

December 4, 2013



Permit Supervisor, Utah Coal Regulatory Program
Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
PO Box 145801
Salt Lake City, UT 84114-5801

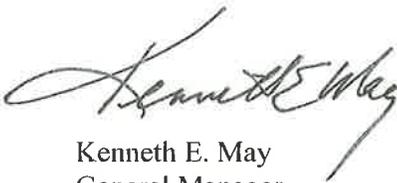
Re: Clean Copies of Waste Rock Disposal Site Subsoil Pile As-Built Amendment, Sufco Mine, Permit
Number C/041/0002, Task ID#4448

Dear Sirs:

Please find enclosed with this letter clean copies of an amendment to the Sufco Mine Permit to address the as-built for the Waste Rock Disposal Site. We have included two clean copies of the text, appendix and drawings.

If you have questions or need addition information please contact Vicky Miller at (435)286-4481.

CANYON FUEL COMPANY, SUFCO Mine



Kenneth E. May
General Manager

Encl.

cc: DOGM Correspondence File

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APPLICATION FOR COAL PERMIT PROCESSING

Permit Change New Permit Renewal Exploration Bond Release Transfer

Permittee: Canyon Fuel Company, LLC

Mine: Sufco Mine

Permit Number: C/041/0002

Title: Clean Copies of Amendment for Waste Rock Disposal Site Subsoil Pile As-built, Task ID#4448

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

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

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

KENNETH E. MAY

Print Name

Kenneth E. May

Sign Name, Position, Date

12/4/13

Subscribed and sworn to before me this 4 day of December, 2013

Notary Public

My commission Expires: _____, 20____ }
 Attest: State of _____ } ss:
 County of _____ }



JACQUELYN NEBEKER

Notary Public
State Of Utah

My Commission Expires 3/24/2015
Commission# 606049

For Office Use Only:

Assigned Tracking Number:

Received by Oil, Gas & Mining

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 DEC 05 2013
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CHAPTER 1
GENERAL CONTENTS

mining methods. Although the Mining and Reclamation Permit Application covers the next five-year period of mining, information is presented below for the life of the mining operation.

- | | | |
|----|------------------------------------|--|
| 1. | First coal produced | 1941 |
| 2. | Termination of mining activity | August, 2025 |
| 3. | Horizontal extent of mine workings | 23,820.58 acres
(Life of mine) |
| 4. | Vertical extent of mine workings | Surface to 2,000 feet deep
(Life of mine) |

The anticipated total acreage to be affected during the five years of operation by underground mining activities is 1,500 acres. The estimated number of total surface acres to be affected over the entire mining operation is 49.136 acres.

<u>PERMITTED DISTURBED AREA BOUNDARY</u>	<u>ACTUAL AREA CURRENTLY DISTURBED TO BE RECLAIMED</u>	<u>SITE DESCRIPTION</u>
30.210	17.405	Mine Site, East Spring Canyon
0.967	0.39	Spring Collection Field, Convulsion Canyon
0.220	0.075	Pump House, Convulsion Canyon
0.784	0.40	Leach Field, Convulsion Canyon
1.595	0.193	Water Tank, East Spring Canyon
0.286	0.017	3 East Portals
1.774	0.70	4 East Portals
0.302	0.017	South Portals
0.396	0.017	Quitcupah Portals
0.287	0.18	Link Canyon Substation No. 1
0.245	0.12	Link Canyon Substation No. 2
0.380	0.18	Link Canyon Portal
11.69	10.76	Waste Rock Disposal Site
0.000	0.00	North Water Mitigation Area
<u>0.000</u>	<u>0.00</u>	Quitcupah Fan and Shaft Site
49.136	30.454	Totals

The legal description of the SUFCO permit area:

Mine Site Facility, Water Tank, South Portals, Spring Collection Field, Pump House, Pipeline, Leachfield (Approximately 64.403 acres)

T. 22 S., R. 4 E., SLBM, Utah
 Section 12: A Portion of the following:
 E1/2NW1/4, SW1/4NW1/4NE1/4, S1/2

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CHAPTER 2

SOILS

5 of this permit. The A1 horizon in the area appeared to have a maximum thickness of 6-inches. As described previously in this section, where the topsoil is less than 6-inches thick, a lift of 6-inches of topsoil and subsoil will be taken and stockpiled as topsoil. The removal of the first 6-inches of soil will be observed and measured in the field by the site construction supervisor or a trained representative. The total area where soil salvage will be performed is approximately 0.07 acres (3,049 sq ft). Based on this area, the following volumes of salvaged soils were estimated:

A1 or topsoil - maximum thickness 0.5 ft.
0.5 ft X 3,049 sq ft = 1,525 cu ft (~56 cu yds)

The volume of salvagable topsoil varied from the volume originally calculated due to large sandstone boulders present in the cut area and reduced the salvable topsoil significantly, from the estimate ~56 cu yds to 8.2 cu yds.

AC and Cca horizon - average thickness of approximately 3 ft
3 ft X 3,049 sq ft = 9,147 cu ft (~339 cu yds)*

The topsoil will be removed first and transported for storage at the waste rock storage site. It will be signed and stored separately from other piles located at the site. The subsoils will be removed to a depth of 42-inches or to the boundary with the weathered bedrock. Approximately 109 cu yds of subsoil and weathered bedrock will be used as fill material at the water tank site. The remaining subsoils will be transported to the waste rock site and stored with the subsoils removed previously from the minesite. Storage of the topsoil and subsoil piles will be done in accordance with Section 2.3.1.4 of this M&RP.

The topsoil removed from construction of the overflow pond and overflow pond access road will be stockpiled on a stable surface southwest of the overflow pond, see Plate 7-4A. According to Plate 2-1 the overflow pond site consists of type T soil. The A horizon is 0 to 2 inches in depth and the B horizon is 2-12 inches in depth. The topsoil stockpile will be segregated between A and B horizons. Much of the site of the overflow pond is on steep hill sides where topsoil is less than 6 inches deep. Assuming an average of 12 inches of removal the following quantities have been calculated:

0.167 ft X 49,950 sq ft = 8,342 cu ft (~309 cy) horizon A

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$$0.833 \text{ ft} \times 49,950 \text{ sq ft} = 41,608 \text{ cu ft } (\sim 1,541 \text{ cy}) \text{ horizon B}$$
$$\text{Total } 309 \text{ cy} + 1,541 \text{ cy} = 1,850 \text{ cy}$$

A site specific soil survey will be completed for the Overflow Pond prior to disturbance and this information will be utilized in determining topsoil salvage depth. During topsoil removal observations and measurements in the field will be conducted by the site construction supervisor or a trained representative. Actual volume of topsoil removed and stockpiled for the Overflow Pond was 1,488 cubic yards.

