



# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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## INSPECTION REPORT

Partial:  Complete:  Exploration:   
Inspection Date & Time: December 13, 1996, 9:30 AM to 1:30 PM  
Date of Last Inspection: November 13, 1996

Mine Name: Castle Gate County: Carbon Permit Number: ACT/007/004  
Permittee and/or Operator's Name: Amax Coal Co.  
Business Address: P. O. Drawer PMC, Price, Utah 84501  
Type of Mining Activity: Underground  Surface  Prep. Plant  Other   
State Officials(s): Paul Baker  
Company Official(s): Johnny Pappas and Ben Grimes  
Federal Official(s): None  
Weather Conditions: Partly cloudy, 30-40's, up to about 6 inches of snow  
Existing Acreage: Permitted- 7646.5 Disturbed- 197.5 Regraded- 33.2 Seeded- 33.2 Bonded- 162  
Increased/Decreased: Permitted- 0 Disturbed- 0 Regraded- 0 Seeded- 0 Bonded- 0  
Status: Exploration/Active/Inactive/Temporary Cessation/Bond Forfeiture  
Reclamation ( Phase I/  Phase II/  Final Bond Release/ 10 for Goose Island Liability Year)

### REVIEW OF PERMIT, PERFORMANCE STANDARDS & PERMIT CONDITION REQUIREMENTS

#### Instructions

- Substantiate the elements on this inspection by checking the appropriate performance standard.
  - For complete inspections provide narrative justification for any elements not fully inspected unless element is not appropriate to the site, in which case check N/A.
  - For partial inspections check only the elements evaluated.
- Document any noncompliance situation by referencing the NOV issued at the appropriate performance standard listed below.
- Reference any narratives written in conjunction with this inspection at the appropriate performance standard listed below.
- Provide a brief status report for all pending enforcement actions, permit conditions, Division Orders, and amendments.

	EVALUATED	N/A	COMMENTS	NOV/ENF
1. PERMITS, CHANGE, TRANSFER, RENEWAL, SALE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. SIGNS AND MARKERS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. TOPSOIL	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. HYDROLOGIC BALANCE:				
a. DIVERSIONS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. SEDIMENT PONDS AND IMPOUNDMENTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. OTHER SEDIMENT CONTROL MEASURES	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. WATER MONITORING	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. EFFLUENT LIMITATIONS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. EXPLOSIVES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. DISPOSAL OF EXCESS SPOIL/FILLS/BENCHES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. COAL MINE WASTE/REFUSE PILES/IMPOUNDMENTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8. NONCOAL WASTE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. PROTECTION OF FISH, WILDLIFE AND RELATED ENVIRONMENTAL VALUES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. SLIDES AND OTHER DAMAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. CONTEMPORANEOUS RECLAMATION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. BACKFILLING AND GRADING	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. REVEGETATION	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
14. SUBSIDENCE CONTROL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. CESSATION OF OPERATIONS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. ROADS:				
a. CONSTRUCTION/MAINTENANCE/SURFACING	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. DRAINAGE CONTROLS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. OTHER TRANSPORTATION FACILITIES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. SUPPORT FACILITIES/UTILITY INSTALLATIONS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. AVS CHECK (4th Quarter-April, May, June)_(date)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. AIR QUALITY PERMIT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. BONDING & INSURANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



## INSPECTION REPORT

(Continuation sheet)

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PERMIT NUMBER: ACT/007/004

DATE OF INSPECTION: December 13, 1996

(Comments are Numbered to Correspond with Topics Listed Above)

### 1. Permits, Change, Transfer, Renewal, Sale

On December 2, 1996, the Division received a response to its review of the Hardscrabble reclamation plan. This is under review.

### 3. Topsoil

Amax has been salvaging topsoil along the southeast wall of Schoolhouse Canyon. According to the plan, an average of 16" should be harvested. Because of the slope, it was very difficult to tell how much soil was being taken, but it looked like the average was probably close to what the plan says. The upper part of the canyon had a lot of large rocks with a small amount of soil between them, and the operator was not going to salvage this soil. We did find a few places where it looked like there might be more soil than the operator had pulled down, and we instructed the trackhoe operator to be sure available soil had been taken.

