C/041/002 Incoming

#5434

Canyon Fuel Company, LLC
A Subsidiary of Bowie Resources Partners, LLC

Sufco Mine
John Byars
General Manager
597 South SR24
Salina, Utah 84654
(435) 286-4400
Fax (435) 286-4499

May 15, 2017

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 the WRS As-Built Soils Amendment, Task ID#5434, SUFCO Mine, Canyon Fuel Company, LLC, Permit Number C/041/0002

Dear Sirs,

Please find enclosed with this letter two clean copies of the WRS As-Built Soils Amendment.

Appendix V has been updated to include the lab analysis for the composite sample for soils stockpiled for Phase 1 & 2 construction. Per a request by Pricilla Burton a drawing showing the location of samples taken and analyzed for the soils placed on Lift 5 has been included in Appendix V. A note has been added to Map 2-G with the intent of clarifying where the various information is located in the M&RP. The quantities table has been revised appropriately. Bonding information was submitted under separate cover in March 2017 and clean copies have been submitted. .

The maps and figures for this submittal were also submitted in the permit legal information update. To simplify only one set of drawings has been included to cover both approved amendments. They are Maps 2A thru 2G, 3A thru 3C, 4A thru 4F, 5, 5A, 7, 8, 8A thru 8C and Figures 4, 5 and 8.

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

CANYON FUEL COMPANY, SUFCO Mine

Vicky D. Miller
for

Jake Smith
TECHNICAL SERVICES MANAGER

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Encl.
cc: DOGM Correspondence File

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 Waste Rock Disposal Site - As-Built Soils Amendment, Task ID#5434
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.

☐ 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.

Jacob D. Smith
Print Name

Sign Name, Position, Date, Engr. Mgr., 5/15/17

Subscribed and sworn to before me this 15 day of May, 2017

Notary Public

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

JACQUELYN NEBEKER
Notary Public
State of Utah
My Commission Expires 03/24/2019
COMMISSION NUMBER 681827

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Form DOGM- C1 (Revised March 12, 2002)

APPLICATION FOR COAL PERMIT PROCESSING
Detailed Schedule Of Changes to the Mining And Reclamation Plan

Permittee: Canyon Fuel Company, LLC
Mine: Sufco Mine **Permit Number:** C/041/002
Title: Clean Copies Waste Rock Disposal Site - As-built Soils Amendment, Task ID#5434

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
☐ Add	☐ Replace	☐ Remove	M&RP - WRDS Volume 3
☐ Add	☒ Replace	☐ Remove	Chapter 2, Pages 2-5, 2-17, 2-18, 2-22 thru 2-24
☒ Add	☐ Replace	☐ Remove	Chapter 2, Page 2-27, 2016 Table
☐ Add	☒ Replace	☐ Remove	Maps 2-A through 2-F , see note below
☒ Add	☐ Replace	☐ Remove	Map 2-G
☐ Add	☒ Replace	☐ Remove	Maps 3-A thru 3-C, 4A thru 4-F, 5, 5A, 7, 8, 8A thru 8C, see note below
☐ Add	☐ Replace	☐ Remove	Appendix V, add to the back of the existing information
☐ Add	☒ Replace	☐ Remove	Figures 4 & 5
☒ Add	☐ Replace	☐ Remove	Figure 8
☐ Add	☐ Replace	☐ Remove	TOC, Page 1-ii
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
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Any other specific or special instruction required for insertion of this proposal into the Mining and Reclamation Plan.

May 2017 The maps and figures for this submittal were also submitted in the permit legal information update. To simplify only one set of drawings has been included to cover both approved amendments. They are Maps 2A thru 2G, 3A thru 3C, 4A thru 4F, 5, 5A, 7, 8, 8A thru 8C and Figures 4, 5 and 8.

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CHAPTER 2

SOILS

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WRDS EXPANSION (2015-2016) TOPSOIL/SUBSOIL SALVAGE (Estimated*)

	Soil Type (Figure 5 & Figure 3 (Append. V (A))	Topsoil Volume (CY)	Subsoil Volume (CY)	Year Salvaged and Stockpiled (Estimated)**
PHASE 1	1	3400	6460	2015 - 2017
	2	17100	2740	
	4	500	0	
	Rehandled***	3500	0	
PHASE 2	1	6600	15300	2015 - 2017
	3	3400	1600	
	5	2500	1300	
PHASE 3	1	2838	5392	2018 - 2020
	2	5818	5486	
	3	7299	3369	
	Rehandled***	2398	0	
PHASE 4	2	9286	8756	2020 .....
	3	7716	3561	
	Rehandled***	3335	0	
PHASE 5	1	690	1312	2020 .....
	2	14065	13261	
	3	4748	2191	
	Rehandled***	3344	0	
PHASE 6	1	2068	3929	
	2	8431	7949	
	3	83	38	

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232.700 Topsoil and Subsoil Removal Under Adverse Conditions

Expansion - Soil horizons will be removed and stockpiled, except where natural conditions render operations hazardous or detrimental to soils outside the disturbed area. In localities where steep grades, adverse terrains, severe rockiness, limited depth of soils, or other adverse conditions exist that render soil removal activities using conventional machines hazardous, soils may not be salvaged and stockpiled, following consultation with DOGM personnel.

233 Topsoil Substitutes and Supplements

Not applicable.

234 Topsoil Storage

Figure 5 is a drawing showing the soils surveyed, the test pit locations, the respective depth of topsoil and subsoil. The Order 2 soil survey in Appendix V(A) contains Figure 3 which described anticipated topsoil and subsoil salvage depths.

234.100 Topsoil Stockpiling

The topsoil removed will be stockpiled for later use in reclamation operations when it is impractical to promptly redistribute the materials on regraded areas. Because the soil salvage quantities are estimated, the actual contours and corresponding cross-sections are approximate.

The subsoil and topsoil stockpiles will be protected with a fence. Following the salvage of soils during Phases 1 the majority of the remaining soils salvaged will be used to reclaim the previous areas where waste rock has been stored i.e. Phase 3 salvaged topsoil and subsoil will be used to cover Phase 1 and 2, Phase 4 will be used to cover Phase 3, etc.

The stockpiles will be graded to a slope ranging between of 2h:1v to 3h:1v,roughened, seeded and mulched to promote surface stabilization. The method of application of the mulch on the stockpiles will be by blower or by hand, the mulch will either be wood fiber, grass hay, straw or alfalfa hay, the anchoring method will be either crimping or chemical binder (Table 10, July 2008, Division's Soil

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Guidelines, pages 26 & 27). Since the piles will not have a flat horizontal surface the recommended application rate of 1 to 2 tons per acre will vary with the surface to receive the application, a minimum of 1 ton will be applied. The interim reclamation seed mix described in WRDS Chapter 3, Section 341.200, will be used for this purpose.

A sign will be installed on the stockpiles to identify as a topsoil storage area or as a subsoil storage area. The stockpiles will be protected from wind and water erosion by being revegetated with a quick growing vegetative cover (interim reclamation seed mix, Section 341.200) and by installing berms around the stockpiles to help trap sediment coming off the stockpiles.

Lift #5 Expansion -The topsoil/subsoil will be removed to a minimum depth of 18 inches in the approximately 0.54 acre area of the expansion. The topsoil will either be used immediately to reclaim a portion of the #5 lift or will be stockpiled on Topsoil Storage No. 2 to be used for reclamation in the future. The topsoil to be removed is estimated to be 1,300 yds. The logs (Appendix II) from boring number B-1 located within the expansion area shows the topsoil to be 12 inches deep, however the area has been part of an undisturbed ditch and additional sediment has the potential of having been deposited in the area. Boring B-1 is located on the west side of the waste rock pile between the pile and undisturbed ditch. Boring B-1 will be covered with waste as part of the expansion planned for Lift # 5 in approximately 2014 (depending upon the quantity of waste produced and hauled).

234.200 Stockpiled Topsoil

Stable Stockpile Site - Stockpiled materials will be placed on a stable site as described in Section 234.100. Cross-Sections of Phase1 & 2 topsoil and subsoil salvage piles are shown on Figure 8.

Protection from Contaminants and Compaction - The stockpiles will be kept isolated from the main area of the waste rock disposal site to protect the material from contaminants and unnecessary compaction that would interfere with vegetation. The stockpile will be constructed in such a manner as to allow equipment access around the base of the stockpiles for repair of the surfaces and diversion structures as needed.

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pile is sufficient to meet reclamation standards for bond release. The Division has previously approved 30" at the waste rock site as being sufficient to cover the placed waste and promote the establishment of vegetation. Historically, portions of the waste rock pile have received the 30" of topsoil and have revegetated well. To demonstrate that the 30" is sufficient for cover and revegetation additional information pertaining to a contemporaneous reclamation project will be provided to the Division for review and approval.

Soil Thickness: The topsoil will be distributed to the disturbed areas illustrated on Map 8. Soil will be spread to a minimum depth of approximately 30 inches . The 30 inches will be made up of approximately 15 inches of topsoil and 15 inches of subsoil. Deeper soil cover up to 48"(15 - 24" topsoil and 24 - 33" subsoil) will be applied, if necessary, to avoid plant toxicity problems.

Phases 1 - 6 - It is planned that during the reclamation of Phases 1 thru 6 that approximately 30 inches of topsoil and 18 inches of subsoil (48") will be placed atop the waste rock piles. The four foot depth of placed soil could vary from 24 to 30 inches of topsoil and from 18 to 24 inches of subsoil, these amounts are dependent upon the actual quantity of soils salvaged during the construction of the site.

The remainder of the disturbed site area, not used for refuse storage will be covered with approximately 12 inches of topsoil (i.e. reclaimed roads, ditches, berms, etc. approximately 4.34 acres). The area and topsoil/subsoil cubic yards for each phase are shown on Plates 2A thru 2F.

The quantity of topsoil/subsoil placed during reclamation of will be determined by surveying the phased area prior to placement and post placement. The M&RP will be updated with as-built drawings, cross sections and a table(s) listing volumes of subsoil and topsoil stockpiles placed within 6 months of the completion of salvage for each phase. The soil salvage during Phases 1 and 2 are shown on the 2016 Table and Map 2G. Phases 1 and 2 were constructed simultaneously, rather than separately, therefore the soils in the topsoil and subsoil storage

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piles existing in 2017 are combined . The table shows topsoil/subsoil quantities, placed on Lift 5, actually within the storage piles and the estimated quantities to be salvaged in the future.

The topsoil and subsoil salvaged and the quantities stockpiled will all be utilized throughout the phases for reclamation, leaving no salvaged soils at final reclamation.

Historic - The first lift was covered with topsoil from the existing adjacent stockpile.

Expansion - Subsequent lifts will be covered with topsoil/subsoil from the next lift site. Sufficient topsoil/subsoil will be placed in the long term storage stockpile to ensure minimum depth coverage of the final lift and the sediment pond area. The area of the phases of waste rock pile construction are noted in tables on Maps 2A - 2F.

Compaction - To prevent compaction of topsoil, soil-moving equipment will refrain from unnecessary operation over spread soil. When possible to minimize compaction, track-mounted equipment (e.g. bulldozers, trackhoes) will be used to spread the soil.

Erosion - Care will be exercised to ensure the stability of soil on graded slopes to guard against erosion during and after soil application. Erosion control measures will include but not be limited to extreme surface roughening (also known as pocking and gouging).

242.200 Regrading

Since the site has been disturbed by previous activities and will be used to permanently store coal mine waste, the area will not be returned to the original geometric configuration. Prior to soil redistribution, the disturbed area will be graded to meet the proposed final reclamation topography (Map 8).

The surface of the refuse pile will be left in a roughened state and in addition will be ripped prior to the application of soil. After the 1st lift of subsoil is placed, the surface of the refuse pile will be ripped again to a depth of approximately 12 inches in an effort to promote root penetration and to mix the top layer of the refuse with the subsoil.

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The second type of surface consists of roads, perimeter ditches, and operational areas which may be compacted through their use. The surface will be ripped to a depth of approximately 1.5 to 2 feet with a ripper-equipped tractor or other appropriate equipment where possible to reduce surface compaction, to assure soil adherence, and promote root penetration. Following the ripping of the soils and the application of stockpiled soils, extreme roughening techniques will be applied. A backhoe or trackhoe will be used to create microbasins with an approximate depth of 18" and the width of the bucket (30" or less). Soil removed to form the microbasins will be dropped above the microbasin onto the soil surface.

242.300 Topsoil Redistribution on Impoundments and Roads

The sedimentation pond and embankment will be breached and reclaimed with the other surface disturbed areas. Similarly, reclamation of abandoned roads will also follow the same technique as for other disturbed areas.

243 Soil Nutrients and Amendments

Soil nutrients and amendments may be applied to the redistributed soil as necessary, to establish the vegetative cover. Refer ro Section 231.300 for additional detail.

In the event that the topsoil/subsoil piles are moved in conjunction with the pile expansion, organic matter growing on the soil will be incorporated into the piles when the soils are relocated. Nitrogen fertilization will be applied at the rate determined by need.

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2016 Table (all quantities are estimated, unless noted otherwise)

	Soil Type#	Topsoil (In.)#	Subsoil (In.)#	Area (SF)	Estimated Topsoil Salvage (CY)	Topsoil Replaced (CY)	Stockpiled Topsoil Remaining (CY)	Estimated Subsoil Salvage (CY)	Subsoil Replaced (CY)	Stockpiled Subsoil Remaining (CY)
Phase 1	1	20	36	55080	3400			6460	0	
	2	35	33	158297	17100			2740	0	
	4	19	0	8526	500			0	0	
	Rehandled	30	0	37800	3500			0	0	
Phase 2	1	20	36	106920	6600			15300		
	3	26	12	42369	3400			1600		
	5	17	9	47647	2500			1300		
Previously Stored*					7061			11747		
Total					44061			39147		
Placed on Lift 5 - Jun 2016						7705			9417	
Remainder							36,356			29,730
Actual Surveyed Soil In Storage Oct. 2016**							27900			25850
							+18353			+ 14247
Phase 3	1	20	36	45978	2838		46,253	5392		40097
	2	35	33	53858	5818		-28,178	5486		- 17270
	3	26	12	90961	7299			3369		
	Rehandled	30	0	25897	2398			0		
					18353	23764 + 4414***	= 18,075	14247	14565 + 2705***	= 22,827
							+ 20337			+ 12317
Phase 4	2	35	33	85964	9286		38,412	8756		35144
	3	26	12	96154	7716		-19591	3561		- 12008
	Rehandled	30	0	36023	3335			0		
					20337	19591	= 18821	12317	12008	23,136
							+ 22847			+ 16764
Phase 5	1	20	36	11185	690		41668	1312		39900
	2	35	33	130199	14065		-21538	13261		- 13201
	3	26	12	59163	4748			2191		
	Rehandled	30	0	36112	3344			0		
					22847	21538	= 20130	16764	13201	26,699
							+ 10582			+ 11917
Phase 6	1	20	36	33498	2068		30712	3929		38616
	2	35	33	78048	8431		-23120	7949		- 8163
	3	26	12	1037	83			38		
					10582	23120	0 **** (7592)	11917	8163	30,453 *****

Reference Section 222 and 234 for more information associated with soil types, map unit designation and topsoil/subsoil salvage quantities
* For referenced quantities refer to Topsoil and Subsoil Storage Piles Pre-Expansion-Historic Table, Chapter 2, Page 2-4
** Determined by flyover survey June 2016
*** Estimated quantity to reclaim Phase 1, which was combined with Phase 2 during construction and will be reclaimed together
**** All remaining topsoil will be placed regardless of quantity
***** Subsoil salvage volumes will be adjusted/decreased as needed

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APPENDIX V

SOILS REPORT

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SOILS REPORT

SAMPLED March 2016

COMPOSITE PHASES 1 & 2 (Stockpiled)

AND

RECLAMATION SOILS PLACED ON LIFT #5

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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: S1603195001

Project: Utah Table 6
Date Received: 3/15/2016

Date Reported: 4/4/2016
Work Order: S1603195

Lab ID	Sample ID	pH	Saturation	Electrical Conductivity	Field Capacity	Wilting Point	Organic Matter LOI	CO3
		s.u.	%	dS/m	%	%	%	%
S1603195-001	Phase 2 WRDS Comp	7.8	41.2	1.18	24.5	11.5	2.1	5.1
S1603195-002	WRS Lift 5-#1	8.1	42.1	0.98	23.4	12.3	3.2	5.9
S1603195-003	WRS Lift 5-#2	7.8	53.9	1.10	29.9	19.8	2.6	6.6
S1603195-004	WRS Lift 5-#3	7.7	50.3	1.20	30.9	16.0	2.5	5.7
S1603195-005	WRS Lift 5-#4	8.0	54.9	1.24	29.4	17.8	2.8	9.1
S1603195-006	WRS Lift 5-#5	7.6	56.5	4.30	29.2	20.7	2.4	3.4

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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: S1603195001

Project: Utah Table 6

Date Received: 3/15/2016

Date Reported: 4/4/2016

Work Order: S1603195

Lab ID	Sample ID	Calcium PE meq/L	Magnesium PE meq/L	Potassium PE meq/L	Sodium PE meq/L	SAR	Sand %	Silt %	Clay %	Texture
S1603195-001	Phase 2 WRDS Comp	4.12	1.27	0.27	6.24	3.80	54.0	26.0	20.0	Sandy Clay Loam
S1603195-002	WRS Lift 5-#1	3.00	1.09	0.27	5.16	3.61	56.0	25.0	19.0	Sandy Loam
S1603195-003	WRS Lift 5-#2	4.38	1.74	0.27	4.22	2.41	32.0	36.0	32.0	Clay Loam
S1603195-004	WRS Lift 5-#3	5.39	1.95	0.33	3.90	2.04	38.0	34.0	28.0	Clay Loam
S1603195-005	WRS Lift 5-#4	4.97	2.11	0.32	4.72	2.51	34.0	36.0	30.0	Clay Loam
S1603195-006	WRS Lift 5-#5	6.70	2.55	0.38	34.3	15.9	36.0	33.0	31.0	Clay Loam

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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: S1603195001

Project: Utah Table 6
Date Received: 3/15/2016

Date Reported: 4/4/2016
Work Order: S1603195

Lab ID	Sample ID	Boron	Phosphorus	Selenium	Nitrate(as N)	TKN	Available Potassium	Available Sodium	Exchangeable Sodium	Total Carbon	TOC
		ppm	ppm	ppm	ppm	%	meq/100g	meq/100g	meq/100g	%	%
S1603195-001	Phase 2 WRDS Comp	0.63	10	<0.02	1.4	0.11	0.53	0.94	0.68	1.3	0.7
S1603195-002	WRS Lift 5-#1	0.59	16	<0.02	1.2	0.13	0.63	0.98	0.77	2.1	1.4
S1603195-003	WRS Lift 5-#2	0.91	8	<0.02	21.5	0.14	0.88	0.89	0.66	1.6	0.8
S1603195-004	WRS Lift 5-#3	0.76	11	<0.02	35.1	0.13	0.87	0.79	0.59	1.6	0.9
S1603195-005	WRS Lift 5-#4	0.51	8	<0.02	11.6	0.13	0.87	0.93	0.67	2.1	1.0
S1603195-006	WRS Lift 5-#5	0.55	16	<0.02	7.3	0.11	0.89	6.21	4.27	1.5	1.0

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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

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Soil Analysis Report

Canyon Fuel Company, LLC.

