

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

April 22, 2009

TO: Jim Smith, Team Lead *JS ex/29/09*

FROM: Priscilla Burton, CPSSc, Environmental Scientist III, Soils. *PB/bm/sks*

RE: Wildcat Loadout Expansion, Andalex Resources Inc., Wildcat Loadout, C/007/0033, Task #2966

SUMMARY:

The Division Order (DO_2031) dated December 9 2004, describes the effect of accumulations of dust on plants and wildlife and requires that the Permittee address the issue of fugitive dust control (2006\Outgoing\0026.pdf). The last correspondence from the Division regarding the technical aspects of the Division Order review were provided in a letter dated August 9, 2006 (2006\Outgoing\0013.pdf). This correspondence is worth reviewing, as the objectives of the requirements of the Division Order are discussed.

On April 30, 2008, Andalex Resources, Inc. applied for a "Significant Revision" to the Wildcat loadout mining and reclamation plan. This is the third response to DO_2031, the previous responses were insufficient to address the problems of fugitive dust control and were returned with deficiencies [refer to Task 2182 (2005) and Task 2410 (2006)]. The ACR review for this Significant Revision (Task 2966) was completed on May 15, 2008. Several emergency amendments arrived at the Division subsequent to this application (i.e. Skyline Task 3047; Dugout Task 3068; Bear Canyon 3022 and 3070, West Ridge Task 3077) and a management decision was consciously made to delay the review of this amendment past the 120 days (R645-300-131.114), in order to process the emergencies in a timely manner. In addition, the Permittee's urgent need for a larger coal stockpile diminished after the closure of the Crandall Canyon Mine in 2007 and the Centennial mine in 2008.

In this application, the Permittee proposes to expand the coal storage area by 3.5 acres, add a 3.2 acre drop zone for coal fines, add a 6.3 acre materials storage yard, and use approximately 8 acres for sediment ponds and topsoil stockpiles. The total new disturbed area is 20.85 acres. This expansion would allow handling of up to 5.5 MT/year. The disturbed area will increase from 60.94 acres to 81.79 acres. The expansion is described in Appendix S of the MRP. The expansion is planned in two phases. **Phase 1** is illustrated on Plate 1A-a and consists of

removing coal fines and topsoil from the zone of most deposition and replacing existing sediment pond B with a larger pond, G-1. In addition under Phase 1, a short segment of road PR-5 will be graveled and treated with magnesium chloride. **Phase 2** will disturb most of the additional 20 acres described above, by widening the coal storage area and creating a 150 ft. drop zone (for coal fines), with more sediment ponds and topsoil stockpiles on the outer edge of the drop zone (Plate 1A). This expansion was planned to accommodate the increased coal production for the mines (App. S, p. 6). However, since this plan was first devised in 2006, two of the three operating mines have been closed. Neither the Division nor the Permittee is certain of the time frame for commencing or completing phase 2.

The application should not be approved as written. For the purpose of settling the Division Order, only Phase 1 of the application solves the immediate problem and a response describing the requested improvements to Phase I only should be requested within 30 days. Implementation of Phase 1 should be encouraged. Phase 2 of the expansion can be returned as a separate application at the Permittee's leisure.

This site falls under the requirements of the Utah Rules for Coal Processing Plants Not Located Within the Permit Area of a Mine, R645-302-260. The Significant Revision changes the permit area boundary. The expansion incorporates occupied dwellings and a public road. Therefore, the expansion places coal mining and reclamation activity within 300 feet of occupied dwellings and within 100 feet of public roads. As a result, in accordance with R645-103-234.200, the Division is required to provide an opportunity for a public hearing.

TECHNICAL ANALYSIS:

GENERAL CONTENTS

IDENTIFICATION OF INTERESTS

Regulatory Reference: 30 CFR 773.22; 30 CFR 778.13; R645-301-112

Analysis:

Section R645-301-112 identifies the Applicant is Andalex Resources, Inc. Tower Division. Appendix A, Part 1 includes the Tower Division as a sub-entity beneath Andalex Resources, Inc on the ownership family tree (Section 1). Original lease documents with the Utah Railway and the BLM identify Tower Resources, Inc as the Lessee as late as 1985, but later documents refer to Andalex Resources, Inc. as the Lessee. Although, the officers of parent companies and federal identification numbers are identified in Appendix A, Part 1, there is no information for the officers or directors of the Tower Division, Inc. Andalex Resources, Inc./Tower Division is included in the AVS system as entity 123355. This entity holds the permit for both Wildcat and Centennial Mines. Andalex Resources, Inc is entity number 112234. Andalex Resources, Inc. doe not hold any Utah permits, according to the AVS system. According to the AVS database, UtahAmerican Energy, Inc. (entity 146487) is the parent entity to Andalex Resources, Inc., but not to Andalex Resources, Inc./Tower Division.

The 2004 DOGM permit is issued to Andalex Resources, Inc. If Andalex Resources Inc./Tower Division still exists as stated in the MRP Section R645-301-112, then the Permittee must provide the officers and directors in Appendix A, Part 1. If the entity does not exist, provide a date for its dissolution and supporting documents for the transfer of the assets of the company to Andalex Resources, Inc. so that the AVS database may be updated and remove the Tower Division from the ownership family tree in Appendix A, Part 1 and from the narrative in MRP Section R645-301-112.

Andalex Resources, Inc is wholly owned by UtahAmerican Energy, Inc, which is wholly owned by Murray Energy Corporation, which is wholly owned by Murray Energy Holdings, Inc. Information on the officers and directors of the parent companies is provided in Appendix A, Part 1. The officers of affiliated companies are also listed. Dave Shaver is identified as the Resident Agent for the Wildcat Loadout (C/007/033) in Section R645-301-112.200 page 1-5.

Appendix A, Part 2 includes coal mining permits held in Utah and across the nation by Andalex Resources, Inc. affiliates.

The statement in Section 112.500 that all lands contiguous to the permit are owned by the United States is not accurate, as shown on Plate 16 and Plate 1A. In addition the boundary between SITLA surface and BLM on the east side of the permit area is not clearly shown on Plate 16.

MSHA ID numbers for the Wildcat Loadout and the refuse pile are provided in Section R645-301-112.700.

Findings:

Information provided in the MRP does not meet the Identification of Interests requirements for Coal Processing Plants Not Located Within the Permit Area of a Mine. Prior to approval, provide the following information in accordance with:

R645-301-112.300, [PWB] Include Murray Energy Holdings Co. at the top of the organizational tree in Appendix A Part 1. • MRP Section R645-301-112 identifies the Applicant is Andalex Resources, Inc. Tower Division. The 2004 DOGM permit is issued to Andalex Resources, Inc. Andalex Resources, Inc./Tower Division is included in the AVS system as entity 123355. According to the AVS database, this entity holds the permit for both Wildcat and Centennial Mines. Andalex Resources, Inc is entity number 112234. Andalex Resources, Inc. does not hold any Utah permits, according to the AVS system. According to the AVS database, UtahAmerican Energy, Inc. (entity 146487) is the parent entity to Andalex Resources, Inc., but not to Andalex Resources, Inc./Tower Division. If Andalex Resources Inc./Tower Division still exists as stated in the MRP Section R645-301-112 and as shown on the organizational family tree in Appendix A Part 1, then the Permittee must provide the officers and directors (include beginning and ending dates) for the Tower Division in Appendix A, Part 1. If the entity does not exist, provide a date for its dissolution and supporting documents for the transfer of the assets of the company to Andalex Resources, Inc. (so that the AVS database may be updated), and remove the Tower Division from the ownership family tree in Appendix A, Part 1 and from the narrative in MRP Section R645-301-112.