During the topsoil removal operation for the temporary access road for the construction of the bypass culvert portion of the overflow pond, the total depth of soil removal will be based upon the color change between the upper most and underlying layer and the use of a tape measure. For calculation purposes, the upper layer of soils was assumed to average 12-inches. Therefore, the total material removed prior to excavating the bypass culvert trench is:

$$13000 \text{ sq ft} \times 1.0 \text{ ft} = 13000 \text{ cubic feet or approximately } 482 \text{ cubic yards.}$$

The 482 yards of salvaged soils will be removed and placed adjacent to the new bypass culvert trench location. The remaining material, C2 horizon, will be excavated from the trench and temporarily stored adjacent to the excavation but not mixed with the 482 cubic yards of salvaged soil. After the culvert is placed, the excavated C2 material will be replaced in the trench and any remaining material will be evenly spread over the disturbed trench area. The salvaged 482 cubic yards of soils will then be spread over the disturbed area. The surface will be left in a roughened state to reduce erosion. Reseeding of the area followed the completion of construction in 2010.

2.3.1.2 Suitability of Topsoil Substitutes/Supplements

See Section 2.3.3.2

2.3.1.3 Testing of Topsoil Handling and Reclamation Procedures Regarding Revegetation

The Applicant will exercise care to guard against erosion during and after application of topsoil and will employ the necessary measures to ensure the stability of topsoil on graded slopes. Erosion control measures will include surface roughing and erosion mat placement on slope areas thought

to be unstable. The Applicant will fill, regrade, or otherwise stabilize any rills or gullies deeper than nine (9) inches which form in areas which have been regraded and topsoiled. The areas adjacent to any rills or gullies which have been filled, regraded or otherwise stabilized, will be reseeded or stabilized accordingly.

Methods used to evaluate success of revegetation and stabilization appear in page 37 of Appendix 2-2. Erosion monitor pins will be placed on the slopes at the time of reseeded. Locations of the erosion pins will be obtained via a random number generator. The pin locations will be surveyed and revegetation analyses conducted annually following completion of reseeded, until the release of the bond.

2.3.1.4 Construction, Modification, Use, and Maintenance of Topsoil Storage Piles

The topsoil storage piles (Plate 2-1) at the SUFACO Mine in East Spring Canyon area consist of small amounts of topsoil, from the substation pad (27 cubic yards) and the area where the sediment pond (1,200 cubic yards) was constructed. The topsoil materials were segregated and stockpiled. The stockpiled materials were selectively placed in small area exemption areas within the permit area on stable surface areas below the sediment pond (0.105 acres) and on the south end of the substation pad (0.02 acre). The topsoil small area exemption stockpiles are isolated with no means of access from the main surface area to protect the topsoil from contaminants and unnecessary compaction that would interfere with vegetation. A topsoil storage sign was installed at the base of each stockpile. The stockpiles were protected from wind and water erosion by being revegetated with a quick growing vegetative cover (proposed seed mix minus the shrubs and trees) and by installing silt fence below the stockpiles to help trap sediment coming off the stockpile. This topsoil will not be moved or disturbed until required for redistribution during final reclamation.

Topsoil from the Overflow Pond will be placed in a topsoil pile located southwest of the overflow pond area. This storage area will be protected with berms and/or silt fences, a three-strand barbwire fence, and revegetated with a quick growing vegetative cover (standard seed mix in section 3.4.1.2 minus the shrubs and trees) to control erosion. The surface of the topsoil pile will be pitted to reduce runoff and erosion. This soil will not be moved or disturbed until it is required for redistribution during final reclamation. A figure of the surveyed topsoil stockpile and estimated

quantity of soil stored in the pile is included in Appendix 2-2. Plate 5-2B shows the as-built features associated with the overflow pond.

Topsoil from the Link Canyon Substation No. 1 will be placed and stored on the outslope of the pad. This storage area will be protected with berms and/or silt fences, a three-strand barbwire fence, and revegetated to control erosion. This soil will not be moved or disturbed until it is required for redistribution during final reclamation.

Soil from the Link Canyon Substation No. 2 will be placed in a soil stock pile located at the south end of the pad area. The storage area will be protected with berms and/or silt fences, a three strand barbwire fence, and revegetated to control erosion. This soil will not be moved or disturbed until it is required for redistribution during final reclamation.

Soil from the Link Canyon Mine Portal area will be placed in a topsoil pile located south of the disturbed portal pad area out of the floodplain (Plate 5-2F). The storage area will be protected by installing a topsoil storage sign at the base of the pile, berms and/or silt fences, a three strand barbwire fence, and protected from wind and water erosion by surface pitting the stockpile to retain moisture and reduce erosion and by being revegetated with a quick growing vegetative cover (standard seed mix in section 3.4.1.2 minus the shrubs and trees) to control erosion. This soil will not be moved or disturbed until it is required for redistribution during final reclamation. The surface of the topsoil pile will be pitted to reduce runoff and erosion. Vegetation removed during site construction, such as sage brush and other woody plants, will be placed on top of the pile.

Excess subsoil associated with construction of a run of mine coal stockpile and the West Lease portal tunnel development is stored at SUFACO Mine's waste rock disposal site. At the mine site the substation binwall has approximately 2,160 cubic yards of subsoil material and 5,300 cubic yards of road base, with the additional 11,260 cubic yards of subsoil material (West Lease/run of mine stockpile) being stored at the waste rock site there is a total of 18,720 cubic yards (approximate) that will be available for use as subsoil material during final reclamation of the mine site facilities. Reference Appendix 2-3 for the analyses of the subsoil being stored at the waste rock site to be used during reclamation of the mine site.

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Immediately adjacent to the subsoil pile at the waste rock site is stored 756.3 cubic yards of topsoil collected from beneath the footprint of the subsoil pile. This total represents the removal of approximately 12" of topsoil prior to placement of the subsoil. Section 3.1.6 of Volume 3 of this M&RP contains more information pertaining to the soils stored at the waste rock disposal site.

