawdown. The permittee must supply the Division with additional information about how the pond is protected against sudden drawdown. See R645-301-533.300.

The permittee states that the pond design was approved by the State Engineers Office. The permittee must give the Division a copy of the State Engineers' approval letter. See R645-301-521.190.

- (6) The permittee committed to have the external slopes of the impoundment be planted with an approved seed mix to help prevent erosion and promote stability.
- (8) There are no highwalls associated with the impoundment.
- (9) The permittee committed to conduct inspections as stated in the Utah Coal Rules.

**Findings:**

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, The permittee must provide the following in accordance with:

**R645-301-533.300**, The permittee must show how the pond will be protected against sudden drawdown. Specifically The permittee must show that pore pressure in the embankments will not cause the pond to fail should a sudden drawdown occur. An embankment may be stable under saturated and unsaturated condition but fail during a sudden draw down due to pore pressure.

**R645-301-521.190**, The permittee must give the Division a copy of the letter from the State Engineer stating that the sediment pond design has been approved.

**SUPPORT FACILITIES AND UTILITY INSTALLATIONS**

Regulatory Reference: 30 CFR Sec. 784.30, 817.180, 817.181; R645-301-526.

**Analysis:**

The permittee committed to install and operate all utility installations and support facilities as required by R645-301-526.200

**Findings:**

The permittee met the minimum requirements of this regulation.

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## **SIGNS AND MARKERS**

Regulatory Reference: 30 CFR Sec. 817.11; R645-301-521.

### **Analysis:**

The permittee committed to place signs and markers as required by the Utah Coal Rules.

### **Findings:**

The permittee met the minimum requirements of this section.

## **USE OF EXPLOSIVES**

Regulatory Reference: R645-301-524.

### **Analysis:**

The Division reviewed the general blasting information and found it adequate. R645-301-524.220 allows The permittee to submit a specific blasting plan separate from the MRP. The permittee has opted to submit a detailed blasting plan later.

### **Findings:**

The permittee met the minimum requirements of this section. Under the requirements of R645-301-524.200 The permittee opted to submit the specific blasting plan as a separate submittal. The Division approved The permittee's request to submit the blasting plan as a separate submittal.

## **MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS**

Regulatory Reference: R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

### **Analysis:**

#### **Affected area maps**

Plate 5-5 shows the areas where mining is expected to occur. Plate 5-2 shows the area scheduled to be disturbed. Those maps show the affected area.

#### **Mining facilities maps**

Plate 5-2 shows the mine facilities.

### **Mine workings maps**

Plate 5-5 shows the proposed mine plan for the Lila Canyon area. Part of the mine is located outside the proposed permit area. See the southern boundary.

### **Monitoring and sample location maps**

#### **Findings:**

**R645-301-525.490**, The permittee must show on Plate 5-5 or other similar maps those areas where subsidence control methods (first mining only) will be used to protect surface structures such as escarpments, seeps and springs and eagle nests.

**R645-301-521**, The permittee must be consistent with showing the disturbed area boundaries. The permittee needs to explain what the green area on the per mining, operational and reclamation maps is.

## **RECLAMATION PLAN**

### **APPROXIMATE ORIGINAL CONTOUR RESTORATION**

Regulatory Reference: R645-301-234, -301-270, -301-271, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

#### **Analysis:**

In Section 512.260 the permittee states no variance from the approximate original contours is requested.

#### **Findings:**

The permittee met the minimum requirements of this section.

### **BACKFILLING AND GRADING**

Regulatory Reference: R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

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**Analysis:**

In Section 537.200 The permittee states:

“Slope rock meeting non-toxic, and non-acid criteria will be used to fill some low areas to be used as pads in the coal pile storage areas. See Plate 5-2. The slope rock material will be treated as underground development waste and disposed of in the slope rock and refuse storage area. The area will be covered with material and reseeded as per Chapters 2 and 7 and section 540.”

In Section 553.120 the permittee states that since Lila Canyon is an underground operation, no spoil piles will be created. Since the portals will go in under an existing cliff face, no highwalls will be created.

The term highwall was initially defined as a feature of surface coal mining operations. Under the regulations the definition also applies to underground coal mining operations. For underground coal mining operations highwall means the area for entry to underground coal mining activities. Portal face-up areas, dugways, shafts and boreholes for entry into underground coal mining activities are all considered highwalls. By definition the permittee will be creating highwalls when they construct the portals. Usually the Division requires the permittee to backfill and grade the highwall to the MSHA safety bench.

The permittee shows the pre mining, operational and reclamation phases for the portal areas on Plate 5-9. The portals will be cut into existing cliffs and reclaimed to a similar topography. The Division has reviewed the pre mining and reclamation contour maps and found that the proposed plan will eliminate the highwalls.

