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# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
Executive Director

### Division of Oil, Gas and Mining

JOHN R. BAZA  
Division Director

August 23, 2017

Richard Parkins, General Manager  
Fossil Rock Resources, LLC  
225 North 5<sup>th</sup> Street, Suite 900  
Grand Junction, Colorado 81501

Subject: Completion of Midterm Review, Task #5488, Fossil Rock Resources, LLC, Fossil Rock Mine, C/015/0009

Dear Mr. Parkins:

On June 20, 2017, Fossil Rock Resources, LLC was informed that the Division of Oil, Gas and Mining (the Division) had commenced a midterm permit review for the Fossil Rock Mine.

The midterm review has now been completed and will now be closed; however, the Division has identified deficiencies that must be addressed. The deficiencies have been included with this letter (See Attached). The name of the author for each of the respective deficiencies has been provided.

Your response to these deficiencies will need to be submitted as an amendment to your MRP and will be processed as a separate task. Please submit the required amendment with the accompanying C1 and C2 forms by no later than September 29, 2017.

If you have any questions regarding these requirements or the Midterm Review process, please don't hesitate to call me at 801-538-5325.

Sincerely,

Daron R. Haddock  
Coal Program Manager

DRH/sqs  
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## Technical Analysis and Findings

### Utah Coal Regulatory Program

**PID:** C0150009  
**TaskID:** 5488  
**Mine Name:** FOSSIL ROCK MINE  
**Title:** MIDTERM PERMIT REVIEW

## Summary

The Fossil Rock Mine's midterm permit review commenced on July 20, 2017.

*Deficiencies Details:*

kstorrar

## General Contents

### Identification of Interest

*Analysis:*

The MRP does not meet the State of Utah R645 requirements for Identification of Interests.

General Chapter 1 provides the ownership and control information of Canyon Fuel Company, the owner of the Fossil Rock Mine. The Identification of Interests section was incorporated into the MRP October 8, 2015 and is out dated. This General Chapter 1 is being updated for all the Bowie Resource Partners mines, including the Fossil Rock Mine, in Task #5507, 'Sufco, Update Ownership & Violation Information'. When this task is approved by the Division, the chapter for Identification of Interests must be updated in Fossil Rock's MRP.

*Deficiencies Details:*

The MRP does not meet the State of Utah R645 requirements for Identification of Interests. The following deficiency must be addressed for the midterm review:

R645-301-112: The Permittee must update Identification of Interests in General Chapter 1 of the MRP.

kstorrar

### Violation Information

*Analysis:*

The MRP does not meet the State of Utah R645 requirements for Violation Information.

General Chapter 1 includes Violation Information for the Canyon Fuel Company, the owner of the Fossil Rock Mine. The Violation Information section was incorporated into the MRP June 14, 2016 and is out dated. This General Chapter 1 is being updated for all the Bowie Resource Partners mines, including the Fossil Rock Mine, in Task #5507, 'Sufco,

Update Ownership & Violation Information'. When this task is approved by the Division, the information in chapter for Violation Information must be updated in Fossil Rock's MRP.

*Deficiencies Details:*

The MRP does not meet the State of Utah requirements for Violation Information. The following deficiency must be addressed for the midterm review:

R645-301-113: The Permittee must update Violation Information in General Chapter 1 of the MRP.

kstorrar

## Right of Entry

*Analysis:*

The MRP meets the State of Utah requirements for Right of Entry.

The MRP includes Right-of-Entry documentation. The Coal Lease documents are given in Appendix 4-2.

kstorrar

## Permit Term

*Analysis:*

The MRP meets the State of Utah R645 requirements for a Permit Term.

A permit is issued for the Fossil Rock mine with an effective starting date of February 21, 2015 and an expiration date of February 21, 2020.

kstorrar

## Permit Application Format and Contents

*Analysis:*

This portion of the mid-term review meets the State of Utah R645 requirements for format and contents at R645-300-130. Representatives from Bowie have indicated that the current MRP is scheduled to be reformatted in accordance with the R645 Coal rules. The Division has requested that this commitment be further defined in terms of timing in their review of task 5494 (the Fossil Rock disturbed area boundary change amendment). If this is too big a task the Division could include the re-formatting obligations in the mid-term review document.

*Deficiencies Details:*

jhelfric

## Operation Plan

### Topsoil and Subsoil

*Analysis:*

The application does not meet the requirements of R645-301-230 Soil Operations Plan, because the topsoil pile volume is not reported in Section 8.7, p. 5 & 6. Section 3.5.4 Backfilling and grading plan describes redistribution of the available topsoil to a depth of six inches (item e). The approximate volume of topsoil available would be beneficial for SUFCO to know, in order that the small amount of material might be best utilized.

*Deficiencies Details:*

The application does not meet the Soils Operation plan requirements. The following deficiency must be addressed prior to final approval:

R645-301-230, Provide an estimate of the volume of topsoil (cubic yards) stored in the topsoil pile in Section 8.7.

pburton

## Hydrologic Diversion General

*Analysis:*

The MRP does not meet the State of Utah R645 requirements for Hydrologic Diversions.

