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Technical Analysis and Findings
Utah Coal Regulatory Program

PID: C0070033
TaskID: 4521
Mine Name: WILDCAT LOADOUT
Title: RESPONSE TO NOV #10132

General Contents

Legal Description

Analysis:

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Deficiencies Details:

R645-301-121.100, The disturbed area is described in MRP Section R645-301-212 as 81.79 acres. This figure should be increased accordingly.

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Environmental Resource Information

General

Analysis:

The information provided in the abatement for Nov # 10132 deals primarily with the removal of coal fines and some reseeded that has been reviewed and commented on by the Divisions solis scientist as it deals with the protection of topsoil from contamination and wind and water erosion. Having said that there will be no further review of the abatement plans unless additional information that falls under the purview of the biology regulations is submitted.

jhelfric

Soils Resource Information

Analysis:

The application describes the addition of 6.83 acres to the disturbed area boundary as shown on Plate 1.. This area was included in a baseline soil survey conducted by James Nyenhuis for Mt. Nebo Scientific in 2003, see Appendix D. The soils in this location are predominantly Hernandez loam, 1 - 6% slopes, a prime farmland soil when irrigated. Sample locations WC 6 and WC 10. Laboratory analysis of these samples indicates that soil pH, EC and SAR increase with depth, becoming undesirable after 24 inches. The 2003 soil survey substantiates a twenty four inch soil salvage depth from this 6.83 acre

area, should an expansion of operations occur.

This 6.83 acre expansion area has not had topsoil removed, but the area was vacuumed in 2010, mulched and seeded. On January 24, 2014 during a Division meeting at the site, the coal fines were found to be greater than six inches in much of this 6.83 acre area. Directly south, over a small ridge, a 12 acre area that had been mechanically cleared coal fines, topsoil removed, then mulched and seeded in 2010 was only lightly covered with coal fines and had good vegetation growth. Thus, the impact of coal fines on the soil appears to be negligible if the depth of the fines does not smother the growing plants.

Therefore, on January 24, 2014, the Division agreed that an appropriate response to NOV 10132, given the lack of immediate need for expansion into the area, was to mechanically clear coal fines from the 6.83 acre area and protect the topsoil 'in situ.' The re-exposed soil was seeded with blue grama grass, desert globemallow, desert marigold, sand dropseed, slender wheatgrass, western wheatgrass and purple three awn (see Wildcat Incoming folder 3/11/2014).

Deficiencies Details:

R645-301-121.200, Section R645-301-200 should state the following:

1) The Division's soil scientist, Priscilla Burton, suggested and Division management concurred that protection of the topsoil resource 'in situ' was preferable to salvage and storage of topsoil, based on a lack of immediate need for expansion, limited activity foreseen at the site, and the historic difficulty in revegetation of topsoil stockpiles in this climate. 2) Section R645-301-200 should refer the reader to Appendix D of the MRP for the 2003 soil survey that included the 6.83 acre area.

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Operation Plan

Topsoil and Subsoil

Analysis:

The disturbed area is described as 75.67 acres in the MRP Section 645-301-212, p. 2-5 and R6445-301-242, p. 2-25). This is the 81 acres of disturbed less the acreage covered by topsoil storage. Since this proposal increases the disturbed area for an in situ topsoil storage of 6.83 acres there will be no change to this statement.

Plate 13 illustrates the existing topsoil storage piles (certified by Dan Guy, a Professional Engineer). Plate 13 indicates that there is currently of 17,000 yd³ stockpiled for reclamation. The new location of in-situ topsoil storage and its approximate volume (18 inches of topsoil and substitute topsoil) should be referenced on a map as well.

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 75.67 acres (Sec. R645-301-212, p. 2-5 and R645-301-242, p. 2-25). The soil east of PR5 was identified as suitable to a depth of twenty four inches during previous expansion amendments (Task 2966). Salvage and protection of two feet of suitable topsoil and substitute topsoil is anticipated should an expansion occur east of PR-5. This will alleviate the stockpile deficit and avoid the disturbance of additional area for cover material (R645-301-240).

In 2010, six inches of topsoil was removed from the 7.25 acres added to the disturbed area for the construction of Pond G. The additional topsoil was added to topsoil stockpile A. However, Pond G was never constructed.

A similar scenario was considered for the additional 6.83 acres, but as there is no pending operational use for the area, in place protection of the topsoil resource was preferred.. The area was mechanically cleaned of coal fines and reseeded in 2014. Appendix P states that the area will be regularly monitored for coal fine accumulations, and that the wind fence will be extended 600 ft. along PR-5, but does not describe the protection measures for the in place topsoil, such as a topsoil sign, and removal of coal fine accumulations at depth of four inches. During clean up of coal fines from the 6.83 area, it was apparent that a major source of fines was the coal stockpile pad berm, which is drifting across PR 5 like a sand dune. Measures to stabilize this berm are requested.

Deficiencies Details:

R645-301-521.165, Plate 13 indicates that there is currently of 17,000 yd³ stockpiled for reclamation. The new location of in-situ topsoil storage and the approximate volume (18 inches of topsoil and substitute topsoil over 6 acres) should also be

referenced on a map.