397 South 800 West
Salina, UT 84654

Report ID: S1603195001

Project: Utah Table 6
Date Received: 3/15/2016

Date Reported: 4/4/2016
Work Order: S1603195

Lab ID	Sample ID	Total Sulfur %	T.S. AB t/1000t	Neutral. Potential t/1000t	T.S. ABP t/1000t	Sulfate Sulfur %	Pyritic Sulfur %	Organic Sulfur %	PyriticS AB t/1000t	PyriticS ABP t/1000t
S1603195-001	Phase 2 WRDS Comp	0.03	0.79	50.5	49.7	0.02	<0.01	<0.01	<0.01	50.5
S1603195-002	WRS Lift 5-#1	0.02	0.76	58.8	58.0	0.01	<0.01	<0.01	<0.01	58.8
S1603195-003	WRS Lift 5-#2	0.02	0.56	65.7	65.2	0.01	<0.01	<0.01	<0.01	65.7
S1603195-004	WRS Lift 5-#3	0.02	0.54	57.0	56.4	0.01	<0.01	<0.01	<0.01	57.0
S1603195-005	WRS Lift 5-#4	0.02	0.55	91.1	90.6	0.01	<0.01	<0.01	<0.01	91.1
S1603195-006	WRS Lift 5-#5	0.02	0.66	34.2	33.5	0.02	<0.01	<0.01	<0.01	34.2

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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 Laboratories, Inc.
CHAIN OF CUSTODY
SUFCO MINE

51603195- 001 002 003 004 005 006

Sample Identification	Phase 2 WRDS Comp	WRS Lift 5- #1	WRS Lift 5- #2	WRS Lift 5- #3	WRS Lift 5- #4	WRS Lift 5- #5
Sample Date	03/01/16	03/01/16	03/01/16	03/01/16	03/01/16	03/01/16
Number of Samples	1	1	1	1	1	1
Type of Soil	Topsoil	Topsoil	Topsoil	Topsoil	Topsoil	Topsoil
Laboratory Analyses						
Table 6 Topsoil & Overburden Parameters	X	X	X	X	X	X
AND						
Texture	X	X	X	X	X	X
Soluable K	X	X	X	X	X	X
Available NO3 - N	X	X	X	X	X	X
Organic Matter %	X	X	X	X	X	X
CACO3%	X	X	X	X	X	X
Total Carbon	X	X	X	X	X	X
SAR	X	X	X	X	X	X
Water Holding Capacity	X	X	X	X	X	X
Plant Available Nitrogen	X	X	X	X	X	X
Phosphorus	X	X	X	X	X	X
Pyritic sulfur	X	X	X	X	X	X
Potassium, Extractable	X	X	X	X	X	X
T.S. ABP	X	X	X	X	X	X

WR (Waste Rock), SS (Sub-Soil), TS (Topsoil)

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Amanda Pollard	3/11/16	1310	Kara Hoco	3/15/16	1110

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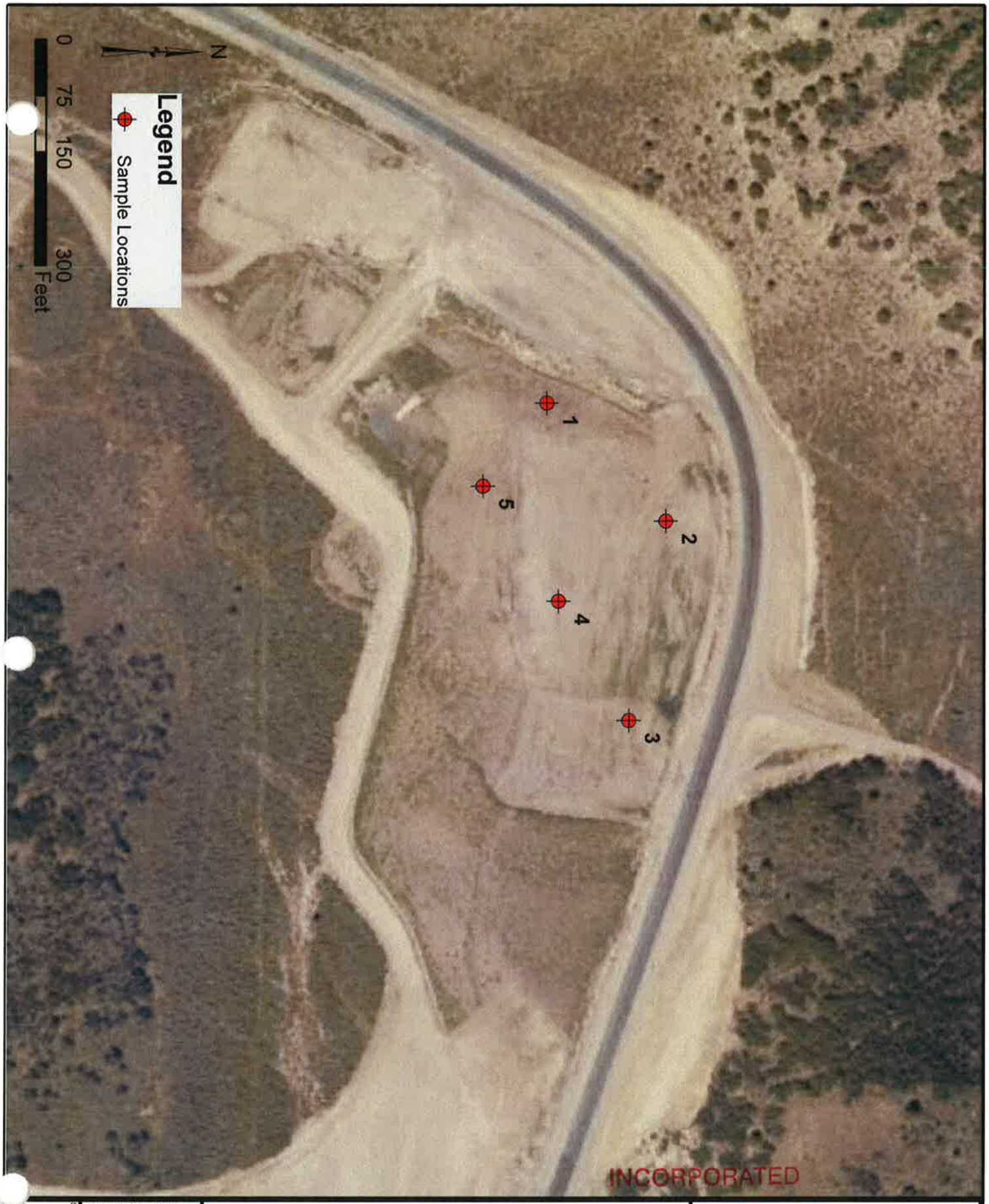

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SHEET NO: 1	SCALE: 1 " = 167 '	SUFCO MINE	Canyon Fuel Company, LLC SUFCO Mine 597 South SR 24 - Salina, UT 84654 (435) 286-4880 Phone (435) 286-4499 Fax
	DATE: 5/9/17	WRS - Lift 5 Soil Sample Locations	
	DRAWN BY: BB	Samples Taken March 1, 2016	
	CHECKED BY: X.X.X.		
	ENGINEER: X.X.X.		
	PROJ: .	FILE NAME:	

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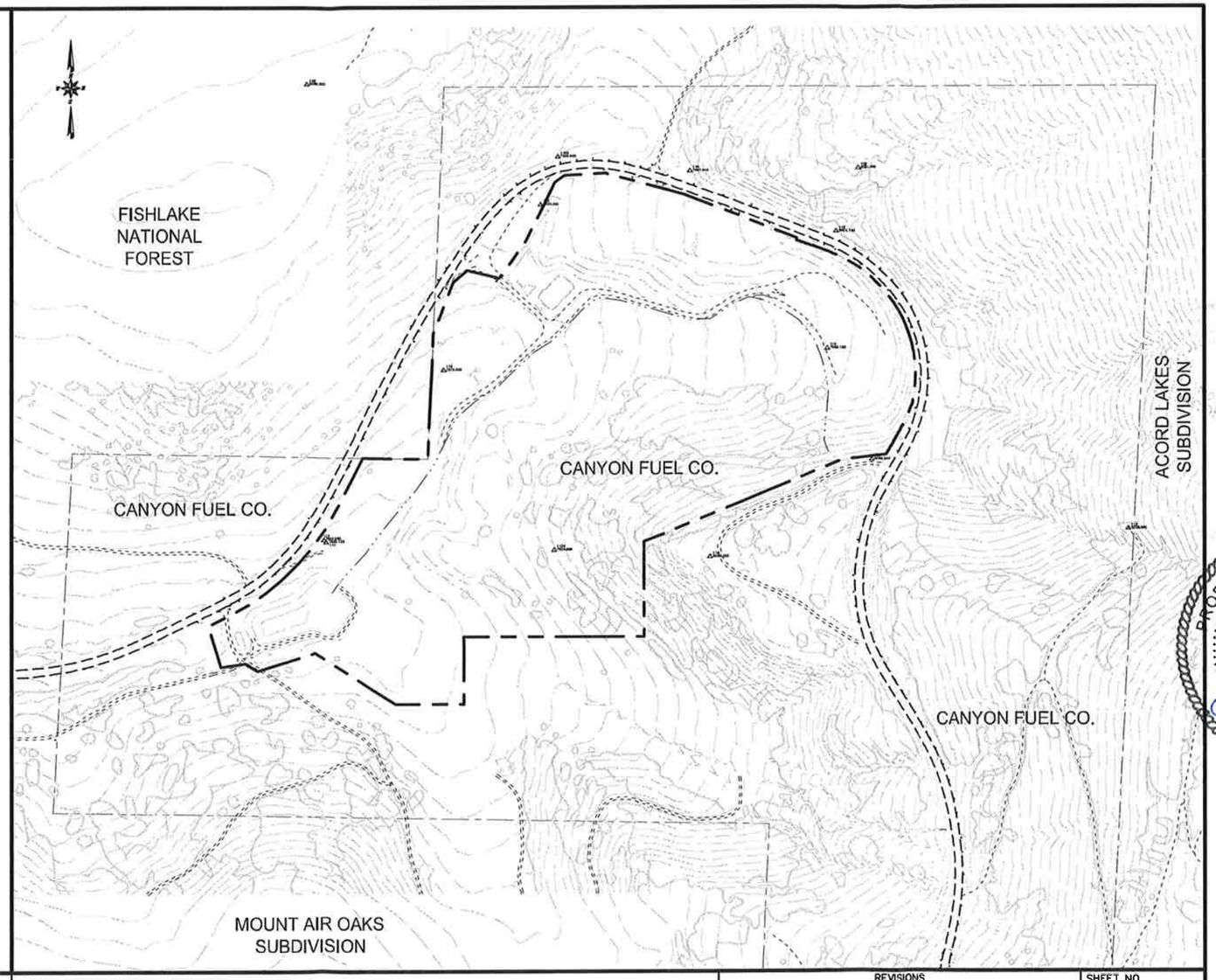
LEGEND

- EXISTING GROUND MAJOR CONTOUR (10 FOOT)
- EXISTING GROUND MINOR CONTOUR (2 FOOT)
- OPERATIONAL GROUND INFERRED CONTOUR (40 FOOT)
- EXISTING ROAD
- EXISTING PAVED ROAD
- DISTURBED AREA BOUNDARY
- CANYON FUEL CO. PROPERTY BOUNDARY
- EXISTING TREELINE



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STATE OF UTAH

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SUFCO Mine
597 South SR 24 - Salina, UT 84654
(435) 286-4880 Phone
(435) 286-4499 Fax

WASTE ROCK PILE

PROPERTY OWNERSHIP – DISTURBANCE AREA BOUNDARY LINE

SCALE: 1" = 400'	DATE: 3/6/2017	DRAWN BY: J.A.	ENGINEER: L.F.	CHECKED BY: V.M
FILE NAME: H:\JD\Proj\1406-120\DWG\FIG_4 PROPERTY OWNERSHIP – DAB LINE.dwg				PROJ: 1406-120

REVISIONS

NO.	DATE	REQ. BY	DWG. BY	REMARKS
1	8/6/2014	VM	JA	UPDEATE PLATE
2	9/4/2014	VM	JA	UPDATE PLATE
3	10/16/2016	VM	JA	PLATE UPDATES
4	03/06/2017	BB	JA	DISTURBED AREA BOUNDARY UPDATE

SHEET NO.

FIG. 4

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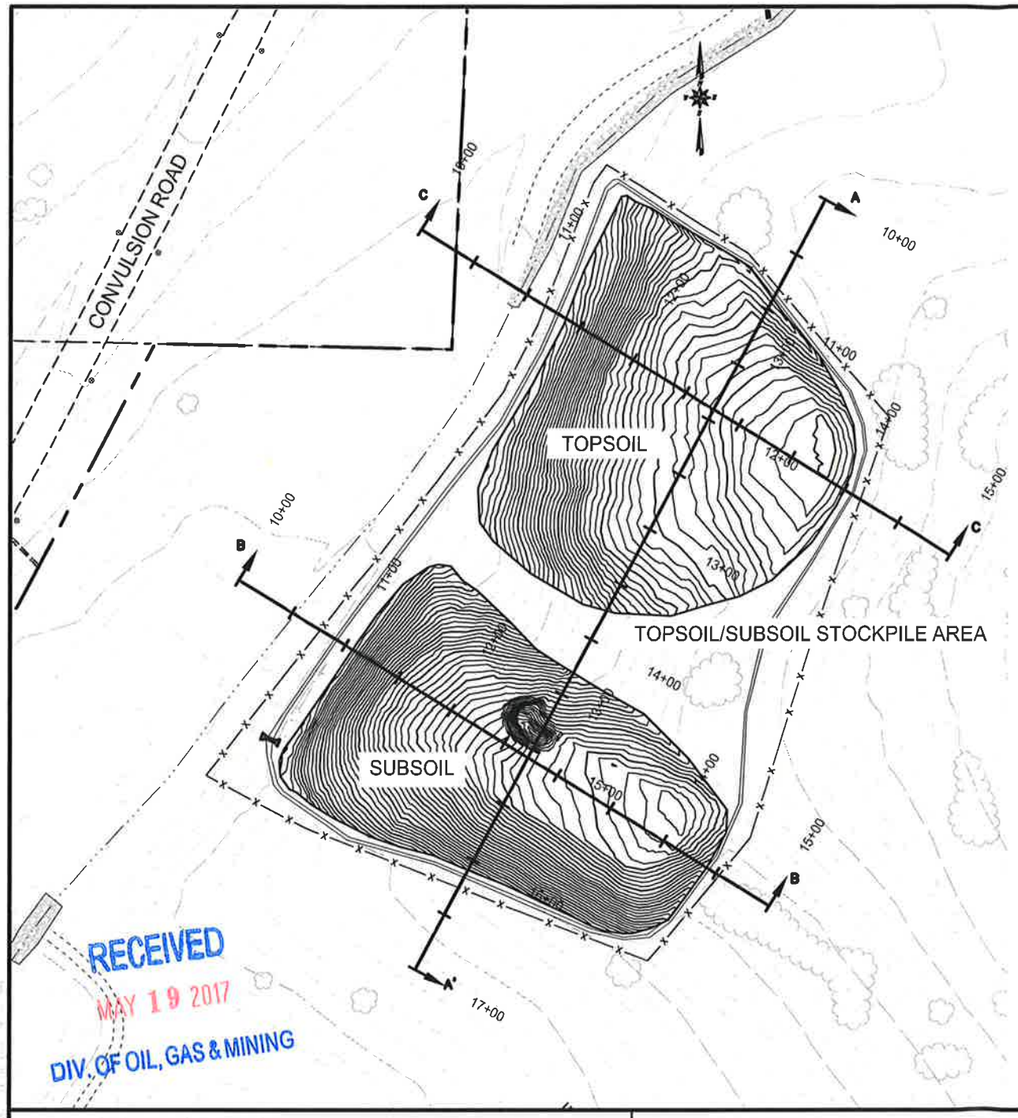

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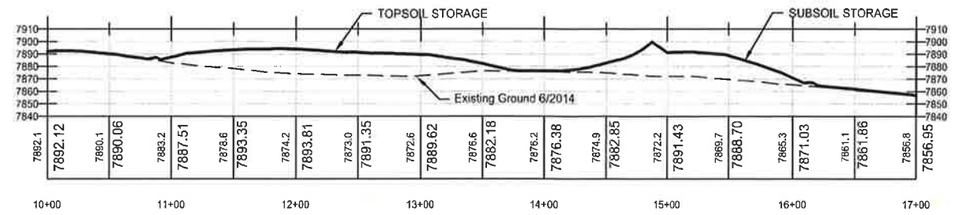
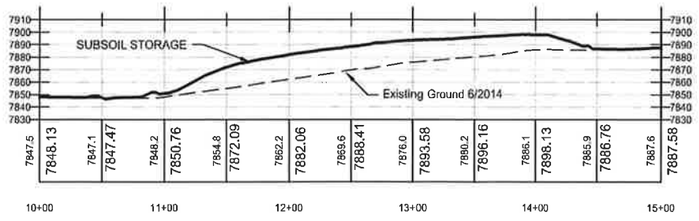
LEGEND

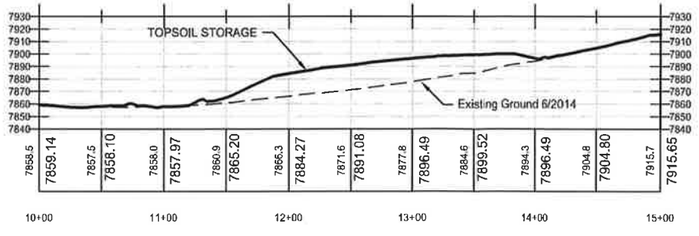
- EXISTING GROUND MAJOR CONTOUR (10 FOOT)
- EXISTING GROUND MINOR CONTOUR (2 FOOT)
- OPERATIONAL GROUND INFERRED CONTOUR (40 FOOT)
- EXISTING ROAD
- EXISTING PAVED ROAD
- DISTURBED AREA BOUNDARY
- CANYON FUEL CO. PROPERTY BOUNDARY
- EXISTING TREELINE