This soil was being hauled to Gravel Canyon to a protected place behind the existing topsoil pile. The operator had apparently used a small dozer to blade the road, but the dozer went far enough up that I'm nearly certain it disturbed a patch of whitetop. This means the topsoil pile may have been contaminated with this weed. We will watch for it this spring, and I will advise the permittee whether control work needs to be done. I am also concerned about the dozer contaminating other areas with whitetop, particularly Hardscrabble Canyon. It should be cleaned before being taken to any other jobs.

### 4. Hydrologic Balance

#### a. Diversions

The operator was continuing to work on the diversions in Hardscrabble Canyon. It was difficult to tell the exact configurations of the diversions because of the snow, but I had a few concerns:

Snow was covering the rocks at the transition between HCRD-8 and the old channel through Goose Island, but it looked like there was a drop between the two channel sections that would erode.

The upper portion of HCRD-4 does not appear to be very deep. The operator is still working to finish this channel and may intend to modify it. The channel is supposed to be one foot deep.

HCRD-4 drops very steeply at first, levels out, then drops steeply again. In the area where it first levels out, I am concerned about the riprap being scoured out. I'm not sure how much water will actually come down this channel and whether this will actually be a problem.

The west side of HCRD-8 in the general vicinity of station 34+00 appears to be low. There are some established oaks near the channel in this area, and it may be possible to use these as a sort of flood plain. A hydrologist needs to look at this area and decide whether it will work.

The bottom of HCRD-8 appears to be low in the area where the road crosses it. I'm sure the channel is not yet at its final grade.

#### c. Other Sediment Control Measures

Where the Gravel Canyon access road meets Highway 6/50, a silt fence had been installed across the road ditch. I think the silt fence would have been effective if water had been running.

### 7. Coal Mine Waste/Refuse Piles/Impoundments

The November inspection report discusses an area where water was piping into the Schoolhouse Canyon refuse pile. This was the subject of a violation written by Division inspector Pete Hess for the Willow

## INSPECTION REPORT

(Continuation sheet)

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Creek Mine which overlaps with the Castle Gate Mine in the area of the preparation plant. The operator has attempted to fix the problem, but it was obviously not working. Water was running down the ditch on the southeast side of the pile and flowing directly into the pile. We could not see where this water was coming out of the pile. Mr. Grimes said he intends to try to put bentonite into the hole.

Mr. Hess also wrote notices of violation for no drainage designs for the refuse pile and for not having the pile crowned in a way that it will drain properly. The former violation was vacated. The pile had been modified by the time I saw it, so there was no apparent problem with how it would drain.

### 13. Revegetation

Several parts of Hardscrabble Canyon have been seeded, but some of these may need to be redisturbed next year. The seeded areas include the area near the fan portal, the south side of Dog Flat, and the west side of the canyon between Dog Flat and pond 8.

A few areas in the No. 4 Mine canyon and in Sowbelly Gulch were reseeded. In the No. 4 Mine canyon, the operator put out about 20 bales of hay to attract elk and deer. The idea was to have them walk over the reseeded areas and push the seed into the ground.

The operator had intended to finish reclamation in Hardscrabble Canyon this year but was not able to. He ordered about 5000 transplants that were to be planted this fall; however, they will have to be stored until spring.

### Copy of this Report:

Mailed to: James Fulton (OSM), Johnny Pappas (Amax)

Given to: Joe Helfrich (DOGM)

Inspector's Signature: Paul B. Baker #41 Date: December 20, 1996

From: Lowell Braxton  
To: BBUTCHER  
Date: 12/20/96 1:50pm  
Subject: NOV n-96-47-1-1

Brandi: attached please find a file memo for the AC on the above NOV. Please cleanup, format and final. You may want to make sure the correct file and folder number are included in the "re:" section.

Please complete a final assessment work sheet for this NOV, and a cover letter (to Paige Beville) for my signature.

After I've reviewed the file memo, cover letter and worksheet we can mail, with a cc to Dan Guy.

I'll do a separate "findings" for the FOV portion of the conference. This can be mailed at a later date.

Thanks, Lowell

CC: vbailey



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November 26, 1996

TO: File

THROUGH: Joseph Helfrich, Permit Supervisor 

FROM: Paul Baker, Reclamation Biologist 

Re: Sowbelly Phase I Bond Release, Amax Coal Company, Castle Gate Mine, ACT/007/004-96D, Folder #2, Carbon County, Utah

## SUMMARY

Amax Coal Company completed backfilling, grading, seeding and mulching on about 18.2 acres of the Sowbelly Gulch disturbed area in the fall of 1995. On February 8, 1996, the Division received as-built drawings for the reclamation and a completely revised Section 3.2.

