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Technical Analysis and Findings

Utah Coal Regulatory Program

September 2, 2016

PID: C0250005
TaskID: 5261
Mine Name: COAL HOLLOW
Title: PIT 10 BORROW AREA (N21164)

General Contents

Right of Entry

Analysis:

Analysis:
The borrow area is within the existing permit boundary, in T 39 S, R 5 W, Section 30, on surface property owned by C.Burton Pugh. The right of entry information meets the requirements of R645-301-114, Right of Entry, because although the initial 10 year lease term expired in 2014, Alton Coal Development interpretes the terms of the lease to mean that the lease renewal does not require additional documentation, rather the extension is inherent to the existing lease for the life of mine (personal correspondence from Bennett Bayer, sent to 2016 Incoming file July 29, 2016). Mr. Bayer referred to Sec. 2.03 and Sec 8.04 of the lease as allowing continued presence on Burton Pugh's land within the existing permit boundary (Confidential File Incoming 06162006).

The borrow area is within the existing permit boundary, in T 39 S, R 5 W, Section 30. The borrow area adds 30.5 acres to the Phase 3 disturbed area (Chap 1, p. 19). The borrow area surface is owned by C. Burton Pugh (Chap 1, p. 7). Surface and Coal ownership are shown on Dwg 1-3 and 1-4, respectively. Coal ownership in the borrow area is further divided between C. Burton Pugh, Roger M. Pugh, and Mark and Margaret Moyers (Chap 1, p. 8). For specific percentages of coal ownership, refer to the 2004 lease agreement (Confidential File Incoming 06162006).

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Reporting of Technical Data

Analysis:

Analysis:
This amendment meets the requirements of R645-301-130, because it provides information on soils of the proposed borrow area for reclamation of Pit 10, the underground mine. Soils information for the borrow area is provided in Appendix 2-4. The report, dated August 17, 2016, was produced by Robert Long, Long Resource Consultants, Inc.

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Environmental Resource Information

Soils Resource Information

Analysis:

Analysis:
The application meets the requirements of R645-301-222, because the borrow area has been adequately mapped.
The area to be disturbed for reclamation of Pit 10, the underground mine, is to the NorthEast and SouthWest of Pond 3 in Section 30, as shown on Figure 2.4-1, Appendix 2-4. Six soil map units are outlined on Figure 2.4-1 and the limitations for each of the twelve component soil Families are detailed in Table 2-4.2.

Appendix 2-4 p. 7 states that further investigation of buried subsoils will be undertaken to determine their depth below the remaining excess spoil pile.

Deficiencies Details:

R645-301-121.200, There is a typographical error on the date listed for establishing Map Unit L as written in Appendix 2-4, page 4 New Soil Map Unit for Pit 10 Borrow Area.

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Operation Plan

Topsoil and Subsoil

Analysis:

Analysis:
The application does not meet the requirements of R645-301-233, because the material balance described in Appendix 2-2 relies on the salvage of soil that is rated poor based on the pH and carbonate content. Material rated ""poor"" as described in Appendix 2-4 Tables 2-4.8 and Table 2-4.9 is not suitable as substitute subsoil and must be amended prior to use. And because the material balance described in Appendix 2-2 relies on less subsoil than is described as available in App. 2-4, Table 2-4.14.

Drawing 2-2 shows the location and describes anticipated size of the topsoil and subsoil stockpiles using the fair to poor material described in Appendix 2-4.

Soil will be salvaged from the borrow area to a depth of six inches and stockpiled as topsoil for reclamation of Pit 10/UG mine.

During mining operations in the borrow area, new topsoil pile #6 will hold 15,043 CY of soil from Map units A1, A3 and 10 (Figure 2-4.1 and Table 2-4.13, App. 2-4.) During mining operations, 91,695 CY of subsoil will be salvaged from the same map units to be redistributed over 36.2 acres to a depth of 1.5 feet (App. 2-4, p. 12). The area of redistribution is shown on Dwg 3-7. This subsoil will likely be temporarily stockpiled in subsoil stockpile #4 shown on Dwg 2-2 while mining occurs in the borrow area and then be redistributed, but this is not made clear in the operations plan in Chapter 2.

When the entire borrow area is utilized at final reclamation, new topsoil pile #6 will hold 73,400 CY and will be 10 ft deep over 4.4 acres (Dwg 2-2 and Table 2-4.14). At final reclamation, subsoil will be salvaged to a maximum depth of 84 inches (7 feet) . This will include material that is rated poor due to alkaline pH and high carbonate content. Subsoil pile #4 will be constructed to hold 374,600 CY and will be 30 ft deep on the average. Subsoil pile #4 will cover 7.8 acres.

The appliction does not meet the requirements of R645-301-234, because Drawing 2-2 states that thes stockpiles will be in place for 6 - 12 months, and Section 244.100 states that stockpiles in place for less than one year will not be seeded. R645-301-234.230 requires that all stockpiles are seeded. Therefore the plan must clearly state that topsoil pile 6 and subsoil pile 4 will be seeded to control erosion in accordance with R645-301-234.230.

