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**State of Utah**  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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September 19, 2000

TO: Internal File

THRU: Paul B. Baker, Team Lead *PB*

FROM: Wayne H. Western, Senior Reclamation Specialist *WHW*

RE: Phase I Bond Release- Hardscrabble Canyon, Castle Gate Holding Company, Castle Gate Mine, ACT/007/004-BR00B

**SUMMARY:**

On July 3, 2000, the Division received the permittee request to be granted Phase I bond release for the Hardscrabble Canyon area of the Castle Gate Mine. The Division reviewed the reclamation plan and field checked the as-built drawing. The Division found that the site met the minimum requirements for Phase I bond release. The Division should prepare for the final Phase I bond release inspection.

**RECLAMATION PLAN**

**POSTMINING LAND USES**

Regulatory Reference: 30 CFR Sec. 784.15, 784.200, 785.16, 817.133; R645-301-412, -301-413, -301-414, -302-270, -302-271, -302-272, -302-273, -302-274, -302-275.

**Analysis:**

The main access road in Hardscrabble Canyon has been approved to be left as part of the postmining land use. The Division inspected the site on July 28, 2000 and found the road to be properly maintained.

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The substation will be left in place until power from the site is no longer needed. The substation is not considered part of the postmining land use.

**Findings:**

The permittee met the minimum requirements of this section.

**APPROXIMATE ORIGINAL CONTOUR RESTORATION**

Regulatory Reference: 30 CFR Sec. 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-270, -301-271, -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:**

On April 21, 2000, the Division field checked the certified as-built maps and cross sections for Hardscrabble Canyon. After the field inspection the Division compared the as-built maps and cross sections with the reclamation plan. The Division found the site conditions met the requirement of the coal rules and permit conditions. On May 11, 2000, the Division approved the as-built drawings for Hardscrabble Canyon and incorporated them into the MRP.

One issues that the Division looked at while reviewing the as-built drawings was compliance with the approximate original contour requirements. The Division found that the site met the AOC requirements because the reclaimed drainages complement the undisturbed drainages and the topography blends into the surround areas.

However, the site was not restored to the original surface configuration. Some premining slopes had safety factors of less than 1.3 so those slopes had to be reclaimed with gentler slopes that would meet the 1.3 safety factor requirements. A road was also left as part of the postmining land use.

On April 14, 1997, the Division made findings about the highwalls at Hardscrabble Canyon. The Division approved variances for the portal highwalls at the No. 3 and No. 4 mine and for the shaft highwall at the No. 5 mine. The Division inspected those areas and found that the backfilling and grading were done according to the approved reclamation plan. Therefore, the Division finds that all highwalls have been reclaimed according to standards for previously mined areas.

The Division approved the AOC variances in 1992. The variances and the justification for them are in Randy Harden's memo dated July 1, 1992. The specific conditions for the variances are:

1. Variance for AOC fro Preexisting Highwalls shall include only those areas that have been identified in the plan and approved by the Division and are as follows:

- A. The location and the extent of highwalls delineated on Exhibit 3.3-2, as the No. 3 portal highwall, and the No. 4 portal highwall and the No. 5 mine return air shaft highwall.
2. The terms and conditions of this permit may be modified at any time by the Division, if it determines that more stringent measures are necessary to ensure that the operations involved are conducted in compliance with the requirements of the State Program.

The Division reviewed the backfilling and grading maps and found that the only highwall remnants left are in the locations specified in the variance. The Division has reviewed the backfilling and grading plan and monitored the site since earthwork activities were completed in 1996. The Division found that the site is stable and requires no additional work.

**Findings:**

The permittee met the minimum requirements of this section.

**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**

On April 21, 2000, the Division field checked the certified as-built maps and cross sections for Hardscrabble Canyon. After the field inspection the Division compared the as-built maps and cross sections with the reclamation plan. The Division found the site conditions met the requirement of the coal rules and permit conditions. On May 11, 2000, the Division approved the as-built drawings for Hardscrabble Canyon and incorporated them into the MRP.

One issues that the Division looked at while reviewing the as-built drawings was compliance with the backfilling and grading requirements. The Division found that the site met all the backfilling and grading requirements because:

- The site meets the AOC requirements.
- All spoil piles have been reclaimed.
- All highwalls have been reclaimed to standards for previously mined areas.
- The slopes met or exceed a safety factor of 1.3 and are stable.
- No spoil piles are on the site.
- All coal mine waste has been properly disposed.
- All coal seams and acid and toxic forming materials have been covered.

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- No terraces were constructed on the reclaimed slopes.
- The slopes minimize erosion.

**Previously mined areas**

The permittee reclaimed all highwalls to standards for preciously mined areas.

**Findings:**

The permittee met the minimum requirements of this section.

**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:**

All mine opens have been sealed according to the requirement of the approved reclamation plan. The Division does not have dates and inspection reports for when the mines were sealed. References are made to the mine being sealed on pages 3.3-26 and 3.3-39. Because of those references the Division assumes that the seals were properly placed.

**Findings:**

The permittee met the minimum requirements of this section.

**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:**

**Reclamation**

All roads in the disturbed area have been reclaimed according to the approved reclamation plan except the main canyon road. That road is scheduled to be retained as part of the post mining land use plan.