R645-301-112.600, [PWB]The statement in Section 112.500 that all lands “contiguous to the permit are owned by the United States” is not accurate, as shown on Plate 16. • Clearly show the boundary between SITLA surface and BLM to the east of Section 33 and on either side of Sections 3 and 4 T 14 S and between Sections 34 and 3 on the boundary of T 13 and 14 S.. and provide a legend for the permit area designation on Plate 16. •Plate 16 indicates BLM land ownership contiguous to the permit area on the north, however in this location, Plate 1A describes

buildings “owned by others” within and adjacent to the permit area in this same location, please make the appropriate changes to the text and/or plates.

VIOLATION INFORMATION

Regulatory Reference: 30 CFR 773.15(b); 30 CFR 773.23; 30 CFR 778.14; R645-300-132; R645-301-113

Analysis:

Appendix B Part B provides violation history for the years 2004 through April 2008 for Utah Coal Mines controlled by Andalex Resources, Inc and affiliates. In addition, the MRP indicates in Section R645-301-113 that neither Andalex Resources, Inc. Tower Division nor its affiliates have had a permit revoked or suspended in the last five years or a bond forfeited.

Although Pennsylvania permit 63921301 and permit 6372307 have unabated violations that were issued in 2004, 2005, and 2006, an Applicant Violator System check on December 29, 2008 indicated that there were there were no outstanding NOV's or CO's or any bond forfeitures of sites under common control with the Andalex Resources, Inc.

Findings:

The information provided meets the minimum violation reporting requirements for Coal Processing Plants Not Located Within the Permit Area of a Mine

RIGHT OF ENTRY

Regulatory Reference: 30 CFR 778.15; R645-301-114

Analysis:

With the 2008 modification plan (significant revision), the permit area increases from 100.19 acres to 270 acres, of which 12.5 acres are under a right of way agreement between the Utah Railway and the Bureau of Land Management (p.1-22). The remaining acreage (approximately 257 acres) is BLM land utilized under Right of Way agreement U-48027 which has been in effect since 1982 and was last updated in 2007 (Appendix B-Part A-6 through A-12).

An Agreement between Andalex Resources, Inc. and Beaver Creek Coal Co. has been in effect since 1988 (Appendix B Part A-5).

A surface lease agreement with the Utah Railway has been in place since 1981 (Appendix B Parts A-2 through A4).

Findings:

The information provided meets the requirements of the Right of Entry Regulations for Coal Processing Plants Not Located Within the Permit Area of a Mine.

LEGAL DESCRIPTION AND STATUS OF UNSUITABILITY CLAIMS

Regulatory Reference: 30 CFR 778.16; 30 CFR 779.12(a); 30 CFR 779.24(a)(b)(c); R645-300-121.120; R645-301-112.800; R645-300-141; R645-301-115.

Analysis:

Lands designated unsuitable are defined in 30 CFR 761.11 as lands within National Parks, Wildlife Refuge Systems, National System of Trails, National Wilderness Preservation System, Wild and Scenic Rivers System, National Recreation Areas, National Forest, National Historic Register of Historic Places, or within 100 ft of a public road (excepting the intersection with a mine haul road); within 300 ft of an occupied dwelling, public park, school, church or any public building; within 100 ft of a cemetery.

MRP Section R645-301-115.300 states that the permit area is not within 100 feet of a public road. However, Plate 16 clearly indicates that revised permit boundary includes the Consumers Road [county], the Trestle public road and the County Consumers Road. The narrative suggests in Section R645-301-114 that the SMCRA permit area boundary be enlarged to include these areas to coincide with the BLM right of way that was recently "squared up." However, permit area is a defined term under SMCRA and means "the area of land upon which the operator proposes to conduct coal mining and reclamation operations under the permit...(R645-100-2000)" SMCRA clearly limits coal mining and reclamation activity within 100 feet of a public road and within 300 feet of an occupied dwelling. Activity within 100 feet of a public road is limited to ingress and egress to the coal mining and reclamation site. Activity within 300 feet of any occupied dwelling may only proceed upon written waiver from the owners of the dwelling.

Plate 1A shows coal mining and reclamation activities within 100 feet of the Trestle public road. Plate 1A shows coal mining and reclamation activities are shown within 300 feet of the Hidden Splendor shop facilities and includes the facilities within the permit area. The Permittee has two choices, either create a permit area boundary that is unique from the BLM right of way, such that it allows for expansion, but does not include occupied dwellings or in

accordance with R645-103-235, the Permittee must obtain a waiver from the owners of the buildings within the permit area allowing coal mining and reclamation activity within 300 feet of the occupied buildings. In either case, in accordance with R645-103-234, the Permittee must obtain the necessary approvals from the road authority for construction of sediment ponds within 100 feet of the Trestle public road and the Division must provide an opportunity for a public hearing.

The permit area is described as 270 acres in the public notice and this equates to the existing 100 acre permit area plus the recently approved 150 acre Right of Way by the Bureau of Land Management Lease Area, with a miscellaneous 20 acres. The 81.79 acre disturbed area is described in MRP Section R645-301-212 is shown not shown on Plate 1A for the proposed expansion, but is shown on Plate 1 for the existing operation. The permit area is shown on all Plates.

Findings:

The information provided does not meet the minimum requirements for Coal Processing Plants Not Located Within the Permit Area of a Mine. Prior to approval, provide the following in accordance with:

R645-301-115.300 and R645-301-121, [PWB] Plate 16 indicates that the [county] Consumer's Road crosses the permit area, but incorrectly shows this road becoming a State Hwy 139. Please correct the narrative Section R645-301-115.300 that states that the permit area is not within 100 feet of a public road and correct all Plates to remove the State Hwy designation.

R645-103-234, [PWB] Plate 1A shows coal mining and reclamation operations within 100 feet of the Trestle public road. The Permittee must obtain the necessary approvals from the road authority for construction of sediment ponds within 100 feet of the Trestle public road and the Division must provide an opportunity for a public hearing. In the absence of any specific approvals, the application must state that the activity within 100 feet of the Trestle road right of way is limited to access and haulage roads, as is the case with limitations placed on activity within 100 feet of the Consumers Road [county].

R645-103-235, [PWB] The narrative suggests in Section R645-301-114 that the SMCRA permit area boundary be enlarged to include these areas to coincide with the BLM right of way that was recently "squared up." However, permit area is a defined term under SMCRA and means "the area of land upon which the operator proposes to conduct coal mining and reclamation operations under the permit...(R645-100-2000)" SMCRA also clearly limits coal mining and reclamation operations within 100 feet of a public road and within 300 feet of an occupied dwelling. Incorporating the occupied buildings into the permit area

amounts to conducting operations within 300 feet of the occupied dwellings. The Permittee has two choices, either create a permit area boundary that is unique from the BLM right of way, such that it allows for expansion, but does not include occupied dwellings or in accordance with R645-103-235, the Permittee must obtain a waiver from the owners of the buildings within the permit area allowing coal mining and reclamation activity within 300 feet of the occupied buildings.

