

Mining and Reclamation Plan
Castle Valley Spur Coal Processing and Loadout Facility Permit Application

Table 8-6
SEEDBED QUALITY MATERIAL VOLUMES
(Including Acres Disturbed in 2006)

Seedbed Quality Material - Approximate Volumes

Mapping Unit	Suitable Stripping Depth	Acreage	Volume - Bank Cubic Yards BCY
*Killpack - KmB	12" Topsoil 12" Subsoil	1.77	5490
*Billings - Blbm	12" Topsoil 12" Subsoil	2.43	7538
**Topsoil Stockpile	NA	NA	49,286
Total Seedbed Quality			62,314
Material Available			
(After 2006 Stripping)			

* Actual Volumes Stripped in 2006.

** From Appendix 8-1.

Map unit KmB can be stripped to 9 inches, and as indicated above, up to 12" for topsoil and 12" for subsoil in the area of the settling ponds. See Table 8-6 for available volume of that soil unit. This is based on the soils report in Appendix 8-2.

Barren areas and salty spots should be avoided in stripping. This includes the Saltair Unit, for which a variance in topsoil stripping is requested due to poor quality. (See Plate 8-1 for locations.)

Prior to the Reclamation Act of 1977 and Utah Interim Program, 77.2 acres of C.V. Spur were disturbed and topsoil not salvaged.

8.7 Removal, Storage and Protection of Soils (continued)

Of the remaining 76.8 acres, 48.7 acres have had topsoil stripped as of April 2002, leaving approximately 28.1 acres within the permit area that will need to have available topsoil removed, if disturbed. An additional 4.20 acres were stripped in 2006. Although 6.61 acres were disturbed, only 4.20 acres were stripped to a total depth of 24" due to poor quality of the remaining acreage.

The topsoil and subsoil stripped from the settling pond was placed in separate storage piles. Organic debris existing on the surface of the newly stripped area was left in the soil when stockpiled to maintain the organic content.

Once the newly stripped soil was placed in new stockpiles, 2000 pounds per acre of weed free hay mulch was added to the surface. The surface was then roughened using a trackhoe. Once the site was prepared, the piles were hydroseeded using the Temporary Seed Mix described on Table 3-1. In addition to the seeding, a potassium fertilizer and 2 bio-stimulants were applied to the topsoil & subsoil piles. The fertilizer was a liquid concentrate called Three Tier (5: 16: 12), applied at a rate of 48 ounces per acre. One of the bio-stimulants was called "Launch", consisting of 1 % K, 0.36% Fe, 74.3% Manure extract, 9% Humic and Folic Acid and 1.2% Kelp. The other bio-stimulant was "Suma-Cal Plus", consisting of 8% Ca, 4% Humic Acid and 27.5 billion microbes/gallon. Each bio-stimulant was applied at a rate of 4 gallons/acre. 2000 pounds per acre of wood fiber mulch and 60 pounds per acre of tacifier were then applied to the surface. Seeding took place during the week of October 23, 2006. It should be noted that the berm constructed with other excavated material from the ponds was also seeded at this time.

The topsoil piles are protected by a combination of efforts, including existing berms and revegetation as described above.

Plate 3-1 indicates disturbance created before and after May 1978. Topsoil material that has been stockpiled and in-place soil to be disturbed contain insufficient volumes of material to cover all of the projected disturbed area to a minimum of six (6) inches. Thus, as discussed in Sections 8.5 and 8.6, the Disturbed Land Map Unit will be revegetated in-place since no better topsoil material exists for reclamation.

All post-law disturbance and the entire refuse area (a total of 55.31 acres after the 2006 stripping) will receive a minimum cover of six inches of topsoil/subsoil. Table 8-6 provides the volumes of soil currently in storage.

Even distribution of six inches over 55.31 acres would require 44,617 cubic yards of material. Therefore, the 62,314 cubic yards of topsoil/subsoil currently in storage is enough to accommodate the proposed reclamation plan.

8.8 Nutrients and Soil Amendments

Soil tests will be taken in materials to be used for final reclamation in order to evaluate the need for soil amendments and nutrients. Soil testing will be performed by a qualified laboratory which uses accepted analytical procedures.

Table 8-8
DEPTHS OF SUITABLE TOPSOIL AVAILABLE FOR SEEDBED MATERIAL
 (by map unit)

Mapping Unit	Component	Depth (in.)	Rating	Percent of Map Unit	Available Depth Suitable Material (restrictive feature of recommended material)
Chc	Chipeta	0-3	Fair	80	6 inches (sodic and clayey)
		3-19	Fair/ Poor		
	Killpack	0-8	Fair	10	6 to 9 inches
	Other Soils	var	var	10	6 inches
DL	Disturbed Land	0-12	Poor	N/A	0 inches (various restrictive features)
		12-60	Poor		
KmB	Killpack - high water table	0-10	Fair	80	6 inches (clayey and sodic)
	Other	var	var	20	0 inches
Bib	Billings	0-7	Fair	100	7 inches

N/A - data not available

var = variable

Table 8-9
TOPSOIL MASS BALANCE TABLE
(after 2006 stripping)

Topsoil Available	62,314 cu. yds.
Disturbed Area	132.5 ac.
Pre-Law Disturbance	77.2 ac.
Post-Law Disturbance	55.3 ac.
Topsoil Required (Post-Law)	44,617 cu. yds.
*Topsoil Required (All Disturbance)	106,883 cu. yds.
Max. Area for 6" Redistribution	77.25 ac.