A complete mine site inspection was conducted June 20, 2017. Hydrologic conveyance features on the ground vary from narratives and designs in the approved MRP. Re-mining of the waste rock site has altered Ditch DA from the approved design. Midway along the ditch's longitudinal profile a rip-rapped ramp drops the ditch from the elevation of the upper lift to the elevation of the lower lift. The elevation adjustment has improved the function of the ditch during remaining of the waste rock site.

*Deficiencies Details:*

The MRP does not meet the State of Utah R645 requirements for Hydrologic Diversions. The following deficiency must be addressed prior to final approval:

The MRP must be updated to accurately reflect the conditions on the ground. Ditch DA on Plate 4-5 must reflect the rip-rapped ramp and all narratives associated with the design of the ditch must be updated as well. The narrative should discuss the fleeting design of the ramp and the varying degrees it may change as the pile is removed or as waste rock is placed at the site.

kstorrar

## **Reclamation Plan**

### **Topsoil and Subsoil**

*Analysis:*

The application does not meet the requirements of R645-301-243, referenced test plot treatments could not be found in the MRP. Section 3.5.5 and Section 3.5.5.2 state that the reclamation method will be determined by evaluation of the test plots. Appendix 9-1C Final Reclamation Soil Testing refers to Appendix 9 for a description of test plot soil nutrient application. Appendix 9-2 references pages 15-17 and 39 – 44 of Appendix 9 for the test plot design (Appendix 9-2, p. 1). However, pages 16-48 of Appendix 9-1 are missing from the Division's copy of the MRP. It appears that fertilizer was applied and found successful in the test plot treatments that were evaluated in 1987 and consequently, Section 8.9 describes the application of 50 lbs of P, 80 lbs N and 80 lbs K per acre as an addition to imported topsoil, pending analysis.

Section 3.5.5.1 Soil Preparation describes ripping the pad areas and pulverizing a cloddy surface. Pulverizing the soil will restrict water infiltration which will exacerbate salinity issues. Pulverizing the soil is not a best practice and should be removed from Section 3.5.5.1 reclamation plan.

*Deficiencies Details:*

The application does not meet the Soils Reclamation plan requirements. The following deficiency must be addressed:

R645-301-243, Please provide pages 16 – 48 of Appendix 9 which are missing from the Division's copy of the Mining and Reclamation Plan. These pages explain the test plot methodology and recommended reclamation treatments referred to in Chapters 3 & 8 of the MRP.

R645-301-242, Pulverizing the soil is not a best practice and should be removed from Section 3.5.5.1 reclamation plan.

pburton

### **Revegetation Standards for Success**

*Analysis:*

The mid-term review of item H meets the the State of Utah R645 requirements for revegetation standards for success at R645-301-356. A site visit of the Fossil Rock mine was conducted on Tuesday, August 8th, 2017 to locate the two vegetation reference areas. Representatives from Bowie included Bryant Bunnell and Clay Mecham. The two reference areas are described in Chapter 9, Section 9.2.3 of the Fossil Rock MRP. One is in the Riparian Community, and one is in the Grassland Shrub Community. Their locations are marked on the vegetation map, Map A, Appendix 9-1. The text in section 9.2.4 (Vegetation map) notes that:

A vegetation map was compiled with the aid of aerial photographs printed in a scale of approximately 528 feet-to-the-inch (1 :6, 3346), assisted by ground-truthing surveys.\* The most recent available aerial survey (1977) was used. The final map was later transferred to a contour map at the same scale. Area measurements were made for each community type by cutting up one of the maps and weighing the various pieces according to the community type. This gave percentages for each community type in the mine plan area and permitted calculating the acreages involved. This map was used to locate the two reference areas that were marked with flagging.

A qualitative assessment will be conducted in September by Bowie to verify the areas ability to represent the success standards of revegetation.

*Deficiencies Details:*

A qualitative assessment will be conducted in September by Bowie to assess the areas ability to represent the success standards of revegetation.

jhelfric

### **Stabilization of Surface Areas**

*Analysis:*

The application does not meet the requirements of R645-301-244, Stabilization of Surface Areas, because various erosion control treatments are described in Section 3.5.4.3, but their use is not prescribed. Section 3.5.5.2 says steeper areas will be hydroseeded or broadcast. Section 3.5.5.2 does not define steeper areas, but should outline the slope angle where hydroseed/hydromulch will be used. Hydroseeding is usually accomplished with the application of wood fiber mulch and a tackifier which are both beneficial on steeper areas.

Section 8.9 states that erosion control mat will be used. The locations where erosion control control mat will be used should also be specified in the narrative.

The Trail Mountain reclamation plan was written in the 1980's. In the years since, the Division has observed that the incorporation of 1T/ac straw into the surface soil with roughening is a superior technique that adds organic matter and improves soil infiltration and provides surface erosion control. This technique should be added to the Trail Mountain reclamation plan.