SOIL SECTION A - A



SOIL SECTION B - B



SOIL SECTION C - C

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STATE OF UTAH

Canyon Fuel Company, LLC SUFCO Mine 597 South SR 24 - Salina, UT 84654 (435) 286-4880 Phone (435) 286-4499 Fax	WASTE ROCK PILE SOIL PILE MAP AND CROSS SECTIONS			
SCALE: 1" = 100'	DATE: 3/30/2017	DRAWN BY: J.A.	ENGINEER: L.F.	CHECKED BY: B.B.
FILE NAME: H:\JD\Proj\1406-120\DWG\FIG_8 SOIL PILE MAP.dwg				PROJ:1406-120

REVISIONS				
NO.	DATE	REQ. BY	DWG. BY	REMARKS

SHEET NO.
FIG. 8

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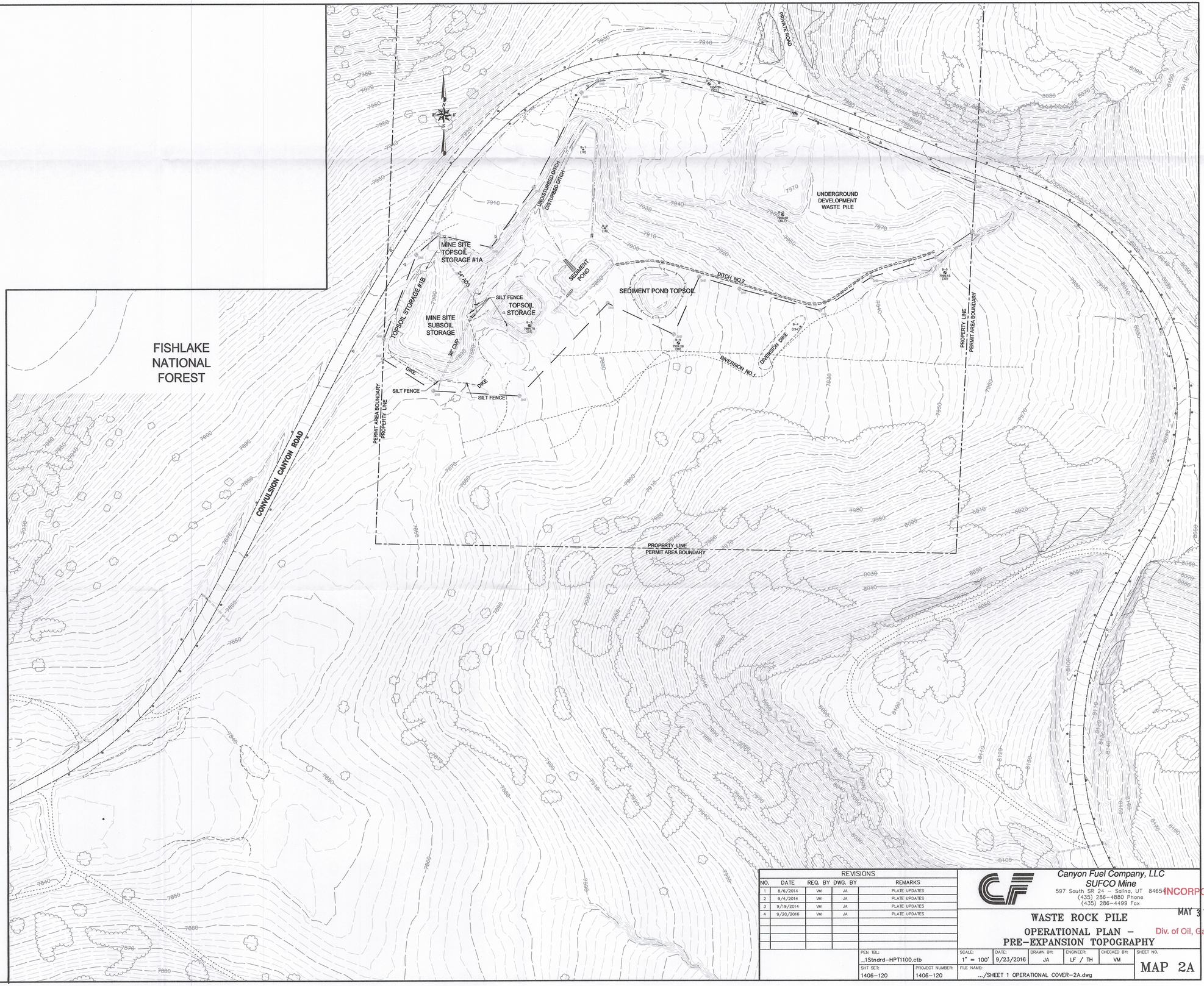

LEGEND

- 8140 — EXISTING GROUND MAJOR CONTOUR (10 FOOT)
- EXISTING GROUND MINOR CONTOUR (2 FOOT)
- EXISTING ROAD
- EXISTING PAVED ROAD
- EXISTING CULVERT
- DISTURBED AREA BOUNDARY
- PROPERTY BOUNDARY
- EXISTING TREELINE

PROFESSIONAL ENGINEER
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5/15/17
STATE OF UTAH

User: 9/23/2016 8:04 AM

REVISIONS				
NO.	DATE	REQ. BY	DWG. BY	REMARKS
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2	9/4/2014	VM	JA	PLATE UPDATES
3	9/19/2014	VM	JA	PLATE UPDATES
4	9/20/2016	VM	JA	PLATE UPDATES

PEN TBL: _1Stndrd-HPT1100.ctb
SHT SET: 1406-120
PROJECT NUMBER: 1406-120

Canyon Fuel Company, LLC
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(435) 286-4499 Fax

WASTE ROCK PILE
OPERATIONAL PLAN – PRE-EXPANSION TOPOGRAPHY

SCALE:	DATE:	DRAWN BY:	ENGINEER:	CHECKED BY:
1" = 100'	9/23/2016	JA	LF / TH	VM

FILE NAME: .../SHEET 1 OPERATIONAL COVER-2A.dwg

SHEET NO. MAP 2A

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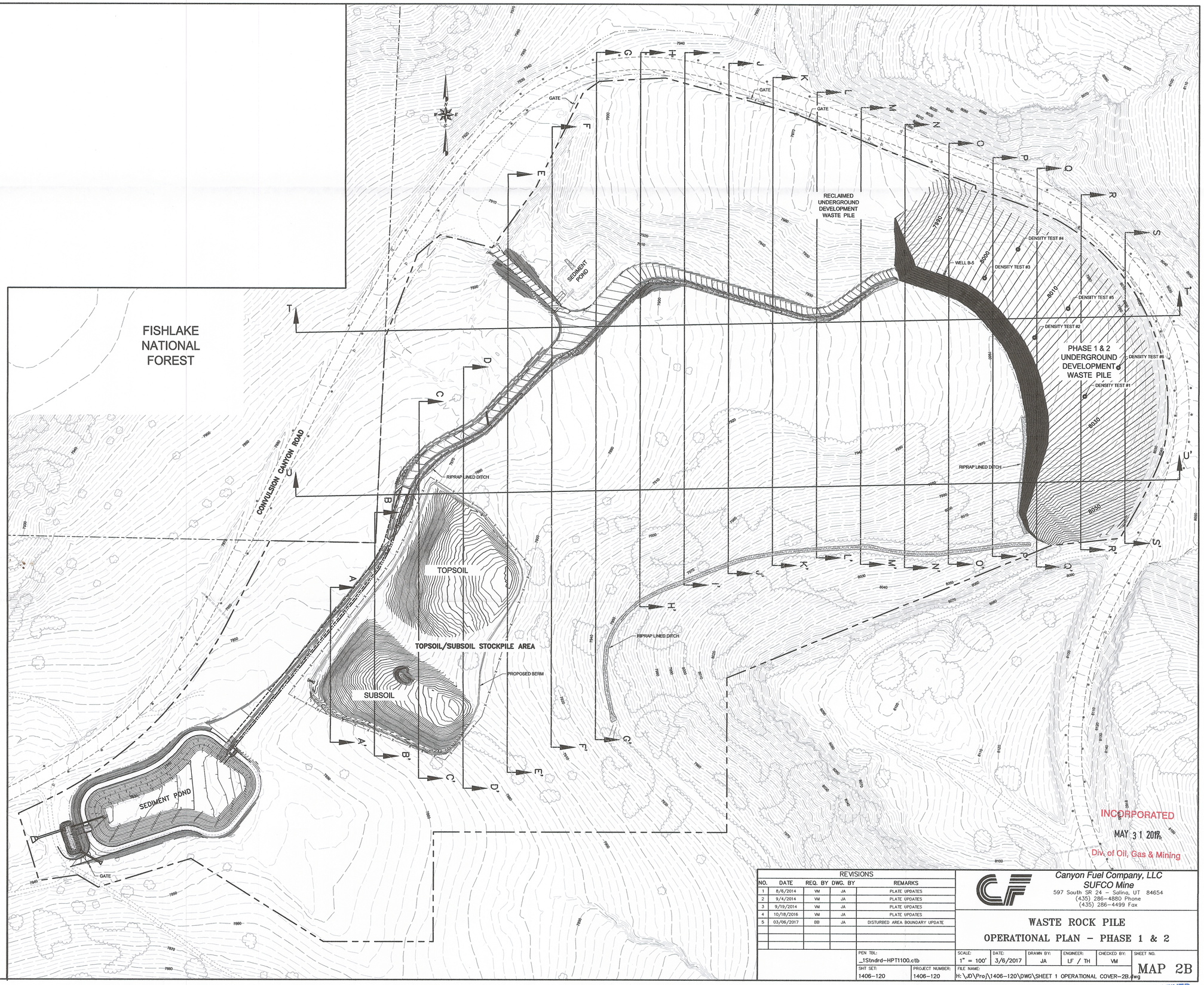

LEGEND

- 8140 — EXISTING GROUND MAJOR CONTOUR (10 FOOT)
- EXISTING GROUND MINOR CONTOUR (2 FOOT)
- 8140 — OPERATIONAL GROUND MAJOR CONTOUR (5 FOOT)
- OPERATIONAL GROUND MINOR CONTOUR (1 FOOT)
- EXISTING ROAD
- EXISTING PAVED ROAD
- EXISTING RIPRAP
- EXISTING DITCH
- EXISTING SIGN
- PROPOSED ANCILLARY ROAD
- EXISTING CULVERT
- PROPOSED CULVERT
- PROPOSED BERM
- DISTURBED AREA BOUNDARY
- PROPERTY BOUNDARY
- EXISTING TREELINE
- A — A' OPERATIONAL CROSS SECTION LOCATION (SEE MAP 3A, MAP 3B AND MAP 3C FOR CROSS-SECTIONS)

PROFESSIONAL ENGINEER
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STATE OF UTAH
5/15/17

NOTE:
TOPOGRAPHIC DATA BASED ON 2016 AERIAL SURVEY

REVISIONS				
NO.	DATE	REQ. BY	DWG. BY	REMARKS
1	8/6/2014	VM	JA	PLATE UPDATES
2	9/4/2014	VM	JA	PLATE UPDATES
3	9/19/2014	VM	JA	PLATE UPDATES
4	10/18/2016	VM	JA	PLATE UPDATES
5	03/06/2017	BB	JA	DISTURBED AREA BOUNDARY UPDATE

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WASTE ROCK PILE
OPERATIONAL PLAN – PHASE 1 & 2

PEN TBL:		SCALE:	DATE:	DRAWN BY:	ENGINEER:	CHECKED BY:	SHEET NO.
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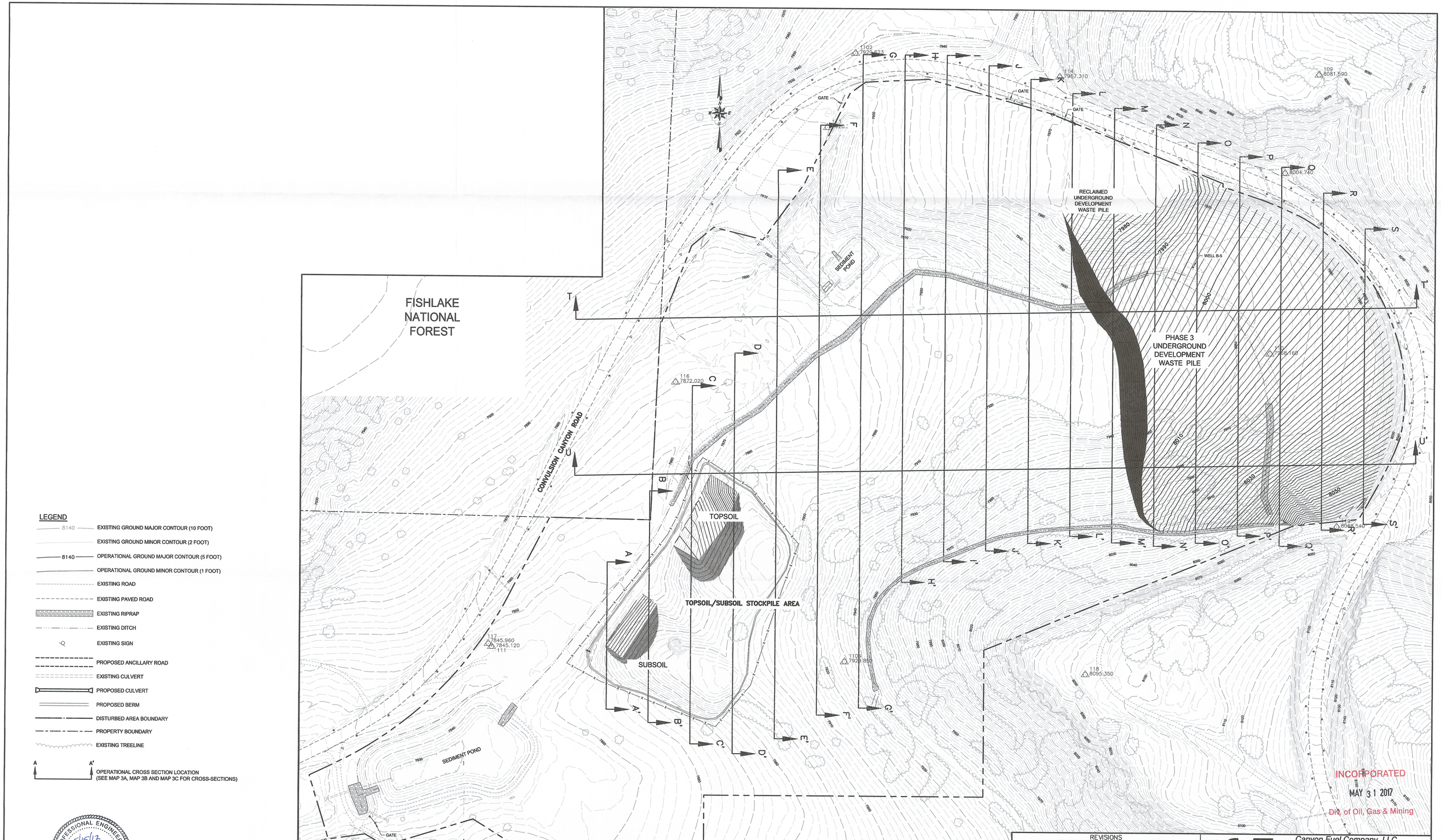

LEGEND

- 8140 — EXISTING GROUND MAJOR CONTOUR (10 FOOT)
- EXISTING GROUND MINOR CONTOUR (2 FOOT)
- 8140 — OPERATIONAL GROUND MAJOR CONTOUR (5 FOOT)
- OPERATIONAL GROUND MINOR CONTOUR (1 FOOT)
- EXISTING ROAD
- EXISTING PAVED ROAD
- EXISTING RIPRAP
- EXISTING DITCH
- EXISTING SIGN
- PROPOSED ANCILLARY ROAD
- EXISTING CULVERT
- PROPOSED CULVERT
- PROPOSED BERM
- DISTURBED AREA BOUNDARY
- PROPERTY BOUNDARY
- EXISTING TREELINE
- A — A' OPERATIONAL CROSS SECTION LOCATION (SEE MAP 3A, MAP 3B AND MAP 3C FOR CROSS-SECTIONS)

PROFESSIONAL ENGINEER
No. 9073281
JACOB D. SMITH
STATE OF UTAH
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2	9/4/2014	VM	JA	PLATE UPDATES
3	9/19/2014	VM	JA	PLATE UPDATES
4	10/19/2016	VM	JA	PLATE UPDATES
5	03/06/2017	BB	JA	DISTURBED AREA BOUNDARY UPDATE

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SUFCO Mine
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(435) 286-4499 Fax

