

0036



CONSOL ENERGY™

**COPY**

*C/015/015 Incoming*

*#3405*

Consolidation Coal Company

P.O. Box 566  
Sesser, IL 62884  
(618) 625-2041

September 17, 2009

Daron Haddock  
Utah Division of Oil, Gas and Mining  
Coal Program  
1594 West North Temple, Suite 1210  
Box 145801  
Salt Lake City, Utah 84114-5801

Re: Emery Deep Mine Permit C/015/015  
Amendment to add Zero Zero North LBA (UTU-86038) to MRP

Dear Mr. Haddock:

Please consider this a minor revision to add additional mining area to the above mentioned permit. Enclosed please find three (3) copies of the submittal, and two (2) CD's with the submittal in pdf format. Also attached please find executed C1 and C-2 forms.

Due to the large quantity of Plates depicting the permit boundary, Consol has submitted nine (9) Plates as hard copies and the remainder as pdf's on the cd. Consol will provide hard copies during clean copy submittal.

Per the ongoing expansion of the Emery Mine, Consol plans to increase the resource recovery by mining additional coal on the north east boundary of the mining area, adjacent to the recently approved Zero Zero North area Task id 3099. The additional mining area consists of 120 acres. The coal is contained in federal lease UTU-86038. Consol was the successful bidder on this tract on September 3, 2009. Eighty acres of the surface area is owned in fee by Consol and 40 acres is contained in the federal lease UTU-86038. The additional panel is designated as the Zero Zero North. Consol will be utilizing a pillar splitting plan that would fall into the planned subsidence category. All Plates that depict full extraction areas have been revised to include the future forecasted panel.

All of the base line studies on this area were conducted in 2008 under the BLM Environmental Assessment procedures. Portions of the EA have been incorporated into the MRP at CH VIII APP VIII-6 and CH VI APP VI-16.

Archeology report MOAC 08-096 was completed on this area with the Environmental Assessment and is included as CH X APP 5-10.

A confidential CD of this report and all confidential maps is included and should be placed in the confidential file.

If you have any questions concerning this request, please call me at (618) 625-6850.

Sincerely,

*John Gefferth*  
John Gefferth  
Environmental Engineer

File in:

Confidential

Shelf

Expandable

Refer to Record No *0036* Date *09172009*

In *C/015/0015/0007 Incoming*

For additional information *Confidential*

**RECEIVED**

**SEP 17 2009**

**DIV. OF OIL, GAS & MINING**

CC: Karl Houskeeper – DOGM-Price Field Office  
Attachments  
JAG/jag emzznorthLBA.doc

**APPLICATION FOR COAL PERMIT PROCESSING**

**COPY**

Permit Change  New Permit  Renewal  Exploration  Bond Release  Transfer

**Permittee:** Consolidation Coal Company

**Mine:** Emery Mine

**Permit Number:** 015/015

**Title:** Zero Zero North LBA

**Description,** Include reason for application and timing required to implement:

Amnd to add LBA UTU 86038 Zero Zero North area to MRP,

9/09

**Instructions:** If you answer yes to any of the first eight (gray) questions, this application may require Public Notice publication.

- Yes  No 1. Change in the size of the Permit Area? Acres: \_\_\_\_\_ Disturbed Area: \_\_\_\_\_  increase  decrease.
- Yes  No 2. Is the application submitted as a result of a Division Order? DO# \_\_\_\_\_
- Yes  No 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area?
- Yes  No 4. Does the application include operations in hydrologic basins other than as currently approved?
- Yes  No 5. Does the application result from cancellation, reduction or increase of insurance or reclamation bond?
- Yes  No 6. Does the application require or include public notice publication?
- Yes  No 7. Does the application require or include ownership, control, right-of-entry, or compliance information?
- Yes  No 8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
- Yes  No 9. Is the application submitted as a result of a Violation? NOV # \_\_\_\_\_
- Yes  No 10. Is the application submitted as a result of other laws or regulations or policies?  
*Explain:* \_\_\_\_\_
- Yes  No 11. Does the application affect the surface landowner or change the post mining land use?
- Yes  No 12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2)
- Yes  No 13. Does the application require or include collection and reporting of any baseline information?
- Yes  No 14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
- Yes  No 15. Does the application require or include soil removal, storage or placement?
- Yes  No 16. Does the application require or include vegetation monitoring, removal or revegetation activities?
- Yes  No 17. Does the application require or include construction, modification, or removal of surface facilities?
- Yes  No 18. Does the application require or include water monitoring, sediment or drainage control measures?
- Yes  No 19. Does the application require or include certified designs, maps or calculation?
- Yes  No 20. Does the application require or include subsidence control or monitoring?
- Yes  No 21. Have reclamation costs for bonding been provided?
- Yes  No 22. Does the application involve a perennial stream, a stream buffer zone or discharges to a stream?
- Yes  No 23. Does the application affect permits issued by other agencies or permits issued to other entities?

**Please attach four (4) review copies of the application. If the mine is on or adjacent to Forest Service land please submit five (5) copies, thank you.** (These numbers include a copy for the Price Field Office)

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

Jonathan M. Pachter  
Print Name

Jonathan M. Pachter 8/5/09  
Sign Name, Position, Date  
General Manager, Environmental Services

Subscribed and sworn to before me this 5 day of AUGUST, 2009

Jane M. Young  
Notary Public  
My commission Expires: JUNE 20, 2013  
Attest: State of PENNSYLVANIA  
County of WASHINGTON

COMMONWEALTH OF PENNSYLVANIA  
Notarial Seal  
Jane M. Young, Notary Public  
Cecil Twp., Washington County  
My Commission Expires June 20, 2009  
Member, Pennsylvania Association of Notaries

COMMONWEALTH OF PENNSYLVANIA  
Notarial Seal  
Jane M. Young, Notary Public  
Cecil Twp., Washington County  
My Commission Expires June 20, 201  
Member, Pennsylvania Association of Notaries

**For Office Use Only:**

Assigned Tracking Number:

Received by Oil, Gas & Mining

**RECEIVED**

**SEP 17 2009**

DIV. OF OIL, GAS & MINING

# APPLICATION FOR COAL PERMIT PROCESSING

## Detailed Schedule Of Changes to the Mining And Reclamation Plan

COPY

**Permittee:** Consolidation Coal Company

**Mine:** Emery Mine

**Permit Number:** 015/015

**Title:** Amnd to add LBA UTU 86038 Zero Zero North area to MRP

9/09 pg1/3

Provide a detailed listing of all changes to the Mining and Reclamation Plan, which is required as a result of this proposed permit application. Individually list all maps and drawings that are added, replaced, or removed from the plan. Include changes to the table of contents, section of the plan, or other information as needed to specifically locate, identify and revise the existing Mining and Reclamation Plan. Include page, section and drawing number as part of the description.

### DESCRIPTION OF MAP, TEXT, OR MATERIAL TO BE CHANGED

|   |   |  | DESCRIPTION OF MAP, TEXT, OR MATERIAL TO BE CHANGED  |
|---|---|--|--|
| <input type="checkbox"/> Add            | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove            | <u>Chapter I, page 8</u>   |
| <input type="checkbox"/> Add            | <input type="checkbox"/> Replace            | <input type="checkbox"/> Remove            | <u> </u>   |
| <input type="checkbox"/> Add            | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove            | <u>Chapter I, Appendix I-2 pages 1,2,3,4,5,6</u>   |
| <input type="checkbox"/> Add            | <input type="checkbox"/> Replace            | <input checked="" type="checkbox"/> Remove | <u>Chapter I, Appendix I-2 pages 8a and 11</u>   |
| <input type="checkbox"/> Add            | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove            | <u>Chapter I, Appendix I-2 pages 7,8,9,10</u>  |
| <input type="checkbox"/> Add            | <input type="checkbox"/> Replace            | <input type="checkbox"/> Remove            | <u> </u>   |
| <input type="checkbox"/> Add            | <input type="checkbox"/> Replace            | <input type="checkbox"/> Remove            | <u> </u>   |
| <input type="checkbox"/> Add            | <input type="checkbox"/> Replace            | <input type="checkbox"/> Remove            | <u> </u>   |
| <input type="checkbox"/> Add            | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove            | <u>Chapter IV, page 1</u>  |
| <input type="checkbox"/> Add            | <input type="checkbox"/> Replace            | <input type="checkbox"/> Remove            | <u> </u>   |
| <input type="checkbox"/> Add            | <input type="checkbox"/> Replace            | <input type="checkbox"/> Remove            | <u> </u>   |
| <input type="checkbox"/> Add            | <input type="checkbox"/> Replace            | <input type="checkbox"/> Remove            | <u> </u>   |
| <input type="checkbox"/> Add            | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove            | <u>Chapter VI, index page</u>  |
| <input type="checkbox"/> Add            | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove            | <u>Chapter VI, page 3</u>  |
| <input checked="" type="checkbox"/> Add | <input type="checkbox"/> Replace            | <input type="checkbox"/> Remove            | <u>Chapter VI, App VI-16 (selected text from Miller Canyon Tract EA)</u>                           |
| <input type="checkbox"/> Add            | <input type="checkbox"/> Replace            | <input type="checkbox"/> Remove            | <u> </u>   |
| <input type="checkbox"/> Add            | <input type="checkbox"/> Replace            | <input type="checkbox"/> Remove            | <u> </u>   |
| <input type="checkbox"/> Add            | <input type="checkbox"/> Replace            | <input type="checkbox"/> Remove            | <u> </u>   |
| <input type="checkbox"/> Add            | <input type="checkbox"/> Replace            | <input type="checkbox"/> Remove            | <u> </u>   |
| <input type="checkbox"/> Add            | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove            | <u>Chapter VIII, index page</u>  |
| <input type="checkbox"/> Add            | <input type="checkbox"/> Replace            | <input type="checkbox"/> Remove            | <u> </u>   |
| <input type="checkbox"/> Add            | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove            | <u>Chapter VIII App VIII-6 (Mt. Nebo Scientific, Zero Zero North LBA veg/wldlf/T&amp;E report)</u> |
| <input type="checkbox"/> Add            | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove            | <u>Chapter X index page</u>  |
| <input type="checkbox"/> Add            | <input type="checkbox"/> Replace            | <input type="checkbox"/> Remove            | <u>Chapter X App 5-10 (MOAC 08-096), Archeo ZZN LBA UTU-86038 CONFIDENTIAL</u>                     |
| <input type="checkbox"/> Add            | <input type="checkbox"/> Replace            | <input type="checkbox"/> Remove            | <u> </u>   |
| <input type="checkbox"/> Add            | <input type="checkbox"/> Replace            | <input type="checkbox"/> Remove            | <u> </u>   |
| <input type="checkbox"/> Add            | <input type="checkbox"/> Replace            | <input type="checkbox"/> Remove            | <u> </u>   |

|   |   |
|---|---|
| <p><b>Any other specific or special instruction required for insertion of this proposal into the Mining and Reclamation Plan.</b></p> | <p>Received by Oil, Gas &amp; Mining</p> <p style="font-size: 1.5em; font-weight: bold; margin: 10px 0;">RECEIVED</p> <p style="font-size: 1.2em; font-weight: bold; margin: 5px 0;">SEP 17 2009</p> <p>DIV. OF OIL, GAS &amp; MINING</p> |
|---|---|

# APPLICATION FOR COAL PERMIT PROCESSING

## Detailed Schedule Of Changes to the Mining And Reclamation Plan

COPY

**Permittee:** Consolidation Coal Company  
**Mine:** Emery Mine **Permit Number:** 015/015  
**Title:** Amnd to add LBA UTU 86038 Zero Zero North area to MRP 9/09 pg2/3

Provide a detailed listing of all changes to the Mining and Reclamation Plan, which is required as a result of this proposed permit application. Individually list all maps and drawings that are added, replaced, or removed from the plan. Include changes to the table of contents, section of the plan, or other information as needed to specifically locate, identify and revise the existing Mining and Reclamation Plan. Include page, section and drawing number as part of the description.

