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**State of Utah**  
DEPARTMENT OF NATURAL RESOURCES

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**Technical Analysis and Findings**  
**Utah Coal Regulatory Program**

September 28, 2015

**PID:** C0070039  
**TaskID:** 4961  
**Mine Name:** DUGOUT CANYON MINE  
**Title:** MIDTERM PERMIT REVIEW

**General Contents**

**Identification of Interest**

*Analysis:*

The Dugout Canyon Mine mining and reclamation plan (MRP) does not meet the State of Utah R645 requirements for Identification of Interests.

The Permittee must revise the last paragraph on page 1-3 of the Dugout Canyon MRP and remove the reference to Arch Coal, Inc.

On page 1-1 of the Dugout Canyon Mine MRP, the Permittee directs the reader to the General Chapter 1 binder for Canyon Fuel Company, LLC (Canyon Fuel). The General Chapter 1 binder contains the legal and financial information for all of the Canyon Fuel properties: Dugout Canyon Mine, Soldier Canyon Mine, Gordon Creek Mines, Skyline Mine and Banning Loadout.

On page 1-1 of the General Chapter 1 binder for Canyon Fuel properties, the Permittee discusses that all of the aforementioned properties are presently held by Canyon Fuel Company, LLC. The information contained in General Chapter 1 was updated in December of 2013 to reflect the sale of all Canyon Fuel properties. Bowie Resources, LLC (Bowie) purchased 100% of the equity interests of Canyon Fuel Company from Arch Coal, Inc. in August of 2013. Figure 1-1 in the General Chapter 1 binder displays the organization chart for Bowie Resources, LLC and associated companies/subsidiaries.

Page 2 of the General Chapter 1 binder provides the tax payer identification numbers for the applicant and operator. Appendix 1-1 provides the names and positions of the company officers as well as the date their respective positions in the company were assumed.

On page 1-4 of Chapter 1 of the Dugout Canyon MRP, the Permittee provides the ownership information for the surface and mineral properties of the permit and adjacent area.

*Deficiencies Details:*

R645-301-112: The Permittee must revise the last paragraph of page 1-3 in Chapter 1 of the Dugout Canyon MRP and remove the reference to Arch Coal, Inc and replace it with Bowie Resources, LLC.

schrister

**Right of Entry**

*Analysis:*

The Dugout Canyon Mine's mining and reclamation Plan (MRP) meets the Right of Entry requirements of the State of Utah R645 coal mining rules.

On page 1-6 in Chapter 1, the Permittee provides the right of entry information. Copies of state coal leases ML-42648 and ML-42649 and Federal Lease U07064-027821 are provided in Appendix 1-1.

*schrister*

## **Legal Description**

*Analysis:*

The Dugout Canyon mining and reclamation plan (MRP) meets the State of Utah R645 coal mining rule requirements for legal descriptions. On page 1-11, the Permittee provides the legal description for the permit boundary. Plate 1-1 and RA Plate 1-1

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## **Permit Term**

*Analysis:*

The Dugout Canyon Mine's mining and reclamation plan (MRP) discusses the anticipated mining phases on page 1-13 of Chapter 1. Plate 5-7 depicts the anticipated mining progression during the operation of the Dugout Canyon Mine. The reclamation stages and time-lines are presented in the respective section of Chapters 2,3,5,7 and 8.

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## **Environmental Resource Information**

### **General**

*Analysis:*

Included herein is a review of conditions and activity at Dugout Coal Mine to ensure that all regulations under R645-301-300 (Biology) and R645-301-400 (land use) of the permit are being implemented as designed in the MRP.

In the essence of time, all requirements and commitments that are being fulfilled may not have not been discussed. The omission of that discussion indicates compliance with the regulations and MRP.

A technical site visit was made on September 10, 2015.

*Ireinhart*

## **Operation Plan**

### **Mining Operations and Facilities**

*Analysis:*

The Division initiated a mid-term review of the Dugout mining and reclamation plan (Task ID #4961) on September 10, 2015 in accordance with R645-303-211. This Technical Memorandum presents the findings of the Midterm Permit review for the Dugout Mine related to engineering and bonding, including:

- A review of the application portions of the permit to ensure that the mine plan contains the commitments for the application of the best technology currently available (BTCA) to prevent additional contributions of suspended solids to stream flows outside of the permit area.
- Evaluate the reclamation bond to ensure that coverage adequately addresses permit changes approved subsequent to permit approval or renewal, and to ensure that the bond amount is appropriately escalated in current-year dollars.
- Evaluate the permit for compliance with variances or special permit conditions related to engineering and bonding.