In Section 553.130 the permittee states that all fill slopes will have a static safety factor of 1.3. In Appendix 5-5 the permittee states that all reclaimed slopes will have a safety factor of at least 1.3. The permittee does not reference any slope stability studies that show the reclaimed slopes will have a static safety factor of 1.3. Appendix 5-5 has slope stability analysis, but none of those studies involve reclaimed slopes.

The permittee will control erosion by constructing berms, channels, silt fences, pock marks, soil tackifiers, and mulch. All runoff will flow to the sediment pond for treatment before leaving the disturbed area.

The permittee states no coal seam will be exposed. The permittee does not state how combustible materials will be handled. The permittee must also specify where any acid or toxic forming materials will be disposed.

The permittee committed to topsoil on the reclaimed slopes. Those areas will be pockmarked to reduce the potential for erosion.

**Findings:**

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, The permittee must provide the following in accordance with:

**R645-301-553.130**, In Section 553.130 the permittee states that all reclaimed slopes will have a static safety factor of at least 1.3. The permittee did not provide the slope stability analysis that supports the 1.3 safety factor claims for the reclaimed slopes. The Division did not receive that information.

**R645-301-121.100**, The permittee must modify the information in Section 553.120 to state the existence of highwalls on site correctly. In that section the permittee claims that no highwalls will be created.

**R645-301-553.300**, The permittee does not address how combustible material and acid and toxic forming materials will be handled, nor how the permittee will handle coal processing waste.

**MINE OPENINGS**

Regulatory Reference: R645-301-513, -301-529, -301-551, -301-631, -301-748, -301-765, -301-748.

**Analysis:**

The permittee committed in Section 529 of the PAP to seal all underground openings according to Division requirements when no longer needed. Appendix 5-6 has plans for portal sealings. The portals will be sealed according to Division and MSHA requirements.

Mine entries that are temporarily inactive, but have a further projected useful service under the approved permit application will be protected by barricades or other covering devices, fenced, and posted with signs to prevent access into the entry and to identify the hazardous nature of the opening. These devices will be periodically inspected and maintained in good operating condition by the person who conducts the activity.

**Findings:**

The permittee met the minimum requirements of this section.

**ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES**

Regulatory Reference: R645-100-200, -301-513, -301-521, -301-527, -301-534, -301-537, -301-732.

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**Analysis:**

The permittee committed to reclaim all roads including removal of bridges and culverts in the disturbed area. The road surfaces will be removed and buried on site and covered with a minimum of two feet of material. The roads will be ripped and top soiled before seeding.

**Findings:**

The permittee met the minimum requirements of this section.

**CESSATION OF OPERATIONS**

Regulatory Reference: R645-301-515, -301-541.

**Analysis:**

The permittee committed to comply with R645-301-515 and R645-301-541 for temporary and permanent cessation. If temporary cession will last more than 30 days the permittee will notify the Division. After permanent cessation the permittee committed to remove all equipment and surface structures.

**Findings:**

The permittee met the minimum requirements of this section.

**MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS**

Regulatory Reference: R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

**Analysis:**

**Affected area boundary maps**

Plate 5-4 shows the boundaries of all lands that are expected to be affected by the Lila Canyon project. Plate 5-6, and Plate 5-7A and Plate 5-7B show the reclamation topography and cross section. Since the reclamation work will be completed in 6 months, The permittee does not need to show the timing and sequence of reclamation.

### **Bonded area map**

Plate 5-6 shows the area for which a reclamation bond will be posted.

### **Reclamation backfilling and grading maps**

Plate 5-6, and Plate 5-7A and Plate 5-7B show the reclamation contours and cross sections.

### **Reclamation facilities map**

The permittee will not leave any facilities after final reclamation. Therefore, such a map is not needed.

### **Final surface configuration maps**

Plate 5-6 shows the proposed final surface topography.

### **Reclamation surface and subsurface manmade features maps**

The permittee does not propose to leave any surface or subsurface manmade features in the reclaimed area.

### **Findings:**

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, The permittee must provide the following in accordance with:

**R645-301-542,** The permittee must give the Division detailed cross section of the reclaimed surfaces. The current cross section are at such a small scale that the Division cannot determine what reclamation activities will occur.

## **BONDING AND INSURANCE REQUIREMENTS**

### **Analysis:**

#### **Determination of bond amount**

The Division will not review this section until the reclamation plan has been approved.

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**Findings:**

The Division will review this section after the reclamation plan has been approved.

**RECOMMENDATION:**

The Division should deny the PAP until the above mention deficiencies are addressed.

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