### DESCRIPTION OF MAP, TEXT, OR MATERIAL TO BE CHANGED

|                              |   |                                 | DESCRIPTION OF MAP, TEXT, OR MATERIAL TO BE CHANGED  |           |
|------------------------------|---|---------------------------------|--|-----------|
| <input type="checkbox"/> Add | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove | Chapter I, Plate I-1 Ownership and Leashold Interest   | HARD COPY |
| <input type="checkbox"/> Add | <input type="checkbox"/> Replace            | <input type="checkbox"/> Remove |  |           |
| <input type="checkbox"/> Add | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove | Chapter III, Plate III-9 Permit Boundaries and Bonding Map (Exhibit D)                         | HARD COPY |
| <input type="checkbox"/> Add | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove | Chapter IV, Plate IV-2, UG Operations Plan   | HARD COPY |
| <input type="checkbox"/> Add | <input type="checkbox"/> Replace            | <input type="checkbox"/> Remove |  |           |
| <input type="checkbox"/> Add | <input type="checkbox"/> Replace            | <input type="checkbox"/> Remove | Chapter V, APP V-5 FIG 1, (Pre-Subsidence survey update)                                       | HARD COPY |
| <input type="checkbox"/> Add | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove | Chapter V, Plate V-1, Presubsidence Survey-Structures and Utilities                            | CD ROM    |
| <input type="checkbox"/> Add | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove | Chapter V, Plate V-2, Presubsidence Survey- Roadways   | CD ROM    |
| <input type="checkbox"/> Add | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove | Chapter V, Plate V-3, Presubsidence Survey- Hydrology  | CD ROM    |
| <input type="checkbox"/> Add | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove | Chapter V, Plate V-4, Presubsidence Survey-Vegetation  | CD ROM    |
| <input type="checkbox"/> Add | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove | Chapter V, Plate V-5, Subsidence Monitoring Points and Buffer Zones                            | HARD COPY |
| <input type="checkbox"/> Add | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove | Chapter V, Plate V-6, Drill Hole,X-Sect, Geotech test hole locations (Confidential)            | CDROM     |
| <input type="checkbox"/> Add | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove | Chapter V, Plate V-17, K1 Seam Geology (Confidential)  | CD ROM    |
| <input type="checkbox"/> Add | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove | Chapter V, Plate V-18, K3 Seam Geology (Confidential)  | CD ROM    |
| <input type="checkbox"/> Add | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove | Chapter V, Plate V-19, J Seam Geology (Confidential)   | CD ROM    |
| <input type="checkbox"/> Add | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove | Chapter V, Plate V-20, UI Seam geology (Confidential)  | CD ROM    |
| <input type="checkbox"/> Add | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove | Chapter V, Plate V-21, LI1 Seam Geology (Confidential)   | CD ROM    |
| <input type="checkbox"/> Add | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove | Chapter V, Plate V-22, LI5 Seam Geology (Confidential)   | CD ROM    |
| <input type="checkbox"/> Add | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove | Chapter V, Plate V-23, G Seam Geology (Confidential)   | CD ROM    |
| <input type="checkbox"/> Add | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove | Chapter V, Plate V-24, D Seam Geology (Confidential)   | CD ROM    |
| <input type="checkbox"/> Add | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove | Chapter V, Plate V-25, C Seam Geology (Confidential)   | CD ROM    |
| <input type="checkbox"/> Add | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove | Chapter V, Plate V-26, A Seam Geology (Confidential)   | CD ROM    |
| <input type="checkbox"/> Add | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove | CH VI, Plate VI-1, Upper Ferron Sandstone potentiometric Surface (1979)                        | CD ROM    |
| <input type="checkbox"/> Add | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove | CH VI, Plate VI-2, Lower Ferron Sandstone Potentiometric Surface (1985)                        | CD ROM    |
| <input type="checkbox"/> Add | <input type="checkbox"/> Replace            | <input type="checkbox"/> Remove |  |           |
| <input type="checkbox"/> Add | <input type="checkbox"/> Replace            | <input type="checkbox"/> Remove |  |           |
| <input type="checkbox"/> Add | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove | CH VI, Plate VI-4, Ground Water Monitoring Well and Surface Water Monitoring Site Location Map | HARD COPY |
| <input type="checkbox"/> Add | <input checked="" type="checkbox"/> Replace | <input type="checkbox"/> Remove | CH VI, Plate VI-5, General Geology   | CD ROM    |

|   |  |
|---|--|
| <p><b>Any other specific or special instruction required for insertion of this proposal into the Mining and Reclamation Plan.</b></p> | <p>Received by Oil, Gas &amp; Mining</p> <p style="font-size: 1.5em; font-weight: bold;">RECEIVED</p> <p style="font-size: 1.2em; font-weight: bold;">SEP 17 2009</p> <p>DIV. OF OIL, GAS &amp; MINING</p> |
|---|--|

# APPLICATION FOR COAL PERMIT PROCESSING

## Detailed Schedule Of Changes to the Mining And Reclamation Plan

COPY

**Permittee:** Consolidation Coal Company

**Mine:** Emery Mine

**Permit Number:** 015/015

**Title:** Amnd to add LBA UTU 86038 Zero Zero North area to MRP

9/09 pg3/3

Provide a detailed listing of all changes to the Mining and Reclamation Plan, which is required as a result of this proposed permit application. Individually list all maps and drawings that are added, replaced, or removed from the plan. Include changes to the table of contents, section of the plan, or other information as needed to specifically locate, identify and revise the existing Mining and Reclamation Plan. Include page, section and drawing number as part of the description.

### DESCRIPTION OF MAP, TEXT, OR MATERIAL TO BE CHANGED

| <input type="checkbox"/> | Add | <input type="checkbox"/>            | Replace | <input type="checkbox"/>            | Remove |   |           |
|--------------------------|-----|-------------------------------------|---------|-------------------------------------|--------|---|-----------|
| <input type="checkbox"/> | Add | <input type="checkbox"/>            | Replace | <input type="checkbox"/>            | Remove |   |           |
| <input type="checkbox"/> | Add | <input checked="" type="checkbox"/> | Replace | <input type="checkbox"/>            | Remove | CH VI, Plate VI-6, Historic and Planned Mining Sequence                             | HARD COPY |
| <input type="checkbox"/> | Add | <input checked="" type="checkbox"/> | Replace | <input type="checkbox"/>            | Remove | CH VI, Plate VI-7, Upper Ferron Sandstone Potentiometric Surface (2006)             | CD ROM    |
| <input type="checkbox"/> | Add | <input checked="" type="checkbox"/> | Replace | <input type="checkbox"/>            | Remove | CH VI, Plate VI-8, Lower Ferron Sandstone Potentiometric Surface (2006)             | CD ROM    |
| <input type="checkbox"/> | Add | <input checked="" type="checkbox"/> | Replace | <input type="checkbox"/>            | Remove | CH VI, Plate VI-9, Misc. Surface Water Data Collection Sites                        | CD ROM    |
| <input type="checkbox"/> | Add | <input checked="" type="checkbox"/> | Replace | <input type="checkbox"/>            | Remove | Chapter VI, Plate VI-10, Surface Drainage Control index Map                         | CD ROM    |
| <input type="checkbox"/> | Add | <input type="checkbox"/>            | Replace | <input type="checkbox"/>            | Remove |   |           |
| <input type="checkbox"/> | Add | <input type="checkbox"/>            | Replace | <input type="checkbox"/>            | Remove |   |           |
| <input type="checkbox"/> | Add | <input type="checkbox"/>            | Replace | <input type="checkbox"/>            | Remove |   |           |
| <input type="checkbox"/> | Add | <input type="checkbox"/>            | Replace | <input type="checkbox"/>            | Remove |   |           |
| <input type="checkbox"/> | Add | <input type="checkbox"/>            | Replace | <input type="checkbox"/>            | Remove |   |           |
| <input type="checkbox"/> | Add | <input checked="" type="checkbox"/> | Replace | <input type="checkbox"/>            | Remove | Chapter VI, Plate VI-12, 4 East Portal Temporary Stream Diversion Drainage Area Map | CD ROM    |
| <input type="checkbox"/> | Add | <input checked="" type="checkbox"/> | Replace | <input type="checkbox"/>            | Remove | Chapter VII, Plate VII-1, Soil Map  | CD ROM    |
| <input type="checkbox"/> | Add | <input checked="" type="checkbox"/> | Replace | <input type="checkbox"/>            | Remove | Chapter VIII, Plate VIII-1, Vegetation and Landuse Map                              | HARD COPY |
| <input type="checkbox"/> | Add | <input checked="" type="checkbox"/> | Replace | <input type="checkbox"/>            | Remove | Chapter IX, Plate 10-1, Selected Wildlife Information (CONFIDENTIAL)                | HARD COPY |
| <input type="checkbox"/> | Add | <input checked="" type="checkbox"/> | Replace | <input type="checkbox"/>            | Remove | Chapter X, Plate X.A-1, Permit Area Cultural Resources (CONFIDENTIAL)               | CD ROM    |
| <input type="checkbox"/> | Add | <input checked="" type="checkbox"/> | Replace | <input type="checkbox"/>            | Remove | Chapter XI, Plate XI-1, Alluvial Valley Floor Along Upper Quitcupah Creek           | CD ROM    |
| <input type="checkbox"/> | Add | <input type="checkbox"/>            | Replace | <input type="checkbox"/>            | Remove |   |           |
| <input type="checkbox"/> | Add | <input type="checkbox"/>            | Replace | <input type="checkbox"/>            | Remove |   |           |
| <input type="checkbox"/> | Add | <input type="checkbox"/>            | Replace | <input type="checkbox"/>            | Remove |   |           |
| <input type="checkbox"/> | Add | <input type="checkbox"/>            | Replace | <input type="checkbox"/>            | Remove |   |           |
| <input type="checkbox"/> | Add | <input type="checkbox"/>            | Replace | <input type="checkbox"/>            | Remove |   |           |
| <input type="checkbox"/> | Add | <input type="checkbox"/>            | Replace | <input checked="" type="checkbox"/> | Remove |   |           |
| <input type="checkbox"/> | Add | <input type="checkbox"/>            | Replace | <input type="checkbox"/>            | Remove |   |           |
| <input type="checkbox"/> | Add | <input type="checkbox"/>            | Replace | <input type="checkbox"/>            | Remove |   |           |
| <input type="checkbox"/> | Add | <input type="checkbox"/>            | Replace | <input type="checkbox"/>            | Remove |   |           |
| <input type="checkbox"/> | Add | <input type="checkbox"/>            | Replace | <input type="checkbox"/>            | Remove |   |           |
| <input type="checkbox"/> | Add | <input type="checkbox"/>            | Replace | <input type="checkbox"/>            | Remove |   |           |

|   |   |
|---|---|
| <p><b>Any other specific or special instruction required for insertion of this proposal into the Mining and Reclamation Plan.</b></p> | <p>Received by Oil, Gas &amp; Mining</p> <p style="font-size: 1.5em; font-weight: bold; margin: 10px 0;">RECEIVED</p> <p style="font-size: 1.2em; font-weight: bold; margin: 5px 0;">SEP 17 2009</p> <p style="font-weight: bold; margin: 5px 0;">DIV. OF OIL, GAS &amp; MINING</p> |
|---|---|

**UMC 782.17**

Underground operations at the Emery Mine is an ongoing situation which does not occur in phases. The extent of the underground workings over the life of the permit is shown on Plates IV-1 and IV-2. The permit area encompasses approximately 442.5 acres and the adjacent area encompasses approximately 5,642,762 acres.

It is anticipated that mining activities will continue considerably beyond the five (5) year permit term. This will require renewals at the end of each term.

**UMC 782.18, UMC 800.60**

Appendix I-5 contains a copy of the insurance certificate, for the Emery Mine, covering personal injury and property damage.