2.3.2 Topsoil and Subsoil Removal

2.3.2.1 Topsoil Removal and Segregation

All topsoil thicker than 6 inches will be removed as a separate layer from the subsoil, segregated, and stockpiled separately. Topsoil less than 6 inches thick will be removed according to Section 2.3.2.3. However, in the areas of the Link Canyon Substation Nos. 1 and 2 pads, all soil will be removed and stored in one area as a single soil resource. At substation pad No. 1, the maximum projected volume of topsoil salvage based on the soil survey depth of 20 inches and the projected topsoil salvage area of 0.08 acres is 224 cubic yards. The salvaged topsoil will be removed as a separate layer, segregated and placed on the south end of the pad outslope. The remaining excavated material in the deeper cuts will be used as fill material for the access road and the north end of the substation pad. At substation No. 2, the volume of soil projected to be removed is 118 CY.

2.3.2.2 Poor Topsoil

Topsoil that is of an insufficient quantity, or of poor quality (for sustaining vegetation) will be removed as a separate layer and segregated. Such operations will be done with approval of the UDOGM, and in compliance with R645-301-233.100 (Section 2.3.3.1).

2.3.2.3 Thin Topsoil

Topsoil to be removed that is less than 6 inches thick will be removed with the immediately underlying unconsolidated materials (up to a total of 6 inches). This material mixture will be treated as topsoil and stockpiled together without any horizon segregation.

2.3.2.4 Minor Disturbances Not Requiring Topsoil Removal

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APPENDIX 2-3

Water and Soil Data Report

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Soil Analysis Report
Canyon Fuel Company, LLC.

397 South 800 West
Salina, UT 84654

Report ID: S1006246001

Project: Sufco Topsoil

Date Received: 6/15/2010

Date Reported: 7/8/2010

Work Order: S1006246

Lab ID	Sample ID	pH s.u.	Saturation %	Electrical Conductivity dS/m	Organic Matter %	Calcium meq/L	Magnesium meq/L	Potassium meq/L	Sodium meq/L	PE	PE	PE	SAR
S1006246-001	Gob Pile Composite	7.3	30.1	2.82	3.9	22.2	12.2	0.31	2.02				0.49

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These results apply only to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H2Osoil= water soluble, AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate
Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neutral. Pot.= Neutralization Potential
Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen A Secor

Karen Secor, Soil Lab Supervisor



Soil Analysis Report
Canyon Fuel Company, LLC.

397 South 800 West
Salina, UT 84654

Report ID: S1006246001

Project: Sufco Topsoil
Date Received: 6/15/2010

Date Reported: 7/8/2010

Work Order: S1006246

Lab ID	Sample ID	Sand		Silt	Clay	Texture	Very Fine		Nitrogen		Available	
		%	%	%	%		Sand	CO3	Nitrate	Selenium	Boron	Phosphorus
S1006246-001	Gob Pile Composite	76.0	15.0	9.0	9.0	Sandy Loam	11.2	16.6	1.9	<0.02	1.07	2.50

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Div. of Oil, Gas & Mining

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Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen A. Secor
Karen Secor, Soil Lab Supervisor



Soil Analysis Report

Canyon Fuel Company, LLC.

397 South 800 West
Salina, UT 84654

Report ID: S1006246001

Date Reported: 7/8/2010

Work Order: S1006246

Project: Sufco Topsoil

Date Received: 6/15/2010

Lab ID	Sample ID	Available Potassium meq/100g	Total Carbon %	TOC %	Neutral Potential 1/1000t
S1006246-001	Gob Pile Composite	0.14	12.6	10.6	167

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Reviewed by: Karen A Secor

Karen Secor, Soil Lab Supervisor



Inter-Mountain Labs

Your Environmental Monitoring Partner

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Soil Analysis Report

Canyon Fuel Company, LLC.

397 South 800 West
Salina, UT 84654

Report ID: S1210370001

Project: Sufco Topsoil

Date Received: 10/22/2012

Date Reported: 12/20/2012

Work Order: S1210370

Lab ID	Sample ID	pH s.u.	Saturation %	Electrical Conductivity dS/m	Organic Matter %	Calcium meq/L	Magnesium meq/L	Potassium meq/L	Sodium meq/L	SAR
S1210370-001	Subsoil Pile 1	7.8	39.6	3.71	4.6	22.1	23.6	0.48	9.18	1.92
S1210370-002	Subsoil Pile 2	8.2	38.5	3.79	4.5	23.1	22.4	0.45	9.29	1.95
S1210370-003	Subsoil Pile 3	8.2	39.8	3.68	4.7	26.9	21.8	0.40	5.78	1.17

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Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen A. Secor

Karen Secor, Soil Lab Supervisor



Inter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Your Environmental Monitoring Partner

Soil Analysis Report

Canyon Fuel Company, LLC.

397 South 800 West
Salina, UT 84654

Report ID: S1210370001

Project: Sufco Topsoil

Date Received: 10/22/2012

Date Reported: 12/20/2012

Work Order: S1210370

Lab ID	Sample ID	Sand			Silt	Clay	Texture	Very Fine		Boron	Nitrate		Phosphorus	Selenium
		%	%	%				Sand	(as N)		ppm	ppm		
S1210370-001	Subsoil Pile 1	39.0	30.0	31.0	Clay Loam	8.1	0.89	6.0	2.8	0.02				
S1210370-002	Subsoil Pile 2	39.0	32.0	29.0	Clay Loam	6.9	1.06	4.5	2.7	<0.02				
S1210370-003	Subsoil Pile 3	47.0	23.0	30.0	Sandy Clay Loam	8.2	1.29	1.6	2.6	0.03				

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Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neutral. Pot.= Neutralization Potential

Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen A. Secor
Karen Secor, Soil Lab Supervisor



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1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Your Environmental Monitoring Partner

Soil Analysis Report
Canyon Fuel Company, LLC.

397 South 800 West
Salina, UT 84654

Report ID: S1210370001

Project: Sufco Topsoil

Date Received: 10/22/2012

Date Reported: 12/20/2012

Work Order: S1210370

Lab ID	Sample ID	Available		Total Carbon	Total Sulfur	T.S.		Neutral.		T.S. ABP
		Potassium meq/100g	Carbon %			TOC %	Sulfur %	AB	ABP	
S1210370-001	Subsoil Pile 1	0.33	11.0	6.8	0.08	2.50	355	352		
S1210370-002	Subsoil Pile 2	0.32	10.1	5.6	0.07	2.19	372	370		
S1210370-003	Subsoil Pile 3	0.30	13.5	9.9	0.16	5.00	298	293		

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Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen AnSecor

Karen Secor, Soil Lab Supervisor



Inter-Mountain Labs

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Your Environmental Monitoring Partner

Soil Analysis Report

Canyon Fuel Company, LLC.