WASTE ROCK PILE
OPERATIONAL PLAN – PHASE 3

PEN TBL:	SCALE:	DATE:	DRAWN BY:	ENGINEER:	CHECKED BY:	SHEET NO.
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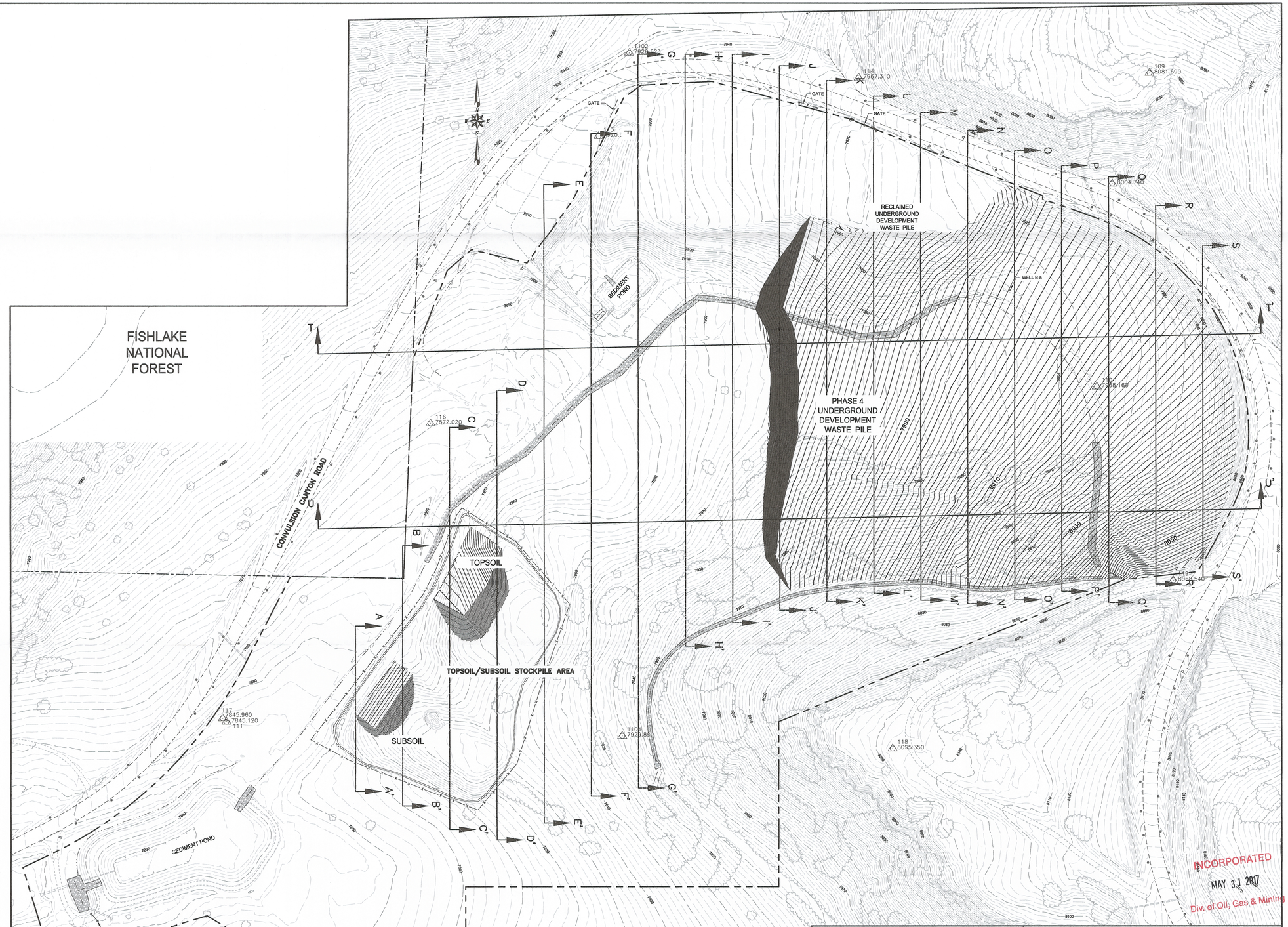

LEGEND

- 8140 — EXISTING GROUND MAJOR CONTOUR (10 FOOT)
- EXISTING GROUND MINOR CONTOUR (2 FOOT)
- 8140 — OPERATIONAL GROUND MAJOR CONTOUR (5 FOOT)
- OPERATIONAL GROUND MINOR CONTOUR (1 FOOT)
- EXISTING ROAD
- EXISTING PAVED ROAD
- EXISTING RIPRAP
- EXISTING DITCH
- EXISTING SIGN
- PROPOSED ANCILLARY ROAD
- EXISTING CULVERT
- PROPOSED CULVERT
- PROPOSED BERM
- DISTURBED AREA BOUNDARY
- PROPERTY BOUNDARY
- EXISTING TREELINE
- A A' — OPERATIONAL CROSS SECTION LOCATION (SEE MAP 3A, MAP 3B AND MAP 3C FOR CROSS-SECTIONS)

PROFESSIONAL ENGINEER
5/15/17
No. 9073281
JACOB D. SMITH
STATE OF UTAH

NOTE:
TOPOGRAPHIC DATA BASED ON 2016 AERIAL SURVEY

REVISIONS				
NO.	DATE	REQ. BY	DWG. BY	REMARKS
1	8/6/2014	VM	JA	PLATE UPDATES
2	9/4/2014	VM	JA	PLATE UPDATES
3	9/19/2014	VM	JA	PLATE UPDATES
4	03/06/2017	BB	JA	DISTURBED AREA BOUNDARY UPDATE

Canyon Fuel Company, LLC
SUFCO Mine
597 South SR 24 – Salina, UT 84654
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(435) 286-4499 Fax

WASTE ROCK PILE
OPERATIONAL PLAN – PHASE 4

PEN TBL:		SCALE:	DATE:	DRAWN BY:	ENGINEER:	CHECKED BY:	SHEET NO.
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SHT SET: 1406–120	PROJECT NUMBER: 1406–120	FILE NAME: H:\JD\Proj\1406–120\DWG\SHEET 1 OPERATIONAL COVER–2D.dwg					

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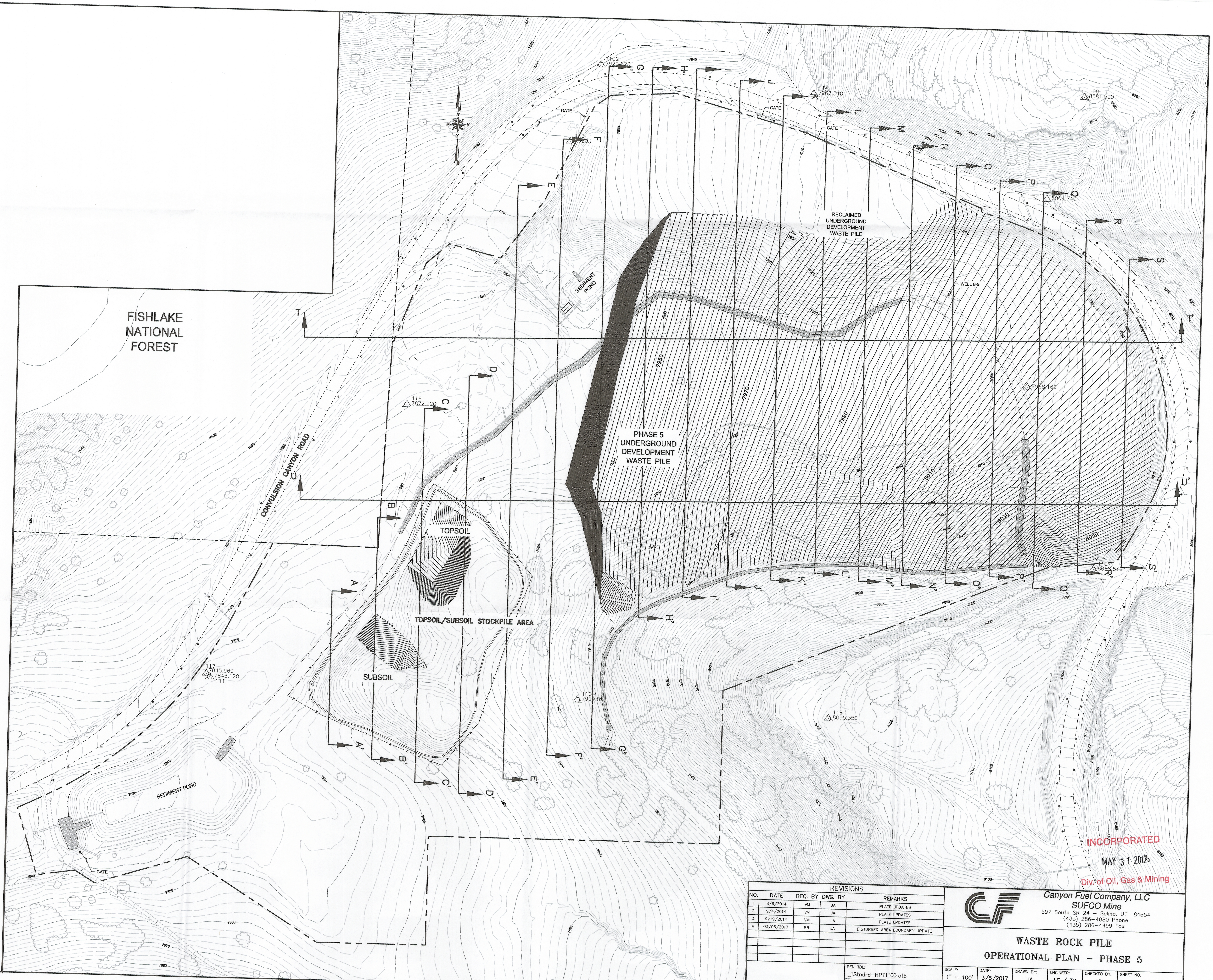

LEGEND

- EXISTING GROUND MAJOR CONTOUR (10 FOOT)
- EXISTING GROUND MINOR CONTOUR (2 FOOT)
- OPERATIONAL GROUND MAJOR CONTOUR (5 FOOT)
- OPERATIONAL GROUND MINOR CONTOUR (1 FOOT)
- EXISTING ROAD
- EXISTING PAVED ROAD
- EXISTING RIPRAP
- EXISTING DITCH
- EXISTING SIGN
- PROPOSED ANCILLARY ROAD
- EXISTING CULVERT
- PROPOSED CULVERT
- PROPOSED BERM
- DISTURBED AREA BOUNDARY
- PROPERTY BOUNDARY
- EXISTING TREELINE
- OPERATIONAL CROSS SECTION LOCATION (SEE MAP 3A, MAP 3B AND MAP 3C FOR CROSS-SECTIONS)

PROFESSIONAL ENGINEER 5/15/17 No. 9073281 JACOB D. SMITH STATE OF UTAH

NOTE:
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NO.	DATE	REQ. BY	DWG. BY	REMARKS
1	8/6/2014	VM	JA	PLATE UPDATES
2	9/4/2014	VM	JA	PLATE UPDATES
3	9/19/2014	VM	JA	PLATE UPDATES
4	03/06/2017	BB	JA	DISTURBED AREA BOUNDARY UPDATE

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(435) 286-4499 Fax

WASTE ROCK PILE
OPERATIONAL PLAN – PHASE 5

PEN TBL: _1Stndrd-HPT1100.ctb
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ENGINEER: LF / TH
CHECKED BY: VM
FILE NAME: H:\JD\Proj\1406-120\DWG\SHEET 1 OPERATIONAL COVER-2E.dwg
SHEET NO. MAP 2E

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LEGEND

- 8140 — EXISTING GROUND MAJOR CONTOUR (10 FOOT)
- EXISTING GROUND MINOR CONTOUR (2 FOOT)
- 8140 — OPERATIONAL GROUND MAJOR CONTOUR (5 FOOT)
- OPERATIONAL GROUND MINOR CONTOUR (1 FOOT)
- EXISTING ROAD
- EXISTING PAVED ROAD
- EXISTING RIPRAP
- EXISTING DITCH
- EXISTING SIGN
- PROPOSED ANCILLARY ROAD
- EXISTING CULVERT
- PROPOSED CULVERT
- PROPOSED BERM
- DISTURBED AREA BOUNDARY
- PROPERTY BOUNDARY
- EXISTING TREELINE
- A — A' OPERATIONAL CROSS SECTION LOCATION (SEE MAP 3A, MAP 3B AND MAP 3C FOR CROSS-SECTIONS)

PROFESSIONAL ENGINEER
No. 9073281
JACOB D. SMITH
5/15/17
STATE OF UTAH

NOTE:
TOPOGRAPHIC DATA BASED ON 2016 AERIAL SURVEY

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NO.	DATE	REQ. BY	DWG. BY	REMARKS
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2	9/4/2014	VM	JA	PLATE UPDATES
3	9/19/2014	VM	JA	PLATE UPDATES
4	03/06/2017	BB	JA	DISTURBED AREA BOUNDARY UPDATE

Canyon Fuel Company, LLC
SUFCO Mine
597 South SR 24 – Salina, UT 84654
(435) 286-4880 Phone
(435) 286-4499 Fax

WASTE ROCK PILE
OPERATIONAL PLAN – PHASE 6

PEN TBL:	SCALE:	DATE:	DRAWN BY:	ENGINEER:	CHECKED BY:	SHEET NO.
_1Stndrd-HPT1100.ctb	1" = 100'	3/6/2017	JA	LF / TH	VM	MAP 2F
SHT SET: 1406-120	PROJECT NUMBER: 1406-120	FILE NAME: H:\JD\Proj\1406-120\DWG\SHEET 1 OPERATIONAL COVER-2F.dwg				

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Sufco Waste Rock Topsoil / Subsoil

Phase 1 **

*Soil Type	Topsoil (Inches)	Subsoil (Inches)	Area (SF)	Topsoil Salvaged (CY)	Topsoil Replaced (CY)	Stockpiled Topsoil Remaining (CY)	Cumulative Stockpiled Topsoil Remaining (CY)	Subsoil Salvaged(CY)	Subsoil Replaced (CY)	Stockpiled Subsoil Remaining (CY)	Cumulative Stockpiled Subsoil Remaining (CY)	Waste Rock (CY) ②
1	20	38	55080	3400				6460				
2	35	33	158297	17100				2740				
3	26	12			0	0	24500		0	9200	9200	0
4	19	0	8526	500				0				
5	17	9										
Rehandled Soils	30	0	37800	3500				0				
Total				**24500**	**0**	**0**	**24500**	**9200**	**0**	**9200**	**9200**	**0**

*See Fig. 5 for Soil Type Map

** Phase 1 & 2 Constructed at the Same Time, Therefore They Will Be Reclaimed Together

Sufco Waste Rock Topsoil / Subsoil

Phase 2 **

*Soil Type	Topsoil (Inches)	Subsoil (Inches)	Area (SF)	Topsoil Salvaged (CY)	Topsoil Replaced (CY)	Stockpiled Topsoil Remaining (CY)	Cumulative Stockpiled Topsoil Remaining (CY)	Subsoil Salvaged(CY)	Subsoil Replaced (CY)	Stockpiled Subsoil Remaining (CY)	Cumulative Stockpiled Subsoil Remaining (CY)	Waste Rock (CY)
1	20	38	106920	6600				15300				
2	35	33										
3	26	12	42369	3400	0	0	12500	1600	0	0	18200	296700
4	19	0										
5	17	9	47647	2500				1300				
Rehandled Soils	30	0	0	0				0				
Total				**12500**	**0**	**0**	**12500**	**18200**	**0**	**0**	**18200**	**296700**

*See Fig. 5 for Soil Type Map

** Phase 1 & 2 Constructed at the Same Time, Therefore They Will Be Reclaimed Together

Sufco Waste Rock Topsoil / Subsoil

Lift 5

Topsoil Replaced (CY)	Stockpiled Topsoil Remaining (CY)	Cumulative Stockpiled Topsoil Remaining (CY)		Subsoil Replaced (CY)	Stockpiled Subsoil Remaining (CY)	Cumulative Stockpiled Subsoil Remaining (CY)
7705	20308.13	20308.13		9417	24551.50	24551.50
7705	**20308**	**20308**		**9417**	**24552**	**24552**

Refer to Table 2-2 for Additional Details

Sufco Waste Rock Topsoil / Subsoil

Actual Soil in Storage 2016**

Cumulative Stockpiled Topsoil Remaining (CY)		Cumulative Stockpiled Subsoil Remaining (CY)	
27900		25850	
Total	**27900**	**Total**	**25850**

**Based aerial flight information from 2016

Sufco Waste Rock Topsoil / Subsoil

Phase 3 ***

*Soil Type	Topsoil (Inches)	Subsoil (Inches)	Area (SF)	Topsoil Salvaged (CY)	Topsoil Replaced (CY)	Stockpiled Topsoil Remaining (CY)	Cumulative Stockpiled Topsoil Remaining (CY)	Subsoil Salvaged(CY)	Subsoil Replaced (CY)	Stockpiled Subsoil Remaining (CY)	Cumulative Stockpiled Subsoil Remaining (CY)	Waste Rock (CY)
1	20	38	45978	2838				5392				
2	35	33	53858	5818				5486				
3	26	12	90961	7299	28178	-9825	18075	3369	17270	-3023	22827	384600
4	19	0										
5	17	9										
Rehandled Soils	30	0	25897	2398				0				
Total				**18353**	**28178**	**-9825**	**18075**	**14247**	**17270**	**-3023**	**22827**	**384600**

*See Fig. 5 for Soil Type Map

*** Refer To Table 2-2 For Additional Details

Sufco Waste Rock Topsoil / Subsoil

Phase 4

Soil Type	Topsoil (Inches)	Subsoil (Inches)	Area (SF)	Topsoil Salvaged (CY)	Topsoil Replaced (CY)	Stockpiled Topsoil Remaining (CY)	Cumulative Stockpiled Topsoil Remaining (CY)	Subsoil Salvaged(CY)	Subsoil Replaced (CY)	Stockpiled Subsoil Remaining (CY)	Cumulative Stockpiled Subsoil Remaining (CY)	Waste Rock (CY)
1	20	38		0				0				
2	35	33	85964	9286				8756				
3	26	12	96154	7716	19591	746	18821	3561	12008	309	23136	412654
4	19	0										
5	17	9										
Rehandled Soils	30	0	36023	3335				0				
Total				**20337**	**19591**	**746**	**18821**	**12317**	**12008**	**309**	**23136**	**412654**

*See Fig. 5 for Soil Type Map

Sufco Waste Rock Topsoil / Subsoil

Phase 5

Soil Type	Topsoil (Inches)	Subsoil (Inches)	Area (SF)	Topsoil Salvaged (CY)	Topsoil Replaced (CY)	Stockpiled Topsoil Remaining (CY)	Cumulative Stockpiled Topsoil Remaining (CY)	Subsoil Salvaged(CY)	Subsoil Replaced (CY)	Stockpiled Subsoil Remaining (CY)	Cumulative Stockpiled Subsoil Remaining (CY)	Waste Rock (CY)
1	20	38	11185	690				1312				
2	35	33	130199	14065				13261				
3	26	12	59163	4748	21538	1309	20130	2191	13201	3563	26699	439611
4	19	0										
5	17	9										
Rehandled Soils	30	0	36112	3344				0				
Total				**22847**	**21538**	**1309**	**20130**	**16764**	**13201**	**3563**	**26699**	**439611**

*See Fig. 5 for Soil Type Map

Sufco Waste Rock Topsoil / Subsoil

Phase 6

Soil Type	Topsoil (Inches)	Subsoil (Inches)	Area (SF)	Topsoil Salvaged (CY)	Topsoil Replaced (CY)	Stockpiled Topsoil Remaining (CY)	Cumulative Stockpiled Topsoil Remaining (CY)	Subsoil Salvaged(CY)	Subsoil Replaced (CY)	Stockpiled Subsoil Remaining (CY)	Cumulative Stockpiled Subsoil Remaining (CY)	Waste Rock (CY)
1	20	38	33498	2068				3929				
2	35	33	78048	8431				7949				
3	26	12	1037	83	23120	-12538	7592	38	8163	3754	30452	382499
4	19	0										
5	17	9										
Rehandled Soils	30	0	0	0			④	0				⑤
Total				**10582**	**23120**	**-12538**	**7592**	**11917**	**8163**	**3754**	**30452**	**382499**

*See Fig. 5 for Soil Type Map

NOTE:

① SEE MAPS 4A - 4F FOR DIMENSIONS OF SOIL STORAGE STOCKPILES.

