

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

April 1, 2005

TO: Internal File

THRU: Pamela Grubuagh-Littig, Permit Supervisor

THRU: Dave Darby, Team Lead

FROM: Wayne H. Western, Environmental Scientist III, engineering and bonding

RE: Mathis/Summit Creek State LBA Boundary Change, Andalex Resources Inc., Centennial Project, Permit C/007/0019 and Task #2119

SUMMARY:

On January 14, 2005, the Division received amendment 2119 (Mathis/Summit Creek State LBA boundary change) for the Centennial Mine. The Permittee proposed to add the Mathis tract (380 acres), State L. B. A. (80 acres), and Federal Summit Creek Lease Area (630.21 acres), totaling 1090.21 acres. The Permittee will only conduct underground mining in those areas. This memo dealt with engineering and bonding issues.

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TECHNICAL ANALYSIS:

GENERAL CONTENTS

ENVIRONMENTAL RESOURCE INFORMATION

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

PERMIT AREA

Regulatory Requirements: 30 CFR 783.12; R645-301-521.

Analysis:

The Permittee showed permit area and adjacent lands on Maps 1-1. The Permittee must include a legal description of the permit area with subdivisions for federal, State and fee acreages in the text of the MRP. The Division needs that information.

Findings

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Before approval, the Permittee must provide the following in accordance with:

R645-301-521.190-WHW, The Permittee must include a legal description of the permit area with subdivisions for federal, state and fee acreages in the text of the MRP. The description of the leases in Section R645-301-114 of the MRP is not adequate, because some of the leased area may not be part of the permit area. The Division needs that information for administrative reasons.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Analysis:

Affected Area Boundary Maps

The permit area for the West Ridge Mine was show on Plate 1-1, Location Map.

Existing Surface Configuration Maps

Plate 5-1 showed the premining disturbance area.

Map 1-1, Location Map showed the surface topography for the entire permit area. The map was at a scale of 1:24,000, which was adequate to show the premining surface topography for areas with no surface disturbance.

Mine Workings Maps

There were four mineable seams in the Centennial Project:

- The Pinnacle Mine, Gilson Coal Seam, Plate 28.
- The Aberdeen Mine, Aberdeen Coal Seam, Plate 29.
- The Apex Mine, Lower Sunnyside Coal Seam, Plate 26
- The Centennial Seam is accessed thought the Pinnacle Mine Plate 27.

Permit Area Boundary Maps

The Permittee must update Plate 1 and all other maps that showed the permit area boundaries such as Plate 1-A, Plate 2 and Plate 3.

Surface and Subsurface Ownership Maps

Plate 2, Centennial Project Surface Ownership Map and Plate 3, Centennial Mineral Ownership Map showed the surface and subsurface ownerships.

Findings:

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Before approval, the Permittee must provide the following in accordance with:

R645-301-521.141 and R645-301-521.190-WHW, The Permittee must show the new permit and affected area boundaries. The Permittee must update the permit

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boundaries on all applicable maps, such as, but not limited to, Plate 1A, Plate 2 and Plate 3.

OPERATION PLAN

COAL RECOVERY

Regulatory Reference: 30 CFR 817.59; R645-301-522.

Analysis:

The Division received a letter from the BLM on August 12, 2005 about the resource recovery and protection plan (R2P2.) The BLM analyzed the coal resource in the area and determined that the Permittee's mine plan would maximize coal recovery. The Division relied upon the information in the R2P2 to make findings that the Permittee would achieve maximum economic coal recovery.

Findings:

The information in this section meets the minimum requirements of this section of the regulations.

SUBSIDENCE CONTROL PLAN

Regulatory Reference: 30 CFR 784.20, 817.121, 817.122; R645-301-521, -301-525, -301-724.

Analysis:

Renewable Resources Survey

The Permittee identified grazing and wildlife habitat as renewable resource in and around the permit area.

Subsidence Control Plan

In the event the survey showed that such structures or renewable resource lands existed, and that subsidence could cause material damage or diminution of value or foreseeable use of the land, or if the Division determined that such damage or diminution could occur, the application must have included a subsidence control plan that contained the following information:

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- A description of the method of coal removal, such as longwall mining, room-and-pillar removal, hydraulic mining, or other extraction methods, including the size, sequence, and timing for the development of underground workings.

The Permittee proposed to use longwall mining when possible and room-and-pillar mining for development work and to recover coal in areas not conducive to longwall mining.

- A map of underground workings which described the location and extent of areas in which planned-subsidence mining methods will be used and which includes all areas where measures will be taken to prevent or minimize subsidence and subsidence related damage and where appropriate, to correct subsidence-related material damage.

Plate 25, Aberdeen Mine Subsidence Monitoring, showed the underground workings including the longwall panels. The map had several deficiencies including: 1) the map was not signed by a registered professional engineer, 2) the permit boundary updates were not clearly shown and 3) the subsidence zone was not shown. In addition, the Permittee must have a subsidence map for the entire permit area in addition to those for each mine.