397 South 800 West
Salina, UT 84654

Report ID: S1107066002
(Replaces S1107066001)

Date Reported: 8/11/2011
Work Order: S1107066

Project: West Lease
Date Received: 7/6/2011

Lab ID	Sample ID	pH	Saturation %	Electrical Conductivity dS/m	Organic Matter %	PE			SAR	
						Calcium meq/L	Magnesium meq/L	Potassium meq/L		
S1107066-001	Comp 1	7.5	40.1	2.76	3.7	20.1	27.3	0.32	9.88	2.03
S1107066-002	Comp 2	7.6	37.4	3.62	5.1	22.0	32.6	0.35	11.8	2.27
S1107066-003	Comp 3	7.7	39.3	3.73	3.6	25.5	38.5	0.39	11.1	1.96
S1107066-004	Comp 4	7.8	41.2	3.06	4.2	17.7	26.4	0.36	8.68	1.85
S1107066-005	Comp 5	7.8	37.7	3.16	3.9	20.0	28.6	0.37	9.49	1.93
S1107066-006	Comp 6	7.9	39.0	2.36	4.5	11.1	18.3	0.29	6.91	1.80

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These results apply only to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H20Sol= water soluble, AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate
Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neutral. Pot.= Neutralization Potential
Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen A. Secor

Karen Secor, Soil Lab Supervisor



Inter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Your Environmental Monitoring Partner

Soil Analysis Report

Canyon Fuel Company, LLC.

397 South 800 West
Salina, UT 84654

Report ID: S1107066002
(Replaces S1107066001)

Date Reported: 8/11/2011

Work Order: S1107066

Project: West Lease

Date Received: 7/6/2011

Lab ID	Sample ID	Very Fine						Nitrate		Phosphorus ppm	
		Sand %	Silt %	Clay %	Texture	Sand %	CO3 %	Selenium ppm	Boron ppm		(as N) ppm
S1107066-001	Comp 1	29.0	36.0	35.0	Clay Loam	2.2	29.3	0.05	0.98	23.4	5.90
S1107066-002	Comp 2	32.0	35.0	33.0	Clay Loam	4.6	31.7	0.05	1.08	25.8	5.94
S1107066-003	Comp 3	28.0	37.0	35.0	Clay Loam	4.8	37.0	0.07	0.66	38.4	5.08
S1107066-004	Comp 4	30.0	35.0	35.0	Clay Loam	3.5	36.1	0.06	0.80	30.5	4.40
S1107066-005	Comp 5	32.0	35.0	33.0	Clay Loam	3.8	36.7	0.03	0.82	12.8	5.34
S1107066-006	Comp 6	35.0	36.0	29.0	Clay Loam	3.0	36.6	<0.02	0.86	8.9	5.79

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These results apply only to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H2Osoil= water soluble, AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate

Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neutral. Pot.= Neutralization Potential

Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen A. Secor

Karen Secor, Soil Lab Supervisor



Inter-Mountain Labs

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Soil Analysis Report

Canyon Fuel Company, LLC.

397 South 800 West
Salina, UT 84654

Report ID: S1107066002
(Replaces S1107066001)

Date Reported: 8/11/2011

Work Order: S1107066

Project: West Lease

Date Received: 7/6/2011

Lab ID	Sample ID	Available		Total Carbon	TOC	Total Sulfur		T.S.		Neutral.		T.S.	
		Potassium	meq/100g			%	%	AB	ABP	Potential	ABP	t/1000t	t/1000t
S1107066-001	Comp 1	0.21	0.21	6.7	3.2	0.09	0.09	2.73	2.73	293	293	290	290
S1107066-002	Comp 2	0.20	0.20	7.7	3.9	0.07	0.07	2.17	2.17	317	317	315	315
S1107066-003	Comp 3	0.19	0.19	7.1	2.7	0.05	0.05	1.60	1.60	370	370	368	368
S1107066-004	Comp 4	0.20	0.20	7.9	3.5	0.06	0.06	1.94	1.94	361	361	359	359
S1107066-005	Comp 5	0.20	0.20	8.6	4.2	0.04	0.04	1.39	1.39	367	367	365	365
S1107066-006	Comp 6	0.19	0.19	8.4	4.0	0.02	0.02	0.57	0.57	366	366	365	365

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These results apply only to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H2Osol= water soluble, AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate

Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neutral. Pot.= Neutralization Potential

Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen A. Secor

Karen Secor, Soil Lab Supervisor

CHAPTER 7
HYDROLOGY

is 0.017 acre. The disturbed area associated with the 3 East portals is 0.017 acre. The disturbed area associated with the Quitchupah portals is 0.017 acre. A calculation demonstrating the insignificance of the inflow of surface water into the mine is included in Appendix 7-16.

During construction of the new overflow pond sediment from the disturbed area will be controlled by the use of containment berms and silt fencing.

Several alternate sediment control areas are defined within the mine site and are listed below (see Plates 5-2B,C,D,E,&F):

- The original substation pad area and fire water tank above the office building. The sediment controls include a graveled pad area and silt fences. The disturbed area is 0.324 acre.
- The topsoil stockpile near the mine site primary sedimentation pond. The sediment control consists of containment berms and silt fencing. The disturbed area is 0.105 acre.
- The topsoil stockpile near the mine site overflow pond. The sediment control consists of containment berms and silt fencing. The disturbed area of the overflow pond topsoil stockpile is 0.141 acres.
- The subsoil, topsoil and sedimentation pond topsoil stockpiles at the waste rock disposal site. The sediment controls include containment berms and silt fencing. The disturbed area of the subsoil and topsoil stockpiles is 1.24 acre. The disturbed area of the pond topsoil pile is 0.293 acre.
- The area above the mine fan in East Spring Canyon. The sediment control consists of silt fencing. The disturbed area is 0.122 acre.
- The pump house in Convulsion Canyon. The sediment control consists of containment berms and silt fencing. The disturbed area is 0.075 acre.
- The leach field in Convulsion Canyon. The sediment control consists of containment berms and silt fencing. The area is fenced to prevent grazing. The disturbed area is 0.40 acre.
- The new substation pad disturbed area is 0.287 acre. The sediment controls include gravel and silt fences.
- The 4 East portal site consists of a pad area where a mine fan has been built. The disturbed area associated with the two portal openings at this site is 0.70 acre. Alternate sediment control at this pad consists of a containment berm, gravel and silt fencing.