R645-301-521.141, [PWB] The 81.79 acre disturbed area is described in MRP Section R645-301-212 is shown not shown on Plate 1A for the proposed expansion. The proposed disturbed area boundary that corresponds with the proposed placement of perimeter markers (R645-301-521) must be shown on all maps.

R645-301-121.200, [PWB] The permit area is described as 270 acres in the public notice and this equates to the existing 100 acre permit area plus the recently approved 150 acre Right of Way by the Bureau of Land Management Lease Area, with a miscellaneous 20 acres, please explain using narrative or maps the boundary of the 270 acres.

PERMIT TERM

Regulatory References: 30 CFR 778.17; R645-301-116.

Analysis:

Andalex Resources, Inc. was issued a permanent program permit for this site on May 5, 1989, which was successively renewed on May 5, 1994 and May 5, 1999 and May 5, 2004. The current permit expires May 5, 2009.

With the 2008 modification plan (significant revision), the permit area increases from 100.19 acres to 270 acres, of which 12.5 acres are under a right of way agreement between the Utah Railway and the Bureau of Land Management (p.1-22). The remaining acreage (approximately 257 acres) is BLM land utilized under Right of Way agreement U-48027 that has been in effect since 1982 and was last updated in 2007 (Appendix B-Part A-6 through A-12).

Effective May 1994, Exhibit A of the permit describes a surface disturbance of 63.7 acres. The disturbed area will increase to 81.79 acres with the 2008 expansion plan.

Findings:

Andalex Resources Inc. holds a valid State of Utah mining permit that expires May 5, 2009.

PUBLIC NOTICE AND COMMENT

Regulatory References: 30 CFR 778.21; 30 CFR 773.13; R645-300-120; R645-301-117.200.

Analysis:

Public comment on this significant revision for the Wildcat Loadout was sought through legal notice in the Sun Advocate during the month of May and June 2008. An affidavit of publication must be provided with the application.

This site falls under the requirements of the Utah Rules for Coal Processing Plants Not Located Within the Permit Area of a Mine, R645-302-260. By changing the permit area boundary, the expansion incorporates occupied dwellings and a public road. Therefore, the expansion places coal mining and reclamation activity within 300 feet of occupied dwellings and within 100 feet of public roads. As a result, in accordance with R645-103-234.200, the Division is required to provide an opportunity for a public hearing.

Findings:

R645-301-117.200, [PWB] Provide an affidavit of publication as part of this significant revision.

R645-301-234, [PWB] See the deficiency written under this Rule, above in "Legal Description and Status of Unsuitability Claims" section.

PERMIT APPLICATION FORMAT AND CONTENTS

Regulatory Reference: 30 CFR 777.11; R645-301-120.

Analysis:

Appendix B Part A-16 should not be considered confidential as it is simply correspondence from the Division of State History to Mike Glasson, recommending clearance

for the Wildcat Loadout. There is no mention of any sensitive information in the letter. This is a public document and must remain so.

Findings:

R645-300-113 and 300-124.330, [PWB] Appendix B Part A-16 should not be considered confidential as it is simply correspondence from the Division of State History to Mike Glasson, recommending clearance for the Wildcat Loadout. There is no mention of any sensitive information in the letter. This is a public document and must remain so.

REPORTING OF TECHNICAL DATA

Regulatory Reference: 30 CFR 777.13; R645-301-130.

Analysis:

Individuals and firms that contributed to the mining and reclamation plan are listed in Section 2, R645-301-130 or with their respective reports, i.e. James Nyenhuis, Appendix D Supplement.

Findings:

The information provided meets the minimum requirements for Coal Processing Plants Not Located Within the Permit Area of a Mine.

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.21; 30 CFR 817.22; 30 CFR 817.200(c); 30 CFR 823; R645-301-220; R645-301-411.

Analysis:

Soil Resources are described in Sec. 2 of the MRP. Appendix D contains all Soil Survey information. The Phase 1 expansion area (Plate was surveyed in 2003, under the direction of Mr.

James Nyenhuis for Mt. Nebo Scientific in March 2003. The 2003 soil survey includes an Order 1 survey map for the 12 acre expansion area on the east portion of the permit area. The soils in this location are predominantly Hernandez loam and Haverdad loam, both prime farmland soils, when irrigated. The 2003 soil survey substantiates a twenty-four inch soil salvage depth for the expansion and the use of subsoils to cover the coal mine waste at reclamation.

In April 2007, I conducted a courtesy evaluation of 4 backhoe pits within the 5 acre material storage area proposed for expansion (see Inspection Report #1259). Mr. Shaver took a representative soil sample from 0 – 24 inches in one of the pits for baseline analyses. This sample is labeled “Tan-Topsoil” in the analytical report found in Appendix D. [The second sample, labeled “Gray - Coal Mine Waste” was a grab sample taken from the refuse pile.] The four soil pits were on an open area of a gently sloping (5%) pediment. Scattered pinyon and juniper brush borders the flat area which is vegetated with blue grama grass, prickly pear cactus, balck sagebrush and winterfat. The soil profiles were very similar. In all soil pits, the upper 24 inches appeared uniform. The boundaries between horizons were determined by structure and change in gravel/stone content.

The 1988 SCS soil survey for Carbon County maps the soils of the site as the Hernandez Series (Map Units 52 and 55) and classifies the soils as fine-loamy, mixed, superactive, mesic Ustic Haplocalcid (similar to the Abra loam, described above). Map Unit 52, Hernandez family has 3-8% slopes and is a deep soil that is capable of high production if an adequate amount of water is supplied. Plate 11 reproduces the Carbon County Order III soil survey for the site.

A site survey of the Wildcat soil was first conducted in 1988 by Earl Jensen, soil scientist with the NRCS. (The location for his pit is generally given as the intersection of the Gordon Creek road and Utah Railroad.) He classified the soil as fine loamy mixed mesic Ustollic Calciorthids with a map unit name of Abra loam. He indicated that there was 60 inches of available topsoil. He also indicated that there was a layer of calcium carbonate accumulation from 9 – 12 inches and that adjacent soils did not have this layer of accumulation. The NRCS changed the classification of this series to fine loamy, superactive, mesic, Ustic Haplocalcid (<http://wwwsoils.usda.gov>). The “superactive” designation pertains to the ratio of the electrical conductivity and the percent clay. There can be a calcic horizon in the soil.

Prior to the 2008 expansion proposal, substitute topsoil was evaluated in four fill slopes through the use of test plots described in Appendix N. These plots were installed in 1989 (Plate 1) and evaluated by Patrick Collins, PhD, of Mt. Nebo Scientific Research & Consulting in 1991. Mr. Collins reported that the plots were dominated by Russian thistle (*Salsola iberica*) and summer cypress (*Kochia scoparia*) weeds, with the exception of spoil plot B that contained a sizeable community of Western wheatgrass (*Agropyron smithii*) and Indian ricegrass (*Oryzopsis hymenoides*). **The plots were last evaluated in 1991 (App. N) and were to be re-evaluated in the summer of 2006. This re-evaluation was not conducted, as far as I know.** When both phases of this expansion are complete, the Permittee will be relieved of the requirement to use

these test plot soils for final cover, as enough suitable cover will be recovered with the new disturbance to provide cover for the entire 81.79 disturbed acres.