Revised 8-31-95  
Revised 4/05  
Revised 9/06  
Revised 5/09  
Revised 8/09

**Surface Land Ownership Within and Adjacent to the Permit Area**

The following information describes the surface land ownership within and adjacent to the permit. Plate I-1 shows surface land ownership in and adjacent to the permit area.

**Section 19 T22S, R6E**

George E. & Patricia Olsen  
15 E. Center  
Orangeville, Utah 84537  
(801) 748-2522

Julian Bowman  
P.O. Box 141  
Huntington, UT 84528-0141

James Olsen  
647 N. Main  
Spanish Fork, Utah 84660  
(801) 798-3322

United States of America (BLM)  
Lease No. U-5287  
Utah State Offices  
440 West 200 South, Suite 500  
Salt Lake City, Utah 84145-0155

Utah Power and Light  
P.O. Box 899  
Salt Lake City, Utah 84522  
(801) 748-2570

Wynona P. Olsen (trustee)  
3805 Highland Cove Lane  
Apt #D18  
Salt Lake City, Utah 84146

M. Christensen  
Box 35  
Emery, Utah 84522  
(801) 286-2348

Young Investment LLC  
c/o Walt Young  
6590 W. Center St.  
Mendon, UT 84325

Consolidation Coal Company  
~~1800 Washington Road~~ 1000 Conso!  
Energy Dr  
Pittsburgh/Canonsburgh, P~~A~~ennsylvania  
15241317  
(724412) ~~485831~~ 4000

Inserted 12/07  
Revised 9/09

**Surface Land Ownership Within and Adjacent to the Permit Area**

The following information describes the surface land ownership within and adjacent to the permit. Plate I-1 shows surface land ownership in and adjacent to the permit area.

**Section 20 T22S, R6E**

Gary Petty & Jolene  
P.O. Box 44  
Emery, Utah 84522

Glen R. Anderson  
1462 W. 6235 S.  
Murray, Utah 84107  
(801) 266-4324

Emery County  
Emery County Courthouse  
Castle Dale, Utah 84513

Osburn Bret and Lori Lynn Carter  
P.O. Box 24  
Emery, Utah 84522

Kenneth L. & Earlene Christensen  
P.O. Box 552  
Emery, Utah 84522

Jeffery Christensen  
P.O. Box 235  
Cleveland, UT 84518

Osburn Bret Carter & J.R. Lawrence  
P.O. Box 24  
Emery, Utah 84522

Utah Power and Light  
P.O. Box 899  
Salt Lake City, Utah 84110  
(801) 748-2570

**Section 21 T22S, R6E**

Wayne & Delise Staley  
482 N. 2 W.  
Emery, Utah 84522  
(801) 286-2213

John & Vicki Byars  
P.O. Box 575  
Emery, Utah 84522

Consolidation Coal Company  
~~1800 Washington Road~~ 1000 Consol Energy Dr  
Pittsburgh Canonsburgh, PA ennsylvania  
15244 317  
(724 412) 485 831 -4000

Osburn Bret and Lori Lynn Carter  
P.O. Box 24  
Emery, Utah 84522

L.D. & C.A. Jensen  
179 W. 4 S.  
Emery, Utah 84522  
(801) 286-2297

Kent Alan Jorgensen et al  
3663 Bountiful Blvd.  
Bountiful, UT 84010-3313

Morris & Ronnie Sorensen  
P.O. Box 104  
Emery, UT 84522-0104

Inserted 12/07  
Revised 9/09

**Surface Land Ownership Within and Adjacent to the Permit Area**

The following information describes the surface land ownership within and adjacent to the permit. Plate I-1 shows surface land ownership in and adjacent to the permit area.

**Section 22 T22S, R6E**

Consolidation Coal Company  
~~1800 Washington Road~~1000 Consol  
Energy Dr  
PittsburghCanonsburgh, PAennsylvania  
15241317  
(724412) 485831-40000

John & Vicki Byars  
P.O. Box 575  
Emery, Utah 84522

Kenneth L. & Earlene Christiansen  
P.O. Box 552  
Emery, Utah 8452

D.U. Company, Inc.  
53 West Angelo Avenue  
Salt Lake City, Utah 84115

**Section 23 T22S, R6E**

Consolidation Coal Company  
1000 Consol Energy Drive  
Canonsburgh, PA 15317

**Section 26 T22S, R6E**

United States of America BLM  
Leased to Consolidation Coal UTU  
86038

**Section 27 T22S, R6E**

Consolidation Coal Company  
~~1800 Washington Road~~1000 Consol  
Energy Dr  
PittsburghCanonsburgh, PAennsylvania  
15241317  
(724412) 485831-4000

**Section 28 T22S, R6E**

Wayne & Delise Staley  
P.O. Box 83  
Emery, Utah 84522  
(801) 286-2213

Consolidation Coal Company  
~~1800 Washington Road~~1000 Consol  
Energy Dr

PittsburghCanonsburgh, PAennsylvania  
15241317  
(724412) 485831-4000

Russell H. Odle  
P.O. Box 23  
Emery, UT 84522-0023

**Section 29 T22S, R6E**

Russell H. Odle  
P.O. Box 23  
Emery, UT 84522-0023

Emery County  
Emery County Courthouse  
Castle Dale, Utah 84513

Morgan Robertson  
P.O. Box 65  
Emery, Utah 84522  
(Refer to Page 7b thru 7d for  
Exploration & Surface Agreement)

Rainbow Glass  
P.O. Box 340  
Orangeville, UT 84537

Consolidation Coal Company  
~~1800 Washington Road~~1000 Consol Energy Dr  
PittsburghCanonsburgh, PAennsylvania  
15241317  
(724412) 485831-4000  
Osburn Bret Carter & J.R. Lawrence  
P.O. Box 24  
Emery, Utah 84522

**Surface Land Ownership Within and Adjacent to the Permit Area**

The following information describes the surface land ownership within and adjacent to the permit. Plate I-1 shows surface land ownership in and adjacent to the permit area.

**Section 30 T22S, R6E**

George E. & Patricia L. Olsen  
15 E. Center  
Orangeville, Utah 84537  
(801) 748-2522

Josiah K. Eardley  
2433 South Highway 10  
Price, Utah 84501

Consolidation Coal Company  
~~1800 Washington Road~~1000 Consol Energy Dr  
PittsburghCanonsburgh, PAennsylvania  
15244317  
(724412) 485831-4000  
Emery County  
Emery County Courthouse  
Castle Dale, Utah 84513

Morgan C. Robertson  
P.O. Box 65  
Emery, Utah 84522  
(Right of Entry - Road & Monitoring  
Facilities, right-of-way & easement  
grant executed 10-3-88, filed &  
recorded 10-6-88, Utah, Emery County  
Book 174, Page 600-601)

Wynona P. Olsen (trustee)  
3805 Highland Cove Lane  
Apt #D18  
Salt Lake City, Utah 84146

Young Investment LLC  
c/o Walt Young  
6590 W. Center St.  
Mendon, UT 84325

Clara V. Albrechtsen  
893 N 800 E  
Bountiful, UT 84010-2848

M. Christensen  
Box 35  
Emery, Utah 84522  
(801) 286-2348

**Section 31 T22S, R6E**

Consolidation Coal Company  
~~1800 Washington Road~~1000 Consol Energy Dr  
PittsburghCanonsburgh, PAennsylvania  
15244317  
(724412) 485831-4000

Morgan Robertson  
P.O. Box 65  
Emery, Utah 84522

Josiah K. & Etta Marie Eardley  
2433 South Highway 10  
Price, Utah 84501

Osburn Bret Carter et al  
P.O. Box 24  
Emery, Utah 84522

**Section 32 T22S, R6E**

Consolidation Coal Company  
~~1800 Washington Road~~1000 Consol Energy Dr  
PittsburghCanonsburgh, PAennsylvania  
15244317  
(724412) 485831-4000

Osburn Bret Carter  
P.O. Box 24  
Emery, Utah 84522

Inserted 12/07  
Revised 9/09

**Surface Land Ownership Within and Adjacent to the Permit Area**

The following information describes the surface land ownership within and adjacent to the permit. Plate I-1 shows surface land ownership in and adjacent to the permit area.

**Section 33 T22S, R6E**

Consolidation Coal Company  
~~1800 Washington Road~~1000 Consol  
Energy Dr  
PittsburghCanonsburgh, PAennsylvania  
15241317  
(724412) 485831-4000

**Section 36 T22S, R5E**

Consolidation Coal Company  
~~1800 Washington Road~~1000 Consol Energy Dr  
PittsburghCanonsburgh, PAennsylvania  
15241317  
(724412) 485831-4000  
M. Robertson  
P.O. Box 65  
Emery, UT 84522-0065

**Section 34 T22S, R6E**

Consolidation Coal Company  
~~1800 Washington Road~~1000 Consol  
Energy Dr  
PittsburghCanonsburgh, PAennsylvania  
15241317  
(724412) 485831-4000  
United States of America (BLM)

**Section 6 T23S, R6E**

Consolidation Coal Company  
~~1800 Washington Road~~1000 Consol Energy Dr  
PittsburghCanonsburgh, PAennsylvania  
15241317  
(724412) 485831-4000  
United States of America (BLM)  
Not Leased

**Section 25 T22S, R5E**

Rex Addley  
Emery, Utah 84522  
(801) 286-2250

Osburn Bret Carter  
P.O. Box 24  
Emery, Utah 84522

George Lewis  
75 E. 3rd South  
Salt Lake City, Utah 84111  
Phone Unknown

**Section 5 T23S, R6E**

Robert Lewis  
107 W. 2 S.  
Emery, Utah 84522  
(801) 286-2424

Osburn Bret Carter  
P.O. Box 24  
Emery, Utah 84522

United States of America (BLM)  
Not Leased

United States of America (BLM)  
Not Leased

Inserted 12/07  
Revised 9/09

**Section 4 T23S, R6E**

United States of America (BLM)  
Not Leased

**Section 1, T23S, R5E**

United States of America (BLM)  
Not Leased

Inserted 12/07  
Revised 9/09

### Coal Ownership Within and Adjacent to the Permit Area

All the holdings described below that are shown as controlled by P&M or Consol were subject to a 50/50 lease agreement between Consol and P&M (through Gulf Oil Company's acquisition of Kemmerer Coal Company) dated August 23, 1966 and amended 9/1/72 and 2/27/75. Any reference, below, to Kemmerer should be read as P&M. This agreement was terminated by an agreement made effective 3/31/93 giving Consolidation Coal Company sole control of the Emery Coal Mine and all real property associated with it. A copy of this latest agreement is provided at the end of this appendix. The documents and lands listed below pertain only to coal ownership. Plate I-1 shows coal ownership in and adjacent to the permit area.

