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File ACT/007/006 #2

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DIVISION OF
OIL GAS & MINING

Mr. Lowell Braxton
State of Utah Department of Natural Resources
Division of Oil, Gas & Mining
355 West North Temple
Salt Lake City, Utah 84180-1203

RE: Variance for Ditches 51, 57, and 58.

Dear Mr. Braxton:

As directed by the Utah Division of Oil, Gas & Mining (DOGM) we are hereby making a formal request that a variance be granted to Ditches 51, 57 & 58 as originally requested on Pages 784-76h through 784-76j in the 1986 permit application. Maps 731.720a and 731.720c show the locations of Ditches 57 & 58, and 51 respectively. Heretofore it has been the understanding that a variance was granted for these ditches via approval of the 1986 permit application. This request for variance from meeting the complete design and erosion protection requirements of R645-301-742.300 is a reiteration of the earlier submittal in order to formalize the paper process requesting the variance. A summary of the variance request presented in the 1986 permit application, as well as additional items which should now be considered follows:

Reasons for the variance request include, 1) the inability to properly size riprap in certain steep slope ditch sections due to a lack of design methodologies, 2) the lack of adequate space to install riprapped channels, 3) the evidence that minimal erosion has occurred historically under certain conditions, 4) the certainty of damage to roadside riprapped channels resulting from annual removal of rockfall debris, 5) the ditches have been operated over the past several years under the plan proposed in the 1986 permit application, and 6) no major issues have been raised by the regulatory agencies as to their operational practice. Specifics of the request related to each ditch follows.

DITCH 51

Ditch 51 consists of the conveyance channel between culvert 5B and Sedimentation Pond No. 3, and is located down a steep hillside having slopes ranging between 16 and 29 percent. Historical efforts to minimize erosion in the channel have included the placement of large diameter rock, especially near the entry to Sedimentation Pond No. 3. The

channel has eroded to bedrock regardless of whether or not large diameter rock has been placed to dissipate downslope energy. It was also noted in the 1986 MRP that erosion seemed to be more severe at riprapped locations due to additional turbulence which was created by the rock, and that erosion appeared to have reached a state of equilibrium. Equilibrium appears to have been reached by 1) the erosion of the channel to bedrock, and 2) the creation of a series of drop pool structures found throughout its length.

Because 1) erosion found to exist at Ditch 51 appears to have reached a state of general equilibrium, 2) because channel slopes are too great for practical design, and 3) because sediment found within the ditch is controlled by direct entry into Sediment Pond No. 3, a variance is requested from formal design and sediment erosion protection. With this request it is understood that reclamation will be completed on the ditch as part of the mine reclamation plan.

DITCHES 57 & 58

A variance to the design and installation of riprap lining for Ditches 57 & 58 is also being requested due to limited historical erosion, space limitations, potential damage from falling hillslope debris, damage from annual roadside cleaning efforts, and historical practice. These we will explain.

- Inspections made of these ditches have noted very little erosion adjacent to the upper mine pad access road. It is certain that some erosion is naturally occurring, however, no specific areas of significant erosion have been noted along the entire channel reach in question.

- Preliminary riprap designs for these ditches indicates that a channel top width of approximately eight feet would be required to pass the design flow rate. Many areas adjacent to the road in question lack the width required to install such a ditch without the enlargement of the road cut.

- Rockfalls from road cuts can damage riprapped channels. Falling rock can break, displace or deform riprap placed within a designed channel thereby compromising the integrity of the channel.

- Each spring maintenance crews work in the area of Ditches 57 & 58 to remove rock debris which has fallen from the cut slope over the winter period. Road graders and/or front end loaders are usually required by these crews to remove the large volumes of rock which are found within these roadside channels, thus restoring channel carrying capacities. Annual cleaning efforts of this nature would destroy any riprap channel which were to be constructed. Requiring riprap erosion

protection within this area would require the reinstallation of the channel on an annual basis.

- Both ditches have operated successfully over the last five to six years since the original variance request was made without significant impact, nor without major concerns raised by regulatory agencies.

As part of the variance request from requiring a formal design and construction of riprapped channels for Ditches 57 & 58, the following alternative solution was proposed and has been implemented since 1986. A series of silt fences was placed throughout the length of each ditch to control the transport of local sediments. It was proposed that there be two evenly spaced silt fences installed on Ditch 57 and three on Ditch 58. The sediment trap solution appears to be the most feasible solution for the control of sediment on these ditches due to the relative ease at which they can be maintained.

As part of the variance requests made to date, footnotes on the respective maps have been modified to match the status of the variance requests. Footnotes placed on the maps in 1986 indicated that a variance request from requiring formal ditch design had been made. These footnotes were changed for the 1991 permit submittal to read that a variance had been granted based upon the acceptance of the 1986 permit application. It is proposed herein to keep the footnotes on the respective maps as currently submitted.

We appreciate your help in clearing up the conditions related to this variance and look forward to working with you on these and other matters. Should you have any questions, please call.

Respectfully,

Ben Grimes
Senoir Environmental Engineer

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