* As discussed in Sections 8.5 and 8.6, pre-law disturbed areas will utilize in-place soils, since no better topsoil exists for reclamation.

consultation with the Division at least 60 days prior to final reclamation.

All soils will be properly fertilized to bring them up to the level necessary for vegetation establishment. Fertilizer application will be based on soil test analysis as discussed in Section 8.8.

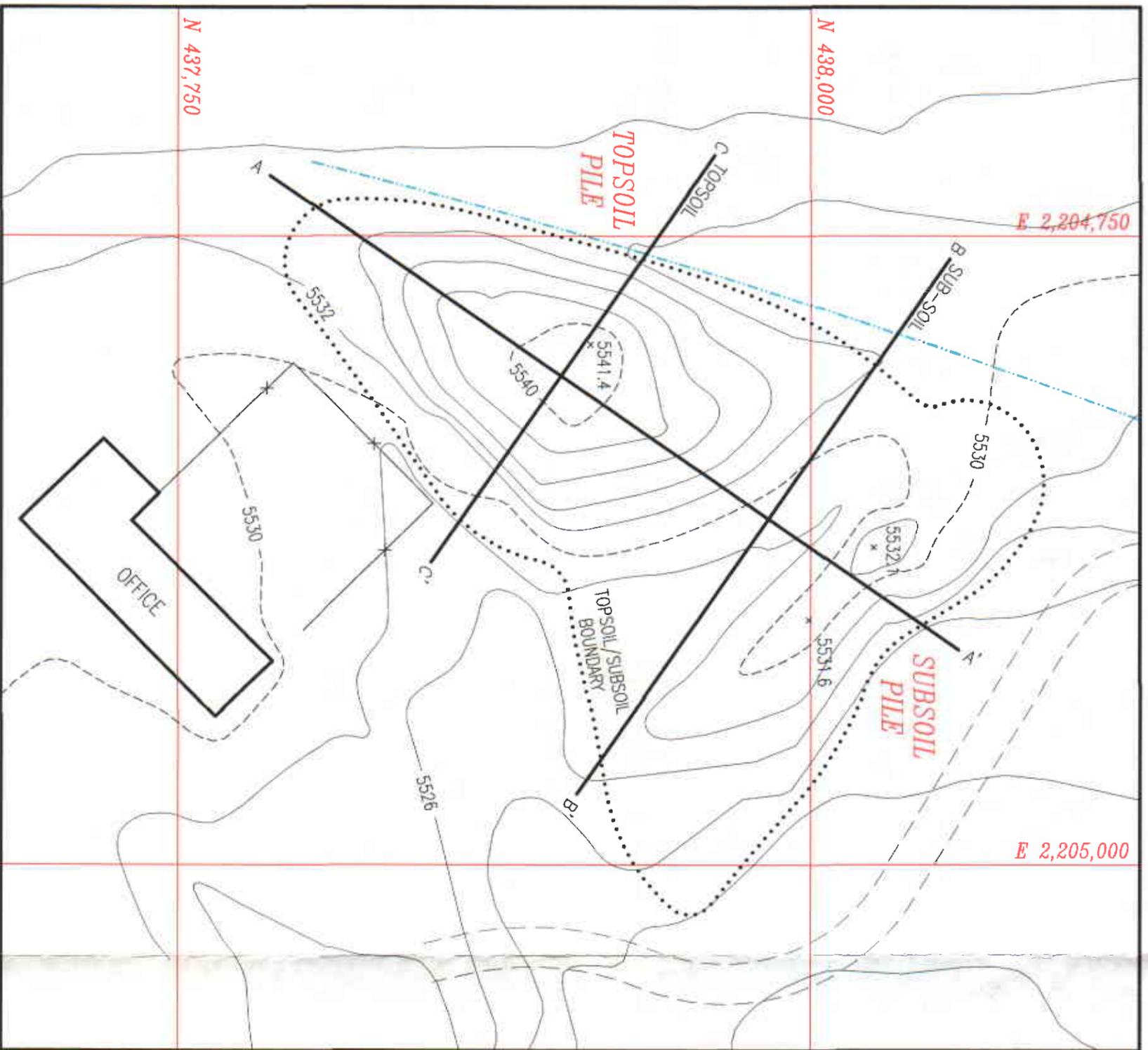
8.10 Mitigation and Control Plans

All suitable seedbed quality material (topsoil) will be stripped and stockpiled prior to disturbance. Topsoil stockpiles will be placed on a stable surface in an attempt to limit wind and water erosion and other factors which would lessen the capability of the material to support vegetation. Every effort will be made to minimize the area of disturbance to only that area needed immediately. A quick-growing cover of annual and perennial plants will be seeded or planted during the first desirable planting period after disturbance. Topsoil stockpiles will remain in-place and undisturbed until the material is to be redistributed on disturbed areas.