#### Township 22 South, Range 6 East (SLM)

|                   |  |   |
|-------------------|--|---|
| <b>Section 19</b> | NE $\frac{1}{4}$ SW $\frac{1}{4}$<br>NW $\frac{1}{4}$ SE $\frac{1}{4}$<br>E $\frac{1}{2}$ SE $\frac{1}{4}$<br>S $\frac{1}{2}$ NE $\frac{1}{4}$ | Lease from USA (BLM) to Kemmerer and Consol dated 7/1/70 (#U-527)<br>Utah State Offices<br>University Club Building<br>Salt Lake City, Utah<br>(801) 524-5330 |
|                   | SE $\frac{1}{4}$ SW $\frac{1}{4}$<br>dated 5/14/68   | Deed from Emery County to Kemmerer Coal Co.   |
|                   | SW $\frac{1}{4}$ SE $\frac{1}{4}$  | Deed from L.M. and S.M. Pratt to Kemmerer Coal Co.<br>dated 6/22/49   |
|                   | N $\frac{1}{2}$ NE $\frac{1}{4}$<br>NW $\frac{1}{4}$   | United States of America<br>Not Leased  |
|                   | W $\frac{1}{2}$ SW $\frac{1}{4}$   | Emery County<br>95 E. Main<br>Castledale, Utah 84513<br>(801) 748-2474  |
| <b>Section 20</b> | NW $\frac{1}{4}$ SW $\frac{1}{4}$<br>S $\frac{1}{2}$ S $\frac{1}{2}$<br>NE $\frac{1}{4}$ SE $\frac{1}{4}$                                      | Lease from United States of America (BLM) to Kemmerer and Consol dated 7/1/70 (#U-5287)   |
|                   | NE $\frac{1}{4}$<br>E $\frac{1}{2}$ NW $\frac{1}{4}$<br>NE $\frac{1}{4}$ SW $\frac{1}{4}$<br>NW $\frac{1}{4}$ SE $\frac{1}{4}$                 | Deed from San Rafael Fuel Co. to Kemmerer Coal Co.<br>date 10/1/58  |
|                   | W $\frac{1}{2}$ NW $\frac{1}{4}$   | United States of America<br>Not Leased  |
| <b>Section 21</b> | W $\frac{1}{2}$ SE $\frac{1}{4}$<br>NE $\frac{1}{4}$ NE $\frac{1}{4}$<br>W $\frac{1}{2}$ NE $\frac{1}{4}$                                      | Deed from San Rafael Fuel Co.<br>to Kemmerer Coal Co.   |
|                   | SE $\frac{1}{4}$ NE $\frac{1}{4}$  | Deed from L.M. and S.M. Pratt<br>to Kemmerer Coal Co.   |

Replaced/reordered 9/09

**Section 22**      NW¼NW¼      Deed from San Rafael Fuel Co.  
to Kemmerer Coal Co. dated 10/1/58

SW¼SW¼      Deed from San Rafael Fuel Co.  
SE¼NE¼      to Kemmerer Coal Co. dated 10/1/58

SW¼NW¼      Lease from United States of America  
N½SW¼      (BLM) to Consol dated 7/1/83 (#U-50044)  
SE¼SW¼

W½SE¼      Deed from I. Browning to  
E½NW¼      Kemmerer Coal Co. dated 8/23/66  
W½NE¼  
NE¼NE¼

**Section 23**      SW¼NW¼      Deed from I. Browning to  
Kemmerer Coal Co. dated 8/23/66

NW¼SW¼      Deed from San Rafael Fuel Co.  
to Kemmerer Coal Co. dated 10/1/58

S1/2SW1/4      Lease from USA (BLM) to Consol dated ?????(UTU 86038)

**Section 26**      NW1/4NW1/4      Lease from USA (BLM) to Consol dated ?????(UTU 86038)

**Section 27**      S½ NW¼      Deed from San Rafael Coal Co.  
SW¼NE¼      to Kemmerer Coal Co. dated 10/1/58

N½NE¼      Deed from L.M. and S.M. Pratt  
to Kemmerer Coal Co. dated 6/22/49

S½NE¼      Deed from Kemmerer Coal Co.

**Section 28**      NW¼      Deed from San Rafael Fuel Co.  
to Kemmerer Coal Co. dated 10/1/58

NE¼      Dated from San Rafael Fuel Co.  
to Kemmerer Coal Co. dated 10/1/58

S½      Deed from San Rafael Fuel Co.  
to Kemmerer Coal Co. dated 10/1/58

**Section 29**      NW¼NW¼      Lease from United States of America  
E½NW¼      (BLM) to Kemmerer and Consol  
W½NE¼      dated 7/1/70 (#U-5287)  
NW¼SE¼

Beginning 20 rods South of  
the NW corner of the SW  
Quarter of Section 29,  
thence South 60 rods, thence  
East 80 rods, thence North 20  
rods, thence Northwesterly to  
the place of the beginning.

Lease from John and Carolyn Lewis  
to Consol and Kemmerer  
dated 11/12/80  
1163 E. 25th Street  
Idaho Falls, ID 83401  
(208) 522-3646

Revised/reordered 9/09

SW $\frac{1}{4}$ NW $\frac{1}{4}$ , beginning at the NW corner of SW $\frac{1}{4}$ , thence E 80 rods, thence S 76 rods, thence Northwesterly to the place of the beginning.

Lease from George Olsen to Consolidation Coal Co. dated 12/17/80  
15 E. Center  
Orangeville, Utah  
(801) 748-2522

SE $\frac{1}{4}$ NE $\frac{1}{4}$

Lease from R.D. Jensen and D.R. Close to Consolidation Coal Co. dated 12/17/80  
520 E. 1 N.  
Cleveland, Utah 84518  
(801) 653-2252

NE $\frac{1}{4}$ NE $\frac{1}{4}$   
E $\frac{1}{2}$ SE $\frac{1}{4}$   
SW $\frac{1}{4}$ SE $\frac{1}{4}$   
NE $\frac{1}{4}$ SW $\frac{1}{4}$

Deed from San Rafael Fuel Co. to Kemmerer Coal Co. dated 10/1/58

S $\frac{1}{2}$ SW $\frac{1}{4}$

State of Utah  
Lease Relinquished by Consolidation Coal Co.

**Section 30**

S $\frac{1}{2}$ NE $\frac{1}{4}$   
E $\frac{1}{2}$ NW $\frac{1}{4}$   
NW $\frac{1}{4}$ SE $\frac{1}{4}$   
SW $\frac{1}{4}$ SE $\frac{1}{4}$   
SE $\frac{1}{4}$ SW $\frac{1}{4}$

Deed from Emery County to Kemmerer Coal Co. dated 5/14/68

N $\frac{1}{2}$ NE $\frac{1}{4}$   
SW $\frac{1}{4}$ NW $\frac{1}{4}$   
NE $\frac{1}{4}$ SW $\frac{1}{4}$

Deed from L.M. and S.M. Pratt to Kemmerer Coal Co. dated 6/22/49

NW $\frac{1}{4}$ NW $\frac{1}{4}$

Private ownership, Ralph Lewis  
4053 S. 850 W.  
Bountiful, Utah 84010  
(801) 292-1204

SW $\frac{1}{4}$ SW $\frac{1}{4}$   
S $\frac{1}{2}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$

Lease from George Lewis to Consolidation Coal Co. dated 8/30/82

NE $\frac{1}{4}$ SE $\frac{1}{4}$

Lease from John and Carolyn Lewis to Consolidation Coal Co. dated 11/12/80

SE $\frac{1}{4}$ SE $\frac{1}{4}$

State of Utah  
Lease relinquished by Consolidation Coal Company

N $\frac{1}{2}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$

Lease from Robert Lewis to Consolidation Coal Co. dated 10/3/74  
107 W. 2 S.  
Emery, Utah 84522  
(801) 286-2424

**Section 31**

W $\frac{1}{2}$ NE $\frac{1}{4}$   
E $\frac{1}{2}$ NW $\frac{1}{4}$   
NW $\frac{1}{4}$ NW $\frac{1}{4}$

Deed from Emery County to Kemmerer Coal Co. dated 5/14/68

SW $\frac{1}{4}$ NW $\frac{1}{4}$   
W $\frac{1}{2}$ SW $\frac{1}{4}$   
SW $\frac{1}{4}$ SE $\frac{1}{4}$

See Note A.

E $\frac{1}{2}$ NE $\frac{1}{4}$

Deed from San Rafael Fuel Co. to Kemmerer Coal Co. dated 10/1/58  
CH I App, I-2, pg9

|                   |                            |  |
|-------------------|----------------------------|--|
|                   | NW¼SE¼<br>NE¼SW¼<br>SE¼SW¼ | State of Utah<br><br>Lease Not Renewed                           |
|                   | E½SE¼                      | Deed from L.M. and S.M. Pratt to Kemmerer Coal Co. dated 6/22/49 |
| <b>Section 32</b> | NW¼<br>E½                  | Deed from San Rafael Fuel Co. to Kemmerer Coal Co. dated 10/1/58 |
|                   | SW¼                        | Deed from L.M. and S.M. Pratt to Kemmerer Coal Co. dated 6/22/49 |
| <b>Section 33</b> | All                        | Deed from San Rafael Fuel Co. to Kemmerer Coal Co. dated 10/1/58 |
| <b>Section 34</b> | N½                         | Deed from San Rafael Fuel Co. to Kemmerer Coal Co. dated 10/1/58 |
|                   | S½                         | United States of America<br>Not Leased                           |

**Township 22 South Range 5 East (SLM)**

|                   |      |  |
|-------------------|------|--|
| <b>Section 25</b> | E½E½ | United States of America<br>Not Leased |
| <b>Section 36</b> | All  | Utah State, not leased                 |

**Township 23 South Range 5 East (SLM)**

|                  |     |  |
|------------------|-----|--|
| <b>Section 1</b> | All | United States of America<br>Not Leased |
|------------------|-----|--|

**Township 23 South Range 6 East (SLM)**

|                  |                               |  |
|------------------|-------------------------------|--|
| <b>Section 6</b> | N½W¼<br>NW¼NE¼                | See Note A.  |
|                  | NE¼NE¼                        | Deed from L.M. and S.M. Pratt to Kemmerer Coal Co. dated 6/22/49 |
| <b>Section 5</b> | NW¼NW¼                        | Deed from L.M. and S.M. Pratt to Kemmerer Coal Co. dated 6/22/49 |
|                  | E½<br>E½W½<br>W½SW¼<br>SW¼NW¼ | United States of America (BLM)<br>Not Leased                     |
| <b>Section 4</b> | W½                            | United States of America (BLM)<br>Not Leased                     |
|                  | E½                            | United States of America (BLM)<br>Not Leased                     |

NOTE A: The Kemmerer Coal Company has been paying taxes on these lands for a number of years. However, during the title investigations, the deed from Ira Browning to Kemmerer was found to be missing, but these lands are not included in the Browning estate. Therefore, it is Consol-Kemmerer's contention that these coal lands do indeed belong to Consol-Kemmerer, although judicial action will probably be necessary to clear them. The legal proceedings for these properties will be initiated in the near future.

Replaced/reordered 9/09

## CHAPTER IV      ENGINEERING DESIGNS

### IV.A            UNDERGROUND MINE PLAN

This part covers the description of the underground mining operations to be conducted at the Emery Mine.

#### IV.A.1          UNDERGROUND MINE PLAN

UMC 783.12(a), 783.24(c), 783.25(e), 783.25(h), 784.11(a), 784.23(a)

The Adjacent Area for the Emery Mine encompasses approximately 5,642.762 acres. The permit area for the Emery Mine encompasses approximately 442.5 acres. The boundary of the Adjacent Area and permit area is shown on the Permit Boundaries and Bonding Map (Plate III-9). The description of the Adjacent area is as follows:

Township 22 South, Range 6 East

Section 19: S/2NE/4, SE/4, E/2SW/4

Section 20: S/2NE/4, SE/4NW/4, S/2

Section 21: S/2N/2, S/2

Section 22: S/2, SW/4NW/4, portions of the following E/2SE/4NW/4, SW/4SE/4NW/4, S/2NW/4NE/4, SW/4NE/4, SW/4SW/4NE/4NE/4, W/2SE/4NE/4, S/2NE/4SE/4NE/4, SE/4SE/4NE/4

Section 23: portions of the following SW/4NW/4, NW/4SW/4 Section 27: W/2, portion of NE/4

Section 23: S/2 SW1/4

Section 26: NW1/4NW1/4

Section 28: All

Section 29: All

Section 30: E/2, E/2NW/4, SW/4NW/4, N/2NW/4SW/4, E/2SW/4

Section 31: N/2, W/2SW/4, E/2SE/4, SW/4SE/4

Section 32: All

Section 33: W/2, NE/4

The description of the permit area is as follows:

Township 22 South, Range 6 East

Section 27: portions of NW/4, SW/4, NE/4

Section 30: portions of NE/4

Section 32: portions of NW/4, NE/4, SE/4

Section 33: portions of NW/4, NE/4, SW/4

Mining operations at the Emery Mine are conducted in the IJ Zone utilizing the room and pillar mining method. Plate IV-1 shows the layout, the present mine workings and the projected areas to be mined during the permit term. The existing workings have been marked to show the extent of underground mining operations (1) before August 3, 1977, (2) between August 3, 1977 and May 3, 1978, and (3) after May 3, 1978 up to the permit approval date of January 5, 1986. There are no surface mining operations at the Emery Mine. The projected mine workings are delineated by year for the next five year permit term. Plate IV-2 shows the same plan on a 1"=1000' map to show the extent of the projected life of mine plan in the IJ Zone. The Emery Mine operates under the General Safety Orders, Utah Coal Mines issued by the Industrial Commission of Utah and the applicable regulations issued by the Mine Health and Safety Administration (MSHA).