The Permittee has not submitted a formally revised reclamation cost estimate and will do so by September 30, 2015.

The Permittee's mining operations are following the MRP which meets the minimum requirements of R645-301-523, -526, and 528 including descriptions of the mining operation, method of coal mining, engineering techniques, anticipated annual

and total production of coal by tonnage, and major equipment to be used for all aspects of those operations proposed to be conducted during the life. The Permittee submits relevant annual data such as subsidence and waste rock quantities to the Division on an annual basis. Quarterly inspections of the facilities and waste rock ponds and waste placement are sent to the Division in a timely manner.

cparker

## **Subsidence Control Plan Subsidence**

### *Analysis:*

The minimum requirements of R645-301-525.400 are met in the MRP as the Permittee presented a clear subsidence plan for protected areas. The Permittee continues to submit annual subsidence reports to the Division during the annual reports.

cparker

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

### *Analysis:*

The MRP meets the minimum requirements of R645-301-515.100 with procedures detailing the emergency contact procedures in the event of a slide. A site inspection was conducted on September 10, 2015 and all visible highwalls appeared stable.

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

### *Analysis:*

Pursuant to P645-301-322.220, the permittee has committed to conduct a spring survey of raptor nests where raptor habitat could be affected by subsidence or surface disturbance associated with the mining activities. The survey area will be a ½ mile radius of the potential subsidence or activity. In addition, raptor nest locations will be monitored /surveyed the year following the first monitoring / survey if nests were observed during the survey and if operations result in subsidence. The protection of raptors by conducting raptor surveys is outlined on page 3-20 of the MRP. Furthermore (page 3-31) states each nest and it's corresponding occupant and circumstances will be evaluated by a qualified person nine months or the summer prior to the period of potential subsidence. A determination by SCM, UDWR, and UDOGM will be made to the methods to be used for protection.

The permittee has been hiring Mt. Nebo Scientific, Inc to conduct spring surveys of known raptor nests within the permit area. Observation stations are set up to scan subsidence areas for nests along the escarpments. Although the reports are well written and prepared, it is not clear that areas of subsidence are adequately surveyed. The timing of subsidence and areas surveyed are not discussed and maps do not illustrate where nest locations are in relation to areas of subsidence (both past and future).

Surveys should be occurring at least nine months prior to mining panels to ensure data is collected prior to actual subsidence. If a nest of a protected species is observed, coordination should be initiated with the Division and DWR to determine the appropriate plan of action. If a nest is located, a post subsidence survey is appropriate to determine any impacts. As such, the survey locations should move with the mining sequence.

Without adequately knowing if nests exist prior to subsiding them, it is impossible to determine if an impact or take has occurred. The schedule that is currently implemented does not allow any pre-planning or consultation (as required by Section 333.300, p. 3-30 of the MRP) with the Division.

Ireinhart

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

### *Analysis:*

The fish and wildlife information provided in the MRP was evaluated and compared to the current list. Analysis using the U.S. Fish and Wildlife Service Information for Planning and Conservation (IPaC) website was conducted for the permit area. A current list for proposed, candidate, threatened, and endangered species was evaluated and an Official Species List and letter from local office is available upon request. This list was compared to information provided in Section 322 and 358 of the MRP.

*Deficiencies Details:*

The permittee must update the MRP (including additional volumes) to include an updated T&E species list and also update the protection and enhancement plan to account for any species that has the potential to be impacted from the mining operation in accordance with: R645-301-322. Species that are currently listed and not analyzed in the MRP include Greater sage-grouse and Yellow-Billed Cuckoo. Mexican spotted owl has been adequately addressed. A USFWS consultation letter and official species list is available upon request for assistance.

The northern portion of the permit area lies within the Carbon County Sage Grouse Management Area (DWR) and is within close proximity (within 5 miles) of known sage-grouse leks, breeding, and nesting habitat. Consultation with DWR is recommended. The decision on listing the Greater sage-grouse will be revealed later this month and that decision should be incorporated into the discussion.

Habitat for the Western Yellow-billed cuckoo should be evaluated using the USFWS Guidelines for the Identification of Suitable Habitat for WYBCU in Utah, which is available upon request.