Findings:

The information provided does not meet the requirements for Environmental Soil Resource information requirements for Coal Processing Plants Not Located Within the Permit Area of a Mine. Prior to approval, please provide the following corrections:

R645-301-220 and -121.200, [PWB] The application states in several places that Priscilla Burton, DOGM, conducted a soil survey of the proposed material storage area, since I did not complete an Order I soil survey these statements should more accurately read, "Priscilla Burton provided a courtesy soil evaluation of four backhoe pits" and the cover page for Appendix D Supplement should more accurately be titled "Soils Analysis Material Storage Area."

OPERATION PLAN

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-230.

Analysis:

Topsoil Removal and Storage

In this application, the Permittee proposes to expand the coal storage area by 3.5 acres, add a 3.2 acre drop zone for coal fines, add a 6.3 acre materials storage yard, and approximately 8 acres dedicated for sediment ponds and topsoil stockpiles. The total new disturbed area is 20.85 acres. This expansion would allow handling of up to 5.5 MT/year. The disturbed area will increase from 60.94 acres to 81.79 acres (MRP, Section 645-301-212, p. 2-5).

The expansion is described in Appendix S of the MRP. The expansion is planned in two phases. Phase 1 is illustrated on Plate 1A-a and consists of removing coal fines and topsoil from the zone of heavy deposition and replacing sediment pond B with a larger pond, G-1. In addition under Phase 1, a short segment of road PR-5 will be graveled and treated with magnesium chloride. Phase 2 will disturb most of the additional 20 acres described above, by widening the

coal storage area and creating a 150 ft. drop zone (for coal fines), with more sediment ponds and topsoil stockpiles on the outer edge of the drop zone (Plate 1A). This expansion was planned to accommodate the increased coal production for the mines (App. S, p. 6). However, since this plan was first devised in 2006, two of the three operating mines have been closed. Neither the Division nor the Permittee is certain of the time frame for commencing or completing phase 2.

The existing topsoil stockpiles are located on the west, south and north perimeters of the disturbed area. The prevailing winds are from west to east. Topsoil piles E and B are upwind of the site. Topsoil Pile A is located southeast of the coal stockpile and may be affected by wind blow coal fines. Plate 13B illustrates the existing topsoil storage piles (certified by Dan Guy, a Professional Engineer). Plate 13B indicates that there is currently of 17,000 yd³ stockpiled for reclamation.

The Wildcat site currently has a deficit of 32,000 yd³ of topsoil to achieve the goal of six inches topsoil replacement depth over the 61 acres (Sec. R645-301-224 and R645-301-240 "Soil Testing and Preparation"). Salvage and protection of two feet of suitable topsoil and substitute topsoil from the 2008 storage yard and the coal stockpile expansion area will alleviate this deficit and avoid the disturbance of additional area for cover material (R645-301-240).

The two-phase expansion plan will increase the disturbed area from 60.94 acres to 81.79 acres. Topsoil and subsoil will be salvaged to a depth of 24 inches from the additional 20 acres expansion could provide a depth on 64,533 yds, and will at least provide approximately 49,704 cu yds (Plate 13C), enough substitute topsoil to cover the entire disturbed area (MRP, Section R645-301-211 and Appendix S). The volume to be recovered and stockpiled in Phase 1 is not stated, but the acreage and depth was stated on page 4 in App. S. The Division calculates Phase 1 topsoil recovery to be 3.5 acres x 43,560 ft²/ac x 2 ft. = 304,920 ft³ or 11,293 yd³ to be stored on the embankment of pond G-1. Phase 1 will reduce the topsoil deficit to 20,700 yd³. Plate 3d-a indicates that the topsoil stored on stockpile G-1 will be at a 3h:1v slope.

Plate 13C shows the proposed stockpile locations and provides soil volumes to be recovered from the 20 acres after phase 2 is completed.

- Stockpile P would hold 19,800 cu yds, almost half of the salvaged topsoil on the west side, safely upwind of the operations.
- Combined stockpiles G, H, and I would hold another 8,000 cu yds as the final layer applied to the dam embankments on the east side of the permit area. This topsoil will be protected from pond sludge with six inches of subsoil on the inslope of the pond. In these [proposed] sediment pond locations the Permittee has recorded between 0 and 2 inches of coal fines accumulation (Appendix U).
- Berms J and K would line the roadways that access sediment ponds on the east side and hold approximately 300 cu yds each. In these proposed berm locations,

the Permittee has recorded between 0 and 4.5 inches of coal fines accumulation (Appendix U).

- Topsoil stockpiles L, M, N, and O are on the east side of the coal stockpile, adjacent to the access road. Combined, these stockpiles would hold 21,000 cu yds. In these proposed stockpile locations, the Permittee has recorded between 0.75 and 6.5 inches of coal fines accumulation (Appendix U).

Plates 13A and 13B provide an estimation of the salvage volume and stockpile dimensions for the proposed stockpiles: G, H, I, L, M, N, O, P. These plates indicate that stockpiles have a maximum height of 15 feet and a maximum 2h:1v slope. (Stockpiles J and K are in low berms along access roads to sediment ponds.) As proposed, the stockpiles have their steepest slopes to the west face, which is a very intense exposure to summer sun. The Permittee should make the stockpiles have a lesser slope on the west side and cover the west and south slope with brush or other mulch after seeding.

Appendix S states that topsoil and substitute topsoil will be stored within the outer embankment of proposed ponds G-1 (see Plate 3d-a) and ponds G, H, and I (Plates 3D, 3E, 3F). Given the history at this site of fugitive dust spreading east with winds from the site, burying the salvaged topsoil within a pond embankment and protecting with a subsoil cap layer is an option that will disturb minimal ground, while protecting the topsoil from coal fines. Embankments must be clearly marked as topsoil storage. Appendix S, p. 7 states that soil stockpiles will be seeded with an interim mix described in Section R645-301-212. The interim seed mix described in Section R645-301-212 was created in the 1994 for use on existing topsoil pile B and test plots located on topsoil pile B (described in Section R645-301-224, pp. 2-9 and 2-10). The interim seed mix should be revised according to the conclusions made from the Topsoil pile B test plot evaluations, see discussion of test plot evaluation below and deficiency written under R645-301-231.100. App. S page 10 states that topsoil above the high water mark of the pond embankments will be seeded. Since there will be little water accumulated in these oversized ponds, the entire inslope and outslope of the embankment should be seeded.

The proposed location of the topsoil stockpiles provides some advantages for reclamation, such as a lower profile that should enable microorganisms to thrive throughout the depth of the stockpile and less topsoil loss through transport. Erosion from topsoil piles will be captured by a berm on the downslope side (App. S, p. 7). Since the stockpiles will be on the east side, downwind of the coal stockpiles, the Permittee proposes to protect the topsoil from coal fine accumulations by burial under a six inch layer of subsoil (App. S, p. 7). The Division is in agreement with this approach, since burial would be only six inches deep and the recent evaluations of vegetated, buried topsoil plots at the West Ridge Mine indicate that there is little difference in vegetation establishment on plots buried under a foot or more of soil for six years. However, placing topsoil stockpiles on the east side of the permit area brings further importance to the resolution of the Division Order and monitoring of coal fine deposition, so that coal fines do not limit vegetation establishment on the stockpiles.