Access to the underground workings is through the portals shown on Plate II-1. All of the present portals are drift openings at the outcrop of the seam. These openings consist of intake, return, and belt entries. It may be necessary in the future to install ventilation raises in other areas of the property; however, these locations are not known at the present time. Future portals may consist of ramp excavations and shafts to access the coal seam. The new 4 East portal will use a ramp excavation down to the top of the IJ seam. A new set of portals will be installed for the southern main entries of the mine when production from the southern part of the mine warrants it.

Revised 8-31-95  
Revised 4/05  
Revised 3/07  
Revised 5/09  
Revised 9/09

## LIST OF APPENDICES

- VI-1: Groundwater Monitoring – Water Quality Data
- VI-2: Lithologic and Geophysical Data for Monitoring Wells
- VI-3: Pump Test Reports and Plots
- VI-4: Water Rights
- VI-5: Surface Water Monitoring – Flow and Water Quality Data
- VI-6: Drainage Ditch Designs
- VI-7: Sedimentation Pond Designs
- VI-8: Alternate Sediment Control Designs
- VI-9: HEC-1 Computer Routings
- VI-10: Groundwater Monitoring – Water Level Data
- VI-11: USGS Streamflow Data
- VI-12: UPDES Monitoring Data
- VI-13: Data from Miscellaneous Surface Water Quality Studies
- VI-14: Mass-Balance Estimates of Future Mine-Water Discharges
- VI-15: MODFLOW Report
- VI-16: Selected Text from Miller Canyon Tract EA

## VI.2.4 Baseline Information

Surface and groundwater resource information is presented in this section to assist in understanding hydrologic conditions in the mine area. This information provides a basis for determining if mining operations have had, or can be expected to have, a significant impact on the hydrologic balance of the area. [Additional information regarding the hydrology of the Miller Canyon Tract is provided in Appendix VI-16.](#)

### VI.2.4.1 Groundwater Information

This section presents a discussion of baseline groundwater conditions in the permit and adjacent areas. The locations of wells and springs in the area are presented on Plates VI-3 and VI-4. Lithologic and completion logs for monitoring wells in the permit and adjacent areas are provided in Appendix VI-2.

Geologic conditions in the permit and adjacent areas are described in Volume V of this MRP. Groundwater in the permit and adjacent areas occurs predominantly in the Ferron Sandstone. However, perched aquifers of limited areal extent are present in overlying materials. Hydrogeologic conditions within the permit and adjacent areas are summarized below.

#### Quaternary Deposits (Qal)

Discontinuous, shallow perched zones are contained within Quaternary alluvial, mud and slope wash, and pediment deposits scattered throughout the Emery area (see Plate VI-5). These Quaternary deposits are generally less than 50 feet thick, with boundaries defined by the contact with the underlying Blue Gate Member of the Mancos Shale.

Recharge to Quaternary *alluvial deposits* in the area occurs primarily by streamflow seepage along adjacent water courses. During the spring and summer months, much of this water consists of irrigation return flow. Groundwater discharges from these Quaternary alluvial deposits primarily via evapotranspiration and horizontal, subsurface outflow to topographically lower areas. Given the relatively impermeable nature of the underlying Blue Gate Member, it is assumed that only minor quantities of alluvial groundwater discharge to the adjacent bedrock.

Most recharge to the Quaternary *mud and slope wash and pediment deposits* occurs via seepage of irrigation water applied to adjacent land. This water, which in the Emery area is diverted predominantly from Muddy Creek, is either evapotranspired or moves horizontally through these deposits and then discharges to the surface at the underlying contact with the relatively impervious Blue Gate Member. Several seepage points representing irrigation return flow from this subsurface mud and slope wash/pediment water are noted on Plate VI-5 (specifically SP-1 through SP-14). Water flowing from some of these seeps becomes trapped in swales which, coupled with the high salinity of the Blue Gate, creates areas of salt accumulation.

Consol conducted an inventory of seepage points within one mile of the permit area on October 24, 1979, and again on June 11, 1980. Each point was evaluated in the field for its geologic setting, and field data were collected to define the temperature, pH, specific conductance, dissolved oxygen, and discharge (where possible) of the seepage.

Within the study area, 16 seepage points were identified in 1979-1980. Locations and field measurements for each of the points are exhibited on Plate VI-5 and Table VI-3, respectively. All but two of the seepage points were observed to be issuing from pediment

Revised 9/09

**APPENDIX VI-16**

Selected Text from  
Miller Canyon Tract EA

**The following is extracted from pages 18 through 20 of the Emery Mine-Miller Canyon Tract Lease Environmental Assessment<sup>1</sup>:**

**3.3.1 Water Resources**

The Tract is bisected by the upper reaches of Miller Canyon (**Figure 4**). Miller Canyon joins Muddy Creek about one mile downstream of the Tract. Though most of the Tract is drained by Miller Canyon, runoff from the western part flows toward Christiansen Wash, which is also tributary to Muddy Creek via Quitchupah Creek. Muddy Creek and the Fremont River combine to form the Dirty Devil River before it joins the Colorado River.

Along a several-mile reach of Muddy Creek, beginning at the Emery Canal diversion (which often completely dewateres the channel) located about 15 miles northwest of the Tract, continuing downstream to include the reach of stream just east of the Tract, stream flows are generally supported by seepage and irrigation returns (Mundorff 1979). Within this reach of Muddy Creek, total dissolved solids (TDS) concentrations markedly increase. For example, TDS in samples collected by the US Geological Survey (USGS) during the 2005 and 2006 water years were consistently below 300 mg/L at the USGS Muddy Creek station upstream of Emery near the canal diversion, but were as high as 3,714 mg/L in Muddy Creek just below Miller Creek (USGS 2008). The increase is due to diversion of good quality water into the Emery Canal, interaction with the soluble marine deposits associated with Mancos Shale Formation outcrops, and contribution of irrigation-affected seepage and return flow. Miller Canyon itself conveys irrigation return flow, runoff from storms and snow melt, and discharge from a small spring. Each of these sources is discussed in more detail below.

Within the reach of Miller Canyon that flows through the Tract, irrigation return flow is seasonal, but of sufficient duration and volume to support a riparian corridor and to provide water for downstream stock uses. It appears to be the largest sustained contributor to Miller Canyon flow: a site visit on April 24, 2008, prior to the start of irrigation, documented an absence of stream flow in Miller Canyon upstream of contributions from a small spring (less than one gallon per minute) near the downstream end of the Tract; a repeat visit on June 4 documented irrigation flows (in excess of 100 gallons per minute) throughout the previously dry reach. Further, field notes from Consol personnel, who routinely visit the area to monitor flows at the spring, often indicate that the presence of irrigation water hinders their ability to measure spring discharge (personal communication, Peter Behling, Consol, April 28, 2008).

While the Emery area has been flood-irrigated for more than 100 years, the practice is likely to be modified in the near future, and this modification may have a direct bearing on future flows in Miller Canyon (unrelated to Consol's plan to mine the Tract). The Tract is within a larger area established by the USDA Natural Resource Conservation Service (NRCS) as the Muddy Creek Unit of the Colorado River Salinity Control Program. As with other salinity control units, this area was determined to be an area where salt load reduction was potentially economical. In October 2004, the NRCS (2004) finalized a plan to construct a new irrigation delivery system and implement an irrigation conversion project (from flood to sprinkler) on the Muddy Creek Unit. Once implemented, this project will result in more efficient water use, which in turn tends to improve water quality by reducing dissolved salts. Irrigation conversion also generally reduces deep percolation, seepage, and excess water in return ditches. Once implemented on the fields upstream of the Tract, stream flows through Miller Canyon are likely to diminish. Those reduced flows, in turn, may result in a diminished riparian corridor and associated habitat. In fact, the NRCS's EA (NRCS 2004) recognizes that at least some of the seeps, wetlands, and riparian areas that have been artificially

---

<sup>1</sup> U.S. Bureau of Land Management. 2009. Environmental Assessment of the Consolidation Coal Company Emery Mine-Miller Canyon Tract Lease UTU-86038, Emery County, Utah. Environmental Assessment UT-070-2008-104. Price, Utah.

created over many years of inefficient irrigation practices in the Muddy Creek area are likely to be negatively impacted by the salinity control project.

Runoff from thunderstorms and seasonal snowmelt is another source that contributes stream flow to Miller Canyon. At Muddy Creek near 1-70, the USGS (2008) attributed more than twice the amount of snowmelt runoff as compared to direct runoff during the 2005-2006 water years, but also notes the large temporal and spatial variability of flows in the Muddy Creek Basin. Snowmelt in Miller Canyon would likely peak in May or early June, and would typically contain very few dissolved solids. Late summer or fall thunderstorms produce most of the direct runoff, and this source is — by nature — infrequent and irregular. Channel morphology in Miller Canyon does not suggest that severe flash floods are common. As with most streams in the area, when the flow is comprised of high-intensity runoff from thunderstorms, sediment concentrations in Miller Canyon are likely to be elevated, and TDS concentrations are likely to be higher than during snowmelt-dominated flow events.

Due to a small, currently unmaintained earthen dike across the Miller Canyon channel at the upstream end of the Tract (**Figure 4**), both irrigation water and runoff are at least partially impounded. During the previously mentioned June 2008 site visit, seepage was occurring beneath the dam, and significant piping and interception of flows was occurring immediately downstream of it (which appears to be related to bedrock joints or fissures as the intercepted flows were observed to resurface well downstream of the dam). Several smaller impoundments have been excavated just upstream of the dam, within and north of the Tract on land owned by Consol but leased to an irrigator. These impoundments were apparently constructed to compensate for the dam's only partially functional ability to store water. The stored water is apparently used to supply drinking water for the lessee's livestock.

As mentioned above, a small spring discharges groundwater along the west bank of Miller Canyon near the downstream Tract boundary (**Figure 4**). This spring is not documented on USGS mapping or in other published sources, but was identified a number of years ago in association with the Emery Mine's baseline data gathering. Named Christiansen Spring (or SP-15), Consol monitors this source quarterly. According to Consol's MRP (Consolidation Coal Company 2008a), the spring discharges from the upper zone of the Ferron Sandstone Member of the Mancos Shale. Consol has a water right (#94-92) that was originally associated with this spring, and which now includes stockwatering rights for a reach upstream of the spring.

Downstream of the spring and the Tract, continuing through Miller Canyon to its confluence with Muddy Creek, BLM has an in-stream point-to-point water right (#94-1716) for stock watering and livestock uses (**Figure 3**). As with the upstream reach of Miller Canyon, flows in this segment of the canyon are most likely supported largely by irrigation return flows.

The Ferron Sandstone is considered to be the primary bedrock aquifer within the general area encompassing the Tract. Located between the more impermeable shales of the Blue Gate (overlying) and the Tununk (underlying) members of the Mancos Shale, the aquifer associated with the Ferron Sandstone is commonly divided into a lower, middle, and an upper aquifer unit. The minable coal seam is located between the middle and upper divisions. The Emery Mine intercepts groundwater from this aquifer, and continually discharges the majority of the intercepted water to Quitchupah Creek. In 2006, the mine discharged this water at an average rate of about 527 gallons per minute; its TDS averaged approximately 3,480 mg/L (EarthFax Engineering, Inc., 2008). The discharge is permitted by the Utah Division of Water Quality (UDWQ) under the Utah Pollutant Discharge Elimination System (UPDES) program. Consol owns several water rights for groundwater, and uses this water for industrial and agricultural purposes.