② THERE WILL BE NO WASTE ROCK PLACEMENT IN PHASE 1, PHASE 1 WILL BE ONLY ROADWAY AND SEDIMENT POND CONSTRUCTION.

③ SEE TABLES 2-1 & 2-2 FOR ADDITIONAL DETAILS

④ ALL REMAINING TOPSOIL WILL BE PLACED REGARDLESS OF QUANTITY.

⑤ SUBSOIL SALVAGE VOLUMES WILL BE ADJUSTED / DECREASED AS NEEDED.

⑥ REFER TO SECTIONS 222 AND 234 FOR ADDITIONAL SOILS INFORMATION.

PROFESSIONAL ENGINEER
5/5/17
No. 9073381
JACOB D. SMITH
STATE OF UTAH

INCORPORATED
MAY 31 2017
Div. of Oil, Gas & Mining

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DIV. OF OIL, GAS & MINING

REVISIONS				
NO.	DATE	REQ. BY	DWG. BY	REMARKS
1	03/31/2017	BB	JA	REVISED MAP NOTES

Canyon Fuel Company, LLC
SUFCO Mine
597 South SR 24 – Salina, UT 84654
(435) 286-4880 Phone
(435) 286-4499 Fax

WASTE ROCK PILE
PHASE 1 THRU 6 SOIL TABLES

PEN TBL:	SCALE:	DATE:	DRAWN BY:	ENGINEER:	CHECKED BY:	SHEET NO.
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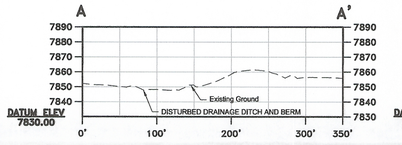

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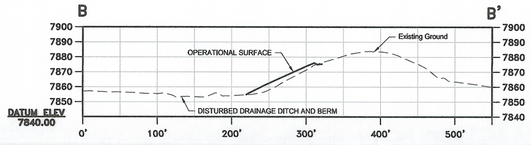

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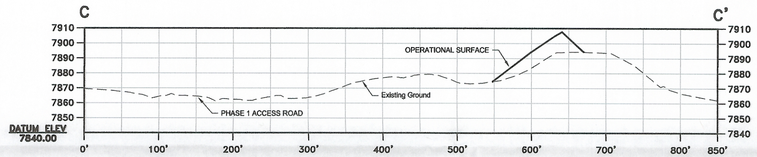

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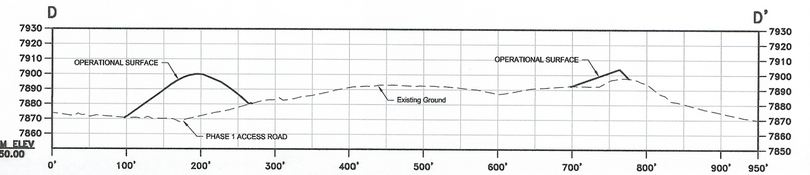

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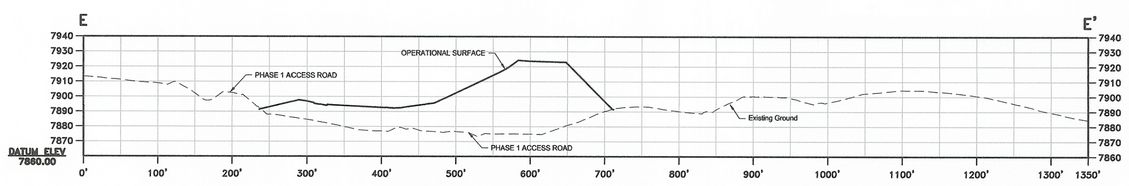

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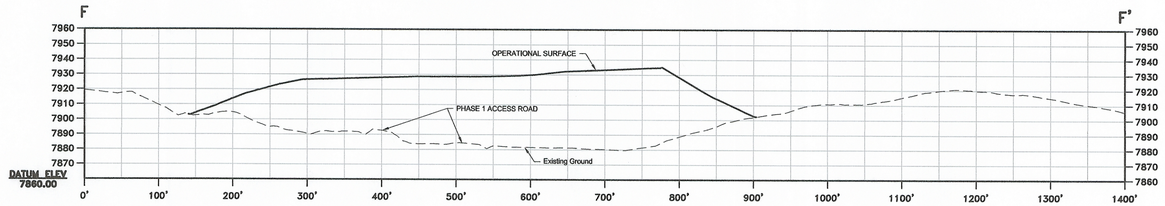

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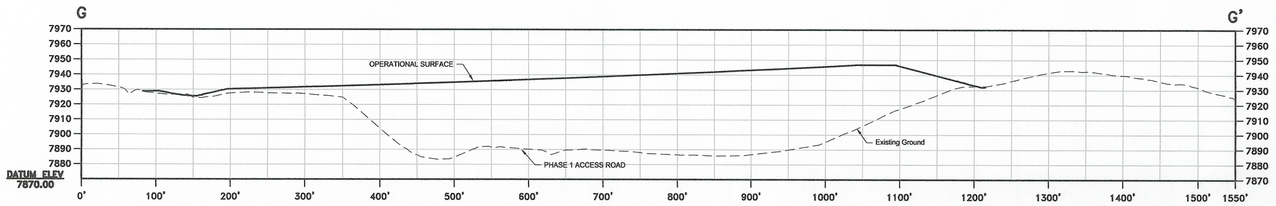

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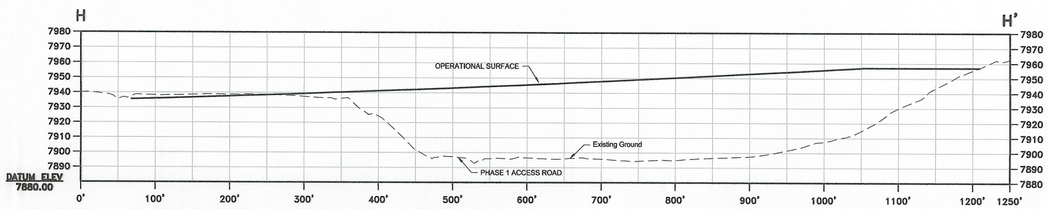

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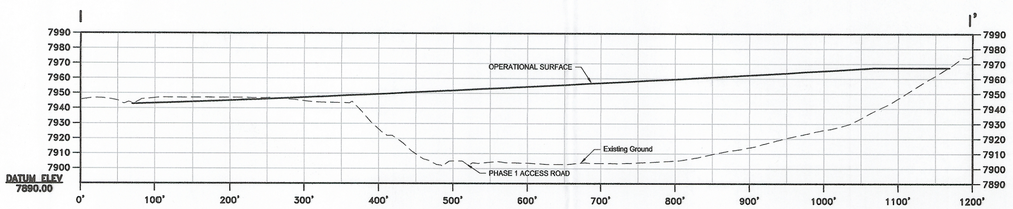

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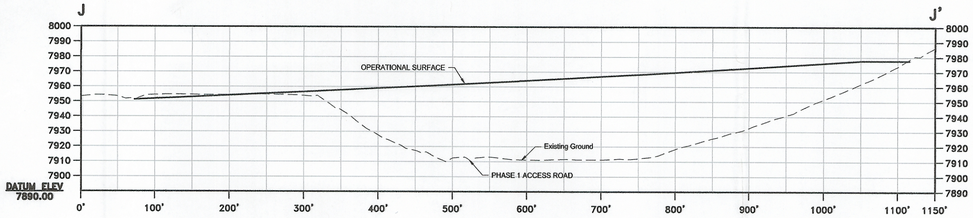

SECTION J–J'

LEGEND

— — — — EXISTING GROUND SURFACE, BASED ON THE 2016 AERIAL TOPOGRAPHY

——— OPERATIONAL SURFACE

INCORPORATED
MAY 31 2017
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DIV. OF OIL, GAS & MINING

PROFESSIONAL ENGINEER
No. 9073281
JACOB D. SMITH
STATE OF UTAH
5/15/17

REVISIONS				
NO.	DATE	REQ. BY	DWG. BY	REMARKS
1	8/6/2014	VM	JA	PLATE UPDATES
2	9/4/2014	VM	JA	PLATE UPDATES
3	9/19/2014	VM	JA	PLATE UPDATES
4	10/18/2016	VM	JA	PLATE UPDATES

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WASTE ROCK PILE
OPERATIONAL CROSS SECTIONS

PEN TBL:	SCALE:	DATE:	DRAWN BY:	ENGINEER:	CHECKED BY:	SHEET NO.
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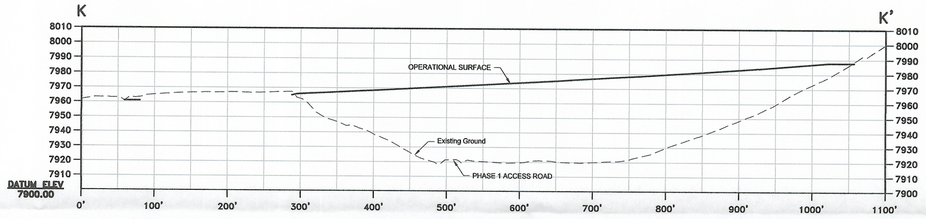

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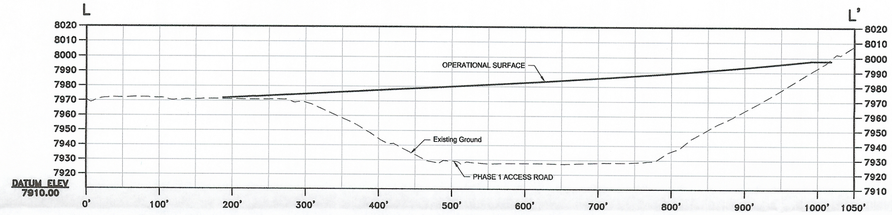

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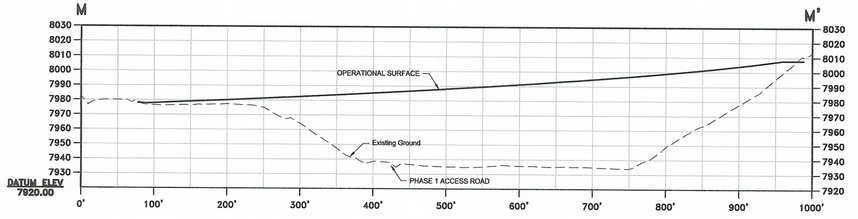

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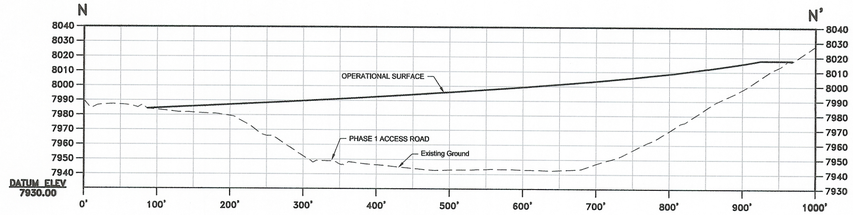

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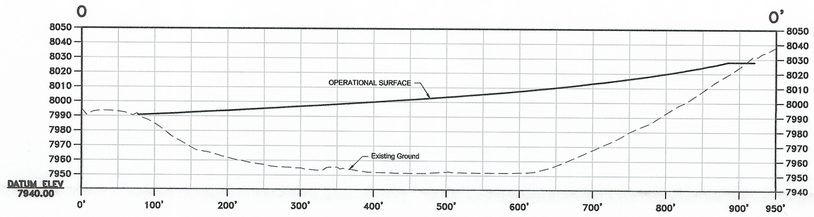

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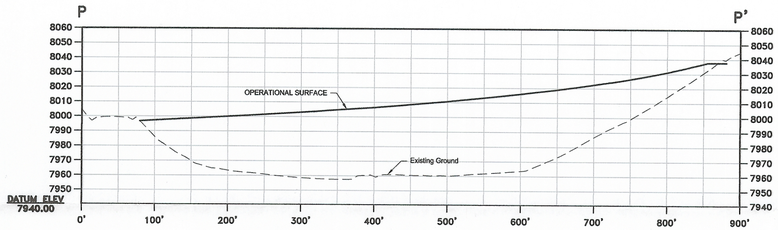

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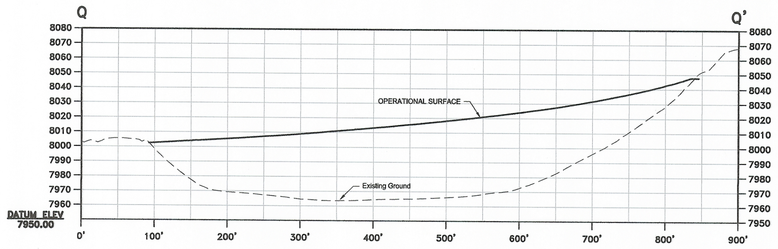

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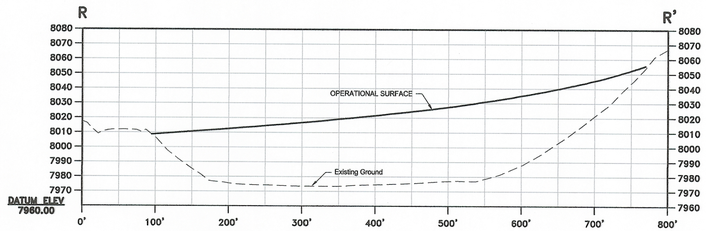

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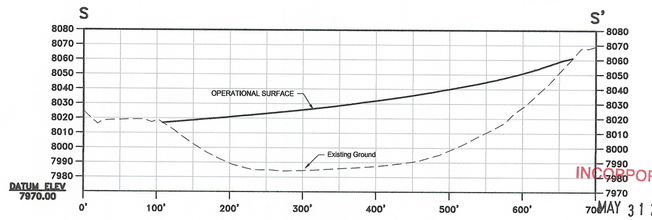

SECTION S–S'

PROFESSIONAL ENGINEER
5/15/17
No. 9073281
JACOB D. SMITH
STATE OF UTAH

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LEGEND

EXISTING GROUND SURFACE, BASED ON THE 2016 AERIAL TOPOGRAPHY

OPERATIONAL SURFACE

REVISIONS				
NO.	DATE	REQ. BY	DWG. BY	REMARKS
1	8/6/2014	VM	JA	PLATE UPDATES
2	9/4/2014	VM	JA	PLATE UPDATES
3	9/19/2014	VM	JA	PLATE UPDATES
4	10/18/2016	VM	JA	PLATE UPDATES
5	03/13/2017	BB	JA	SECTION UPDATES

Canyon Fuel Company, LLC
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WASTE ROCK PILE
OPERATIONAL CROSS SECTIONS

PEN TBL:	SCALE:	DATE:	DRAWN BY:	ENGINEER:	CHECKED BY:	SHEET NO.
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SHT SET: 1406-120	PROJECT NUMBER: 1406-120	FILE NAME: H:_D\Proj\1406-120\DWG\SHEET 3 OPERATIONAL SECTIONS.dwg				

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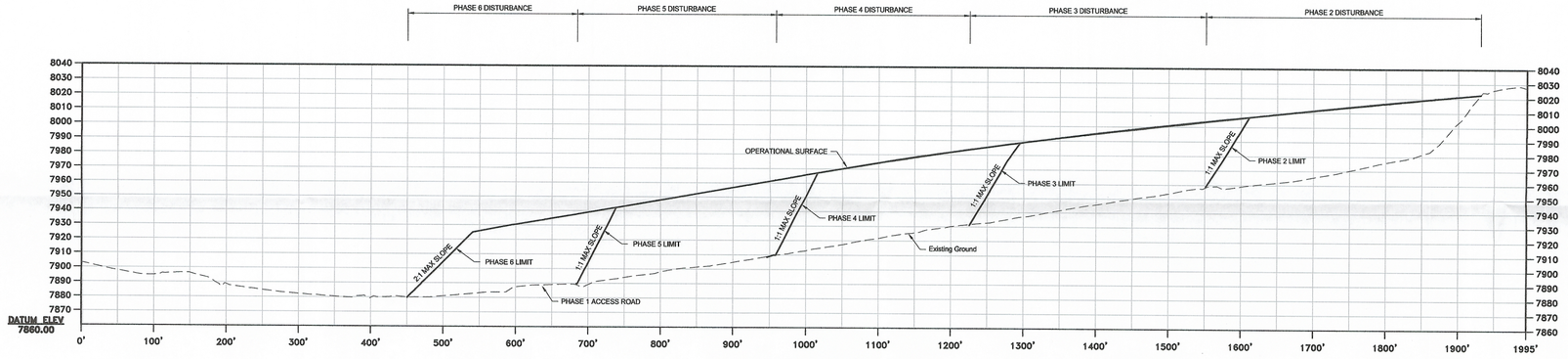

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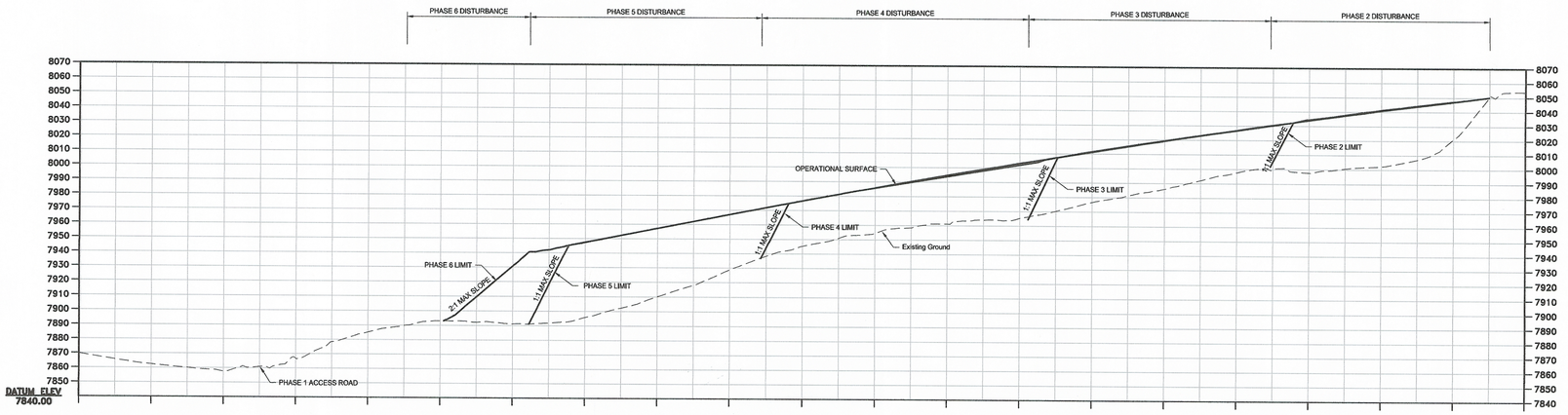