- A description of the physical conditions, such as depth of cover, seam thickness, and lithology, which affect the likelihood or extent of subsidence and subsidence-related damage. That description was given in Section R645-301-525 of the MRP.
- A description of monitoring, if any, needed to determine the commencement and degree of subsidence so that, when appropriate, other measures can be taken to prevent, reduce, or correct material damage.

Subsidence monitoring for panels developed after 2002 consisted of two-subsidence survey station per panel as well as an annual visual inspection. Because the Permittee has not yet detected subsidence, the limited subsidence survey monument program was determined by the Division to be effective.

- Except for those areas where planned subsidence is projected to be used, a detailed description of the subsidence control measures that will be taken to prevent or minimize subsidence and subsidence-related damage, including, but not limited to: backstowing or backfilling of voids; leaving support pillars of coal; leaving areas in which no coal is removed, including a description of the overlying area to be protected by leaving the coal in place; and, taking measures

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on the surface to prevent material damage or lessening of the value or reasonably foreseeable use of the surface.

The Permittee planned to use full extraction mining methods as much as possible. They will not use any methods other than limiting extraction to prevent subsidence.

- A description of the anticipated effects of planned subsidence, if any.

The Permittee does not think that subsidence would occur. If subsidence did occur, the most likely effects would be minor cracks and ground lowering.

- A description of the measures to be taken to mitigate or remedy any subsidence-related material damage to, or diminution in value or reasonably foreseeable use of the land, or structures or facilities to the extent required under State law.

The only commitment that the Permittee made to mitigate or remedy any subsidence related material damage is a general commitment to replace water. At a minimum, the Permittee must have a general statement to repair any surface damage and a detailed plan for replacement of the loss of State appropriated water.

- Other information specified by the Division as necessary to demonstrate the operation will be conducted in accordance with the performance standards for subsidence control. The Permittee does not need any additional information.

Performance Standards For Subsidence Control

The Permittee is required to keep all performance standards associated with subsidence. Specific activities that may not occur include:

- Underground mining activities shall not be conducted beneath or adjacent to: public buildings and facilities; churches, schools, and hospitals.
- Impoundments with a storage capacity of 20 acre-feet or more or bodies of water with a volume of 20 acre-feet or more, unless the subsidence control plan demonstrates that subsidence will not cause material damage to, or reduce the reasonably foreseeable use of, such features or facilities.

- If the Division determines that it is necessary in order to minimize the potential for material damage to the features or facilities described above or to any aquifer or body of water that serves as a significant water source for any public water supply system, it may limit the percentage of coal extracted under or adjacent thereto.

Notification

The Permittee is required to notify at least 6 months before mining, or within that period if approved by the Division, all owners and occupants of surface property and structures above the underground workings. The notification shall include, at a minimum, identification of specific areas in which mining will take place, dates that specific areas will be undermined, and the location or locations where the operator's subsidence control plan may be examined.

Findings:

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Before approval, the Permittee must provide the following in accordance with:

R645-301-525.420 and R645-301-512.110-WHW, The Permittee must have Plate 25 certified by a registered professional engineer, the permit boundaries must be shown as if the amendment had been approved (the expansion area should be noted) and the subsidence zone, 20 degree angle of draw, must be shown. In addition, the Permittee must provide a map that shows the subsidence zone for the entire project, not just for individual mines.

R645-301-525.480-WHW, The Permittee must include 1) a narrative that describes how they will replace adversely affected State-appropriated water supplies and 2) a plan to mitigate or remedy any subsidence-related material damage to the land.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Analysis:

Affected Area Maps

The Permittee showed the affected area on Map 5-4B, Mining Projections (Extended Reserves.)

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Mine Workings Maps

Map 5-4A, Mining Projections, showed the location of the development mining associated with Task 2172.

Findings:

Maps, plans, and cross sections of operations information provided in the PAP are considered adequate to meet the requirements of this section.

RECLAMATION PLAN

BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: 30 CFR Sec. 800; R645-301-800, et seq.

Analysis:

Determination of Bond Amount

Task 2119 did not involve any direct bonding issues. During the review of task 2119, the Division reviewed the bond and updated the unit costs and escalation factor. The Division determined that the adjusted reclamation cost estimate was \$952,000 in 2009 dollars.

The current bond amount is \$1,080,839; therefore, the bond amount is adequate.

The Division is simultaneously working on task 2166, which dealt with gob hole vents. Since the vent holes required additional bond the Division will address the update of unit costs and escalation in task 2166.

Findings:

The information in this section is adequate to meet the minimum regulatory requirements.

RECOMMENDATIONS:

The Division should deny the amendment until the Permittee addresses all of the above-mentioned deficiencies.

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