It is likely the revegetation success standards can be achieved with the reclamation methods the operator used.

## ANALYSIS

### REVEGETATION SUCCESS STANDARDS

Regulatory Reference: R645-301-350

The Division may grant Phase I bond release after an operator has satisfactorily completed backfilling and grading and established drainage controls. However, R645-301-880.210 requires the Division to make an evaluation of, among other factors, the degree of difficulty to complete any remaining reclamation. Backfilling and grading necessarily affect the potential for revegetation success and achieving the postmining land use. The pre- and postmining land uses are wildlife and grazing.

Sowbelly Gulch was originally reclaimed in 1993-1994, but in the fall of 1995, the operator reworked about two-thirds of the area. Originally, the operator had installed contour furrows to trap moisture, but reworked areas were gouged. The gouges vary but are

approximately one to two feet deep and about four to six feet across. This method of water harvesting is considered superior to contour furrowing in this instance. It is anticipated these gouges will trap water and thus increase the amount of soil moisture and the ability for plants to establish and survive. Gouging combined with the other treatments the permittee used are the best revegetation methods known to the Division for this area. If weather cooperates, revegetation should be successful.

Seeding was done in the fall of 1993, 1994 and 1995 using the seed mixtures specified in the plan. Transplants were planted along the stream channel in the spring of 1996. Species used for transplanting were chokecherries, serviceberries, curleaf mountain mahogany, Wood's rose, and elderberries. About 1200 seedlings were planted along the length of the channel.

Slopes created in the grading process are not extremely steep, but some very steep cut slopes were not regraded. As much as possible, these slopes were seeded, but it is not anticipated that much vegetation will become established on them.

About 8% of the reclaimed area, about 1.5 acres, was left as cut slopes. The total regraded area is about 18.2 acres. The revegetation reference areas are abandoned mines in the Spring Canyon area. Considering the reclamation methods used in all of these areas, it is anticipated that there will be at least as much vegetation in the Sowbelly disturbed area as at the abandoned mine reference areas. Assuming, however, there is no vegetation on the steep cut slopes, the overall amount of vegetation in the reclaimed area would be reduced by 8%. If vegetation in the rest of the reclaimed area was as much as in the reference areas, the overall amount of vegetation would be 92% of the reference areas. This would meet the revegetation success standards because the success standards consider the reclaimed area to be equal to the standard when it is within 90% of the standard with 90% confidence.

Vegetation should be adequate to control erosion on regraded areas assuming the cover will be the same as at nearby abandoned mines and that vegetation is controlling erosion in these areas. The ungraded cut slopes have been in place for many years and should be stable according to information presented in the mining and reclamation plan.

The mining and reclamation plan says the diversity index used to compare reference and reclaimed areas will be used to show revegetation success for the parameters of diversity, seasonal characteristics, permanence, and utility for the postmining land use. The seed mix used should result in diversity at least as great as in the reference areas.

The remaining cut slopes are probably not useful for either a grazing or wildlife postmining land use. The Bureau of Land Management considers any slopes steeper than 2h:1v to be unusable for grazing, so the cut slopes that were left are not suitable for this use. Division personnel have seen deer on some of the cut slopes, but it is unlikely big game animals would use vegetation on the cuts for forage or cover.

Although the cut slopes are probably not particularly useful for the postmining land use, they are not extensive and would not keep any animals from gaining access to surrounding areas. The cuts resemble adjacent, undisturbed areas which also have very steep areas that produce little forage or cover for wildlife or livestock and may not be entirely accessible.

**Findings:**

The permittee has met the backfilling and grading requirements for the postmining land use in the Sowbelly Gulch area. In addition, the permittee is likely to achieve successful revegetation if there is adequate moisture. The grading, soil surface preparation, and other reclamation methods used are the best of which the Division is aware for this area .

Although some steep cut slopes remain, they are similar to cliffs in undisturbed areas and should not adversely affect the postmining land use. There should be adequate vegetation to achieve revegetation success standards. Although the steep slopes will not produce much forage, they do not restrict movements by wildlife or livestock any more than cliffs in undisturbed areas.

**RECOMMENDATIONS**

The permittee has completed backfilling and grading in Sowbelly Gulch in a manner that fulfills the requirements for the postmining land uses and makes it likely that revegetation efforts will succeed.