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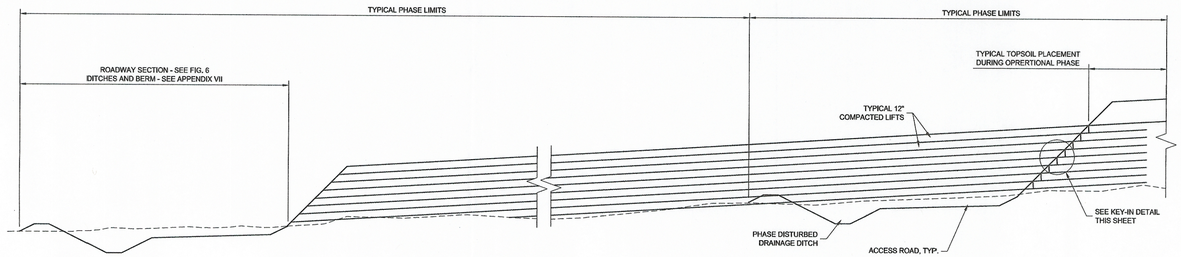
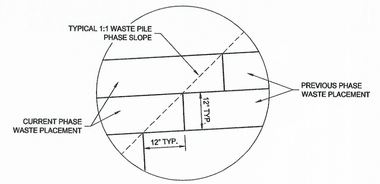


TYPICAL WASTE PLACEMENT
AND KEY-IN DETAIL



SLOPE KEY-IN DETAIL

LEGEND

— — — — — EXISTING GROUND SURFACE, BASED ON THE 2016 AERIAL TOPOGRAPHY

——————— OPERATIONAL SURFACE

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DIV. OF OIL, GAS & MINING

PROFESSIONAL ENGINEER
5/15/17
No. 9073[illegible]
JACOB S. HAMLIN
STATE OF UTAH

INCORPORATED
MAY 31 2017
Div. of Oil, Gas & Mining

REVISIONS				
NO.	DATE	REQ. BY	DWG. BY	REMARKS
1	8/6/2014	VM	JA	PLATE UPDATES
2	9/4/2014	VM	JA	PLATE UPDATES
3	9/19/2014	VM	JA	PLATE UPDATES
4	10/18/2016	VM	JA	PLATE UPDATES
5	3/13/2017	BB	JA	SECTIONS UPDATED

Canyon Fuel Company, LLC
SUFCO Mine
597 South SR 24 – Salina, UT 84654
(435) 286-4880 Phone
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WASTE ROCK PILE
OPERATIONAL CROSS SECTIONS

PEN TBL:	SCALE:	DATE:	DRAWN BY:	ENGINEER:	CHECKED BY:	SHEET NO.
_1Stndrd-HPT1100.ctb	1" = 100'	3/13/2017	JA	LF / TH	VM	MAP 3C
SHT SET: 1406-120	PROJECT NUMBER: 1406-120	FILE NAME: H:\JD\Proj\1406-120\DWG\SHEET 4 OPERATIONAL SECTIONS.dwg				

User: 3/13/2017 1:28 PM

LEGEND

- 8140 — EXISTING GROUND MAJOR CONTOUR (10 FOOT)
- EXISTING GROUND MINOR CONTOUR (2 FOOT)
- EXISTING ROAD
- EXISTING PAVED ROAD
- EXISTING RIPRAP
- EXISTING DITCH
- PROPOSED ROAD
- PROPOSED ANCILLARY ROAD
- EXISTING CULVERT
- PROPOSED CULVERT
- EXISTING SIGN
- PROPOSED DRAINAGE BERM
- PROPOSED DITCH
- DISTURBED AREA BOUNDARY
- PROPERTY BOUNDARY
- TOPSOIL / SUBSOIL STORAGE BOUNDARY
- EXISTING TREELINE

FISHLAKE NATIONAL FOREST

CONVULSION CANYON ROAD

RECLAIMED UNDERGROUND DEVELOPMENT WASTE PILE

SEDIMENT POND

SEDIMENT POND

WELL B-5

1102 7929.623

116 7967.310

109 8081.590

113 7920.320

115 8004.740

116 7872.020

110 7968.160

110 8068.540

118 7845.960

7845.120 111

1104 7929.85

118 8095.350

NOTE:
TOPOGRAPHIC DATA BASED ON 2016 AERIAL SURVEY

PROFESSIONAL ENGINEER
No. 9073287
JACOB D. SMITH
STATE OF UTAH
5/5/17

INCORPORATED
MAY 31 2017
Div. of Oil, Gas & Mining

RECEIVED
MAY 19 2017
DIV. OF OIL, GAS & MINING

REVISIONS				
NO.	DATE	REQ. BY	DWG. BY	REMARKS
1	8/6/2014	VM	JA	PLATE UPDATES
2	9/4/2014	VM	JA	PLATE UPDATES
3	9/19/2014	VM	JA	PLATE UPDATES
4	6/18/2015	VM	JA	PLAT UPDATES
5	10/18/2016	VM	JA	PLATE UPDATES
6	03/06/2017	BB	JA	DISTURBED AREA BOUNDARY UPDATE

Canyon Fuel Company, LLC
SUFCO Mine
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WASTE ROCK PILE
OPERATIONAL PHASES OF PILE CONSTRUCTION

PEN TBL:		SCALE:	DATE:	DRAWN BY:	ENGINEER:	CHECKED BY:	SHEET NO.
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LEGEND

- 8140 — EXISTING GROUND MAJOR CONTOUR (10 FOOT)
- EXISTING GROUND MINOR CONTOUR (2 FOOT)
- EXISTING ROAD
- EXISTING PAVED ROAD
- EXISTING RIPRAP
- EXISTING DITCH
- PROPOSED ROAD
- PROPOSED ANCILLARY ROAD
- EXISTING CULVERT
- PROPOSED CULVERT
- EXISTING SIGN
- PROPOSED DRAINAGE BERM
- PROPOSED DITCH
- DISTURBED AREA BOUNDARY
- PROPERTY BOUNDARY
- TOPSOIL / SUBSOIL STORAGE BOUNDARY
- EXISTING TREELINE

FISHLAKE NATIONAL FOREST

CONVULSION CANYON ROAD

RECLAIMED UNDERGROUND DEVELOPMENT WASTE PILE

SEDIMENT POND

WELL B-5

PHASE 1 & 2

TOPSOIL STOCKPILE (25850 CY)

261.00'

350.00'

SUBSOIL STOCKPILE (27900 CY)

214.00'

334.00'

SEDIMENT POND

PHASE 1 & 2

1102 7929.623

114 7967.310

109 8081.590

113 7920.320

115 8004.740

116 7872.020

116 8068.540

118 7845.960

7845.120 111

1104 7929.880

118 8095.350

NOTE:
TOPOGRAPHIC DATA BASED ON 2016 AERIAL SURVEY

PROFESSIONAL ENGINEER
No. 9073281
JACOB D. SMITH
STATE OF UTAH

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2	9/4/2014	VM	JA	PLATE UPDATES
3	9/19/2014	VM	JA	PLATE UPDATES
4	6/18/2015	VM	JA	PLAT UPDATES
5	10/18/2016	VM	JA	PLATE UPDATES
6	03/06/2017	BB	JA	DISTURBED AREA BOUNDARY UPDATE

Canyon Fuel Company, LLC
SUFCO Mine
597 South SR 24 – Salina, UT 84654
(435) 286–4880 Phone
(435) 286–4499 Fax

WASTE ROCK PILE
OPERATIONAL PHASES OF PILE CONSTRUCTION

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_1Stndrd–HPT1100.ctb		1" = 100'	3/6/2017	JA	LF / TH	VM	MAP 4B
SHT SET: 1406–120	PROJECT NUMBER: 1406–120	FILE NAME: H:\JD\Proj\1406–120\DWG\SHEET 4B OPERATIONAL PHASED.dwg					

User: 3/6/2017 11:37 AM

LEGEND

- 8140 — EXISTING GROUND MAJOR CONTOUR (10 FOOT)
- EXISTING GROUND MINOR CONTOUR (2 FOOT)
- EXISTING ROAD
- EXISTING PAVED ROAD
- EXISTING RIPRAP
- EXISTING DITCH
- PROPOSED ROAD
- PROPOSED ANCILLARY ROAD
- EXISTING CULVERT
- PROPOSED CULVERT
- EXISTING SIGN
- PROPOSED DRAINAGE BERM
- PROPOSED DITCH
- DISTURBED AREA BOUNDARY
- PROPERTY BOUNDARY
- TOPSOIL / SUBSOIL STORAGE BOUNDARY
- EXISTING TREELINE

FISHLAKE NATIONAL FOREST

1102 7929.623
114 7967.310
109 8081.590
113 7920.320
115 8004.740
RECLAIMED UNDERGROUND DEVELOPMENT WASTE PILE
SEDIMENT POND
WELL B-5
110 7968.160
PHASE 3
116 7872.020
CONVULSION CANYON ROAD
TOPSOIL STOCKPILE (18075 CY)
307.00'
254.00'
SUBSOIL STOCKPILE (22827 CY)
214.00'
334.00'
117 7845.960
111 7845.120
1104 7929.623
118 8090.350
119 8068.540
SEDIMENT POND

NOTE:
TOPOGRAPHIC DATA BASED ON 2016 AERIAL SURVEY

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3	9/19/2014	VM	JA	PLATE UPDATES
4	6/18/2015	VM	JA	PLAT UPDATES
5	10/18/2016	VM	JA	PLATE UPDATES
6	03/06/2017	BB	JA	DISTURBED AREA BOUNDARY UPDATE

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WASTE ROCK PILE
OPERATIONAL PHASES OF PILE CONSTRUCTION

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_1Stndrd-HPT1100.ctb	1" = 100'	3/6/2017	JA	LF / TH	VM	MAP 4C
SHT SET: 1406-120 / PROJECT NUMBER: 1406-120	FILE NAME: H:\JD\Proj\1406-120\DWG\SHEET 4C OPERATIONAL PHASED.dwg					

Date: 3/6/2017 11:39 AM

LEGEND

- 8140 — EXISTING GROUND MAJOR CONTOUR (10 FOOT)
- EXISTING GROUND MINOR CONTOUR (2 FOOT)
- EXISTING ROAD
- EXISTING PAVED ROAD
- EXISTING RIPRAP
- EXISTING DITCH
- PROPOSED ROAD
- PROPOSED ANCILLARY ROAD
- EXISTING CULVERT
- PROPOSED CULVERT
- EXISTING SIGN
- PROPOSED DRAINAGE BERM
- PROPOSED DITCH
- DISTURBED AREA BOUNDARY
- PROPERTY BOUNDARY
- TOPSOIL / SUBSOIL STORAGE BOUNDARY
- EXISTING TREELINE

FISHLAKE NATIONAL FOREST

CONVULSION CANYON ROAD

RECLAIMED UNDERGROUND DEVELOPMENT WASTE PILE

PHASE 4

SEDIMENT POND

SEDIMENT POND

TOPSOIL STOCKPILE (18821 CY)

SUBSOIL STOCKPILE (23136 CY)

WELL B-5

102 7929.623

114 7967.310

109 8081.590

113 7920.320

115 8004.740

110 7968.160

116 7872.020

117 7845.960

111 7845.120

1104 7929.880

118 8095.350

8068.540

NOTE:
TOPOGRAPHIC DATA BASED ON 2016 AERIAL SURVEY

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1	8/6/2014	VM	JA	PLATE UPDATES
2	9/4/2014	VM	JA	PLATE UPDATES
3	9/19/2014	VM	JA	PLATE UPDATES
4	6/18/2015	VM	JA	PLAT UPDATES
5	10/18/2016	VM	JA	PLATE UPDATES
6	03/06/2017	BB	JA	DISTURBED AREA BOUNDARY UPDATE

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WASTE ROCK PILE
OPERATIONAL PHASES OF PILE CONSTRUCTION

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_1Stndrd-HPT1100.ctb		1" = 100'	3/6/2017	JA	LF / TH	VM	MAP 4D
SHT SET: 1406-120	PROJECT NUMBER: 1406-120	FILE NAME: H:\JD\Proj\1406-120\DWG\SHEET 4D OPERATIONAL PHASED.dwg					

Date: 3/6/2017 11:41 AM

LEGEND

- 8140 — EXISTING GROUND MAJOR CONTOUR (10 FOOT)
- EXISTING GROUND MINOR CONTOUR (2 FOOT)
- EXISTING ROAD
- EXISTING PAVED ROAD
- EXISTING RIPRAP
- EXISTING DITCH
- PROPOSED ROAD
- PROPOSED ANCILLARY ROAD
- EXISTING CULVERT
- PROPOSED CULVERT
- EXISTING SIGN
- PROPOSED DRAINAGE BERM
- PROPOSED DITCH
- DISTURBED AREA BOUNDARY
- PROPERTY BOUNDARY
- TOPSOIL / SUBSOIL STORAGE BOUNDARY
- EXISTING TREELINE

FISHLAKE NATIONAL FOREST

CONVULSION CANYON ROAD

PHASE 5

RECLAIMED UNDERGROUND DEVELOPMENT WASTE PILE

SEDIMENT POND

WELL B-5

TOPSOIL STOCKPILE (20130 CY)

SUBSOIL STOCKPILE (26699 CY)

SEDIMENT POND

102 7929.623

114 7957.310

109 8081.590

105 7920.320

115 8004.740

116 7872.020

110 7968.160

118 7845.960 7845.120 111

1104 7929.85

118 8095.350

8068.540

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NOTE:
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1	8/6/2014	VM	JA	PLATE UPDATES
2	9/4/2014	VM	JA	PLATE UPDATES
3	9/19/2014	VM	JA	PLATE UPDATES
4	6/18/2015	VM	JA	PLAT UPDATES
5	10/18/2016	VM	JA	PLATE UPDATES
6	03/06/2017	BB	JA	DISTURBED AREA BOUNDARY UPDATE

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WASTE ROCK PILE
OPERATIONAL PHASES OF PILE CONSTRUCTION

PEN TBL:		SCALE:	DATE:	DRAWN BY:	ENGINEER:	CHECKED BY:	SHEET NO.
_1Stndrd-HPT1100.ctb		1" = 100'	3/6/2017	JA	LF / TH	VM	MAP 4E
SHT SET: 1406-120	PROJECT NUMBER: 1406-120	FILE NAME: H:\JD\Proj\1406-120\DWG\SHEET 4E OPERATIONAL PHASED.dwg					

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LEGEND

- 8140 — EXISTING GROUND MAJOR CONTOUR (10 FOOT)
- EXISTING GROUND MINOR CONTOUR (2 FOOT)
- EXISTING ROAD
- EXISTING PAVED ROAD
- EXISTING RIPRAP
- EXISTING DITCH
- PROPOSED ROAD
- PROPOSED ANCILLARY ROAD
- EXISTING CULVERT
- PROPOSED CULVERT
- EXISTING SIGN
- PROPOSED DRAINAGE BERM
- PROPOSED DITCH
- DISTURBED AREA BOUNDARY
- PROPERTY BOUNDARY
- TOPSOIL / SUBSOIL STORAGE BOUNDARY
- EXISTING TREELINE

FISHLAKE NATIONAL FOREST

CONVULSION CANYON ROAD

PHASE 6

SEDIMENT POND

SEDIMENT POND

RECLAIMED UNDERGROUND DEVELOPMENT WASTE PILE

WELL B-5

SUBSOIL STOCKPILE (7592 CY)

254.00'

357.00'

SUBSOIL STOCKPILE (30453 CY)

230.00'

334.00'

1102 7929.623

114 7967.310

109 8081.590

113 7920.320

115 8004.740

116 7872.020

710 7968.160

117 7845.960

7845.120 111

1104 7929.280

108 8068.540

118 8095.350

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NO.	DATE	REQ. BY	DWG. BY	REMARKS
1	8/6/2014	VM	JA	PLATE UPDATES
2	9/4/2014	VM	JA	PLATE UPDATES
3	9/19/2014	VM	JA	PLATE UPDATES
4	6/18/2015	VM	JA	PLATE UPDATES
5	10/18/2016	VM	JA	PLATE UPDATES
6	03/06/2017	BB	JA	DISTURBED AREA BOUNDARY UPDATE

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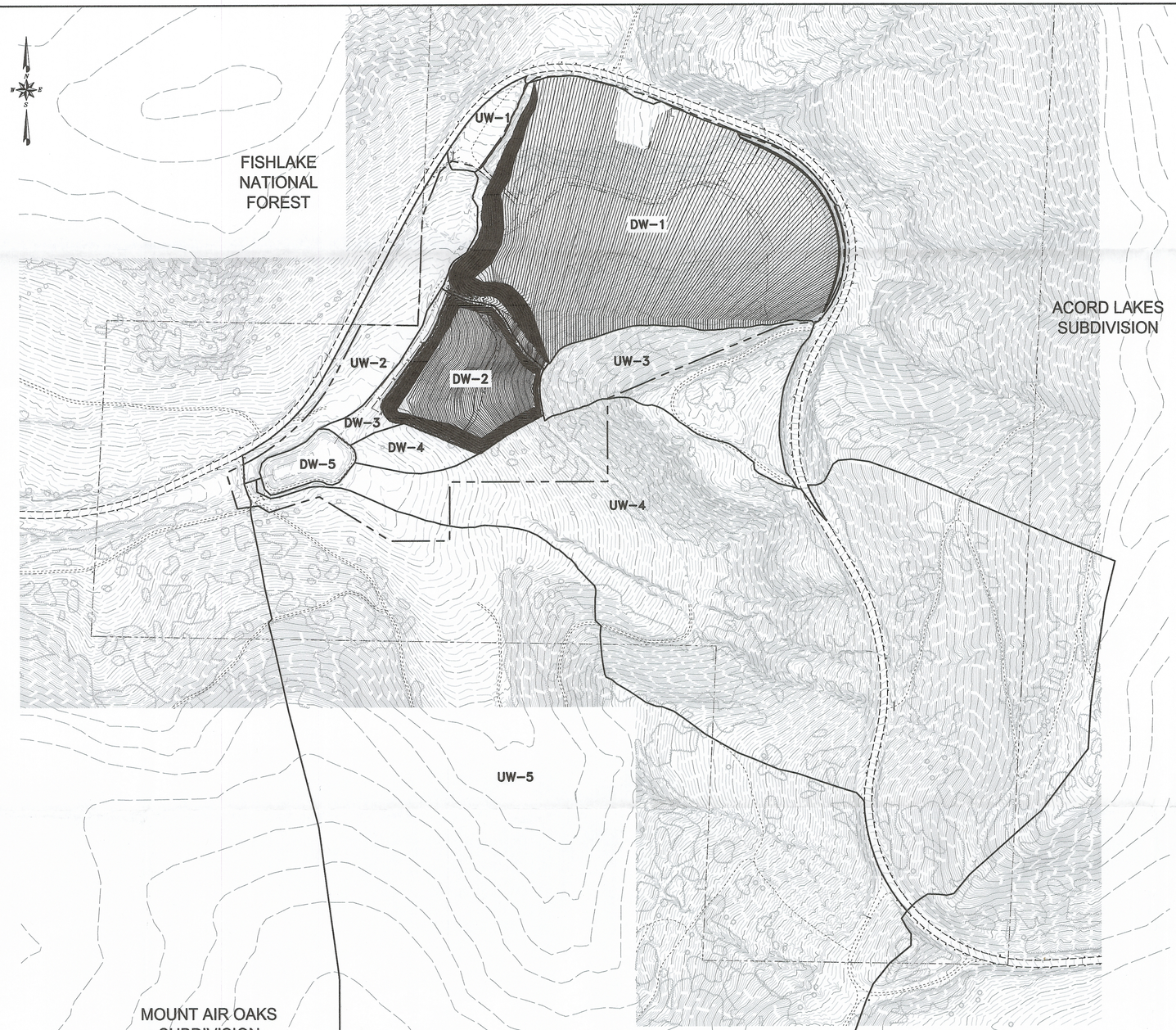
WASTE ROCK PILE
OPERATIONAL PHASES OF PILE CONSTRUCTION