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- The Link Canyon Substation No. 1 facility disturbed area is 0.18 acre. This substation pad area was reclaimed in 2000. The sediment control consists of containment berms, silt fencing, and vegetation.
- The Link Canyon Substation No. 2 facility disturbed area is 0.12 acre. The sediment control consists of containment berms, gravel and silt fencing.
- The Link Canyon Portal facility disturbed area is 0.18 acre. The sediment control consists of containment berms, gravel and silt fencing.

The total area for Alternate Sediment Control Areas (ASCA) is 4.167 acres. This is approximately 13.6 percent of 30.454 acres of total disturbed area at the mine site, Link Canyon Portal and Substation No. 1 and No. 2 facility sites, and waste rock disposal site (including ASCA's and SAE's).

7.4.2.2 Siltation Structures

General Requirements. Additional contributions of suspended solids and sediment to stream flow or runoff outside the permit area are being prevented to the extent possible using various siltation structures.

The existing siltation structures for the main facilities area, the concrete sediment trap and primary sedimentation pond, were not constructed before beginning coal mining operations. The structures were constructed upon implementation of applicable State and Federal Regulations. The overflow pond was constructed to allow for continued compliance with State and Federal Regulations. The sedimentation pond for the waste rock disposal site was constructed before the site was used. Each structure has been certified by a qualified registered professional engineer.

All siltation structures which impound water have been designed, constructed and maintained as described in Chapter 5 and Sections 7.3.3 and 7.4.3.

Siltation structures are also provided at the mine-water discharges points. Water is presently being discharged from the mine at UPDES discharge point 003 from the Quitchupah Canyon breakouts. UPDES discharge point 001 is approved as an alternative mine water discharge point. Design of the siltation structures for these discharge points is presented in Section 7.3.1.5.

Sedimentation Ponds. There are four sedimentation ponds operating within the permit area. These ponds are described as follows:

- Concrete sediment trap located at the south end of the main facilities area.

- The water tank area northeast of the mine site. This area is classified as an "Exempt Area". The demonstration for this area is a SEDCAD computer program and is located in Appendix 7-16. The disturbed area is 0.193 acre.

The total disturbed area contributing to the primary sedimentation pond is 15.88 acres. The total disturbed area contributing to the overflow pond is 16.49 acres. The total disturbed area contributing to the waste rock disposal site sedimentation pond is 7.93 acres. The total area for Small Area Exemption (SAE) is 0.623 acres. This is 2.1 percent of 30.454 acres of total disturbed area at the mine site, Link Canyon Portal and Substation No. 1 and No. 2 facility sites, and waste rock disposal site (including ASCA's and SAE's).

7.4.2.3 Diversions

General Requirements. The diversions within the permit area consist of drainage ditches and culverts. All diversions within the permit area have been designed to minimize adverse impacts to the hydrologic balance, to prevent material damage outside the permit area and to assure the safety of the public.

All diversions and diversion structures have been designed, located, constructed, maintained and used to:

- Be stable
- Provide protection against flooding and resultant damage to life and property
- Prevent, to the extent possible, additional contributions of suspended solids to stream flow outside the permit area
- Comply with all applicable local, state, and federal laws and regulations

All diversions within the permit area are temporary and will be removed when no longer needed. The diversions will be reclaimed in accordance with the reclamation plan defined in Chapter 5.

Peak discharge rates from the undisturbed and disturbed area drainages within the permit area were calculated for use in determining the adequacy of the existing diversion ditches and culverts. The storm runoff calculations for the temporary diversion structures were based on the 10-year, 6-hour precipitation event of 1.3 inches. Curve numbers were based on those defined in Appendix 7-9 and professional judgement. A description of the methods used to determine the peak discharge rates is presented in Appendix 7-10. The overflow pond bypass culvert was designed to safely convey the 100-year, 6-hour precipitation event of 2.06 inches. For more information of designs and calculations see Plates 7-5A, 7-5B, and 7-5C and Appendix 7-23. The

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VOLUME 3
WASTE ROCK DISPOSAL SITE

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materials such as cinder block, however, will be deposited at the disposal site.

Any slide or other damage at the disposal site which may have a potential adverse affect on public property, health, safety, or the environment will be reported to the Division by the fastest available means and will be remediated in compliance with Division instructions.

3.1.5 Acid and Toxic Forming Materials

Based on analyses of material that has been placed in the waste rock disposal site to date, no acid forming problems are anticipated. There is a potential for borderline toxicity problems from boron. Samples of the waste material will be collected for every 10,000 tons deposited at the waste rock site and will be analyzed for acid or toxic forming potential. All identified potential acid or toxic forming materials will be buried or otherwise treated.

Copies of laboratory reports on toxicity/acid-base accountability from representative waste samples are included in Volume 8 of the M&RP prior to 2005 and starting in 2005 will be included in the annual report.

3.1.6 Subsoil Stockpile

Excess subsoil material and a small amount of topsoil from the minesite is stockpiled at the Waste Rock Disposal Site for possible use during final reclamation of SUFACO minesite facilities. The location of the subsoil and topsoil material is shown on Map 2. Total acreage of the subsoil stockpile and associated topsoil piles 1A and 1B is 1.19 acres. Approximately 11,260 cubic yards of subsoil material and approximately 8.2 cubic yards of minesite topsoil material are stockpiled at the site. The associated original topsoil pile 1B and new topsoil piles 2 and 3 removed from the subsoil stockpile area contains about 756.4 cubic yards. The top 24 inches of soil material was removed from the subsoil stockpile area as described in Section 3.1.2, Site Preparation. This topsoil was stored along the westerly boundary and east of the subsoil stockpile as shown on Map 2. Topsoil handling procedures complied with those described in Section 3.2.3, Topsoil Handling. These topsoil stockpiles will be stored and seeded using the grasses and forbes of the standard seed mix, Table 4.6.1-1. When the subsoil and minesite topsoil are removed the topsoil will be redistributed and the area reclaimed and seeded in accordance with sections 4.5 and 4.6.