R645-301-231.400, Appendix P describes clearing of coal fines in response to NOV 10132, but should also include a map showing the 2014 mechanical treatment and seeding area . 2) Section R645-301-212, p. 2-4 should describe a plan for ongoing mechanical treatment and seeding of the 6.83 acre area should coal fines accumulate to four inch depths again. 3) A topsoil storage sign should be installed in the 6.83 acre area. 3) During clean up of coal fines from the 6.83 area, it was apparent that a major source of fines was the coal stockpile pad berm, which is drifting across PR 5 like a sand dune. Measures to stabilize this berm are requested.

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Hydrologic Exemptions

Analysis:

In response to NOV 10132, IPA submitted a preliminary amendment to convert previously undisturbed areas within the permit boundary to disturbed area. This is the first step to begin controlling coal fines from leaving the permit boundary. An additional amendment will be submitted to extend the existing permit boundary.

The permittee proposes to convert 6.83 acres of undisturbed area to disturbed area. Currently a portion of the area being proposed as disturbed, is contained within the existing ASCA-3 as shown on plate 15 of the MRP. The area north of ASCA-3 is not currently designated as an ASCA area even though runoff in this area may be currently treated with waddles and straw bales.

Deficiencies Details:

R645-301-700-742.240 The areas proposed as "disturbed area" must be treated to prevent sediment from leaving the permit boundary. If runoff from this area is not collected in a pond it must be designated as an "exemption" under the above sited regulation. This can include being treated using alternative sediment control measures (ASCA). The northern area of the proposed disturbed area is not currently designated as an ASCA. If a new ASCA is created, please update Appendix R section 2.11 and plate 15 of the approved MRP.

adaniels

Reclamation Plan

Topsoil and Subsoil

Analysis:

The reclamation plan describes the replacement of six inches of topsoil over 75.33 acres which is the disturbed area less the topsoil stockpile acreage (R645-301-212, R645-301-242). As the 6.83 additional acreage are in situ storage, soil recovery will leave enough in place suitable soil for topsoil and no replacement will be needed.

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Stabilization of Surface Areas

Analysis:

The topsoil soiled surface will be roughened with gouging (Section R645-301-240, p. 2-19 and 2-21). 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 and concentrate salts.

In 2010, the 7.53 acre area shown as mechanically treated (Figure 2 of App. P) was graded on the contour to crimp in mulch and then drill seeded. Grading on a contour while crimping mulch followed by drill seeding of the 7.53 acres in 2010 tested the hypothesis that grading on the contour may more successful at this fairly level site than gouging. The final reclamation plan should describe grading on a contour

A statement in Section R645-301-240 that mulching and seeding will occur over a 81 acre area should be corrected to read that mulching and seeding will occur over a 88 acre area.

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).

Deficiencies Details:

R645-301-121.100, A statement in Section R645-301-240 that mulching and seeding will occur over a 81 acre area should be corrected to read that mulching and seeding will occur over a 88 acre area.

R645-301-242.110, The grading on a contour while crimping mulch followed by drill seeding of the 7.53 acres in 2010 tested the hypothesis that grading on the contour may more successful at this fairly level site than gouging. This approach was successful as noted in the January 24, 2014 Meeting Notes. Therefore, a change to the reclamation plan on pages 2-19 and 2-21 is requested to eliminate surface roughening in favor of grading on the contour.

R645-301-244.100, The 2010 seeding of the 7.53 acres also tested the value of using Triticale as a cover crop. This seeding was a failure at this low elevation which has inhospitable temperatures and lack of water. Therefore, the interim mix (p. 2-23) should be revised to remove Triticale from the mix. In addition, the interim mix presently lists only pure live seed per square foot, but should have a heading for pure live seed per pound per acre (PLS/lb/acre). A look at the headings in the Final mix table on page 2-22 is also suggested.

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Bonding Determination of Amount

Analysis:

Analysis:

Determination of Bond Amount

The reclamation cost estimate for the Wildcat Loadout was re-evaluated in the following manner:

- 1) The cost estimate for the 2011 Mid-Term Permit Review was used as the basis for the addition of the 6.83 acres (Task ID # 3931).
- 2) Three items were removed from the demolition cost estimate. These were the West side radial stacker, the West side reclaim conveyor, and the West side crusher. The amount reduced in the demo cost total was \$ 12,048.
- 3) A re-vegetation cost for the 6.83 acres was calculated at \$ 24,147. This included costs for the required seed mix, straw mulch, hydroseeding equipment and labor, and a final removal of coal fines from the area prior to the re-seeding activities. Also, discing of the straw mulch into the soil will be done after seeding and mulching activities are completed
- 4) The revised total direct cost estimate and the corresponding indirect cost were escalated to 2014 (3 years) and then re-escalated using the 2014 escalation rate for 2 years until 2016 which is the date of the next Mid-term Permit Review. That escalated amount is \$ 1,088,724.
- 5) The posted bond amount is \$ 1,144,000, which is 4.8 % greater that the 2016 reclamation cost estimate. No additional bond need to be posted at this time.

Findings:

The revised reclamation cost estimate through to 2016 is adequately covered by the current amount of bond posted by the Intermountain Power Agency (\$ 1,144,000).

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