PEN TBL:	SCALE:	DATE:	DRAWN BY:	ENGINEER:	CHECKED BY:	SHEET NO.
_1Stndrd–HPT1100.ctb	1" = 100'	3/6/2017	JA	LF / TH	VM	MAP 4F
SHT SET: 1406–120 / PROJECT NUMBER: 1406–120	FILE NAME: H:\JD\Proj\1406–120\DWG\SHEET 4F OPERATIONAL PHASED.dwg					

User: 3/6/2017 11:44 AM

LEGEND

- 8140 — EXISTING GROUND MAJOR CONTOUR (10 FOOT)
- OPERATIONAL GROUND INFERRED CONTOUR (40 FOOT)
- OPERATIONAL WATERSHED BOUNDARY
- DW–2 DISTURBED WATERSHED DESIGNATION
- UW–2 UNDISTURBED WATERSHED DESIGNATION
- EXISTING ROAD
- EXISTING PAVED ROAD
- PROPOSED ROAD
- DISTURBED AREA BOUNDARY
- PROPERTY BOUNDARY
- EXISTING TREELINE



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STATE OF UTAH
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2	9/4/2014	VM	JA	PLATE UPDATES
3	9/19/2014	VM	JA	PLATE UPDATES
4	8/13/2016	VM	JA	PLATE UPDATES
5	03/06/2017	BB	JA	DISTURBED AREA BOUNDARY UPDATE

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SHT SET: 1406–120
PROJECT NUMBER: 1406–120

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WASTE ROCK PILE
OPERATIONAL WATERSHED PLAN

SCALE:	DATE:	DRAWN BY:	ENGINEER:	CHECKED BY:	SHEET NO.
1" = 250'	7/7/2015	JA	LF / TH	VM	MAP 5

FILE NAME: H:\JD\Proj\1406–120\DWG\SHEET 7 OPERATIONAL WATERSHED.dwg

Date: 5/8/2017 11:45 AM

LEGEND

- 8140 — EXISTING GROUND MAJOR CONTOUR (10 FOOT)
- EXISTING GROUND MINOR CONTOUR (2 FOOT)
- DISTURBED/UNDISTURBED AREA BERM (DB-_/UB-_)
- UNDISTURBED AREA DITCH (UD-_)
- DISTURBED AREA DITCH (DD-_)
- UNDISTURBED AREA CULVERT (UC-_)
- DISTURBED AREA CULVERT (DC-_)
- UNDISTURBED AREA CATCH BASIN (UCB-_)
- EXISTING CULVERT
- PROPOSED OPERATIONAL ROAD
- PROPOSED ANCILLARY ROAD
- EXISTING ROAD
- EXISTING PAVED ROAD
- DISTURBED AREA BOUNDARY
- PROPERTY BOUNDARY
- EXISTING TREELINE
- DRAINAGE FLOW DIRECTION
- EXISTING SIGN
- x—x—x—x— EXISTING FENCE LINE

NOTES:
1. SEE MAP 5 FOR LARGER WATERSHEDS.
2. SEE APPENDIX VII FOR BERM, DITCH, AND CULVERT DETAILS.

FISHLAKE NATIONAL FOREST

1102 7929.623
114 7967.310
109 8081.590
CC-1
116 7872.020
ED-2
ED-1
SEDIMENT POND
ROAD TYPICAL NO. 1
DC-1
POND OUTLET
DD-1
Ditch No. 2 (Existing)
WELL B-5
115 8004.740
CC-1
ROAD TYPICAL NO. 1
DD-8
DD-5
DD-4
DD-3
DD-2
110 7968.160
UB-1
DC-2
Existing Channel
DD-7
DD-9
DD-6
DB-1
UD-1
119 8068.540
UB-1
DD-10
117 7845.960
7845.120
114
DC-3
1104 7929.899
DB-2
LEVEL SPREADER (SEE APPENDIX VII)
118 8095.350
SEDIMENT POND
NATURAL FLOW
UC-4
UC-3

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3	8/13/2016	VM	JA	PLATE UPDATES
4	1/26/2017	BB	JA	PLATE UPDATES
5	03/06/2017	BB	JA	DISTURBED AREA BOUNDARY UPDATE

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PROJECT NUMBER: 1406-120

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WASTE ROCK PILE
OPERATIONAL HYDROLOGY PLAN

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1" = 100'	1/26/2017	JA	LF / TH	VM	MAP 5A

FILE NAME: H:\JD\Pro\1406-120\DWG\SHEET 6 OPERATIONAL HYDROLOGY.dwg

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STATE OF UTAH

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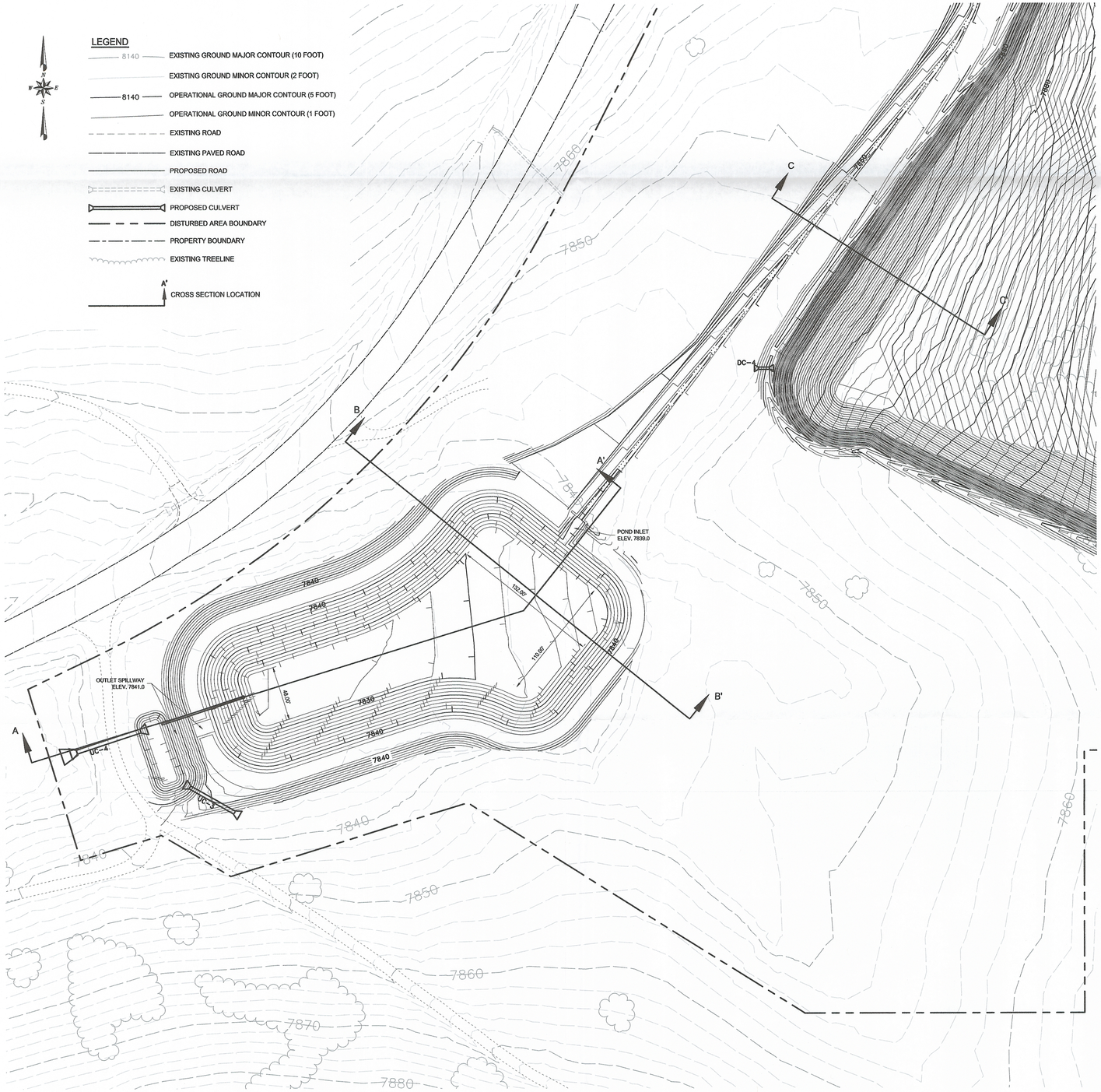
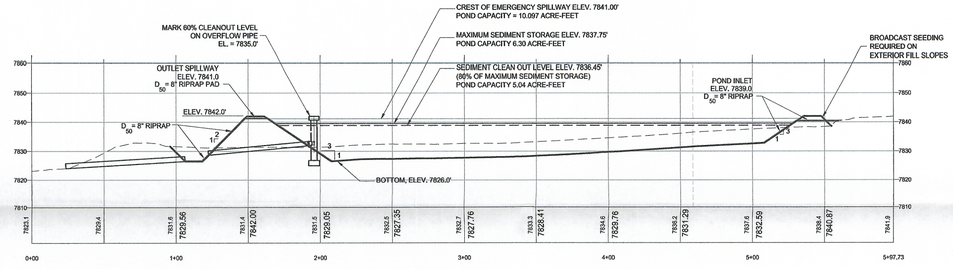
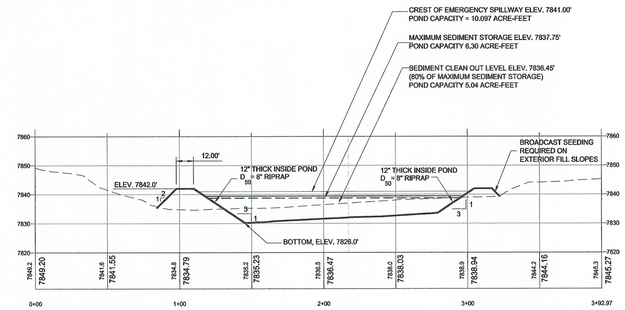


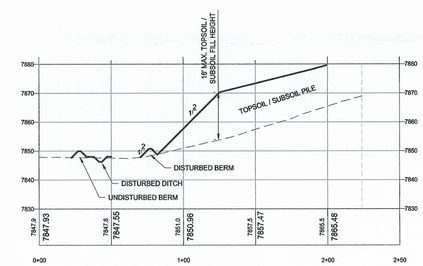
PLAN
HORZ: 1"=50'



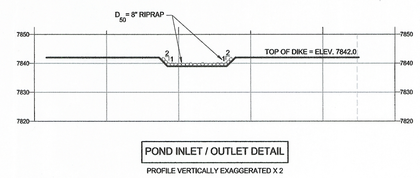
POND SECTION A - A'
PROFILE VERTICALLY EXAGGERATED X 2



POND SECTION B - B'
PROFILE VERTICALLY EXAGGERATED X 2



BASIN SECTION C - C'
PROFILE VERTICALLY EXAGGERATED X 2



POND INLET / OUTLET DETAIL
PROFILE VERTICALLY EXAGGERATED X 2

NOTE:
SEDIMENTATION POND WILL TREAT 100-YR, 6-HR STORM WITH SEDIMENT STORAGE.

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2	9/4/2014	VM	JA	PLATE UPDATES
3	9/19/2014	VM	JA	PLATE UPDATES

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WASTE ROCK PILE SEDIMENTATION POND AND SEDIMENT BASIN WITH SECTIONS

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_1Stndrd-HPT1100.ctb	1" = 50'	6/24/2015	JA	LF / TH	VM	MAP 7
SHT SET: 1406-120	PROJECT NUMBER: 1406-120	FILE NAME: H:\JD\Proj\1406-120\DWG\SHEET 10 SED POND.dwg				

User: 6/24/2015 2:54 PM

LEGEND

- 8140 — EXISTING GROUND MAJOR CONTOUR (10 FOOT)
- EXISTING GROUND MINOR CONTOUR (2 FOOT)
- 8140 — RECLAMATION GROUND MAJOR CONTOUR (10 FOOT)
- RECLAMATION GROUND MINOR CONTOUR (2 FOOT)
- EXISTING ROAD
- EXISTING PAVED ROAD
- EXISTING CULVERT
- DISTURBED AREA BOUNDARY
- PROPERTY BOUNDARY
- EXISTING TREELINE
- RA — RA' RECLAMATION CROSS-SECTION LOCATION (SEE MAP 8A, MAP 8B AND MAP 8C FOR CROSS-SECTIONS)

FISHLAKE NATIONAL FOREST

1102 △7823.623
1114 △7967.310
109 △8081.590
△7920.380
△8004.720
112 △7956.160
118 △8095.540
117 △7845.960
△7845.120
111
1100 △7924.899
118 △8095.350

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1	8/6/2014	VM	JA	PLATE UPDATES
2	9/4/2014	VM	JA	PLATE UPDATES
3	9/19/2014	VM	JA	PLATE UPDATES
4	8/13/2016	VM	JA	PLATE UPDATES
5	03/06/2017	BB	JA	DISTURBED AREA BOUNDARY UPDATE

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WASTE ROCK PILE RECLAMATION CONTOURS AND CROSS SECTION LOCATIONS

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_1Stndrd-HPT1100.ctb		1" = 100'	3/6/2017	JA	LF / TH	VM	MAP 8
SHT SET: 1406-120	PROJECT NUMBER: 1406-120	FILE NAME: H:\uD\Proj\1406-120\DWG\SHEET 12 REC OPTION 1.dwg					

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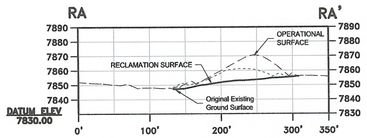
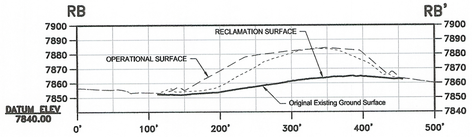
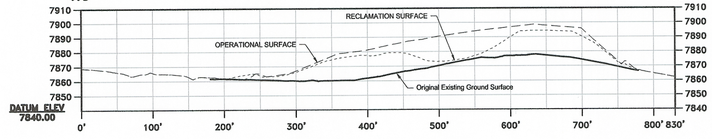


SECTION RA–RA'



SECTION RB–RB'



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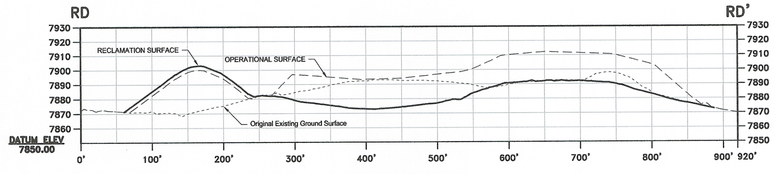

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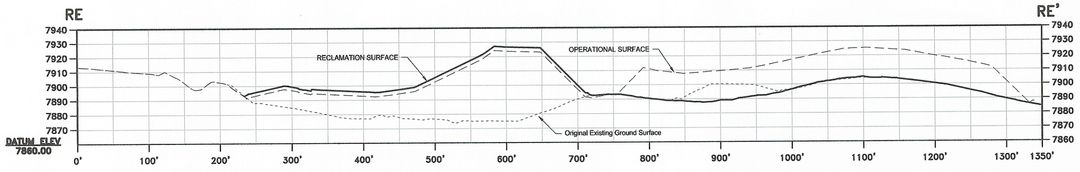

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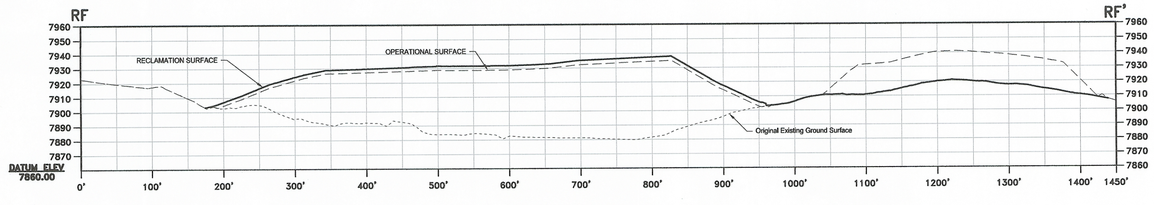

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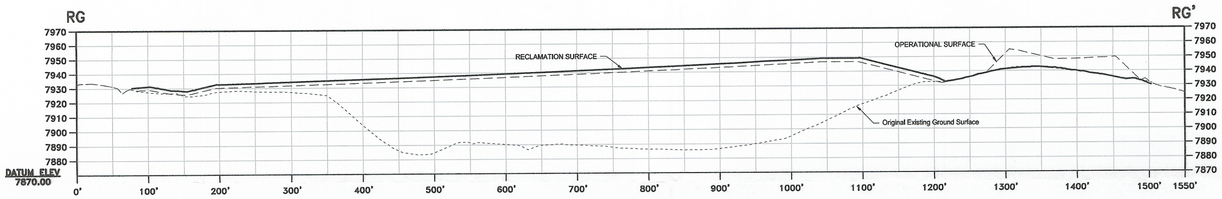

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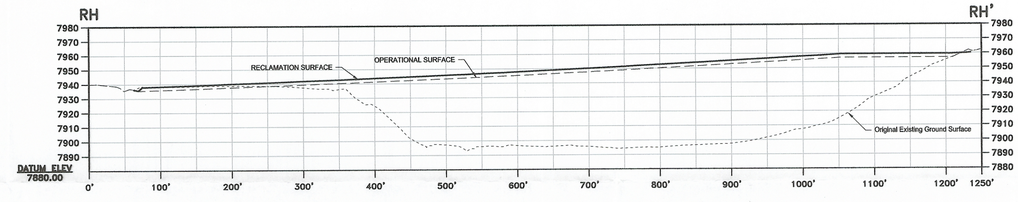