Coal fines or fugitive dust have accumulated to depths greater than three inches on adjacent, undisturbed soils within the permit area (App. U and Patrick Collins report March 2003 included with submittal AM03A). These coal fines may have been from any one of the six existing coal stockpiles on site at the time. The plan indicates in Sec. R645-301-212, p 2-5 and in Sec. R645-301-423.200 that coal fines will be vacuumed if deemed necessary. Vacuuming has been found to be very disruptive to undisturbed soils and is in itself a disturbance. Appendix S, p. 4 states that during phase 1, coal fines will be removed prior to topsoil salvage using grader and backhoe. Page 6 states that during phase 2 only depositions greater than 6 inches will be removed before salvage and stockpiling of soil. Appendix U shows very few locations of greater than six inch deposition of coal fines. So that, in reality, coal fines and topsoil will be salvaged together. To ensure that topsoil is protected from coal fines during the salvage operation, the application must state that coal fines greater than two inches deep will be removed during both phase 1 and 2 operations. The Applicant should evaluate the use of a scrapers rather than graders for this purpose.

The Permittee has committed to annually monitor the coal fine deposition (App. U) and will use moisture on the coal stockpile(s) to reduce fugitive dust as required by the January 5, 2000 Approval Order (DAQE-005-00) General Condition #15.

Historical Information on Topsoil Stockpiles

Topsoil was salvaged from 20 acres of the site in **1984** and placed in the topsoil stockpiles (Plates, 1 and 13). Stockpiles were consolidated in 1994 (due to coal fine accumulation on the stockpiles located on the east side of the coal stockpile) and pile B now contains all of the soil formerly in B, C, and D. Relocated stockpile B was seeded in the fall of 1994 and now contains 285,810 yd³. Grab samples were taken from stockpiled soil in 1988 (R645-301-212, p 2-2 and Appendix D). This analytical information provides valuable information on the quality of the pre-existing surface soil. Topsoil has not been salvaged from the ASCA areas shown on Plate 2 (Sec. R645-301-212 p. 2-2).

The topsoil was reseeded in 1989 and 1990 (1989 Correspondence folders, memo from Henry Sauer dated April 25, 1989 and January 23, 1990) using a modified interim mix (memo from Lynn Kunzler dated November 17, 1989).

MRP Sec. R645-301-212, p. 2-3 describes transfer of topsoil piles B, C, and D to the west side of Wildcat for protection against wind blown coal fines (in 1994). The transferred topsoil was collectively designated topsoil stockpile B and placed adjacent to existing topsoil stockpile E. The stockpile was seeded in 1994 with an interim seed mix described on page 2-4. The ground exposed by removal of the stockpiles B, C, D was drill seeded with the mixture described on page 2-4. New topsoil pile B was reseeded in December 2002. Topsoil A was recently reseeded in June 2002 (see inspection reports).

Topsoil Substitutes and Supplements

Stipulation UMC 817.22-(1)-(HS) of the 1989 Technical Analysis required the Permittee to establish test plots to determine the suitability of the fill as substitute topsoil. The Permittee established four plots in 1989 for this purpose (Sec. R645-301-212 p 2-6, and Sec. R645-301-224).

Revegetation test plots A, B, C, D, established in 1989 on fill slopes, are located on Plate 1, see deficiency written under R645-301-121.200. The information in the files and the MRP appendices D and N reveals the following:

- Spoil samples from the four plots were analyzed by Utah State University Plant & Water Analysis Lab in December 1988, analyses were received by the Division on February 15, 1989 (Incoming File).
- Spoil plots were ripped to a depth of six inches and 1 Ton/acre alfalfa hay was incorporated to the same depth (MRP Appendices D), this tilling and mulching with straw was confirmed by Division Inspection Reports dated November 2, 1989 and December 19, 1989 (Appendix N).
- Spoil plots may have been left rough with pitting (MRP, Appendix D) and may have been fertilized with 40 lbs K₂O; 60 lbs P₂O₅; and 60 lbs N (as Urea: ½ in Fall of 1989 and ½ in Spring of 1990 (MRP, Appendix D).
- Spoil plots were hand broadcast with a **modified** interim seed mix (December 19, 1989 Inspection Report). The approved modification was to delete Needle and Thread Grass and all shrub species and to include *Elymus cinereus* Basin Wildrye (3 lbs/acre) and *Agropyron trachycaulum* Slender wheatgrass (2.5 lbs/ac) (Lynn Kunzler, Memo to file dated November 17, 1989).
- The MRP describes in Appendices D and N a monitoring program for the spoil plots. The plots were to have been monitored in years 1, 2, 3, 5, 9, and 10.
- Spoil plots were surveyed in 1991, two years after seeding, by Patrick Collins (App. N). The application states that spoil plots will be re-evaluated in 2006.

The 1991 survey report (1991, Appendix N) shows that all the plots were weedy and many of the seeded species were not present. Plot B showed the most positive result with 30% of its 52% cover attributed to the seeded grasses. Plot B is near the substation, east of the railroad tracks. The Division biologist (Jerriann Ernstsén) briefly examined Plot B during a field visit (January 30, 2003) and the plot was still dominated by grasses (species unidentified) and without shrubs. Photographs taken of the test plots on June 23, 2005 are in the photo database.

1988 samples of the spoils that were taken in six inch depth increments shed some light on the success of spoil plot B vegetation. Spoil plot B soils are loam in texture with pH values between 8.0 and 8.3, Electrical Conductivity values between 3.3 mmhos/cm decreasing to 0.9 mmhos/cm in the profile; and Sodium Adsorption Ratio (SAR) values from 1.3 falling to 0.4

within the profile. Spoil Plot B had the most desirable characteristics of the spoils sampled. Although spoil Plot A soils were also low in SAR, they were more sandy and would have had less water holding ability in the drought years after the seeding, described by Mr. Collins 1991 survey. Spoil Plots D and E both are loam texture, but have EC values increasing down the profile to a high value of 4.0 mmhos/cm for spoil D and 3.0 for spoil E. The SAR values for spoil plots D & E are correspondingly high (from 2.8 to 6.6 for spoil D and from 1.6 to 8.5 for spoil E).

In addition to the spoil plots, there four topsoil testplots were established on the new topsoil pile B (adjacent to pile E, see Sec. R645-301-2224 , p. 2-8), as part of the commitment stated on page 2-8 of the original plan to implement test plots if the spoil plots were unsuccessful. These test plots were seeded in the fall of 1994 and evaluated once in 1997 and will not be revisited. Mr. Glasson provided the Division with a copy of the 1997 evaluation of these test plots (incoming folder 3/11/03). The test plots were eliminated in 2000, when the surface of the new topsoil pile B was reseeded. The treatments on these test plots were

- irrigation vs. no irrigation;
- incorporation of 3 to 4 tons alfalfa hay vs 1 ton alfalfa hay;
- 1 ton alfalfa hay incorporated and 1.5 tons straw anchored with netting vs. 1 ton alfalfa hay incorporated and 1.5 tons oat or barley straw anchored with mesh and staples.

According to Mr. Collins in his July 1997 Evaluation of the Test Plots, conducted 2 ½ years after seeding (Division 2003 Incoming Record 0001):

- Excluding forbs which were all weedy, the percent cover ranged from 38.75% to 43.33%.
- Seeded *Kochia prostrata* (prostrate kochia) and *Agropyron cristatum* (Fairway crested wheatgrass) accounted for most of the cover.
- Mulch incorporation at 3 – 4 Tons/ac greatly increased establishment of *Kochia prostrata* (a woody shrub) at the expense of grasses. This trend was also noted at lower levels of mulch incorporation.
- Irrigated plots favored grasses.
- Fairway crested wheatgrass (an introduced species) did much better than the native grasses and although it did not exclude the natives, may have created competition limiting their establishment.

