

# TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

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December 3, 2004

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TO: Internal File

FROM: Wayne H. Western, Environmental Scientist III, Team Lead *WHW*

RE: Phase I Bond Release Hardscrabble Substation Area, Castle Gate Holding Company, Castle Gate Mine, C/007/004, Task ID #2037

**SUMMARY:**

On September 14, 2004, the Division received requests for bond release on 0.72-acre substation area of Hardscrabble. The Permittee reclaimed the area in the fall of 2002. The rest of the site received Phase I bond release in 1985 and 2001. The Permittee held off reclaiming the substation because of the potential future use of the facilities

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TECHNICAL ANALYSIS:

## RECLAMATION PLAN

### APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR Sec. 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

#### Analysis:

The requirements to achieve approximate original contour restoration are a combination of performance standards for backfilling and grading, hydrology, postmining land use and revegetation. The performance standards include:

- Minimization off-site impacts.
- The final surface configuration closely resembles the general surface configuration of the land prior to mining.
- The topsoil/growth media are adequate to support the vegetation requirements.
- Erosion is minimized.
- The land is able to support the approved postmining land use.

The intent of the approximate original contour regulations is not to restore a site to the approximate premining elevation. Rather the intention of the regulations is to ensure that the reclaimed site has slope lengths and gradients that are within acceptable limits.

The main criterion that the Division uses to determine if AOC has been achieved is whether the postmining topography, excluding elevation, closely resembles its premining configuration. In addition, the Division takes into consideration soil, climate and other pertinent characteristics of the surrounding area in evaluating the adequacy of final graded slopes. In arid or semi-arid areas, vegetation alone may not adequately control erosion on steep slopes. Therefore, the Division will closely evaluate the slope gradients of reclaimed areas to ensure effective erosion control. In addition to the general requirements, there are also specific regulatory requirements that must be achieved that include:

- Eliminate all highwalls.
- Eliminate all spoil piles.
- Eliminate all depressions with the exception of small depressions needed to retain moisture, minimize erosion, create and enhance wildlife habitat or assist revegetation.

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- All slopes will have a static safety factor of 1.3 or greater and not exceed the angle of repose.
- Minimize erosion and water pollution both on and off site.
- Support the postmining land use.

The Permittee met the minimum requirements for achieving AOC because:

- Since there were no highwalls in the area, that item is not relevant.
- Since there were no spoil piles in the area, that item is not relevant
- There are no depressions at the site except for small depressions (pocks). The pocks are part of a standard surface roughening methods used to control erosion.
- The slopes were reclaimed according to the approved reclamation plan see Exhibit 3.3-4A. The approved reclamation plan called for all reclaimed slopes to have a static safety factor of 1.3 or greater and that the slope angle is less than the angle of repose. Exhibit 3.3-23, Hardscrabble Canyon As-Built Reclamation Topography and Treatment Map, shows that the reclaimed area meets the performance standards.
- The Permittee reclaimed the site using surface roughening techniques (pocking). Pocking is an effective means to control erosion and water pollution.
- The reclaimed site will support the postmining land use of grazing and wildlife habitat because the site was graded to a slope configuration of the surrounding area and vegetated with an approved seed mix.

**Findings:**

The information provided in the bond release package meets the minimum requirements of the approximate original contour requirements.

**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**

The Permittee meet the general backfilling and grading requirements because:

- The area was reclaimed to the approximate original contour requirements. See the Approximate Original Contour section of the TA for details.
- There were no highwalls or spoil piles at the site so those regulations are not relevant.

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- There are no depressions at the site except pocks used to control erosion.
- The reclaimed slopes have a safety factor of 1.3 or greater and do not exceed the angle of repose. See Exhibit 3.3-23 for as-built certifications.
- The Permittee reclaimed the site using surface roughening techniques (pocking). Pocking is an effective means to control erosion and water pollution.
- The reclaimed site will support the postmining land use of grazing and wildlife habitat because the site was graded to a slope configuration of the surrounding area and vegetated with an approved seed mix.

**Previously Mined Areas**

The site was disturbed by pre-SMCRA mining. The R645 rules allow such site to be reclaimed to different standards if highwalls or spoil piles are present. Since there are no highwalls or spoil piles associated with the substation area those rules do not apply for that area.

Pre-SMCRA highwalls did exist in the Hardscrabble site and were addressed during the general Phase I bond release process.

**Findings:**

The information provided in the bond release package meets the minimum requirements of the backfilling and grading requirements.

**MINE OPENINGS**

Regulatory Reference: 30 CFR Sec. 817.13, 817.14, 817.15; R645-301-513, -301-529, -301-551, -301-631, -301-748, -301-765, -301-748.

