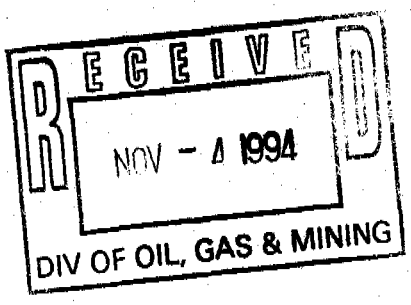
jbr environmental consultants, inc.
8160 South Highland Drive, Suite A-4 • Sandy, Utah 84093 • (801) 943-4144 • Fax: (801) 942-1852

0001

November 3, 1994



Mr. Daron R. Haddock
Permit Supervisor
Utah Division of Oil, Gas and Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180

SUBJECT: Hidden Valley Coal Company - Revised Plan Amendment
ACT/015/007-94A #21 file all n

Dear Mr. Haddock:

On behalf of Hidden Valley Coal Company, JBR Environmental Consultants, Inc. is submitting with this letter eight sets of amended pages to the Hidden Valley Reclamation Plan. They consist of pages 21-B, 21-C, 21-D, 27-A, 29-A, 33-B, 46-B, 47-B, and 52-B. The pages are meant to replace the plan amendment dated August 15, 1994, and address the Division's October 17, 1994 comments on that previous submittal. The plan amendment discusses the work done this summer near the former topsoil storage area and on the road outslopes. As requested by the Division, the amendment identifies the work done on the road outslopes as erosion control, rather than as sediment control, which was the term used in the August 15 version.

We hope that this submittal adequately addressed the Division's concerns. If you have further comments or questions, please contact me at JBR (801-637-5565) or Lee Edmonson at CalMat (602-254-8465).

Sincerely,

Karla Knoop

Karla Knoop
Hydrologist

Enclosure: Plan Amendment - 8 copies

Copy: Lee Edmonson, CalMat
Ed Settle, Consolidation Coal Company

In summer 1994, selected areas of the road outslopes were treated to control erosion. As described in the March 15, 1991 Plan Revision, the roadway intercepts runoff from up-gradient, undisturbed areas. Retention of much of that sediment-laden runoff occurs within water bars located downstream of the gate. Elsewhere on the roadway, runoff from up-gradient areas and direct precipitation is also infiltrated. The roadway thereby stores fine sediments and increases available water for plant growth. During larger storm events, runoff that is not contained within the water bars discharges down the road outslope.

Prior to the treatment described herein, erosion had occurred on the un-engineered fill at locations where water bars had previously discharged excess runoff from undisturbed areas up-gradient of the road. This discharge, and associated erosion, was primarily the result of two major storm events in 1987 and 1989. Site repairs were carried out following both events; they consisted of expanding the retention capacity of the water bars, constructing small rock check dams, and placing large, on-site rock within the discharge outfalls where locally available. In 1991, three of these locations were the subject of a Notice of Violation issued by DOGM. The NOV was subsequently vacated and no physical work was done on the outfalls. However, on May 6, 1994, DOGM was issued a Ten-Day Notice by OSM for erosion at five locations on the road outslope. The TDN cited R645-301-534.150, which requires control or prevention of erosion on roads. Although the TDN dealt with the same features as the vacated NOV, and there had been no change to those features between 1991 and 1994, erosion control treatment was implemented. Techniques and materials are described below; these were approved by DOGM before implementation.

In general, the treatment consisted of a combination of reshaping the discharge courses, and placing erosion control matting and/or fiberdam material. In addition to the five sites cited by OSM, three other locations were also treated. The treatment was implemented using non-mechanical, hand labor. Cross section and alignment varied both within and among discharge courses. In addition, particle sizes encountered at the sites range from very fine-textured clays to large boulders and bedrock. Therefore, the type, size and degree of treatment done varies among the eight sites, and field fitting was done to insure the greatest chance of success.

All eight locations were groomed or shaped by rearranging loose rock and slump features within the confines of the existing alignments. Side slopes (where steep, undercut or unstable) were laid back. Smaller boulders were strategically placed, or were removed. Larger boulders were pried loose and rolled downhill where possible and desirable. Due to the nature of the unengineered fill, the reshaping did not result in a uniform cross section aligned perpendicular down the steep slope; rather, it resulted in a site where the erosion control measures could be feasiblely retrofitted, as was intended in the DOGM-approved plan for this work.

At seven of these sites, a synthetic fiber erosion matting was placed where substrate was adequate to allow sufficient anchoring with metal staples. (At one site, the amount of perennial vegetation did not warrant placement of the matting.) Landlok TRM 1060, made by Synthetic Industries Construction Products Division, was the material used. Its thickness, ground cover, void space, and durability provide both short and long term erosion protection, and facilitate vegetation establishment. It will remain in place until UV destabilization occurs and/or interfilling with sediment/vegetation integrates the matting with the surrounding substrate. In some areas, substrate precluded anchoring of the matting, and it was not used.