The plan provides some some parameters to be tested in future plots (page 2-8): native and local seed, different fertilizing techniques (including no fertilizer) and different seedbed preparation. The 1997 Collins analysis suggests that Fairway Crested wheat seed should be eliminated from the interim seed mix in order to encourage greater diversity in the establishment of grasses.

The Division concurs with Mr. Collins recommendation of removing Fairway crested wheatgrass from the interim seed mix and eliminating the incorporation of alfalfa hay and surface straw. The Division would also suggest the following techniques be evaluated in future seeding activity: cover the seed by raking to increase shrub germination, employ wood-fiber

hydromulch, eliminate fertilizer, reduce mulch to 1 T/ac, and change the timing of seeding to late summer.

Findings:

The information provided does not meet the minimum requirements for Coal Processing Plants Not Located Within the Permit Area of a Mine. Prior to approval, provide the following information:

R645-301-141, [PWB] The Plate provided in Appendix U shows the major drainages and the existing ROW. It must also have topographic lines labeled, and must include the radial stacker and indicate radial stacker drop points and the extent of the coal pile at the time of sampling. The Plate in Appendix U must include all permit area roads (currently PR-1 through PR-10), so that the location of the coal fines accumulation points can be determined in reference to the operational structures.

R645-301-230 and -121.100, [PWB] Appendix N should include a copy of Lynn Kunzler's memo dated November 17, 1989 which indicates that the seed mix reported in Appendix N, Table 9 was not seeded, but was modified with approval. The mix that was applied to the spoil pile plots had no shrub seed and did not include *Stipa comata*, but did include *Elymeus cinereus* (Basin wildrye) and *Agropyron trachycaulum* (slender wheatgrass). •Section R645-301-224, p. 2-9 states that a second quantitative evaluation of fill slopes will occur in 2006. Please discuss the results and provide the location of the 2006 evaluation. •Appendix N should include the 1997 Topsoil Test plot evaluations conducted by Patrick Collins. If the Permittee can not locate their copy, an electronic copy was filed with the Division as 2003\Incoming\0001.pdf. • Section R645-301-224 of the application should state that the 1994 test plots were evaluated in 1997 and should provide a location for the results of the evaluation. Further the plan should state that the test plots were eliminated in 2000, when the surface of the new topsoil pile B was reseeded and the plan should provide the interim mix used in 2000 on the topsoil pile B.

R645-303-212 and R645-301-121.200, [PWB] The commitment provided in appendix U to monitor the coal fines monthly should indicate how monitoring information will be reported to the Division, in the Annual Report? •Does the volume stated on Plate 13 C and in Plate 13A for topsoil stockpile M include the existing volume of topsoil pile A? If so, is the volume of topsoil pile A counted twice in the mass balance table on Plate 13C?

R645-301-231.100, [PWB] To ensure that topsoil is protected from coal fines during the salvage operation, the application must state that coal fines greater than two inches deep will be removed during both phase 1 and 2 operations. The Applicant should evaluate the use of a scrapers rather than graders for this purpose. • As proposed on Plates 13A and B, the stockpiles have their steepest slopes to the west face, which is a very intense exposure to summer sun. The Permittee should make the stockpiles have a lesser slope on the west site and cover the west and south slope with brush after seeding. • The plan must state that pond embankments will be clearly marked as topsoil storage. App. S page 10 states that topsoil above the high water mark of the pond embankments will be seeded. • Since there will be little water accumulated in these oversized ponds, App. S., p. 10 must specify that the entire inslope and outslope of the topsoil embankments will be seeded (not just above the high water mark). • The interim mix described in Section R645-301-212 for seeding of the topsoil stockpiles and the drop zone should be revised to eliminate Fairway crested wheatgrass and the wheat grass species and shrub species that have been unsuccessful in previous trials. Instead, the interim mix should include native species found in the Gordon Creek vicinity that might be locally collected (such as *Ceratoides lanata*, winterfat, and *Artemisia nova*, black sagebrush, and *Bouteloua gracilis*, blue grama grass and *Stipa hymenoides*, Indican ricegrass). These suggestions are supported by Patrick Collins, July 1997 Evaluation of the Test Plots (2003\Incoming\0001.pdf). • Appendix S should clearly indicate that there will be no alfalfa hay incorporated or placed on the surface of the topsoil stockpiles. • Appendix S should indicate that after seeding topsoil stockpiles will be hand raked .

SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

Analysis:

Coal processing waste was used (along with subsoils) to create a foundation for the coal stockpiles (R645-301-212 p 2-2; R645-301-512.230 p 5-7). Appendix C, the 1982 Soil and Foundation Investigation conducted by Rollins, Brown and Gunnell, Inc., states on page 2 that in the vicinity of the truck dump and the coal pile there is between 9 and 12 feet of coal beneath the ground surface. Chapter 5 Section R645-301-512.230 p 5-8 states that 10,000 yd³ of refuse material has been used as foundation fill.

Refuse Piles

Approximately 44,500 yd³ of refuse are in the refuse pile (Plate 1 and R645-301-512.230, p 5-8). Refuse (bone) is stored on the west side of the railroad tracks (Plate 1). This refuse was sampled once in 1994 as described in Sec. R645-301-711.100. The leachate analysis results are found in the 1994 Annual Reports.

One sample of the waste was taken in 2007 for the purpose of the significant revision (Appendix O Supplement). Inter-Mountain Laboratories, Sheridan, Wyoming analyzed the sample which contained 0.39% total sulfur (requiring 12.2 tons/1000 tons calcium carbonate equivalent to be neutralized). The sample contained 116 tons CaCO₃/1000 tons. Hence, the sample indicates that the waste will not be acid forming.

Section 645-301-512.230 p. 5-7 discusses the use of coal mine waste as substitute fill during operations, as well as separate handling and final disposal of the coal mine waste under four feet of subsoil. Section R645-301-512.230 p 5-8 indicates that the expansion of the coal pad proposed by the significant revision will utilize more of this refuse as foundation material. Appendix S, p. 9 states that refuse may be used as backfill of pond D. As built will accurately state the amount of the total refuse volumes.

Findings:

The information provided meets the minimum requirements for Coal Processing Plants Not Located Within the Permit Area of a Mine. **The significant revision contains a commitment to report the volumes of waste used as foundation construction material and pond backfill during the coal pad expansion, see Section R645-301-512.230 p 5-8.**

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

General

Acid- and Toxic-Forming Materials and Underground Development Waste

Acid and Toxic Forming Materials sampling information is found on p. 7-5 in Sec. R645-301-711.100. The analysis of the 1994 leachate from coal and refuse by Commercial Testing and Engineering Co. is found in the 1994 Annual Report.