Deficiencies Details:

R645-301-233,
1) The total volume of subsoil available from the borrow area is given as 348,516 CY (Appendix 2-4, Table 2-4.14). The total subsoil volume actually sums to 358,516 CY. Table 2-4.14 should be corrected accordingly.
2) The volume of borrow area subsoil in the materials balance table is listed as 374,627 CY (App. 2-2). Since there is 16,111 CY less subsoil available than described in the materials balance, please clarify the source of the materials balance figures and ensure that there is a source for the adequate subsoil for reclamation.
3)The volume of topsoil to be stockpiled in the materials balance table of App. 2-2 (73,400 CY) differs from the volume available for salvage (88,398 CY) stated on Table 2-4.14. This is a surplus of almost 20,000 CY available. Please adjust the

topsoil stockpile volume accordingly.
4) Describe a plan for separately stockpiling and amending poor quality subsoil to ensure suitability prior to use in final reclamation.

R645-301-R645-301-234.230, The plan must clearly state that topsoil pile #6 and subsoil pile #4 will be seeded to control erosion in accordance with R645-301-234.230.

R645-301-231.100, Please clarify in the operations plan how the subsoil will be handled prior to its redistribution over the interim reclamation area.

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Reclamation Plan

Topsoil and Subsoil

Analysis:

Analysis:
The plan meets the requirements of R645-301-241, because the Topsoil Balance Sheet and Figure 1 in Appendix 2-2 outline the locations for topsoil and subsoil placement. However, there are descrepencies with the numbers provided in Appendix 2-2 and Appendix 2-4, see deficiencies under Topsoil and Subsoil Operations Plan. In comparing volumes between App. 2-2 and 2-4 it appears that there is an excess of approximately 20K CY of suitable topsoil that could be used at greater depths in some locations over the surface of the borrow area. This would allow variation in rooting depth and reduce the volume of subsoil required to achieve the four foot cover depth, eliminating the need for some of the ""poor"" quality subsoil material.

Figure 1 outlines the locations for subsoil and topsoil replacement in the south lease area as follows: 62 acres of the borrow area will require topsoil and subsoil replacement; 22.4 acres of Pit 10 require subsoil; and 24.9 acres of Phase 1 bond location require topsoil (but not subsoil); 4.1 acres of pond 3 and the 97.6 acres of remaining facilities (including Pit 10) require topsoil only. The plan must clearly show on Figure 1 in Appendix 2-2 that Pit 10 requires both topsoil AND subsoil cover over 22.4 acres.

In sum (per Figure 1):
126.6 acres require topsoil only at final reclamation;
62.0 acres require (subsoil and) topsoil.
188.6 acres TOTAL requiring TOPSOIL @ 0.67 feet = 203,864 CY

22.4 acres require subsoil only;
62 acres require subsoil (and topsoil)
88.4 acres TOTAL requiring SUBSOIL @ 3.3 feet = 470, 641 CY

Appendix 2-2 Topsoil and subsoil Balance Sheet dated 8/16/2016 provides an accounting of the existing topsoil storage in stockpiles #1 and #2 (162,310 CY) and the proposed topsoil stockpile #6 (73,446 CY). Topsoil #6 topsoil stockpile volume includes 59,403 CY of "cultivated" topsoil as described in Appendix 2-4, p. 13. In total there will be 235,756 CY in topsoil storage in these three piles.

The balance sheet states that there is 110,408 CY in subsoil stockpiles #1 and #2 and that there will be 374,627 CY in proposed subsoil stockpile #4. The volume in proposed subsoil stockpile #4 includes 0.5 feet salvaged from 36.2 acres at final reclamation (Appendix 2-4, p. 12.) The plan provides adequate topsoil and subsoil coverage.

The locations of these stockpiles is shown on Dwg 2-2.

Deficiencies Details:

Deficiency:
R645-301-122, Section 234.230(c) refers to Drawing 2-4 which could not be found in the application.

R645-301-233.100, Since there is a surplus of topsoil available, use of greater depths of topsoil in the four foot cover should

be described at some locations in the borrow area to eliminate the use of "poor" quality subsoil.

R645-301-241 and R645-301-121.200, The plan must clearly show on Figure 1 in Appendix 2-2 that Pit 10 requires both topsoil AND subsoil cover over 22.4 acres.

R645-301-234 and R645-301-121.200, It will not be possible to livehaul the "cultivated soil", therefore the plan must describe the placement of the "cultivated soils" into topsoil stockpile #6 and subsoil stockpile #4 at final reclamation.

R645-301-231.100, The plan must describe the operational details of salvage of the interim topsoil and subsoil from 36.2 acres at final reclamation.

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Stabilization of Surface Areas

Analysis:

Analysis:
The application meets the requirements of R645-301-244, because Section 232.720 states that soils of the borrow area and Excess spoil pile that are disturbed during operations will amended with an organic mulch and will be seeded with the interim mix. Details of the mulch and application rate were not included in the narrative, but mulch application at final reclamation is described in Section 244.200.

Section 244.100 of the plan states that temporary piles in place for less than a year will be treated with a tackifier, but will not be seeded. This statement must be removed from the plan, because all topsoil and subsoil stockpiles must be stabilized with vegetation in accordance with R645-301-234.230.

Deficiencies Details:

R645-301-121.200, In Section 232.720, please specify the details of the proposed mulch type and application rate being suggested or refer to Section 244.200 for further information.

R645-301-234.230, Section 244.100 of the plan states that temporary piles in place for less than a year will be treated with a tackifier, but will not be seeded. This statement must be removed from the plan, because all topsoil and subsoil stockpiles must be stabilized with vegetation in accordance with R645-301-234.230.

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