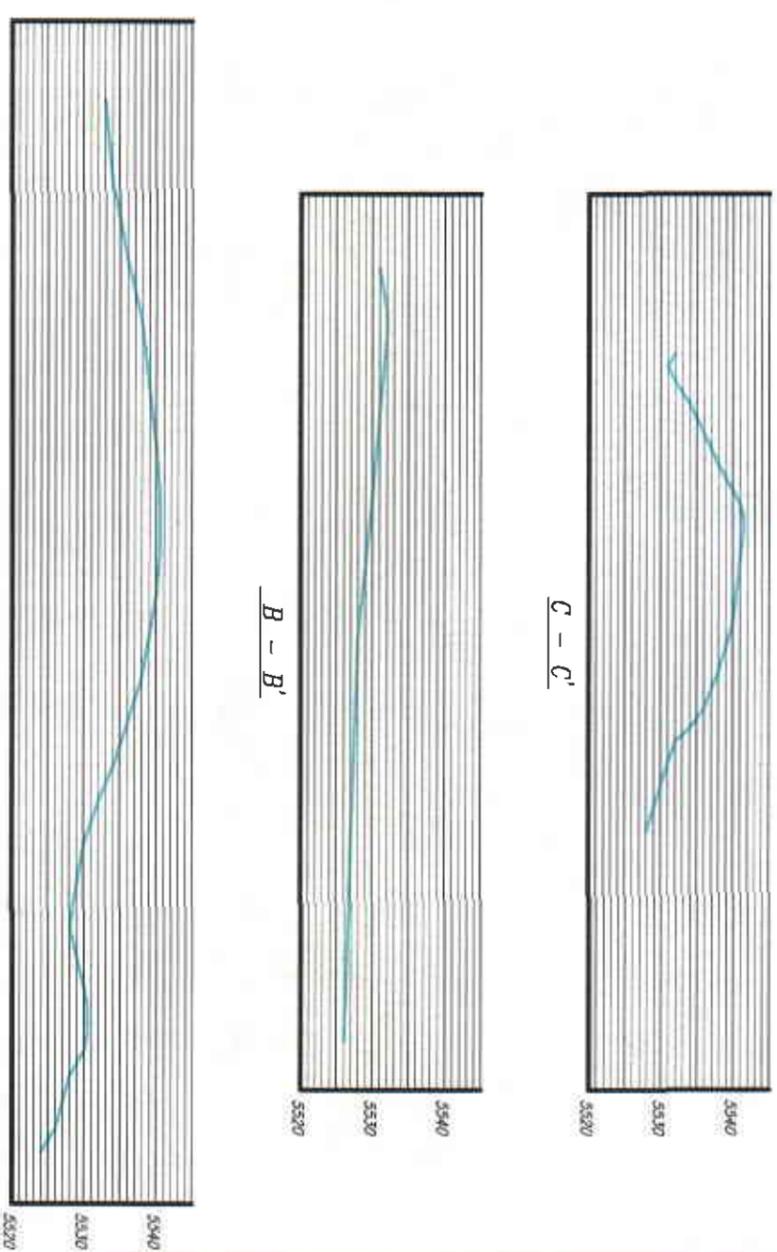
Stipulation UMC 817.23-(HS)-(1)

An as-built survey was performed on the soil stockpiles, as required. Results of the survey show a total of 49,475 cubic yards of material presently in storage, as indicated on Table 8-9. The survey is summarized in Appendix 8-1, and the as-built map of the piles is shown on Plate 8-2.

In April 2002, an additional 12,140 cubic yards of topsoil were stripped and added to the Topsoil Stockpile. The topsoil and subsoil piles were blended together into one pile, roughened, mulched and seeded. This increased the volume of the Topsoil Stockpile to 49,286 cubic yards. In 2006, an additional 13,028 cubic yards of topsoil/sub-soil were stripped and placed in separate storage piles located north of the office building, bringing the total storage volume to approximately 62,314 cubic yards.



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NOTE:

TOPSOIL STORED = 6514 c.y.
 SUB-SOIL STORED = 6514 c.y.
 TOTAL AVAILABLE = 13,028 c.y.
 AT THIS LOCATION.



SAVAGE COAL TERMINAL SETTLING POND AREA	
<small>DESIGNED BY</small> BLACKHAWK ENGINEERING, INC.	<small>SCALE</small> 1" = 50'
<small>DATE</small> JANUARY 2007	<small>PLATE NUMBER</small> 8-3