### **Retention**

The main canyon road will be retained as part of the postmining land use plan. The road is classified as a primary road and meet the design standards. The Division found the road to be in good repair when they visited the site on July 28, 2000.

### **Findings:**

The permittee met the minimum requirements of this section.

## **HYDROLOGIC INFORMATION**

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

### **Analysis:**

#### **Discharges into an underground mine**

No discharges into underground mines will occur on the site.

#### **Gravity discharges**

No gravity discharges will occur.

#### **Diversions**

On April 21, 2000, the Division field checked the certified as-built maps and cross sections for Hardscrabble Canyon. The Division specifically reviewed the as-built channels with the approved plan and the field conditions. The Division found that the channels were constructed according to the approved design.

The design standards for the channels are as follows:

- The shape of the reclaimed channels for natural drainages (HCRD 1 to 11) was designed to the approximate the natural upstream channel. The reclaimed channels have a trapezoid shape with 3H:1V sides. Reclaimed channels with the sole purpose of diverting runoff from road R-1 were designed with a triangular cross section and slide slope of 1.5H:1V.

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- Peak discharge rates used to determine channel capacities for the main canyon channels were based on 100-year 6-hour events. Peak discharge for the remaining channels was based on a 10-year 6-hour event.
- All culverts were removed and replaced by swells.
- Due to site conditions and the desire to avoid redisturbance of a significant portion of Hardscrabble Canyon the sediment ponds were removed during Phase II grading. The alternative sediment control measures were installed during reclamation.

After the field inspection the Division compared the as-built maps and cross sections with the reclamation plan. The Division found the site conditions met the requirement of the coal rules and permit conditions. On May 11, 2000, the Division approved the as-built drawings for Hardscrabble Canyon and incorporated them into the MRP.

**Siltation structures**

All siltation structures have been removed. Sediment is controlled by vegetation.

**Sedimentation ponds**

All sediment ponds have been removed.

**Other treatment facilities**

All sediment is controlled by vegetation.

**Exemptions for siltation structures**

All sediment is controlled by vegetation.

**Discharge structures**

No discharge structures exist on the site.

**Impoundments**

No impoundments exist on the site.

**Findings:**

The permittee met the minimum requirements of this section.

## **CESSATION OF OPERATIONS**

Regulatory Reference: 30 CFR Sec. 817.131, 817.132; R645-301-515, -301-541.

### **Analysis:**

The site is in permanent cessation.

### **Findings:**

The permittee met the minimum requirements of this section.

## **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**

Several maps show the affected surface boundaries for the Hardscrabble surface disturbance. Exhibit 3.3-19 shows the disturbed area boundaries.

#### **Bonded area map**

Several maps show the affected bond areas boundaries for the Hardscrabble area. Exhibit 3.3-19 shows the disturbed area boundaries that are considered to be the bond area.

The permittee must also show the areas granted phased bond release and when those areas were seeded. R645-301-142 requires the permittee to give the Division maps that show the areas that are in different stages of bond release. The Division needs to know when each area was seeded, because the bond clock begins when seeding is completed not when Phase II has been approved.

#### **Reclamation backfilling and grading maps**

The backfilling and grading maps have been field check and incorporated into the MRP. The Division found the maps to be accurate and met all the requirements of this section.

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TECHNICAL MEMO

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**Reclamation facilities maps**

Exhibit 3.3-19 shows the existing substation and the main canyon road. The existing substation will remain until power from the site is no longer needed. The road will be retained as part of the postmining land use.

**Final surface configuration maps**

Exhibit 3.3-19, Exhibit 3.3-20A and Exhibit 3.3-20B show the final surface configuration. The maps have been field checked by the Division and incorporated into the MRP>

**Reclamation surface and subsurface manmade features maps**

Exhibit 3.3-19 shows the reclaimed surface manmade feature, which is the main canyon road. See the mine maps for subsurface features on the site.

**Findings:**

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

**R645-301-142**, The permittee must give the Division maps of Hardscrabble Canyon that show the areas that are in phased bond release, the dates the areas were granted phased bond release and the dates when the areas were seeded.

**BONDING AND INSURANCE REQUIREMENTS**

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

**Analysis:**

**Determination of bond amount**

The current bond for the Hardscrabble Canyon is \$1,804,000 the permittee wants \$783,000 released after Phase I bond release has been approved. The new bond would be \$722,000 (the Division round the bond to the nearest \$1,000). A 60% reduction maximum amount allowed under R645-301-880.310.

Phase I bond release is for backfilling, grading and topsoil placement. Those activities have been completed except for the reclamation of the electrical substation. Reclamation of that area will be completed when transmission from the site is no longer needed.

Phase II bond release is for successful revegetation. At the beginning of Phase II the permittee must have enough bond to ensure that the Division could revegetate the site. The Division calculated the revegetation costs to be \$121,000 in 2010 dollars. The new bond would be \$722,000 which would insure that the Division would have enough money to revegetate the site and reclaim the substation if the permittee forfeited the bond.

A summary of the reclamation cost estimates and a detailed copy of the revegetation cost estimate area attached. The costs on those sheets do not match the bond amount because the Division has updated the unit costs and is using different indirect costs. The bond will be updated at the midterm or permit renewal.

**Findings:**

The permittee met the minimum requirements of this section.

**RECOMMENDATIONS:**

The Division found the site meets the minimum requirements for Phase I bond release. The Division should proceed with the Phase I bond release inspection.