**Analysis:**

There are not mine openings at the substation area.

**Findings:**

The information provided in the bond release package meets the minimum requirements of the mine openings requirements.

**ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES**

Regulatory Reference: 30 CFR Sec. 701.5, 784.24, 817.150, 817.151; R645-100-200, -301-513, -301-521, -301-527, -301-534, -301-537, -301-732.

**Analysis:**

**Retention**

The approved reclamation plan calls for the retention of the road in Hardscrabble Canyon including the area associated with the substation.

**Findings:**

The information provided in the bond release package meets the minimum requirements of the road systems and other transportation facilities requirements.

**MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS**

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

**Analysis:**

**Affected Area Boundary Maps**

There was no change to the affected area boundary. Therefore, the Permittee does not have to modify the affected area boundary maps.

**Bonded Area Map**

There was no change to the bonded area. Therefore, the Permittee does not have to modify the bonded area maps.

**Reclamation Backfilling And Grading Maps**

The Permittee did not include any backfilling and grading maps with the bond release package. Backfilling and grading maps for the earthwork that the Permittee did at the substation and other parts of Hardscrabble Canyon were incorporated into the MRP on May 11, 2000. See Exhibit 3.3-19 and Exhibits 3.3-20A-C in Volume III of the MRP.

The backfilling and grading maps are adequate to show that the Permittee meet the minimum backfilling and grading regulations including the approximate original contour requirements.

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**Reclamation Facilities Maps**

There are no reclamation facilities associated with the substation area.

**Final Surface Configuration Maps**

See the backfilling and grading section.

**Reclamation Surface And Subsurface Manmade Features Maps**

Other than the road shown on Exhibit 3.3-19 in the MRP there are no surface or subsurface manmade features at the substation site.

**Certification Requirements.**

All appropriate maps were certified.

**Findings:**

The information provided in the bond release package meets the minimum requirements of the maps, plan and cross section of reclamation requirements.

**BONDING AND INSURANCE REQUIREMENTS**

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

**Analysis:**

**General**

Technical Directive 006 outlines the procedures that the Division uses to evaluate a bond release application. The Permittee address the general procedures for bond release as follows:

- The Permittee described the area for which Phase I bond release is being sought as 0.72 acres in SE1/4SW1/4 of Section 3, Township 13 South, Range 9 East, SLB&M, Utah. The substation area is shown on Exhibit 3.3-23 in the MRP, which was incorporated January 23, 2003.

- The Permittee did not include a map in the bond release package. However, Exhibit 3.3-23 shows the Phase I bond release area and was incorporated into the MRP on January 23, 2003. The map shows 1) all the disturbed areas in Hardscrabble Canyon, 2) the dates when reclamation occurred, 3) the reclamation status of each area within the Hardscrabble area, 4) dates when each area received phased bond release and acreage, and the area where phased bond release is sought.
- The Permittee showed when the work for the area being sought for bond release was done.
- In the bond release package, the Permittee included a brief history of the mining and reclamation activities.
- Exhibit 3.3-23 in the MRP, which was incorporated January 23, 2003 shows then seeding was done.
- There are no ponds within the substation area; sediment control was done with surface roughening techniques, such as pocking.
- Table 3.1-2 shows the amount of bond release being sought.
- Table 3.1-2 shows the sites within the Castle Gate Mine, the disturbed acres and the bond amount.

#### **Determination of Bond Amount**

The Division determined the cost to reclaim the Castle Gate Mine to be \$680,154 in 2004 dollars. The Permittee proposed that the Division reduced the bond by \$168,100 for the reclamation work done at both Hardscrabble Canyon and Sowbelly Canyon. The Permittee requested partial bond release for work done in Sowbelly Canyon in another bond release application.

The Division will tie the bond release for Hardscrabble Canyon and Sowbelly Canyon together because:

- The Permittee submitted both bond release packages at the same time.
- The Division will review both bond release packages including field inspections at the same time.
- Processing the both bond release request at the same time save the Permittee and the Division substantial time and money.

The Division determined that after bond release the bond amount would be \$512,054 in 2004 dollars. R645-301-830.300 requires the Division to escalate the bond. In 2004, the Division escalated the bonds by 2.59% per year. The bond amount escalated to 2009 dollars is \$582,000, which is a bond release of \$98,154.

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**Findings:**

The information provided in the bond release package meets the minimum requirements of the bonding and insurance requirements.

**Recommendations:**

The Division should approve Phase I bond release for the substation area at Hardscrabble Canyon. The Division must retain enough bond to ensure that the Division can accomplish reclamation in the event of bond forfeiture.

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