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State of Utah

DEPARTMENT OF NATURAL RESOURCES

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June 4, 2009

Dave Shaver, Manager
Genwal Resources, Inc.
P.O. Box 910
East Carbon, Utah 84520-0910

Subject: Water Aeration Treatment Area, Genwal Resources, Inc., Crandall Canyon Mine, C/015/0032, Task ID #3261, Outgoing File

Dear Mr. Shaver:

The Division has reviewed your application to construct a water aeration treatment facility at the Crandall Canyon Mine Facility.

The Division has determined that there are some deficiencies that must be addressed before a determination can be made that the requirements of the R645 Coal Mining Rules have been met, and an approval can be granted. Those deficiencies are listed as an attachment to this letter.

The initials of the author follow each deficiency in order for you and your staff to directly communicate with that individual should questions arise.

The plans as submitted are denied. Please resubmit the application in its entirety.

Sincerely

James D. Smith
Permit Supervisor

JDS/SKC/sqs
cc: Price Field Office
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Deficiency List

Task No. #3261
Water Aeration Treatment Area

The members of the review team include the following individuals:

Steve Christensen (SC)
Pete Hess (PH)

R645-301-120- The Permittee must revise the last paragraph of page 5-33. The application refers to a Figure 7-14. It doesn't appear that a Figure 7-14 was submitted. Upon review of the application, it appears that Figures 7-13a thru 7-13d were submitted to depict the various design features of the proposed aeration treatment facility. (SC)

R645-301-751-The Permittee must provide a plan and discussion as to how the maintenance/clean-up of the aeration treatment facility will occur. The application does not provide a contingency or back-up system plan to the aeration treatment facility. If the intention is to route the in-mine water directly into the receiving drainage during maintenance of the aeration treatment facility, the Permittee must provide the Division with documentation from the Department of Water Quality (DWQ) that such a practice is acceptable per the terms of their UPDES permit and subsequent violation. (SC)

R645-301-751- The Permittee must provide additional information as to how the proposed aeration treatment facility will remove the iron from the mine water discharge. On page 5-34 and page 7-47, the Permittee discusses the low-lying baffle structures, their placement as well as the use of a 2"-3" gravel layer (potentially comprised of limestone and/or some chemical flocculent or coagulant. The Permittee must provide some scientific justification and/or supporting calculations that the proposed treatment can work (i.e. technical paper, guidance document etc.). The justification should demonstrate that, given the current flow volumes and iron concentrations at the mine site, the proposed aeration treatment could work. (SC)

R645-301-751- The Permittee should revise page 5-34 of the application to reflect that the proposed aeration treatment facility will be a temporary/operational structure. Once more information is obtained regarding the iron levels of the mine water discharge; a final reclamation plan will be revised accordingly. However, at this time, the application should make it clear that the proposed aeration treatment facility is a temporary measure to address the current DWQ violation. (SC)

R645-301-741 AND –742.300- The Permittee must revise Table 4, *Runoff Summary Drainage to Sediment Pond* so that it clearly identifies watershed WSUD-3 as contributing flow to the sediment pond. The additional 0.23 cubic feet per second (cfs) of flow (produced from the 10 year/6 hour design storm event for diversions) reporting to disturbed drainage ditch DD-8 from WSUD-3 is reflected in the WSDD-8 calculations on Table 4. However, as Table 4 lists each individual watershed that contributes flow to the sediment pond, watershed WSUD-3 should be a line item. (SC)

R645-301-741 AND –742.300- The Permittee must revise Table 5, *Runoff Control Structure Watershed Summary* of Appendix 7-4. For clarification, the 'Sediment Pond' entry at the bottom of the table must identify watershed WSUD-3 as contributing watershed to the Sediment Pond. (SC)

R645-301-741 AND –742.300- The Permittee must revise the flow depths and flow areas identified in Figure 3 of Appendix 7-4 to reflect the additional flow being contributed to disturbed drainage ditches DD-8 and DD-5. (SC)

R645-301-742.300-The Permittee must provide additional information as to how the in-mine water will be routed to the proposed aeration treatment facility. Pages 5-33 and 7-47 of the application discuss how the distribution pipeline will be suspended either from off the existing concrete wall *or* suspended from rock anchors affixed to the ledgerock. The Permittee should clarify (with narrative and design drawings) which method will be utilized. If during construction, problems arise and/or modifications need to be implemented on site, the Division will work with the Permittee and the MRP can be revised with an as-built submission following construction. (SC)

R645-301-742.300- The Permittee must provide additional discussion and design drawings that illustrate how the seepage from the Star Point Sandstone (located directly above the proposed aeration treatment facility) will be collected. Per Division Order #DO08A-2957 (Division Order), the Permittee was directed to revise the existing reclamation plan in the approved MRP to account for the encountered mine water. As part of the Division Order, it's been established that the seepage water emanating from the sandstone layer must be quantified in order to produce a long-term reclamation plan. As the seepage water is currently reporting to the area of the proposed aeration facility, the application must also include the design considerations and design drawings that demonstrate how that water will be contained and quantified prior to co-mingling with the in-mine water being treated in the proposed aeration facility. (SC)

R645-301-742- The Permittee must clarify what method(s) will be utilized to prevent the infiltration of the aeration water into the base material of the adjacent Forest Service road. On page 5-33, the Permittee states, "*The area will then be surfaced with a water-proof treatment (i.e. concrete, asphalt, impervious liner, etc.) to make certain that the water flow across the treatment pad does not saturate the underlying fill material.*" The application should specify the materials and methods that will be utilized. (SC)

R645-301-742-The Permittee must clarify what type of barricade would be constructed around the treatment facility to prevent disturbed area drainage from co-mingling with the aeration treatment facility. On page 5-33 and page 7-47, the Permittee refers to a "*suitably constructed barricade*". Figures 7-13c and 7-13d depict a "*typical jersey barrier*". If it is the intent of the Permittee to utilize jersey barriers to impede flow from both entering into and discharging from the aeration treatment facility, further details/designs must be submitted as to how this will be accomplished. Typical jersey barrier installations do not establish barrier that is

impervious to water flow. (SC)

R645-301-742- The Permittee must provide additional information as to what the actual aeration treatment facility features/structures will be and how they will be constructed/installed. On page 5-34 of the application, the Permittee discusses the structures, "*As currently envisioned, these structures could be precast concrete parking curbs (wheel stops)...*" If during construction, problems arise and/or modifications need to be implemented on site, the Division will work with the Permittee and the MRP can be revised with an as-built submission following construction. However, in order for the Division to approve the proposed aeration treatment facility, specific design information is required. (SC)

R645-301-742.220- The Permittee must provide up to date survey information regarding the sediment level accumulation in the pond. The updated survey information is needed in order to determine whether the pond requires maintenance/cleaning. The application demonstrates that the sediment pond has adequate storage for the proposed re-routing of undisturbed watershed 3 (WSUD-3). However, that is based up on the sediment level in the pond being maintained below it's clean-out level. Based upon recent site visits/field inspections by Division staff, the water level in the pond has been observed less than 1 foot below the principal spillway. Annual reports submitted by the Permittee have provided estimated sediment accumulation elevations of 7,767' for 2006, 7,768' for 2007 and 7,768' for 2008 respectively. The sediment clean-out level for the pond is 7,769'. It is highly unlikely that the sediment level has remained constant. The updated survey information will determine if the pond needs to be cleaned out. (SC)

R645-301-800- The currently posted reclamation bond amount is $ 2,062,000. The Division estimates that a bond of $ 2,115,000 is required to reclaim this site. The Permittee must post an additional $53,000 of bond. (PH)