The Ferron Sandstone aquifer is primarily recharged from the high-elevation Wasatch Plateau to the west, and is under artesian pressure in the vicinity of the Emery Mine. Within the Tract, the Ferron Sandstone is the uppermost bedrock unit, and it is exposed as outcrop along portions of Miller Canyon, including at the location of the above-described spring. Generally though, within and near the outcrop

area the Ferron is not saturated. By intercepting and continually discharging the intercepted water, mining has lowered the potentiometric surface of the Ferron, (primarily the upper Ferron zone and to a lesser extent the middle and lower zones) (Consolidation Coal Company 2008b). Once mining ceases, the trough of depression caused by past and currently approved mining activities will gradually diminish and pre-mining groundwater levels will eventually be approximately reestablished.

The water quality of the Ferron varies with depth and with distance down gradient from the recharge area. The TDS concentration of groundwater in the upper Ferron Sandstone averages about 1,600 mg/L, though in the vicinity of the Emery Mine is locally higher, likely due to interaction between the Ferron and the overlying shales.

Neither the surface- nor groundwater resources in the vicinity of the Tract supply public or private drinking water systems. This is largely due to a lack of need in this sparsely populated area, but in part is due to high TDS concentrations.

**The following is extracted from page 29 of the Emery Mine-Miller Canyon Tract Lease Environmental Assessment:<sup>1</sup>**

Under existing approvals that are irrespective of the proposed action being evaluated here, it has been predicted that Christiansen Spring (also known as SP-15) will be within the cone of depression due to mining and resultant dewatering of the upper Ferron Sandstone aquifer. Groundwater modeling presented in Consol's approved MRP (Consolidation Coal Company 2008) suggests that the potentiometric surface in the vicinity of the spring will temporarily decline about 24 feet; this decline can be expected to affect the discharge of Ferron Sandstone groundwater at Christiansen Spring. As overall premining groundwater levels reestablish after mining is complete, the spring can be expected to again discharge this groundwater. Mining the Tract would not alter either the diminishment or the reestablishment of the spring as it is already expected to occur under the existing mine plan.

Further, this spring is not within the footprint of the area that would be mined or subsided under the proposed action. As such, its physical setting would not be disturbed.

## CHAPTER VIII VEGETATION

| <u>PARTS</u>                                     | <u>Page</u> |
|--|-------------|
| VIII.A. ENVIRONMENTAL BASELINE DESCRIPTION ..... | 1-2         |

### VIII.B. DETAILED DESIGNS AND CALCULATIONS

|          |   |        |
|----------|---|--------|
| VIII.B.1 | SAMPLING DESIGN .....                       | 3-4    |
| VIII.B.2 | DESCRIPTIONS OF VEGETATION MAPPING UNITS .. | 5-10   |
| VIII.B.3 | SPECIES LIST .....                          | 11-16  |
| VIII.B.4 | THREATENED AND/OR ENDANGERED SPECIES .....  | 17-17a |
| VIII.B.5 | DATA REVIEW .....                           | 18-19  |

### VIII.C DEMONSTRATION OF COMPLIANCE WITH PERFORMANCE STANDARDS

|           |   |        |
|-----------|---|--------|
| VIII.C.1  | UMC 783.19 VEGETATION INFORMATION .....   | 20     |
| VIII.C.2  | UMC 783.24 MAPS REQUIREMENTS .....  | 20     |
| VIII.C.3  | UMC 817.100 CONTEMPORANEOUS RECLAMATION ..  | 20     |
| VIII.C.4  | UMC 817.111 REVEGETATION: GENERAL<br>REQUIREMENTS. ....                             | 21-22  |
| VIII.C.5  | UMC 817.112 REVEGETATION: USE OF INTRODUCED<br>SPECIES .....                        | 23     |
| VIII.C.6  | UMC 817.113 REVEGETATION: TIMING .....  | 23     |
| VIII.C.7  | UMC 817.114 REVEGETATION: MULCHING AND OTHER<br>SOIL STABILIZING<br>PRACTICES ..... | 23     |
| VIII.C.8  | UMC 817.115 REVEGETATION: GRAZING .....   | 23     |
| VIII.C.9  | UMC 817.116 REVEGETATION: STANDARDS FOR<br>SUCCESS .....                            | 24-25c |
| VIII.C.10 | UMC 817.117 REVEGETATION: TREE AND SHRUB<br>STOCKING FOR<br>FOREST LAND .....       | 26     |

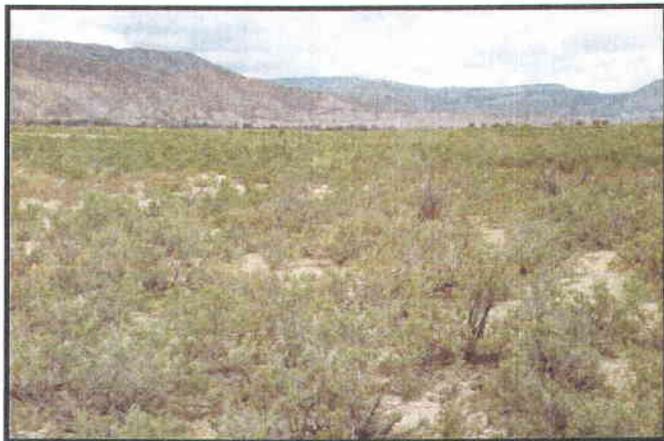
### APPENDICES

|        |  |
|--------|--|
| VIII-1 | BIOLOGICAL IMPACTS AT THE 4 <sup>TH</sup> EAST PORTAL AREA<br>Mt. Nebo Scientific, Inc., May 2002  |
| VIII-2 | THREATENED, ENDANGERED, and Sensitive Species Survey<br>Report, JBR Environmental Consultants, Inc., August 2002   |
| VIII-3 | Vegetation of the 4 <sup>th</sup> East, 6 <sup>th</sup> West, & 14 <sup>th</sup> /15 <sup>th</sup> West Areas<br>Report Mt. Nebo Scientific, April 2007 (includes T&E and sensitive species)   |
| VIII-4 | Biological Resources of the Full Extraction Pillar Splitting, Life of Mine Surface Area Report Mt.<br>Nebo Scientific, November 2008   |
| VIII-5 | Biological Resources of the Zero Zero North Area, Mt. Nebo Scientific, June 2009   |
| VIII-6 | <u>Biological Resources of the Zero Zero North LBA UTU-86038, Mt Nebo Scientific, Nov 2008</u><br><u>Plant Communities, Threatened, Endangered &amp; Sensitive Species study, Burrowing Owl Survey,</u><br><u>Prairie Dog Survey</u> |
| Plates |  |
| VIII-1 | VEGETATION & LAND USE MAP  |

**CHAPTER VIII**  
**APPENDIX VIII-6**

# **PLANT COMMUNITIES**

**MILLER TRACT AREA  
EMERY MINE  
2008**



Prepared by

MT. NEBO SCIENTIFIC, INC.  
330 East 400 South, Suite 6  
Springville, Utah 84663  
(801) 489-6937

by  
Patrick D. Collins, Ph.D.

for

**CONSOLEENERGY**  
P.O. Box 566  
Sesser, Illinois 62844

November 2008



# TABLE OF CONTENTS

|                     |   |
|---------------------|---|
| INTRODUCTION .....  | 1 |
| METHODS .....       | 1 |
| RESULTS .....       | 2 |
| Shadscale .....     | 2 |
| Greasewood .....    | 2 |
| Saltgrass .....     | 3 |
| Riparian .....      | 3 |
| Pasture Lands ..... | 3 |
| Sagebrush .....     | 4 |
| Tamarisk .....      | 4 |
| FIGURES .....       | 5 |

# INTRODUCTION

The Emery Mine is located in south-central Utah in Emery County. Expansion of underground coal mining activities have been planned in an area known as the Miller Tract. In planning for the future, studies regarding impacts to the land surface above the mining have been conducted.

The plant communities located within the Miller Tract area have been mapped and briefly described in this document.

# METHODS

Vegetation mapping was accomplished by walking the entire area of the Miller Tract of the Emery Mine site. Aerial photographs were also utilized in the field for the vegetation mapping work. Dominant plant species of each plant community and field notes were recorded during the field work.

# RESULTS

The following plant communities were mapped within the Miller Tract of the Emery Mine:

- Shadscale
- Greasewood
- Saltgrass
- Riparian
- Pasture Land
- Sagebrush
- Tamarisk

A brief description about the plant communities follows. A vegetation map of the area has also been included in this report (Figure 1) along with color photographs of each community type (Figures 2-9).

## Shadscale

A Shadscale plant community occupied portions of the Miller Tract (Figure 2). As the community name suggests, this community was dominated by shadscale (*Atriplex confertifolia*), but several other species of shrubs, forbs, and grasses were often common in this community such as broom snakeweed (*Gutierrezia sarothrae*), mat saltbush (*Atriplex corrugata*), cryptanth (*Cryptantha* spp.), Indian ricegrass (*Stipa hymenoides*), galleta (*Hilaria jamesii*) and blue grama (*Bouteloua gracilis*). Additionally, there were areas of shadscale that also supported scattered pinyon pine (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*) trees (Figures 1 and 3).

### Greasewood

Greasewood communities were common in the study area (Figure 4). This community is known for its relatively low species diversity with the dominant plant species here represented almost exclusively by greasewood (*Sarcobatus vermiculatus*), and to a lesser extent, Torrey's seepweed (*Suaeda torreyana*).

### Saltgrass

The lower elevation topography of the study areas were often comprised of Saltgrass plant communities (Figure 5). The water that flows within these areas is often derived from natural groundwater and surface water as well as runoff from irrigated pasture lands located up-gradient. The dominant plant species in these communities was often almost exclusively comprised of saltgrass (*Distichlis spicata*). However, there were other saltgrass areas that contained additional species that were represented as co-dominants such as tamarisk (*Tamarisk chinensis*) and wiregrass (*Juncus arcticus*).

### Riparian

There was a riparian community associated with a drainage through the Miller Canyon Tract (Figure 6). Depending on the reach location, dominant plants species included wiregrass,

saltgrass, tamarisk, greasewood, rushes (*Juncus* spp.) and sedges (*Carex* spp.).

### Pasture Land

Some of the lower elevation areas have been converted from native plant communities to pasture lands for use by domestic livestock. Some of the pasture lands were once irrigated, but are currently being utilized as unirrigated, dry-land pastures (Figure 7). Native species common in these areas were greasewood, saltgrass and galleta. Due to disturbance by landowners and cattle, some “weedy”, exotic species such as gumweed (*Grindelia squarrosa*), field bindweed (*Convolvulus arvensis*), thistles (*Cirsium* spp.) and houndstongue (*Cynoglossum officinale*) were also common in these areas.

### Sagebrush

There were some relatively small areas that were dominated by sagebrush (*Artemisia tridentata*). These areas were primarily located on the upland fringes of the riparian community (Figure 8). Other species associated with this community were saltgrass, greasewood, shadscale, broom snakeweed (*Gutierrezia sarothrae*), galleta and rubber rabbitbrush (*Chrysothamnus nauseosus*).

## Tamarisk

Tamarisk, or salt cedar, is a non-native plant that has become a problem in Utah because it out-competes and often displaces other native species. A native of Eurasia, it was once cultivated as an ornamental and has become naturalized along seeps, streams, and reservoirs in Utah. Nearly pure stands of tamarisk have become established in some locations of the study area, primarily in the aforementioned drainage channel (Figure 9).