The only current T&E or sensitive species occurrence records within the permit area are Golden Eagle and Northern Goshawk. Both of which are protected but are not listed under the ESA. None of these locations are within the disturbance area or 5 year mine plan and therefore any impact is unlikely.

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## **Topsoil and Subsoil**

*Analysis:*

**Analysis:**

There are 5 topsoil stockpiles for the Dugout mine facilities area at a secure facility on the Soldier Canyon Road. The expansion of this site to include the Dugout soils is described in Appendix 2-7. The topsoil stockpiles at the Soldier Canyon facility are identified on Plate 2-3. The volumes in each stockpile are outlined in Table 2-2 of the MRP. A total of 26,247 CY are stored at the Soldier Canyon site.

There are two topsoil stockpiles for the Pace Canyon fan facility stored in Pace Canyon. Table 2-2 (dated January 2011) states that the two Pace Canyon stockpiles hold 3,159 CY. Appendix 2-9 provided the initial Pace Canyon topsoil stockpile calculations and stated each would hold approximately 3,000 CY. No as built or narrative description could be found in the MRP for the stockpiles in Pace Canyon. Please provide the narrative description or an as- built of each stockpile to confirm the volume.

A second plate, Plate 2-3A, shows an additional location for Pace Canyon soil storage at site G-3. Is this correct?

Section 233.200 states that Pace Canyon topsoil will be sampled and analyzed at the time of stockpiling. Please bring this narrative up to date which the Division believes is as follows: the Pace Canyon topsoil was sampled on June 1, 2005 and the analysis is found in Appendix 2-4.

Section 234.200 describes the weed problem at the topsoil stockpile location. This section states that proper treatment will be discussed with the Division.

*Deficiencies Details:*

**Findings:**

R645-301-121.200, MRP Section 233.200 states that Pace Canyon topsoil will be sampled and analyzed at the time of stockpiling. Please bring this narrative up to date which the Division believes is as follows: the Pace Canyon topsoil was sampled on June 1, 2005 and the analysis is found in Appendix 2-4.

R645-301-121.200, There are two topsoil stockpiles for the Pace Canyon fan facility stored in Pace Canyon: the portal pile and the shaft pile. However, Plate 2-3A shows a third stockpile location for the Pace Canyon facility soils, that is location G-3. Is this correct? Please verify the G-3 location and if necessary, make the appropriate corrections to the narrative and/or to Plate 2-3A.

R645-301-231.400, Table 2-2 (dated January 2011) states that the two Pace Canyon stockpiles hold 3,159 CY. No as built or narrative description could be found for the stockpiles in Pace Canyon. Please provide the narrative description or an as-built of each stockpile to confirm the volume.

R645-301-234.220, Section 234.200 describes the weed problem at the topsoil stockpile location. This section states that proper treatment will be discussed with the Division. Please update this narrative with the current status of the weed situation at the topsoil storage site (dominant weeds and a rough assessment of percent cover by weeds) and provide a summary of weed control efforts completed recently, if any.

pburton

## Road Systems Classification

*Analysis:*

The MRP meets the minimum requirements of R645-301-527.100 by classify each road as primary or ancillary. Road were inspected during the Division site visit and found to be in working order with proper drainage reporting to the various catchment basins and pond at the facilities site.

cparker

## Road System Plans and Drawings

*Analysis:*

The MRP meets the minimum requirements of R645-301-534.100 by submitting plans and drawing for each road to be maintained within the permit area. No road were witnessed at the site that were not already accounted for within the current MRP.

cparker

## Spoil Waste Disposals of Noncoal Mine Wastes

*Analysis:*

The MRP and site visit to the Dugout mine show that the Permittee meets the minimum standards or R645-301-528.330.

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## Spoil Waste Coal Mine Waste

*Analysis:*

The MRP meets the minimum standards or R645-301-528.320 regulations regarding coal mine waste. All coal mine waste is transported in a controlled manner the existing waste rock pile. The Waste rock pile was inspected on September 10, 2015 and found to match the current MRP narrative and details.

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## Hydrologic Ground Water Monitoring

*Analysis:*

The minimum requirements of R645-301-731 are not met within the midterm review, the water monitoring program should be updated to reflect the non-functioning well, GS-11-2.