Subsoil material was placed in 2-3 ft. lifts using dump trucks and a D-7 Cat dozer. Exterior slopes of the subsoil stockpile are approximately 1v:1.25h. At this slope the material will be stable as placed. The subsoil stockpile was seeded using the grasses and forbes of the standard seed mix,

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Table 4.6.1-1. This subsoil may be taken to the minesite and used for fill material during final reclamation of the minesite.

Run off from the subsoil and associated topsoil stockpiles is collected and routed through a silt fence treatment located as shown on Map 2. The total acreage of the five stockpiles is 1.24 acres. Alternate sediment control measures are in place as described above. This area is classified as an approved Alternate Sediment Control Area (ASCA).

Topsoil and Subsoil Storage Piles at Waste Rock Disposal Site

TOPSOIL			
Description	Volume (cy) ^(a)	Area (acres)	Distribution Location
1A	8.2	1.19*	Mine Site
1B	456.9	0*	Waste Rock
2	161.4	0.03	Waste Rock
3	138	0.02	Waste Rock
Sediment Pond	634.9	0.293	Waste Rock
Lift # 4 Area**	1847	0.34	Waste Rock
TOTAL	3246.2	NA	NA
SUBSOIL			
Subsoil	11,260	0*	Mine Site

(a) Estimated Quantity

* The acreages for Piles 1A,1B and Subsoil are combined

** Topsoil stored in piles on top of Lift #4, estimated depth of stored topsoil - 3.5 feet

3.2 Components of Operation

3.2.1 Sedimentation Pond

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A sedimentation pond was constructed down gradient from the rock fill area to control sediment removed from the disturbed areas by surface runoff. The pond was constructed prior to disturbing any other areas of the site. It will remain in place until the waste rock disposal area has been completely reclaimed.

The pond consists of an excavated storage basin. Suitable material removed from the excavation was used to construct an embankment on the downstream perimeter of the excavation to yield a maximum storage depth in the pond of 5.70 feet.

The embankment has a top width of 10 feet, a minimum height of 6.8 feet with exterior side slopes of 2.5h:lv. The bottom of the pond was constructed at an elevation of 7885.00 feet.

In accordance with Section 73-5-12 of the Utah Code Annotated 1953, before commencing construction of the sediment pond for the project, written notice was given to the State Engineer, Division of Water Rights.

The embankment and excavated pond area was grubbed of all organic material and the topsoil removed and stored for future use. It is estimated that 24 inches of topsoil was removed from the area.

The top 9 inches of the grubbed and stripped area for sediment pond embankment construction was scarified and recompacted to 90 percent of the maximum dry density as determined by ASTM D1557 procedures. Moisture content during compaction was maintained at -1 to +3 percent of the optimum as determined by ASTM D1557.

Embankment fill material was placed in horizontal lifts not exceeding nine inches in thickness prior to compaction. Embankment material was compacted to at least 90 percent of the maximum dry density as determined by ASTM D1557. Embankment material was free of organic material, and had a plasticity index as determined by ASTM D423 and D424 of not less than five. Waste rock was not used for embankment fill for the settling pond.

The embankment was constructed with interior and exterior slopes of 2.5h:lv. The top of the embankment was constructed at an elevation 7892.2 feet, providing 1.0 foot of freeboard above the maximum water surface and five percent for settlement. To prevent erosion, the exterior slopes were vegetated and the interior slopes covered with rip-rap and filter fabric in accordance with the recommendation presented in Section 5.3.3 of the SHB report.

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The principal spillway consists of a 12 inch diameter corrugated metal pipe (CMP) with the inlet at an elevation of 7889.5 feet. A 36 inch CMP skimmer was placed around the inlet as shown on Section E-E' of Figure 1.

The CMP was placed at an average gradient of 4.4 percent through the embankment. Structural fill within 2.0 feet of the CMP was hand compacted to a dry density of at least 90 percent of ASTM D1557 at a moisture content of -1 to +3 percent of optimum. During placement and compaction of the fill along the CMP, the pipe was preloaded to prevent it from pushing up and out of alignment. Preload was maintained until at least 1/2 the pipe diameter had been placed and compacted. Two anti-seep collars with minimum dimensions of three feet high by three feet wide were placed around the CMP as shown in Figure 1. The anti-seep collars have water-tight connections to the CMP.

At the outlet of the principal spillway, a rip-rap apron was constructed as shown on Figure 1 to prevent damage to the downstream embankment slope.

Rip-rap conforms to the following gradation:

<u>Size, Inches</u>	<u>Percent Passing</u>
18	100
9	45-35
4	15-0

Rip-rap is hard, durable, and free from rocks having a maximum dimension three or more times greater than the minimum dimension of the particle.

Prior to rip-rap placement, a filter fabric such as Phillips 66 SUPAC 5NP, Mirafi 140N, Dupont TYPAR 3401 or an approved equivalent, was placed on the prepared soil surface to prevent erosion and undermining of the rip-rap. A sand or 3/4 inch road base blanket was placed over the fabric to protect it from punctures during rip-rap placement.

3.2.2 Operating Pond Requirements

The sediment pond provides capacity in excess of requirements with present project conditions. The principle maintenance requirement will be sediment removal. When the sediment storage area is 60 percent full, which is at an average elevation of 7886.00 feet, sediment must be removed from the pond.



I CERTIFY THE ITEMS SHOWN ON THIS PLAN TO BE TRUE TO THE BEST OF MY KNOWLEDGE.