Figure 2: Shadscale

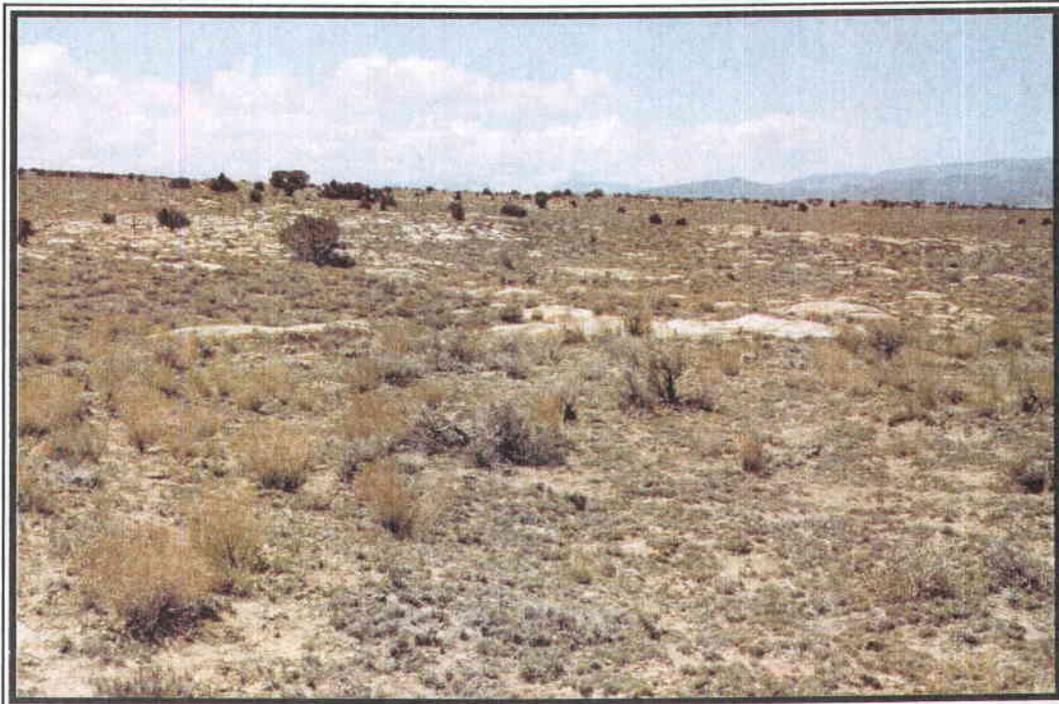


Figure 3: Shadscale (with scattered Pinyon-Juniper)

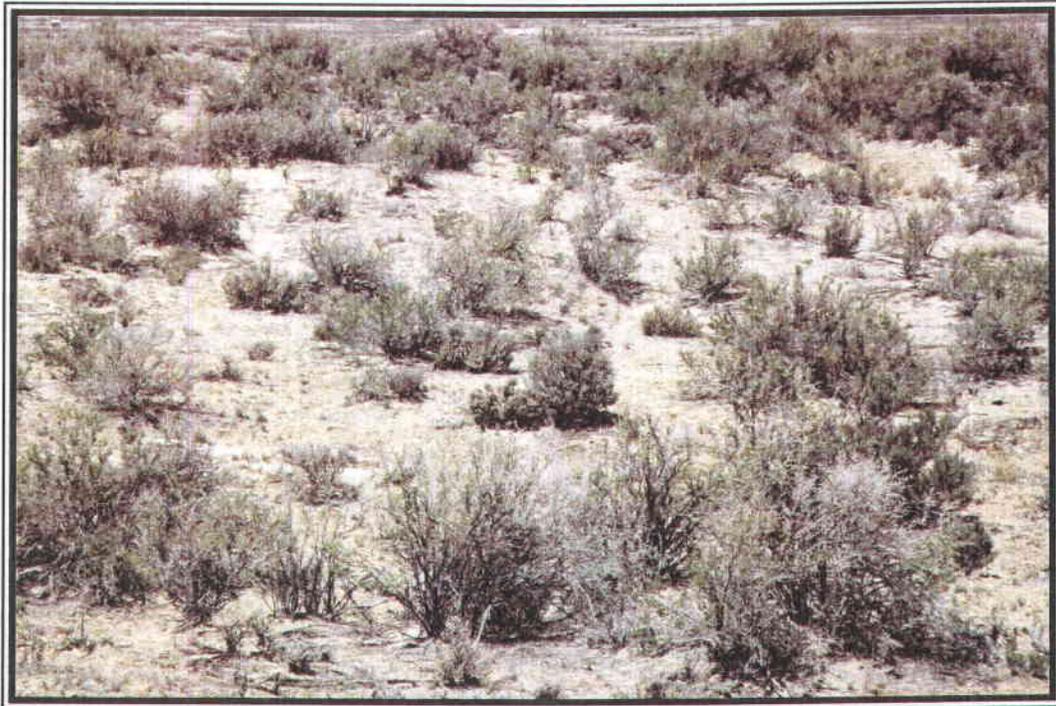


Figure 4: Greasewood

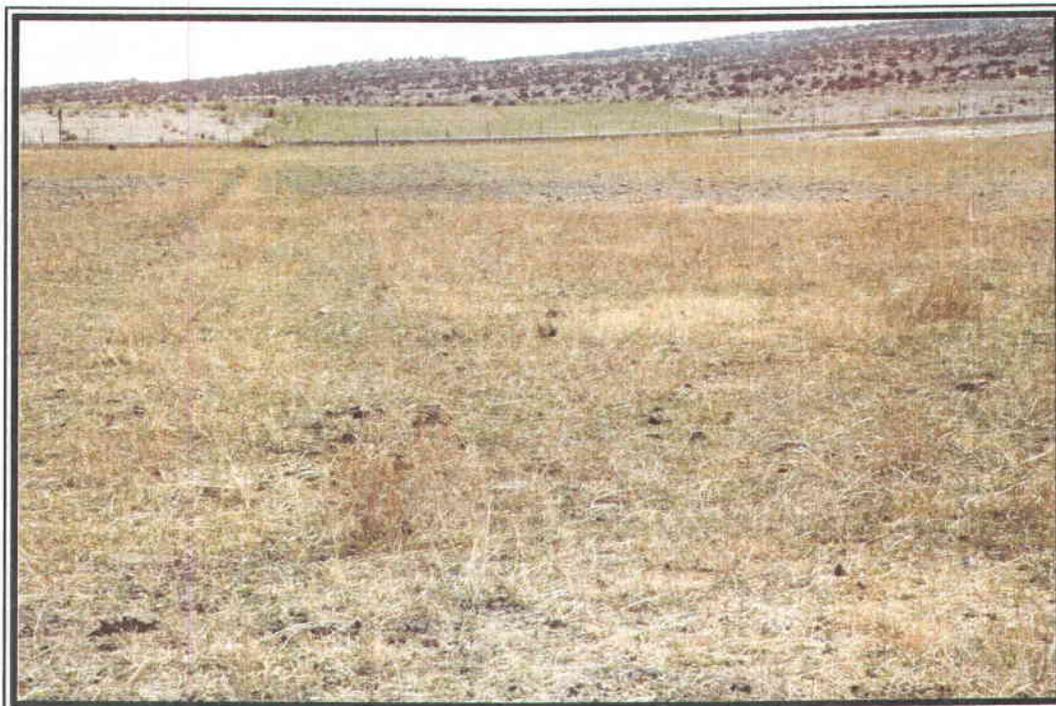


Figure 5: Saltgrass

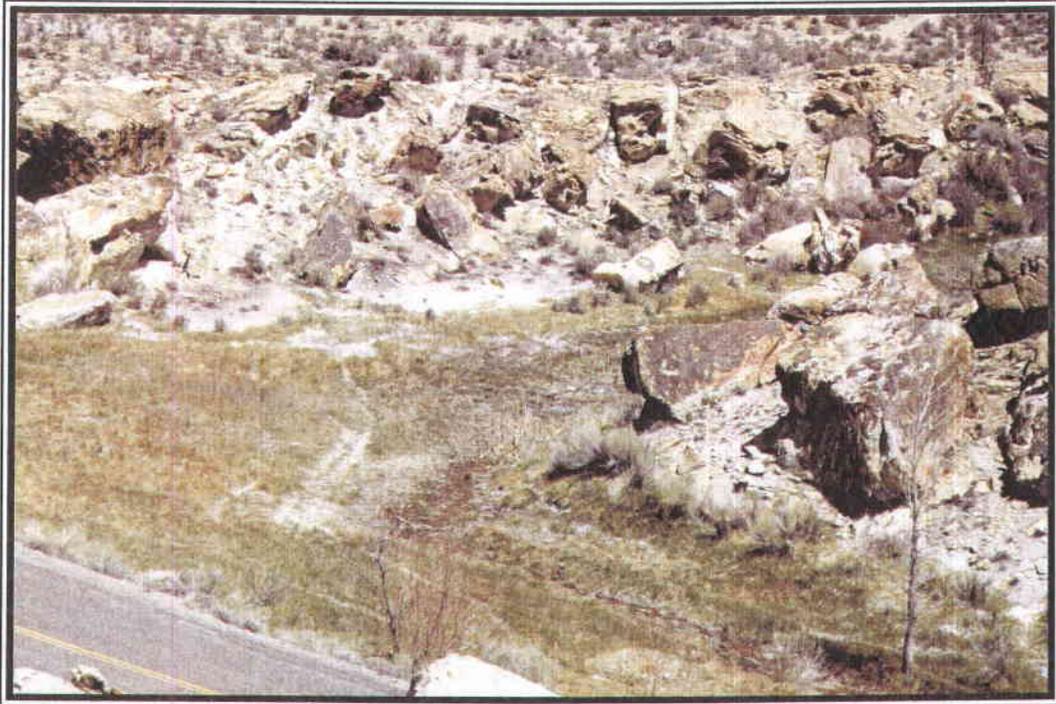


Figure 6: Riparian

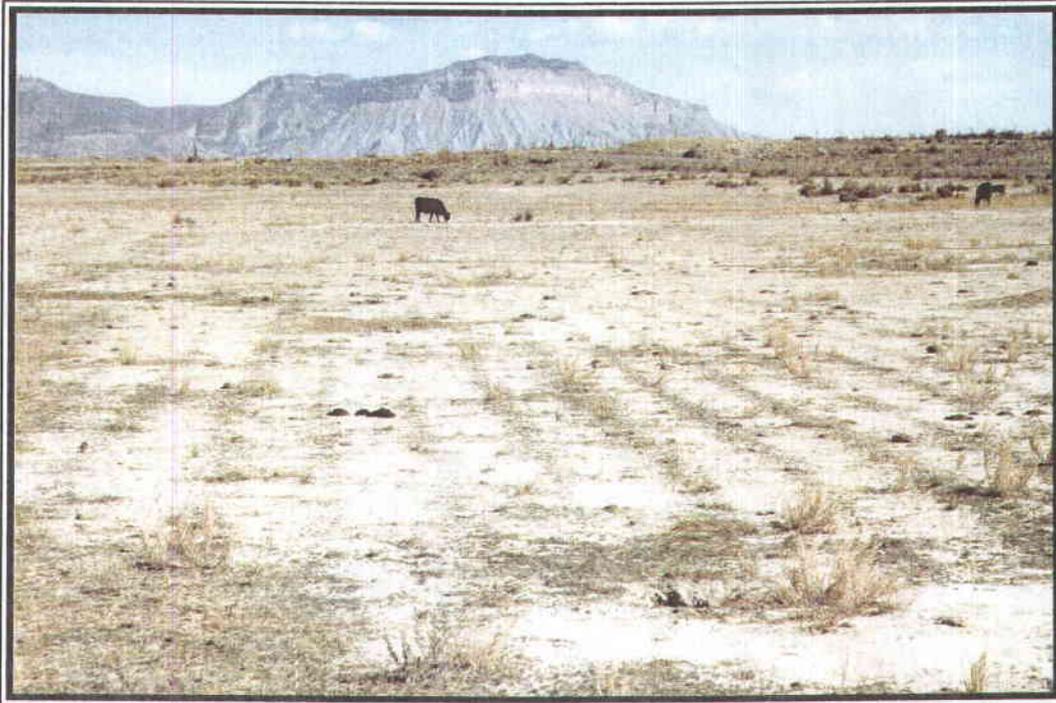


Figure 7: Pasture Land (dry)



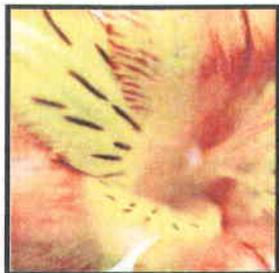
Figure 8: Sagebrush (on upland slopes above channel)



Figure 9: Tamarisk

**THREATENED, ENDANGERED &  
SENSITIVE SPECIES SURVEY**

**MILLER TRACT AREA  
EMERY MINE  
2008**



*Prepared by*

**MT. NEBO SCIENTIFIC, INC.**

330 East 400 South, Suite 6

Springville, Utah 84663

(801) 489-6937

*by*

Patrick D. Collins, Ph.D.