During the midterm review, the water monitoring program was evaluated. It was observed that well GW-11-2 has been reported by the Permittee that the casing has sheered or caved. The Permittee should remove the well from their monitoring program and provide justification as to why a monitoring well in this location is no longer necessary.

*Deficiencies Details:*

R645-301-731 Groundwater monitoring well GW-11-2 has been non functioning since 2009. This well should be removed from the water monitoring program, and justification should be given for not replacing the well if it is no longer necessary.

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## Support Facilites and Utility Installations

*Analysis:*

The site matches the MRP which meets the minimum requirements of R645-301-521.180 and -526 the require the description, plans, and drawing for each support facility to be constructed, used, or maintained within the proposed permit area.

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## **Signs and Markers**

*Analysis:*

The site and MRP meet the minimum requirements of R645-301-521.200 by the having signs with all the required information posted at the facilities and waste rock site.

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## **Maps Affected Area**

*Analysis:*

The MRP meets the minimum requirements of R645-301-521.100 through-521.130 as all maps for the entire site are up to date.

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## **Maps Facilities**

*Analysis:*

The MRP meets the minimum requirements of R645-301-521.120 through-521.125 which require maps to clearly show existing surface and subsurface facilities. All mine facility maps match the site as it was inspected on September 10, 2015.

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## **Maps Mine Workings**

*Analysis:*

The MRP meets the minimum requirements of R645-301-521.140 which requires maps to clearly show all mine plans. The requirements are met as the current MRP drawings correctly show mine workings.

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## **Maps Certification Requirements**

*Analysis:*

R645-301-512 minimum requirements are met as all mine drawings and plates are stamped by a Utah certified professional engineer with experience in underground mining operations.

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## **Reclamation Plan**

### **General Requirements**

*Analysis:*

The minimum requirements of R645-301-540 are met within the midterm review as there is no change to the existing MRP reclamation details.

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### **General Requirements**

*Analysis:*

Revegetation of the methane degasification well sites has been occurring to plan. On January 12, 2015, approval of phase I bond release was granted on sites G2, G3, G4, G5, G6, G7, G9, G10, G12, G13, G14, G16, G18, G19, G22, G25, G26, G30 and G31. Phase I bond release applies to 37.3 acres. Phase II bond release is hereby approved on sites G2, G3, G4, G5, G6, G7, G10, G12, G13, G14, G19 and G31. Phase II bond release applies to 18.95 acres.

*Findings:*

Information provided in the application meets the minimum requirements of R645-301-341

ireinhart

## **Bonding and Insurance General**

*Analysis:*

The application meets the minimum requirements of R645-301-800 as the applicant is current on the bond and insurance standings.

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## **Bonding Form of Bond**

*Analysis:*

The application meets the minimum requirements of R645-301-860.100 as the applicant currently maintains a surety bond amount of \$3,550,000 which is held by Lexon Insurance Co with a rider held by Ironshore Indemnity Inc.

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## **Bonding Determination of Amount**

*Analysis:*

The application does not meet the minimum requirements of R645-301-830.140 as the Permittee has not submitted detailed bond information. The Permittee must provide updated information for estimated bonding costs with supporting calculations for the estimates. This includes updated unit costs (to be used to update bond calculation spreadsheets) and updated escalation factors. Updates should be provided using the 2015 data from R.S. Means Heavy Construction Cost data manual and the Caterpillar Handbook or other appropriate resources. The bond summary and corresponding bond calculation sheets in the MRP need to be updated and appropriately escalated to 2020 dollars using Division's approved 1.2% and 5 year escalation.

*Deficiencies Details:*

The application does not meet the minimum requirements of R645-301-830.140 as the Permittee has not submitted detailed bond information. The Permittee must provide updated information for estimated bonding costs with supporting calculations for the estimates. This includes updated unit costs (to be used to update bond calculation spreadsheets) and updated escalation factors. Updates should be provided using the 2015 data from R.S. Means Heavy Construction Cost data manual and the Caterpillar Handbook or other appropriate resources. The bond summary and corresponding bond calculation sheets in the MRP need to be updated and appropriately escalated to 2020 dollars using Division's approved 1.2% and 5 year escalation.

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## **Bonding Terms and Conditions Liability Insurance**

*Analysis:*

The application meets the minimum requirements of R645-301-850 as the applicant currently holds liability insurance through National Union Fire Ins Co, effective until 2/1/16. The insurance includes the required Marsh from, explosives and claims made per occurrence.

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