EXPLANATION

- DISTURBED AREA BOUNDARY
- PERMIT AREA BOUNDARY/PROPERTY LINE
- DIKE BOUNDARY
- STORAGE PILE BOUNDARY
- FINAL CONTOUR WITH 10' - 15' TERRACE AND DITCH
- FINAL CONTOUR WITH NO TERRACE
- WATER MONITORING WELL WITH CAP ELEVATION (DEPTH TO CONSOLIDATED FORMATION)
- TEST BORE HOLE (DEPTH TO CONSOLIDATED FORMATION)
- DIVERSION DITCH

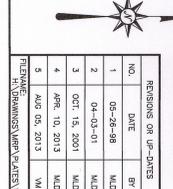
NOTE:
 PERMIT/PROPERTY BOUNDARY IS NW 1/4 R1E27E S18E
 SECTION 18, T25S, R18E, S18E, BLM
 DEC 0 6 2013
 DIV. OF OIL, GAS & MINING
 STATE OF UTAH

Canyon Fuel Company, LLC
 SIFCO Mine

UNDERGROUND DEVELOPMENT WASTE DISPOSAL SITE PLAN
 307 SOUTH 800 WEST
 SALT LAKE, UTAH 84143
 DRAWING OR MAP NUMBER
 MAP 2V5

NO.	DATE	BY	DATE	DESCRIPTION
1	05-26-08	WLD	JAN. 28, 1998	DESIGNED BY
2	04-03-01	WLD		DRAWN BY
3	OCT. 15, 2001	WLD		CHECKED BY
4	APR. 10, 2013	WLD		WLD/VW
5	APR. 09, 2013	WLD		SCALE: 1" = 50'

FILE NAME: H:\ADMIN\WASTE\PLAN\WASTE\WASTE DISPOSAL.WMG





I CERTIFY THE FEES SHOWN ON THIS PLAN ARE THE BEST OF MY KNOWLEDGE

- EXPLANATION**
- DIKE BOUNDARY
 - STORAGE PILE BOUNDARY
 - DISTURBED AREA BOUNDARY
 - PERMIT AREA BOUNDARY/PROPERTY LINE
 - WATER MONITORING WELL WITH GDS ELEVATION (DEPTH TO CONSOLIDATED FORMATION)
 - TEST BORE HOLE (DEPTH TO CONSOLIDATED FORMATION)
 - DIMENSION DITCH

NOTE:
 PERMIT/PROPERTY BOUNDARY IS NW1/4, NE1/4 SECTION 18, T23S, R18E, S18&M
 DEC 0 6 2018
 DIV. OF OIL, GAS & MINING
 RECEIVED
 DEC 0 6 2018
 DIV. OF OIL, GAS & MINING

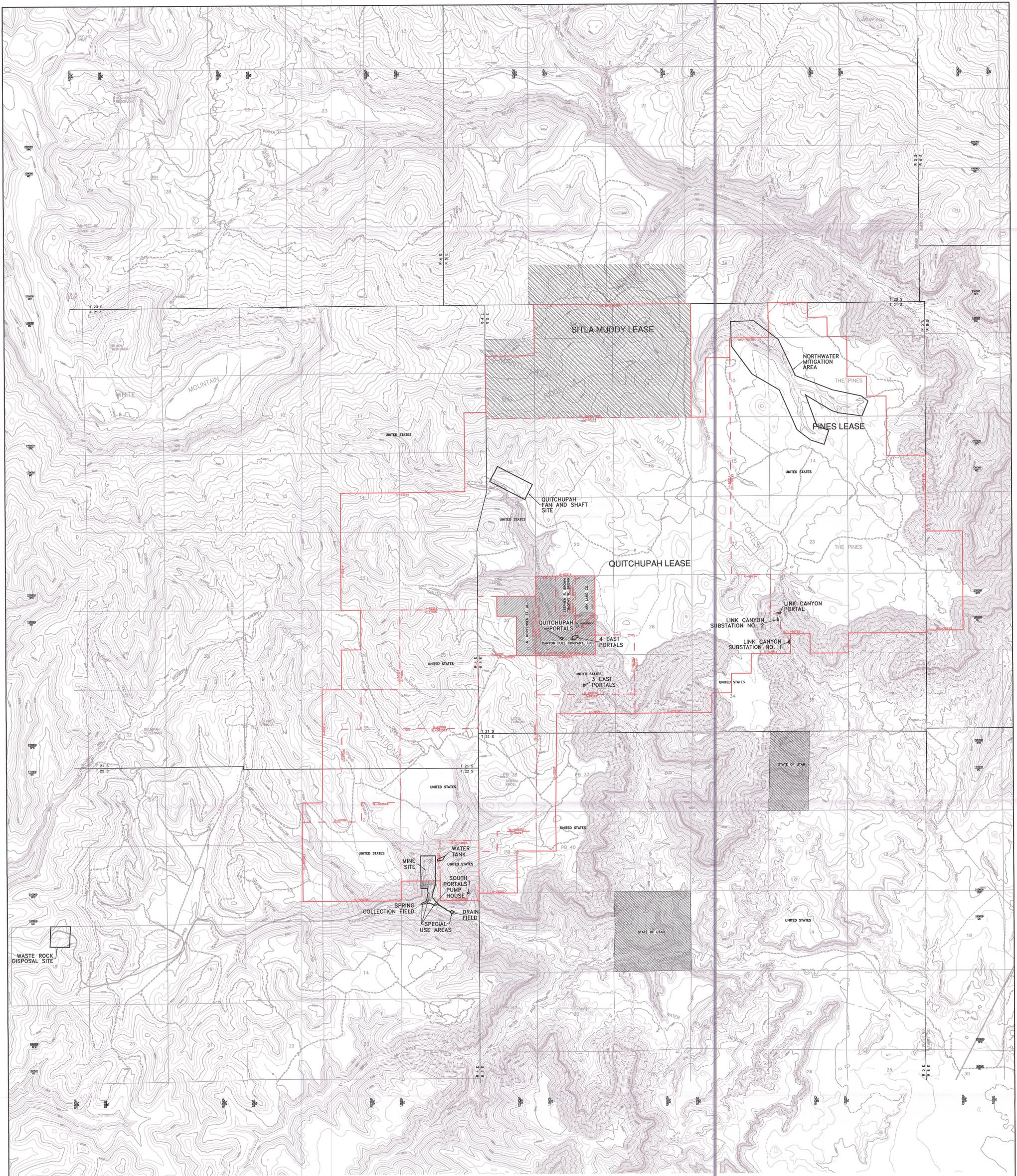


Canyon Fuel Company, LLC
 SUFGCO Mine

NO.	DATE	BY	DATE	REVISIONS OR UPDATES
1	MAY 31, 2004	MJD	NOV 12, 1987	DESIGNED BY
2	APR 10, 2013	MJD		CHECKED BY
3	MAY 20, 2013	WA		SCALE

SCALE: 1" = 50'

UNDERGROUND DEVELOPMENT WASTE DISPOSAL SITE OPERATIONS PLAN
 397 SOUTH 400 WEST
 SALT LAKE, UTAH 84144
 DRAWING OR MAP NUMBER
 MAP 4V3