*Deficiencies Details:*

The application does not meet the Soil Stabilization. The following deficiency must be addressed:

R645-301-244.200,

In Section 3.5.5.2, Define the slope angle where hydroseeding/hydromulching will be used. In Section 8.9 define the slope angle and conditions where erosion control mat will be used.

In Section 3.5.4 Item d, Specify the incorporation of 1 T/acre straw with surface roughening.

pburton

### **Bonding Determination of Amount**

*Analysis:*

The MRP does not meet the State of Utah R645 requirements for Determination of Bonding Amount.

*Deficiencies Details:*

R645-301-830: A review of bonding calculations for the waste rock site revealed that indirect costs had been omitted. Please add indirect costs to the waste rock site bond and resubmit. When completing bond calculations, be advised that the reclamation cost escalation factor for 2017 is 0.0%.

Additionally, Appendix 7-12 illustrates the design and configuration of a Splash Apron at the culvert carrying Cottonwood Mine discharge water underneath the county road. This catchment is to be constructed upon reclamation of the main mine site. As per State of Utah R645-301-830.140 rules, Permittee will need to provide detailed red lined text in the detailed bonding sheets that accounts for the construction of this feature. Changes in the total bonding sheets will need to address the added cost of the construction of a splash apron.

jeatchel

## Bonding Determination of Amount

### Analysis:

The midterm review of the MRP does not meet the State of Utah R645 requirements for Determination of Bond Amount.

In accordance with the requirements of R645-303-211, R645-301-830, and -301-830.140, it is the Permittees responsibility to provide detailed estimated cost sheets to support the reclamation cost estimate. The Division requires an evaluation of the reclamation cost estimate during each midterm permit review. This cost estimate is then escalated for five years or until the next midterm review.

The midterm review of the amendment to update the MRP does not meet the minimum requirements of R645-301-830.140 due to missing information as that the Permittee has not submitted updated bond information in regards to the midterm review of the MRP.

The Permittee must update the unit cost data used in the 2012 Midterm Permit Review reclamation cost estimate to 2017 unit costs using the 2017 R.S. Means Heavy Construction Cost Data manual. All computation sheets for demolition, earthwork and re-vegetation must be updated and submitted to the Division so the Division can determine the required bond amount needed through 2022.

In accordance with R645-301-830.410, Division Technical Directive 007, and Office of Surface Mining Handbook for Calculation of Reclamation Bond Amounts the Permittee may utilize third party contractors for cost references when a general cost references does not adequately describe the required reclamation task. In the event the Permittee utilizes local third party contractors cost estimates within the reclamation bond amount additional information must be submitted with the application including a minimum of three individual quotes for the work. References may include items such as a letter or email transcript but must include all relevant contact information from the contractor so that the Division may contact said contractor to verify unit cost is valid in the event the Division was the hiring personal. References must be submitted at the time the reclamation bond amount is submitted to the Division. The Permittee will submit detailed cost references for all contracted costs of reclamation.

In accordance with R645-301-830.410, Division Technical Directive 007, and Office of Surface Mining Handbook for Calculation of Reclamation Bond Amounts the Permittee must utilize Total Including O&P unit costs when using standardized cost reference manuals such as R.S. Means Heavy Construction. The Division applies an indirect cost of 26.8% that covers overhead calculations in the indirect line items of the total sheet. The Permittee will utilize the total including O&P unit cost when utilizing R.S. Means Heavy Construction cost reference.

The Fossil Rock Midterm review, in accordance with R645-303-211, was commenced on June 20, 2017 by the Division. In accordance with R645-301-830.410, Division Technical Directive 007, and Office of Surface Mining Handbook for Calculation of Reclamation Bond Amounts the Permittee must utilize the dollar year for which the midterm was commenced. The escalation to the next midterm must also be amended to calculate the new escalation to the next midterm review, five years.

The total reclamation cost for the Fossil Rock Mine (sum of all the direct and all indirect costs) must be escalated from 2017 to 2022 (5 years) using the 2017 escalation factor of 0.00.

This escalated cost is rounded up to the next \$1,000.00 to determine the amount of required bond which must be posted with the Division by the Permittee.

### Deficiencies Details:

The midterm review of the MRP does not meet the State of Utah R645 requirements for Determination of Bond Amount.

R645-303-211, R645-301-830.100 through -830.140, R645-301-830.410, June 2017 revision of Tech 007: The Permittee must submit the detail reclamation bond estimate in 2017 Dollars.

R645-303-211, R645-301-830.100 through -830.140, R645-301-830.410: The Permittee must submit detail cost quotes from three parties or utilize a cost reference outside of published construction related cost reference manuals, e.g. R.S. Mean Heavy Construction.

R645-303-211, R645-301-830.100 through -830.140, R645-301-830.410, June 2017 revision of Tech 007: The Permittee will utilize R.S. Means Heavy Construction cost reference or other approved cost reference.

R645-303-211, R645-301-830.100 through -830.140, R645-301-830.410, June 2017 revision of Tech 007: The permittee must add all indirect and all direct cost together then escalation to the next midterm on the Total sheet.

bwiser