At six of the sites (including the one site without matting), small, porous check dams were installed at intervals along the shaped and matted discharge courses. (At two of the sites, check dams were not used due to the small, shallow, outfall cross sections.) The dams consist of a synthetic fiber material called Fiberdam, which is manufactured by Synthetic Industries Construction Products Division. Manufacturer's installation recommendations were generally followed. Fiberdam is a flexible, moldable mass of fibers that, although irregular in shape, can be molded to fit within a non-uniform cross sectional area. Generally, it was shaped to about a one-foot thickness, with maximum height approximately two feet. The dams are held in place with 36-inch long metal rebar stakes. Distance between dams is not uniform, but typically three to four dams are located at each site.

The function of these porous dams is to reduce runoff velocity, causing deposition of sediments behind and within the fiber dams. Water is meant to pass through the dams, as well as over their tops; the porous nature of the dams should not block flow or set up conditions by which forces against the dams become excessive. Allowing water to pass through the dams also reduces the chance of erosion around their edges, which could result in failure.

Sediments should eventually clog the dams, and be deposited behind them, thereby raising the elevation of the flow line. (As with the matting, this material will remain in place and will integrate with the surrounding substrate unless UV degradation takes place first.) Any retention of the fine sediments will allow greater moisture retention and these areas will have a greater opportunity for plant colonization. The result would ideally be a series of steps down the outfall, with the flat sections vegetated and the steep sections stabilized.

However, the treatments used are non-standard, experimental methods and may require future modifications. They were used because standard engineering structures would not be appropriate on the unengineered, angle-of-repose slope that required treatment. The erosion control measures used here are thought to provide the best possible chance of success given the inherent constraints of site topography, road outslope characteristics, substrate and climate.

The treatments were designed and implemented using the best technology currently available. As described above, the fiberdam material has many advantages over more standard checkdam materials (large rock, rock-filled wire cages, or brush). Technologies available for this type of site are limited due to the nature of the site (angle of repose slopes and un-engineered fill), and limitations on types of materials suitable for use in permanent reclamation.

The erosion control measures (consisting of the water bar and its attendant discharge course with fiberdam and/or matting) will be maintained until bond release. Each site will be inspected periodically to insure proper functioning. During the regular inspection period of April through October, these areas will be examined a minimum of once per month. In addition, they will be inspected after weather patterns suggest that substantial runoff may have occurred at the site. Any needed maintenance or repairs will be done within one calendar month following the identification of a problem. In addition, a photographic record will be kept to track condition of the sediment control measures and to identify trends toward stabilization.

These treatments should prevent, to the extent possible, additional contributions of sediment to runoff outside the permit area, and minimize erosion to the extent possible. The natural, undisturbed watersheds above the roadway contribute sediment-laden runoff to the disturbed area, as evidenced by deposition in the water bars. Consequently, some erosion and sediment contribution to the ephemeral channel at the base of the slope is a natural and desirable phenomenon. The treatments are not expected to eliminate all erosion from the disturbed area, nor are they expected to prevent all sediment contribution to the ephemeral drainage. Instead, they are expected to provide a measure of stability such that erosion will be minimized to the extent possible.

UMC 817.106 Regrading or Stabilizing Rills and Gullies

In addition to the measures discussed on Page 27 of the original Plan, gulley control may consist of the erosion control matting/fiber dam treatment described on Pages 21-B through 21-D of this amendment. This type of erosion control has been implemented at eight sites on the road outslope, and may be used elsewhere on the disturbed area if needed.

Additional sediment and erosion control measures were implemented in the summer of 1994. Sediment control consisted of a silt fence and berm that were placed along the southern end of the former road base storage site at the top of the road. A description of this feature can be found on Page 33-B of this amendment. Erosion control matting and/or fiberdam materials were placed in eight locations on the road outslopes to control erosion. A description of that treatment is presented on pages 21-B through 21-D of this amendment.

During the summer of 1994, a silt fence and berm were constructed along the southern end of the former road base storage site at the top of the road. The fence was constructed to the same general specifications described on pages 33 and 34 of the original Plan. However, due to the short length of fence, and to the low volumes of runoff and sediment expected from the low gradient, stable contributing area, no wire fence backing was used to support the geotextile fabric.

Items 3. and 4. on page 46 of the original Plan are herein amended to include additional sediment and erosion control measures implemented in 1994. A silt fence and berm were placed along the southern end of the former road base storage site at the top of the road to control sediment. Further, erosion control matting and/or fiberdam materials were placed at eight locations on the road outslopes to control erosion.

Sediment-laden runoff will also be minimized by the installation of the berm and silt fence that have been placed along the southern end of the former road base storage site at the top of the road, and by the erosion control matting and/or fiberdam materials that were placed in eight locations on the road outslopes.

In the summer of 1994, erosion control matting and/or fiberdam materials were placed in eight locations on the road outslopes. A description of this treatment is presented on pages 21-B through 21-D of this amendment.