- NOTES:
1. "LEASE AREA" INCLUDES ALL FEDERAL COAL LEASES, STATE COAL LEASES, FEE LANDS AND U.S.F.S. SPECIAL USE PERMIT (SUP) AREAS SHOWN ON THIS MAP.
 2. SEE VOLUME 3 REGARDING OWNERSHIP AT WASTE ROCK DISPOSAL SITE.
 3. SEE PLATE 5-2A REGARDING MINESITE AREA DETAIL.
 4. SEE PLATE 5-2B REGARDING U.S.F.S. SPECIAL USE AREA DETAIL.
 5. SEE PLATE 5-2C REGARDING PORTAL AREA DETAIL.
 6. SEE PLATE 5-2D REGARDING LINK CANYON SUBSTATION NO. 1 AREA DETAIL.
 7. SEE PLATE 5-2E REGARDING LINK CANYON SUBSTATION NO. 2 AREA DETAIL.
 8. SEE PLATE 5-2F REGARDING LINK CANYON PORTAL AREA DETAIL.

EXPLANATION

- SUFCO EXTERIOR LEASE BOUNDARY
- SUFCO INTERIOR LEASE BOUNDARY
- PERMIT BOUNDARY
- SPECIAL USE PERMIT BOUNDARY
- MINE COORDINATES
- STATE PLANE COORDINATES
- DISTURBED AREA BOUNDARY MARKER
- DISTURBED AREA BOUNDARY

LEASE AREA

- 20,991.07 ACRES FEDERAL COAL LEASES
- 2,134.19 ACRES UTAH STATE COAL LEASES
- 640.00 ACRES FEE COAL LEASES
- 40.00 ACRES WASTE ROCK DISPOSAL SITE
- 15.32 ACRES U.S.F.S. SPECIAL USE PERMITS
- 23,820.58 ACRES TOTAL LEASE AREA

ADJACENT AREA

1. BIOLOGY ADJACENT AREA IS A 0.5 MILE BUFFER AROUND ALL SURFACE DISTURBANCES.
2. SEE CHIA FOR HYDROLOGIC ADJACENT AREA BOUNDARY.

LAND AND MINERAL OWNERSHIP

LAND	MINERAL
UNITED STATES	STATE OF UTAH
UNITED STATES	UNITED STATES
VARIOUS OWNERS (AS SHOWN)	CANYON FUEL COMPANY, LLC
STATE OF UTAH	UNITED STATES
U.S.F.S. SPECIAL USE AREA	UNITED STATES

PERMIT AREA BOUNDARIES	SITE DESCRIPTION	PERMITTED DISTURBED AREA	ACTUAL AREA CURRENTLY DISTURBED TO BE RECLAIMED
62,506	SUFCO MAIN FACILITIES COMPLEX	30,210	17,405
1,595	WATER TANK, EAST SPRING CANYON	0,286	0,286
0,286	3 EAST PORTALS	1,774	0,70
0,302	4 EAST PORTALS	0,302	0,017
0,396	QUITCHUPAH PORTALS	0,396	0,017
0,287	LINK CANYON SUBSTATION NO. 1	0,287	0,18
0,245	LINK CANYON SUBSTATION NO. 2	0,245	0,12
0,350	LINK CANYON PORTAL	0,350	0,15
41,812	WASTE ROCK DISPOSAL SITE	11,680	10,76
542,260	NORTH WATER MITIGATION AREA	0,000	0,000
68,640	QUITCHUPAH FAN & SHAFT SITE	0,000	0,000
720,483	TOTAL	49,136	30,454

PERMITTED DISTURBED AREA BOUNDARIES	SITE DESCRIPTION	ACTUAL AREA CURRENTLY DISTURBED TO BE RECLAIMED	SITE DESCRIPTION
30,210	SUFCO MAIN FACILITIES COMPLEX	17,405	MINE SITE, EAST SPRING CANYON
0,987	WATER TANK, EAST SPRING CANYON	0,39	SPRING COLLECTION FIELD, CONVULSION CANYON
0,220	3 EAST PORTALS	0,075	PUMP HOUSE, CONVULSION CANYON
0,784	4 EAST PORTALS	0,40	LEACH FIELD, CONVULSION CANYON
1,595	WATER TANK, EAST SPRING CANYON	0,193	3 EAST PORTALS
0,286	3 EAST PORTALS	0,017	4 EAST PORTALS
1,774	4 EAST PORTALS	0,70	SOUTH PORTALS
0,302	QUITCHUPAH PORTALS	0,017	QUITCHUPAH PORTALS
0,396	QUITCHUPAH PORTALS	0,017	QUITCHUPAH PORTALS
0,287	LINK CANYON SUBSTATION NO. 1	0,18	LINK CANYON SUBSTATION NO. 1
0,245	LINK CANYON SUBSTATION NO. 2	0,12	LINK CANYON SUBSTATION NO. 2
0,350	LINK CANYON PORTAL	0,15	LINK CANYON PORTAL
41,812	WASTE ROCK DISPOSAL SITE	10,76	WASTE ROCK DISPOSAL SITE
542,260	NORTH WATER MITIGATION AREA	0,000	NORTH WATER MITIGATION AREA
68,640	QUITCHUPAH FAN & SHAFT SITE	0,000	QUITCHUPAH FAN & SHAFT SITE
720,483	TOTAL	49,136	TOTAL



I CERTIFY THE ITEMS SHOWN ON THIS DRAWING ARE ACCURATE TO THE BEST OF MY KNOWLEDGE



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NO.	DATE	REV. BY	DWG. BY	REMARKS
14	09/12/05	M.D.	80H	
15	02/20/07	M.D.	88B	
16	06/29/09	M.D.	88B	
17	06/11/10	M.D.	88B	
18	07/26/12	M.D.	88B	
19	04/16/13	M.D.	79B	

Canyon Fuel Company, LLC
SUFCO Mine
597 South SR 24 - Solms, UT 84654
(435) 286-4900 Phone
(435) 286-4469 Fax

LAND OWNERSHIP, LEASE, AND PERMIT AREA MAP

SCALE: 1" = 2000'
DATE: 10/28/13
DRAWN BY: JMB/TJB
ENGINEER: MWS
SHEET NO.: PLATE 5-6v19

FILE NAME: H:\DRAWINGS\WPP\PLATES\PLATE 5-6v19.dwg