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FINDINGS DOCUMENT
Utah Coal Regulatory Program

PID:	C0410002
TaskID:	4395
Mine Name:	SUFCO MINE
Title:	WASTE ROCK DISPOSAL SITE SUBSOIL PILE AS-BUILT

Operation Plan

Topsoil

Analysis:

The narrative in Chapter 2 pp. 2-11 through pp.2-22 is a mixture of conjecture and documented soil volumes. The Division understands that several small topsoil stockpiles have been segregated and protected (Vol. 1 Section 2.3.1.1 and 2.3.1.4 and Vol. 3 Sec. 3.1.6). They are as follows:

Waste rock site stockpiles (Vol 3, Map 4):		
mine site subsoil stockpile	11,364 yd3	
waste rock site combined topsoil 1A and 1B mine	465 yd3	
waste rock topsoil pile #2	161.4 yd3	
waste rock topsoil pile #3	138 yd3	
waste rock fenced sediment pond topsoil pile	635 yd3	
Lift #4 stockpile	1,847 yd3	
Mine site stockpiles		
sediment pond	1,200 yd3	
substation no. 1		224 yd3
substation no. 2	118 yd3	
overflow pond	1,488 yd3	
Link Canyon		38yd3

A table added to WRDS p. 3-5 indicates that there is 11,260 cy of subsoil stored in a stockpile at the waste rock site for use at the mine site. This does not correspond with the statement on page 2-18 that there is 11,364 cy of subsoil stockpiled at the mine site. Please explain.

Three new portals accessing the West Lease and were approved with Task #3548 in 2010. The construction of concrete access tunnels to lessen the grade of the entry to Portal #1 (West Lease Beltline portal) and Portal #2 (West Lease Main Haulage portal) was conditionally approved with Task 3780. A commitment stated in the West Lease portal construction application cover letter, dated March 21, 2011, was to provide suitability analysis for excess soil which supports placement in either the subsoil stockpile or the waste rock pile at the waste rock site. This as-built information was required as a condition of approval of the West Lease portal construction (reviewed as Tasks 3548, 3739, and 3780). Analysis dated August 11, 2011 (six Comp samples) and analysis dated December 20, 2012 (three subsoil pile samples) fulfill this commitment. The C2 form states that this information is to be added to Appendix 2-3, but the location of the analyses are not indicated in the narrative to support the use of the 11,364 cu yds of excavated pad material labeled "subsoil". The subsoil laboratory analysis and Gob analysis provided with this amendment show that potassium is available in minute

quantities in these clay loam soils. Since potassium is a plant macronutrient, plants growing on this subsoil pile should be evaluated for potassium deficiency (small dots arranged on the leaf edges, dry, scorched leaf edges, irregular chlorosis) and the augmentation of the subsoil with a potassium rich amendment should be discussed. Potassium may become more available over time, as the subsoil minerals weather.

The MRP identifies 2,160 yd³ of subsoil stored in the substation bin wall and 5,300 yd³ of road base and 11,364 yd³ subsoil stored at the waste rock site that is available for use as subsoil at the mine site (Section 2.3.1.4 on page 1-12). That is a total of 18,824 yd³ of suitable subsoil available for final reclamation of the 17.4 acre East Spring Canyon facilities pad site, as listed in MRP, Sec. 116. (This amounts to approximately 8 inches of subsoil cover.) Volume 1, Chapter 2, page 2-21 has been updated with this information.

At the East Spring Canyon mine site, topsoil is stored at the substation stockpile (27yd³), and at the sediment pond (1,200 yd³, Section 2.3.1.4). The overflow pond construction in 2009 generated an additional 1,488 yd³ (Sec. 2.3.1.1, p. 18). (As built for the overflow pond stockpile are under review as Task #4393.) Substitute topsoil is also located in restored (seeded) slopes at the mine site (pp. 2-10 and 2-23). More specifically, the interim seeded slopes above the parking lot and portals will be used as substitute topsoil (personal communication with Mike Davis, November 24, 2009.)

The waste rock as-built amendment states that there are five topsoil stockpiles at the Waste Rock site. They are Topsoil Pile 1A, 1B, new topsoil stockpiles 2 & 3, and the sediment pond topsoil stockpile.

Final reclamation grading of the mine site is described in Section 5.4.2.2 and Appendix 2-4. Cut/Fill estimates are presented in Appendix 2-5. Approximately 74,000 yd³ will be moved.

Deficiencies Details:

R645-301-121.200, A table added to WRDS p. 3-5 indicates that there is 11,260 cy of subsoil stored in a stockpile at the waste rock site for use at the mine site. This does not correspond with the statement on page 2-18 that there is 11,364 cy of subsoil stockpiled at the mine site. Please explain.

R645-301-233.300, 1) On page 2-18, please include a reference to the location (App. 2-3) of the waste rock subsoil analyses that have been provided to support the use and label of the 11,364 cu yds of excavated pad material as "subsoil."
2) Please provide the Total Sulfur AB (acid base) and T.S. ABP (acid base potential) analysis which is currently missing from the Gob pile analysis dated July 8, 2010.

pburton