*for*

**CONSOLEENERGY**

P.O. Box 566

Sesser, Illinois 62844

November 2008



# TABLE OF CONTENTS

|                           |   |
|---------------------------|---|
| INTRODUCTION .....        | 1 |
| METHODS .....             | 1 |
| Plant Species .....       | 1 |
| Wildlife Species .....    | 2 |
| RESULTS .....             | 3 |
| SUMMARY .....             | 7 |
| PLANT COMMUNITY MAP ..... | 8 |

# INTRODUCTION

The Emery Mine is located in south-central Utah. Expansions of underground coal mining activities have been planned in an area known as the Miller Tract. Elevation of the Miller Tract surface area is approximately 6,100 ft above sea level. The Miller Tract boundary and the plant communities present within it are shown in Figure 1.

In planning future coal mining activities, studies regarding impacts to the land surface above mining have been conducted. This document reports the findings of a survey for threatened and endangered plants and animals, or the potential for these species and their habitats to occur within the Miller Tract study area.

## METHODS

### Plants Species

To begin the threatened and endangered (T&E) plant studies, a search was conducted in the research files at *Mt. Nebo Scientific, Inc.* for locations including habitat information for the sensitive species that may be present in the study area. Collections and voucher specimens were also reviewed in the herbarium at Brigham Young University (BYU) of the sensitive plant species known to occur in that region of the state.

For the T&E plant surveys, known locations were visited in the field for the target species. Visiting these locations at the time of the survey enabled the investigators to reevaluate the habitat of each species as well as note the current seasonal growth development and phenology of the plants.

Once the literature searches were conducted, herbarium work was accomplished, and known habitats and locations were re-visited, a site-specific field survey was conducted within the boundaries of the Miller Tract of the Emery Mine. This was accomplished by systematically walking the Miller Tract surface area in search of these species and the habitats where they are known to occur. Depending on the target species, the surveys were conducted from mid-April through June 2008.

### Wildlife Species

For wildlife studies, state and federal lists were consulted as well as the State of Utah, Division of Wildlife Resources (DWR) database for sensitive and high interest wildlife species. Wildlife habitat information has been compiled previously for the Emery Mine area. Moreover, DWR GIS information databases were consulted.

# RESULTS

There are several federally listed plant species known to occur in Emery County, Utah (Table 1). Although somewhat unlikely, it is possible that some of these species may occur in the study area. The most

likely plant

communities for such

occurrences were the

shadscale communities

located in the Miller

Tract (Figure 1).

No federally listed T&E

plant species were

found within the Miller Tract Area.

| <b>Table 1: Federally Listed Threatened or Endangered Plant Species in Emery County, Utah</b> |                         |        |
|---|-------------------------|--------|
| Scientific Name   | Common Name             | Status |
| <i>Cycladenia humilis var. jonesii</i>  | Jones Cycladenia        | T      |
| <i>Erigeron maguirei</i>  | Maguire Daisy           | T      |
| <i>Pediocactus despainii</i>  | Despain Footcactus      | E      |
| <i>Pediocactus winkleri</i>   | Winkler Footcactus      | T      |
| <i>Schoenocrambe barnebyi</i>   | Barneby's schoenocrambe | E      |
| <i>Sclerocactus wrightiae</i>   | Wright Fishhook Cactus  | E      |
| <i>Townsendia aprica</i>  | Last Chance Townsendia  | T      |

*E = Endangered*  
*T = Threatened*

A wildlife map for the current permit area was prepared previously and has been included in Emery Mine's Mining & Reclamation Plan (MRP). This map is called *Selected Wildlife Information* (Plate 10-1).

Federally listed threatened, endangered and candidate species for Emery County are shown on Table 2. Of these species, little or no habitat is present within the mine's permit area.

Table 2 also briefly describes the habitat for each of these species and the potential impacts, if any, as a result of the underground coal mining planned in the Miller Tract.

Although federally listed threatened, endangered and candidate wildlife species are probably not present within the permit boundaries of the Emery Mine (see Table 2 Comments), two sensitive species may be present including the burrowing owl (*Athene cunicularia*) and white-tailed prairie-dog (*Cynomys leucurus*). Habitats for these species were surveyed in the Miller Tract. Consequently, active prairie-dog burrows were found in the study area resulting in additional field surveys for prairie-dogs and burrowing owls. Results from the followup surveys can be found in two separate reports prepared by *Mt. Nebo Scientific* called: 1) BURROWING OWL SURVEY, MILLER TRACT AREA, EMERY MINE SITE (2008) and 2) PRAIRIE-DOG SURVEY, MILLER TRACT AREA, EMERY MINE SITE (2008).

**Table 2: Federally Listed Threatened, Endangered and Candidate Wildlife Species in Emery County, Utah**

| Scientific Name                         | Common Name                  | Status | Comments   |
|---|------------------------------|--------|--|
| <i>Coccyzus americanus occidentalis</i> | Western Yellow-billed Cuckoo | C      | <p>DWR database information states that historically, cuckoos were probably common to uncommon summer residents in Utah and across the Great Basin. The current distribution of yellow-billed cuckoos in Utah is poorly understood, though they appear to be an extremely rare breeder in lowland riparian habitats statewide. DWR information also states that currently, the range of the cuckoo is limited to disjunct fragments of riparian habitats from northern Utah, western Colorado, southwestern Wyoming, and southeastern Idaho southward into northwestern Mexico and westward into southern Nevada and California.</p> <p>Although the possibility exists that historically this species could be seen in Emery County, it is highly unlikely that it occurs within the Emery Mine permit area due to the limited habitat for this species.</p> <p>There should be no impacts to this species as a result of mining in the Miller Tract, especially if no impact to the riparian community in the study area occurs.</p> |

**Table 2: Federally Listed Threatened, Endangered and Candidate Wildlife Species in Emery County, Utah**

| Scientific Name                   | Common Name                    | Status | Comments  |
|-----------------------------------|--------------------------------|--------|---|
| <i>Empidonax traillii extimus</i> | Southwestern Willow Flycatcher | E      | <p>This species breeds in southwestern U.S. and winters in southern Mexico and Central America. It is a rare visitor of southern Utah. Its habitat is primarily riparian and the bird most frequently occurs in dense willow stands.</p> <p>There are very few dense willow stands in the Emery Mine permit area.</p> <p>There should be no impacts to this species as a result of mining in the Miller Tract, especially if no impact to the riparian community in the study area occurs.</p>  |
| <i>Gila cypha</i>                 | Humpback Chub                  | E      | <p>Humpback chub in Utah are now confined to a few white-water areas in the Colorado, Green, and White Rivers. These rivers do not occur in the Emery Mine permit area. Other than some subsidence from underground mining, no surface disturbances that could impact downstream drainage to the Colorado River system have been planned in Miller Tract.</p> <p>There should be no impacts to this species as a result of mining in the Miller Tract, especially if no impact to the surface and groundwater systems in the study area occurs.</p> |
| <i>Gilia elegans</i>              | Bonytail                       | E      | <p>The bonytail is a very rare minnow originally native to the Colorado River system. These rivers do not occur in the Emery Mine permit area. Other than some subsidence from underground mining, no surface disturbances that could impact downstream drainage to the Colorado River system have been planned.</p> <p>There should be no impacts to this species as a result of mining in the Miller Tract, especially if no impact to the surface and groundwater systems in the study area occurs.</p>  |
| <i>Lynx canadensis</i>            | Canada Lynx                    | T      | <p>Lynx usually occur in mature forests having dense undergrowth. They can also be found in more open forests, rocky areas or tundra.</p> <p>This habitat is not found within the Emery Mine permit area.</p> <p>There should be no impacts to this species as a result of mining in the Miller Tract.</p>  |
| <i>Mustela nigripes</i>           | Black-footed Ferret            | Ex     | <p>Black-footed ferret habitat is primarily prairie grasslands. The ferret has a diet consisting of almost 90% prairie-dogs. Although prairie-dog habitat does occur in the permit area, it is not prairie grassland. DWR information suggested that this species has been "extirpated" from Emery County.</p> <p>No ferrets have been reported during prairie-dog surveys within the permit area.</p> <p>There should be no impacts to this species as a result of mining in the Miller Tract.</p>   |

**Table 2: Federally Listed Threatened, Endangered and Candidate Wildlife Species  
in Emery County, Utah**

| Scientific Name  | Common Name          | Status | Comments  |
|--|----------------------|--------|---|
| <i>Ptychocheilus lucius</i>  | Colorado Pike minnow | E      | <p>The Colorado pikeminnow is a fish that prefers medium to large rivers. With the loss of habitat they are now restricted to the upper Colorado River system. These rivers do not occur in the Emery Mine permit area. Other than some subsidence from underground mining, no surface disturbances that could impact downstream drainage to the Colorado River system have been planned in the Miller Tract.</p> <p>There should be no impacts to this species as a result of mining in the Miller Tract, especially if no impact to the surface and groundwater systems in the study area occurs.</p>   |
| <i>Strix occidentalis lucida</i>   | Mexican Spotted Owl  | T      | <p>In Utah the Mexican spotted owl is rare, but when it occurs it is sometimes in various forest types, but more commonly in steep rocky canyons, nesting in caves or cliffs of steep walled canyons. This habitat does not exist in the mine area with the possible exception of the adjacent Miller Canyon sandstone outcrop areas. DWR distribution maps do not show the owl in the mine area.</p> <p>There should be no impacts to this species as a result of mining in the Miller Tract.</p>  |
| <i>Xyrauchen texanus</i>   | Razorback Sucker     | E      | <p>This species prefers slow backwater habitats and impoundments in the Colorado River system. Utah Division of Wildlife Resources distribution maps of this species for Carbon County shows to occur near the Green River in extreme eastern portion of the county. These rivers do not occur in the Emery Mine permit area. Other than some subsidence from underground mining, no surface disturbances that could impact downstream drainage to the Colorado River system have been planned in the Miller Tract.</p> <p>There should be no impacts to this species as a result of mining in the Miller Tract, especially if no impact to the surface and groundwater systems in the study area occurs.</p> |
| <i>E = Endangered</i><br><i>T = Threatened</i><br><i>C = Candidate</i><br><i>Ex = Extirpated</i> |                      |        |   |

## SUMMARY

Surveys for threatened and endangered plant species have been conducted on the surface of the Miller Tract of the Emery Mine. No threatened, endangered or otherwise sensitive plants were found in the study area.

State and federal lists were consulted for the potential of threatened, endangered and sensitive wildlife species and the habitats in which they occur. There is a very low likelihood that any federally listed T&E wildlife species occur in the Miller Tract study area. However, field surveys conducted revealed that two sensitive species, the burrowing owl and white-tailed prairie-dog do occur within Miller Tract boundaries. Results from these surveys have been reported in separate documents.