The analysis of the refuse material (soil) by Utah State University Soil Plant and Water Analysis Laboratory is included as Attachment 2 of Appendix J (Probable Hydrologic Consequences). These analyses indicate that there is 0.53% sulfur and 0.8 % CaCO₃ in the coal and 1.02% sulfur and 9.5% CaCO₃ in the boney. (The methods used were not disclosed and so the following calculations that are based on the relative concentrations of sulfur and carbonate may not accurately reflect the acid base accounting.) Based upon these 1988 reports, the Division calculates that more than 16 Tons of calcium carbonate/1000 tons coal would required to neutralize the total sulfur in the coal. More than 32 tons CaCO₃/1000 tons of boney would be required to neutralize the sulfur in the boney. The a base potential of Standard Laboratories, Inc., analyzed a separate sample in 1985 and reported 0.04% pyritic sulfur (found in App. J). Based upon the pyretic sulfur content, only 1.25 tons CaCO₃ equivalents/1000 tons waste would be required to neutralize the pyretic sulfur in the waste.

Two samples of the refuse material (soil) taken in 2004 were sent to Brigham Young University Soil and Plant Analysis Laboratory is located in Appendix D. These samples indicate there is adequate carbonate in the material to neutralize the potential acidity. The samples also report high values for selenium, this fact should be noted in the selection of vegetation. These sample analyses could not be located in the May 2006 reformatted MRP.

One sample of the waste was taken in 2007 for the purpose of the significant revision (Appendix O Supplement). Inter-Mountain Laboratories, Sheridan, Wyoming analyzed the sample which contained 0.39% total sulfur (requiring 12.2 tons/1000 tons calcium carbonate equivalent to be neutralized). The sample contained 116 tons CaCO₃/1000 tons. Hence, the sample indicates that the waste will not be acid forming.

Section 645-301-512.230 p. 5-7 discusses the use of coal mine waste as substitute fill during operations, as well as separate handling and final disposal of the coal mine waste under four feet of subsoil.

Ponds, Impoundments, Banks, Dams, and Embankments

Topsoil and substitute topsoil will be stored "within" the embankment of pond G-1 in Phase I (App. S, p. 4 and Plate 3d-a) and ponds G, H, I in Phase 2.

Findings:

The information provided meets the minimum requirements for Coal Processing Plants Not Located Within the Permit Area of a Mine.

SUPPORT FACILITIES AND UTILITY INSTALLATIONS

Regulatory Reference: 30 CFR Sec. 784.30, 817.180, 817.181; R645-301-526.

Analysis:

The Division Order written in 2004, DO_2031, describes the issue of fugitive dust control and its effect on plants and wildlife. This significant revision calls for a 3.5 acre expansion of the coal stockpile and a new 6.5 acre storage pad. Wildcat loadout has already received approval from the DAQ for the larger 20 acres coal stockpile and for increased throughput up to 5.5 MT annually. A copy of the most recent Air Quality approval order DAQE AN113007-04 is included in Appendix B, Part A-13. The Notice of Intent and approvals were made prior to the closure of the Crandall Canyon Mine in 2007 and the Centennial mine in 2008. The volume of storage would not be required for coal mined from the West Ridge Mine.

Section R645-301-423.200 refers to Appendix B for the fugitive dust control plan. The only dust control plan noted in Appendix B is the Air Quality Order described above, which relies upon the application of moisture to stockpiles and open disturbed areas as well as a limited haul road length and vehicle speed to control fugitive dust. The fugitive dust control must be applied when monitoring indicates greater than 20% opacity. Monitoring is the responsibility of the Permittee.

Specific measures to be taken in accordance with R645-301-526.220 *et seq* to reduce wind blown deposition of coal fines is the subject of the Division Order written in December 2004 (previous Tasks 2182 and 2966). The MRP indicates that wind fences are used to control of fugitive dust near pond B (R645-301-423.200, item #15). The MRP indicates that vacuuming will be used to clear undisturbed soils of accumulations of coal fines (Sec. R645-301-432.200, p. 4-10 and R645-301-212, p. 2-4). Vacuuming has been found to be very disruptive to undisturbed soils and is in itself a disturbance.

In phase 2 of the operation plan, diversion ditches are proposed along the eastern edge of the coal fine drop zone, to direct the water transport of the coal fines to a collection pond (App. S, p. 2 and p. 9). A road will be established along this ditch for access, limited to ditch maintenance. (Road should be shown on Plate 1A.) After topsoil removal, the 4 acre drop zone (150 ft. X 1,200 ft.) will be roughened and seeded with an interim mix. The Permittee has instigated an annual monitoring plan to monitor the wind blown coal fine deposition on adjacent undisturbed soils (Appendix U). This commitment should be added to the annual reporting requirements.

Primary roads have been identified on Plate 1. Increasingly, haul trucks have been using road PR-5 that runs along the eastern edge of the coal stockpile, greatly exceeding the 0.21 mile length of haul road identified in the 2004 Air Quality Approval Order (DAQE-AN0113007-04). During Phase 1, "the truck haul portion" of this road (illustrated on Plate 1A-a) and the ramp leading to the pad will be graveled and treated with magnesium chloride (App. S, p. 4). To address the problem of coal fines identified in DO-231, the entire length of PR-5 from the loadout tower to its intersection with PR-1 should be graveled and treated with magnesium chloride.

Findings:

The Permittee has instigated an annual monitoring plan to monitor the wind blown coal fine deposition on adjacent undisturbed soils (Appendix U). **This commitment should be added to the annual reporting requirements.** In addition, the 2008 expansion plan should indicate the following, in accordance with:

R645-303-212 and 301-527.230, [PWB] To best address the problem of coal fines identified in DO-231, the entire length of PR-5 from the loadout tower to its intersection with PR-1 should be graveled and treated with magnesium chloride in Phase 1 of the operation plan. • Plate 1A should show the location of the limited access road to be established along the drop zone perimeter ditch.

RECLAMATION PLAN

GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR Sec. 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

Analysis:

Reclamation techniques are being investigated at the site. Substitute topsoil plots have been in existence since 1989. (Appendix N). In 1997 by Patrick Collins of Mt. Nebo Scientific evaluated the topsoil test plots installed on Topsoil Pile B in 1994 (see discussion under Operation Plan Topsoil and Subsoil).

Findings:

The information provided meets the minimum requirements for Coal Processing Plants Not Located Within the Permit Area of a Mine. The Division expects to continue refining the reclamation plan for this site in cooperation with the Permittee.

BACKFILLING AND GRADING

Regulatory Reference: 30 CFR Sec. 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

Analysis:

General

During Phase 2 operations, Pond D will be backfilled with material excavated from enlarging ponds D, F, and I (App. S, pp. 9 and 10).

The plan calls for reclamation in one step, eliminating a return to the site for grading of sediment ponds. Final reclamation contours and locations of cut and fill are shown on Plate 9. The cut/fill legend on Plate 9 appears to be the reverse what is intended, since the area of cut to re-establish the main drainage through the site is shown as a fill. This legend must be corrected. Plate 9 does not show the permanent empoundments west of the railroad tracks which are shown on Plate 1A. Plate 9 does not show cut/fill proportions for the new sediment ponds, including the over excavated pond I. In addition, Plate 9 shows the final result, but does not reflect the details of the reclamation process. Plate 9 does not illustrate areas of where coal mine refuse will be cut from the coal stockpile pad prior to being filled and graded. Areas of coal mine waste to be cut prior to final grading should be outlined on a map. The scale of Plate 9 is such that the final grading of the refuse pile can not be determined. Plate 9 should indicate a four feet of cover over the regraded coal mine waste pile. An evaluation Plate 10, Reclamation profiles, has been removed and there is no cross-section provided for the reclamation.