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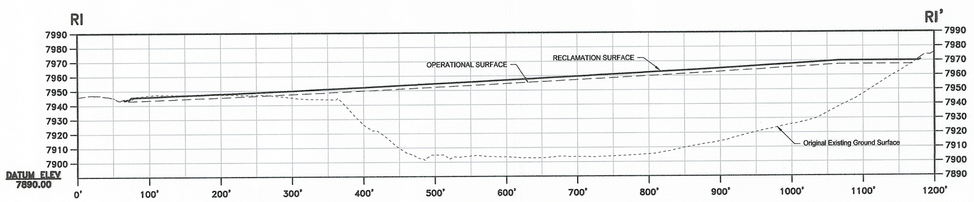

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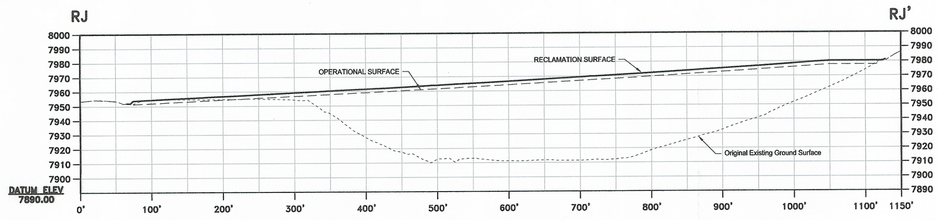

SECTION RJ–RJ'

LEGEND

- ORIGINAL EXISTING GROUND SURFACE
- OPERATIONAL SURFACE
- RECLAMATION SURFACE

PROFESSIONAL ENGINEER
5/15/17
No. 9073261
JACOB D. SMITH
STATE OF UTAH

INCORPORATED
MAY 31 2017
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1	8/6/2014	VM	JA	PLATE UPDATES
2	9/4/2014	VM	JA	PLATE UPDATES
3	9/19/2014	VM	JA	PLATE UPDATES
4	8/13/2016	VM	JA	PLATE UPDATES

Canyon Fuel Company, LLC
SUFCO Mine
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WASTE ROCK PILE
RECLAMATION CROSS-SECTIONS

PEN TBL:	SCALE:	DATE:	DRAWN BY:	ENGINEER:	CHECKED BY:	SHEET NO.
_1Stndrd-HPT1100.ctb	1" = 100'	3/13/2017	JA	LF / TH	VM	MAP 8A
SHT SET: 1406-120 / PROJECT NUMBER: 1406-120	FILE NAME: H:\JD\Proj\1406-120\DWG\SHEET 14 RECLAMATION SECTIONS.dwg					

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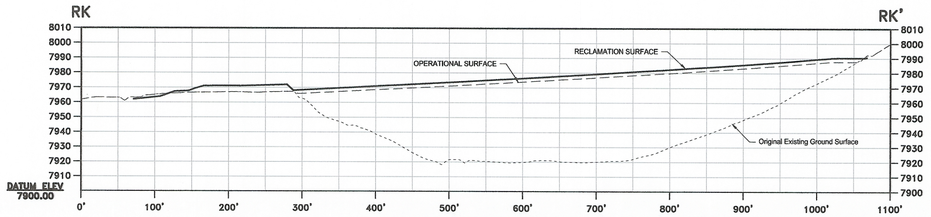

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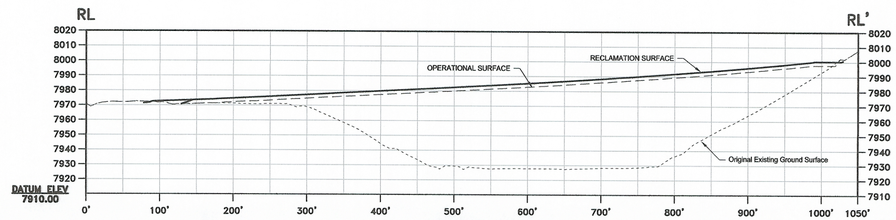

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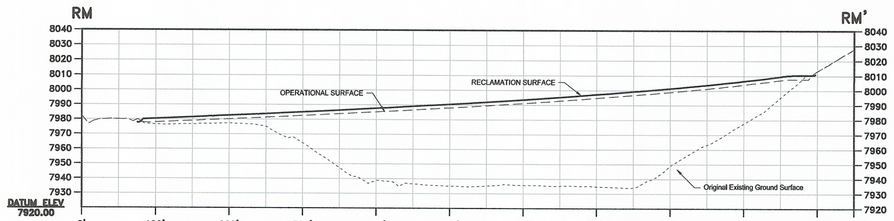

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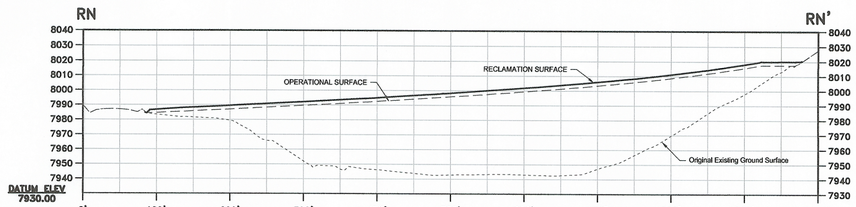

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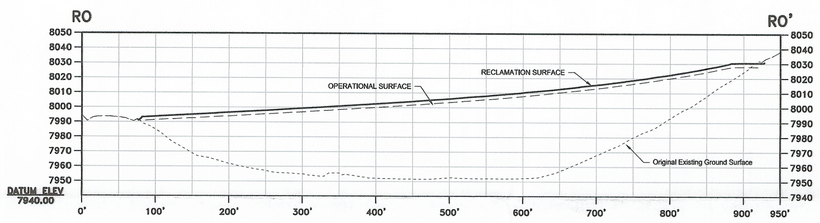
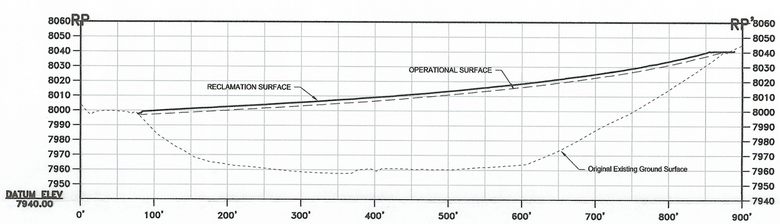


SECTION RO–RO'



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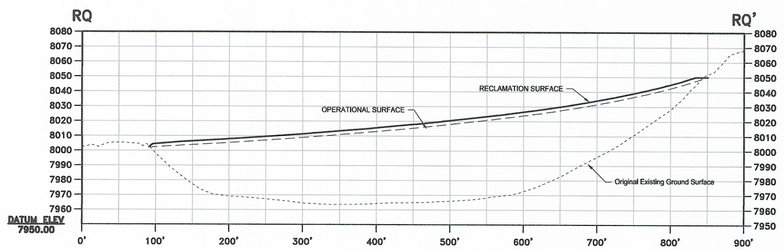

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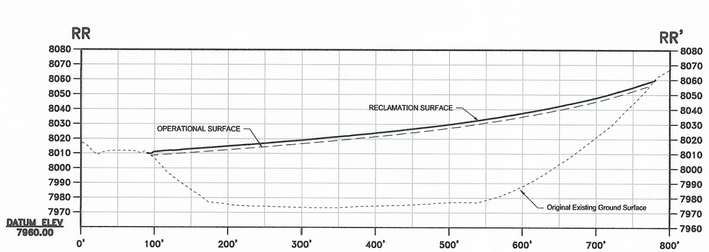

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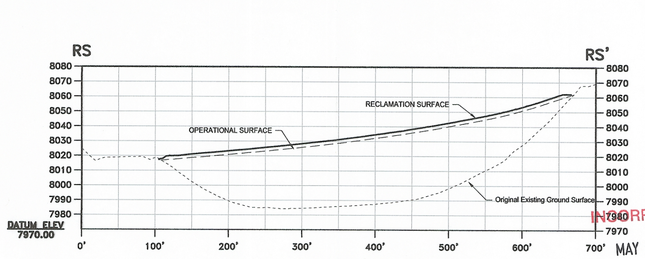

SECTION RS–RS'

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LEGEND

- ORIGINAL EXISTING GROUND SURFACE
- OPERATIONAL SURFACE
- RECLAMATION SURFACE

PROFESSIONAL ENGINEER
No. 9073281
JACOB D. SMITH
STATE OF UTAH
5/5/17

REVISIONS				
NO.	DATE	REQ. BY	DWG. BY	REMARKS
1	8/6/2014	VM	JA	PLATE UPDATES
2	9/4/2014	VM	JA	PLATE UPDATES
3	9/19/2014	VM	JA	PLATE UPDATES
4	8/13/2016	VM	JA	PLATE UPDATES
5	3/13/2017	BB	JA	SECTION UPDATES

Canyon Fuel Company, LLC
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(435) 286–4499 Fax

WASTE ROCK PILE
RECLAMATION CROSS–SECTIONS

PEN TBL:	SCALE:	DATE:	DRAWN BY:	ENGINEER:	CHECKED BY:	SHEET NO.
_1Stndrd–HPT1100.ctb	1" = 100'	7/14/2015	JA	LF / TH	VM	MAP 8B
SHT SET: 1406–120	PROJECT NUMBER: 1406–120	FILE NAME: H:\JD\Proj\1406–120\DWG\SHEET 14 RECLAMATION SECTIONS.dwg				

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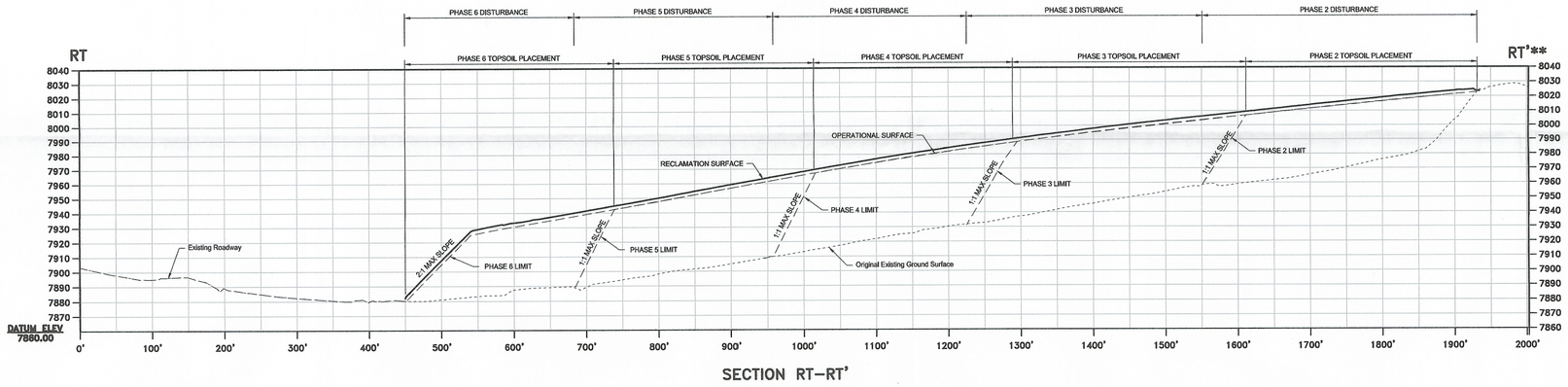
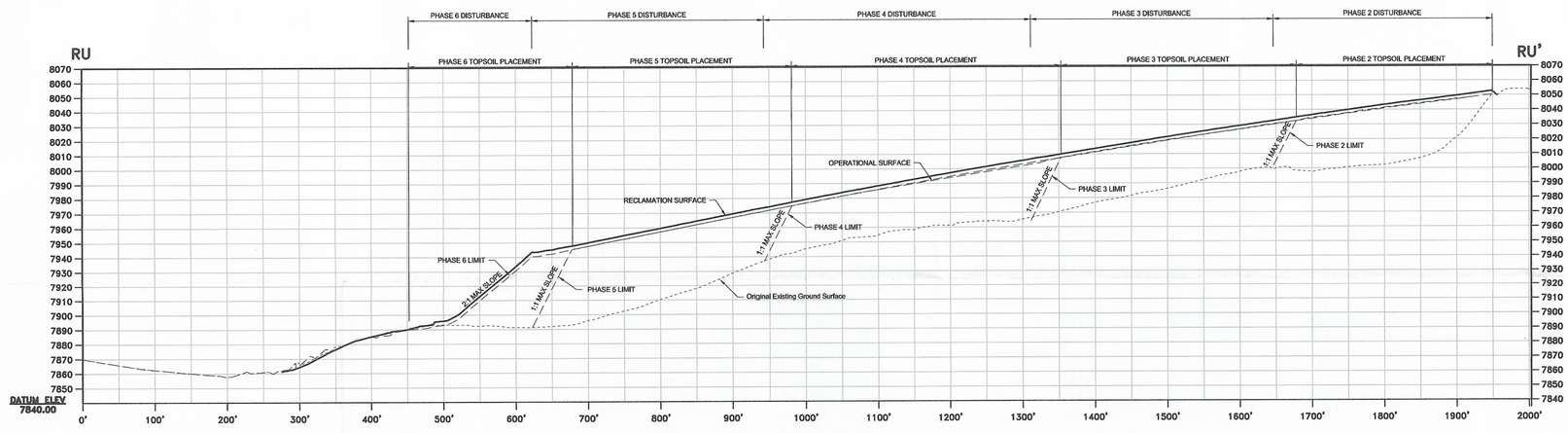


SECTION RT–RT'



SECTION RU–RU'

LEGEND

- ORIGINAL EXISTING GROUND SURFACE
- OPERATIONAL SURFACE
- RECLAMATION SURFACE

NOTES

** TOPSOIL/SUBSOIL STOCKPILE OPTIONS 1 AND 2 (CROSS–SECTIONS RT)

OPTION 1 REFLECTS THE CROSS SECTION OF THE AREA SHOULD THE MINE SITE BE RECLAIMED AFTER THE WASTE ROCK SITE THEREFORE THE PILES WOULD REMAIN IN PLACE UNTIL SUCH TIME AS THE MINE SITE IS RECLAIMED.

OPTION 2 REFLECTS THE CROSS SECTION OF THE WASTE ROCK SITE ONCE THE SOILS HAVE BEEN USED FOR RECLAMATION OF THE MINE SITE OR FOR OTHER RECLAMATION PURPOSES AS APPROVED BY THE DIVISION.

PROFESSIONAL ENGINEER
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STATE OF UTAH

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NO.	DATE	REQ. BY	DWG. BY	REMARKS
1	8/6/2014	VM	JA	PLATE UPDATES
2	9/4/2014	VM	JA	PLATE UPDATES
3	9/19/2014	VM	JA	PLATE UPDATES
4	10/02/2015	VM	JA	PLATE UPDATES, ADDED NOTE
5	8/13/2016	VM	JA	PLATE UPDATES
6	3/13/2017	BB	JA	UPDATED SECTIONS

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WASTE ROCK PILE
RECLAMATION CROSS–SECTIONS

PEN TBL:	SCALE:	DATE:	DRAWN BY:	ENGINEER:	CHECKED BY:	SHEET NO.
_1Stndrd–HPT1100.ctb	1" = 100'	3/13/2017	JA	LF / TH	VM	MAP 8C
SHT SET: 1406–120	PROJECT NUMBER: 1406–120	FILE NAME: H:\JD\Proj\1406–120\DWG\SHEET 14 RECLAMATION SECTIONS.dwg				

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LEGEND

- EXISTING GROUND MAJOR CONTOUR (10 FOOT)
- EXISTING GROUND MINOR CONTOUR (2 FOOT)
- SOIL-1, TOPSOIL-20", SUBSOIL-38" (KUNZ-TRAG-CROW)
- SOIL-2, TOPSOIL-25", SUBSOIL-33" (CHIVERS-KUNZ)
- SOIL-3, TOPSOIL-28", SUBSOIL-12" (TUNTSA-TRAG-ZILLION)
- SOIL-4, TOPSOIL-19", SUBSOIL-0" (BOYETT-VEATCH)
- SOIL-5, TOPSOIL-17", SUBSOIL-9" (WIGGLER-HELPER-TRAG)
- PRE-EXPANSION DISTURBED AREA BOUNDARY
- DISTURBED AREA BOUNDARY
- EXISTING ROAD
- EXISTING PAVED ROAD
- PROPERTY BOUNDARY
- EXISTING TREELINE
- B-7 7900.00 (30.0) — MONITORING WELL WITH CAP ELEVATION (DEPTH TO CONSOLIDATED FORMATION)
- B-7 (30.0) — TEST BORE HOLE (DEPTH TO CONSOLIDATED FORMATION)
- TP — SOIL TEST PIT

FISHLAKE NATIONAL FOREST

CONVULSION CANYON ROAD

B-1 (18)
B-2 (18)
B-3 7884.70 (23)
B-4 (26+)
B-5 7960.15 (30)
B-6 7956.50 (30+)
B-7 7955.30 (51+)
B-9 7904.28 (28)

SOIL 1
SOIL 2
SOIL 3
SOIL 4
SOIL 5

13SF01 WIGGLER
13SF02 BOYETTE
13SF03 KUNZ
13SF04 FLYGARE
13SF05 CHIVERS
13SF06 CROW
13SF07 TRAG
13SF11 KUNZ
13SF12 CHIVERS
13SF13 TRAG
13SF14 SANDSTONE OUTCROP
13SF17 VEATCH

PROFESSIONAL ENGINEER
No. 9073281
JACOB D. SMITH
STATE OF UTAH
5/15/17

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1	10/18/2016	VM	JA	PLATE UPDATES
2	04/03/2017	BB	JA	DISTURBED AREA BOUNDARY UPDATE

Canyon Fuel Company, LLC
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597 South SR 24 – Solina, UT 84654
(435) 286-4880 Phone
(435) 286-4499 Fax

WASTE ROCK PILE
SOILS MAP

PEN TBL:		SCALE:	DATE:	DRAWN BY:	ENGINEER:	CHECKED BY:	SHEET NO.
_1Stndrd-HPT1100.ctb		1" = 100'	3/6/2017	JA	LF / TH	VM	FIG. 5
SHT SET: 1406-120	PROJECT NUMBER: 1406-120	FILE NAME: H:\JD\Proj\1406-120\DWG\SHEET 11 SOILS.dwg					

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