Final reclamation will involve grading 82,117 yd³ of material (Section R645-301-240, p 2-18). Section R645-301-512.230 p. 5-8 states that all refuse used as construction fill will be removed and returned to the waste disposal site. Section R645-301-512.230 also describes the burial of all coal mine waste underneath four feet of soil.

The fill will be compacted (Sec. R645-301-212, p. 2-6), but the last few lifts will be left loose for a depth of four feet to eliminate the need for ripping (Sec. R645-301-240, p. 2-21).

Findings:

The information provided does not meet the backfilling and grading requirements for Coal Processing Plants Not Located Within the Permit Area of a Mine. Prior to approval, in accordance with:

R645-301-553, [PWB] The cut/fill legend on Plate 9 appears to be the reverse what is intended, since the area of cut to re-establish the main drainage through the site is shown as a fill. This legend must be corrected. •Cut/fill evaluations (coloration and calculation) shown on Plate 9 should be extended to include the sediment ponds east of the drop zone area. • Plate 9 does not show the permanent empoundments west of the railroad tracks which are shown on Plate 1A. •Plate 9 does not illustrate areas of where coal mine refuse will be cut from the coal stockpile pad prior to being filled and graded. Areas of coal mine waste to be cut prior to final grading should be outlined on a map. •The scale of Plate 9 is such that the final grading of the refuse pile can not be determined. The scale of Plate 9 should match that of Plate 1A and Plate 9 should indicate a four feet of cover over the regraded coal mine waste pile. •Plate 9 does not show existing contours in the disturbed area. •Coloration on Plate 9 is so similar that the reader cannot tell the difference between 7, 8, 9, 10, 11, or 12 feet of cut/fill. The Plate should be revised to use more colors or the cut fill could be shown with a series of cross sections, or both.

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-240.

Analysis:

Redistribution

The reclamation plan is described in Sections R645-301-240 (p. 2-13) and R645-301-542.400. Reclamation costs are provided in Appendix B. Within the 270 acre permit area,

87.19 acres will be disturbed. Of the disturbed acres, 36.1 acres were previously described as pre-SMCRA (Section 4, pg 3-4, incorporated May 17, 2005), although no differentiation was made in the expansion application. The reclamation plan describes replacement of six inches of topsoil over 75.33 acres which is the disturbed area less the topsoil stockpile acreage (Section R645-301-212).

Section R645-301-240 p. 2-23 indicates stockpiled topsoil will be sampled for fertility and amended as recommended by the regulatory authority. R645-301-243 indicates soil nutrients will be applied as needed.

A statement in Section R645-301-240 that mulching and seeding will occur over a 61 acre area should be corrected to read that mulching and seeding will occur over a 81 acre area. A seed mix is provided in Section R645-301-240, which is based upon data observed from the new reference area (App. I Supplement), on the south boundary of the site. The headings in the seed mix table do not make sense. There should be a column for pure live seed/lb and lbs/acre. Prior to reclamation, the final seed mix should be evaluated for correlation with successful species establishment on the spoil and topsoil test plots and topsoil stockpiles.

Topsoil placement will occur in the Fall (pg 2-20). Topsoil will be replaced using dump trucks and graders (pg 2-20). As mentioned in Sec. R645-301-240 p. 2-19, a loose application of fill should eliminate the requirement for ripping (scarification) of the graded fill prior to topsoil placement. The topsoiled surface will be roughened with gouging. Seed will be applied to all 61 disturbed acres, as shown on Plate 9 (Section R645-301-240, p. 2-22).

Findings:

The information provided does not meet the minimum topsoil and subsoil reclamation requirements for Coal Processing Plants Not Located Within the Permit Area of a Mine.

R645-301-240 and -121.100, [PWB] With the expansion plans, a statement in Section R645-301-240 that mulching and seeding will occur over a 61 acre area should be corrected to read that mulching and seeding will occur over an 81 acre area. • The headings in the final seed mix table provided in Section R645-301-240 should be checked for accuracy. • A commitment in the plan should establish that prior to reclamation, the final seed mix will be re-evaluated for correlation with successful species establishment on the spoil and topsoil test plots and topsoil stockpiles.

STABILIZATION OF SURFACE AREAS

Analysis:

Reclaimed areas will be gouged as described in Sec. R645-301-240 p. 2-21, hydroseeded and hydromulched. Gouges are described as 18 in. deep x 2 - 3 ft. wide, spaced 6 – 10 feet apart. Existing Plate 10 illustrates the final slope as 20h: 1v (about 4%). On such a gentle slope, the gouges will serve less to control erosion and more to provide for water collection. The problems with creating gouges in this manner are that the gouges will be deeper than replaced topsoil and the topsoil that is removed from the gouge becomes a mound adjacent to the gouge, with steep slopes that will not retain seed, and the gouge may expose compacted fill soil.

Gouging will be used during operations to promote vegetation growth in the drop zone and to collect coal fines. This method could be alternated with ripping of the surface to a depth of 12 inches and both measures could be qualitatively evaluated for success at final reclamation. The Permittee could commit to using the most effective roughening technique (either ripping or gouging at final reclamation).

All seeded areas (illustrated on Plate 9) will be treated with hydromulch (1 Ton/ac) and tackifier to stabilize the regraded soil (Sec.R645-301-240, p. 2-23).

Riprap may be used for soil stability, presumably along drainages (Sec. R645-301-242.320).

Repair of erosion is described in Sec. R645-301-212, p 2-7.

Findings:

The information provided meets the minimum reclamation surface area stabilization requirements for Coal Processing Plants Not Located Within the Permit Area of a Mine.

R645-301-244, [PWB] Gouges are described as 18 in. deep x 2 - 3 ft. wide, spaced 6 – 10 feet apart (Section R645-301-240). On such a gentle slope, the gouges will serve less to control erosion and more to provide for water collection. The problems with creating gouges in this manner are that the gouges will be deeper than replaced topsoil and the topsoil that is removed from the gouge becomes a mound adjacent to the gouge, with steep slopes that will not retain seed, and the gouge may expose compacted fill soil. Gouging will be used during operations to promote vegetation growth in the drop zone and to collect coal fines. This method could be alternated with ripping of the surface to a depth of 12 inches and both measures could be qualitatively evaluated for success at final reclamation. The Permittee could commit to using the most effective roughening technique (either ripping or gouging at final reclamation).

REQUIREMENTS FOR PERMITS FOR SPECIAL CATEGORIES OF MINING

COAL PREPARATION PLANTS NOT LOCATED WITHIN THE PERMIT AREA OF A MINE

Regulatory Reference: 30 CFR Sec. 785.21, 827; R645-302-260, et seq.

Analysis:

This site falls under the requirements of the Utah Rules for Coal Processing Plants Not Located Within the Permit Area of a Mine, R645-302-260. The Significant Revision changes the permit area boundary.

Findings:

Improvements to the application are written in the form of deficiencies under each Rule cited in this document.

RECOMMENDATIONS:

The expansion places coal mining and reclamation activity within 300 feet of occupied dwellings within 100 feet of public roads. In accordance with R645-103-234.200, the Division is required to provide an opportunity for a public hearing. There was no mention of activity within 100 feet of a public road within the newspaper notice run in May and June 2008.

The application should not be approved as written. For the purpose of settling the Division Order, only Phase 1 of the application solves the immediate problem and a response describing Phase I only should be requested within 30 days. Implementation of Phase 1 should be encouraged. Phase 2 of the expansion can be returned as a separate application at the Permittee's leisure.