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State of Utah

DEPARTMENT OF NATURAL RESOURCES

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Executive Director

Division of Oil, Gas and Mining

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Outgoing
C6070047
#3646
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January 27, 2011

Greg Hunt, Agent
Carbon Resources, LLC
16577 Columbine Lane
Cedaredge, Colorado 81413

Subject: Deficient Permit Application, Carbon Resources LLC, Kinney #2 Mine, C/007/0047,
Task ID #3646, Outgoing File

Dear Mr. Hunt:

The Division has reviewed your application to operate a coal mine facility at the Kinney No. 2 mine site in Scofield, Utah.

The Division has determined that there are 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.

Each deficiency identifies its author by that author's initials in parentheses; such that your staff can directly communicate with that individual should any questions arise relative to the preparation of Carbon Resource's response to that particular deficiency.

Priscilla Burton [PB]
James Owen [JCO]
April Abate [AA]
Steve Christensen [SC]
Joe Helfrich [JCH]

In order to complete a timely and efficient review of your application please highlight all text changes in red-line strike-out and include a reference to the chapter and page or map, exhibit, etcetera where the changes are located. These references are typically included in the cover letter with the application.

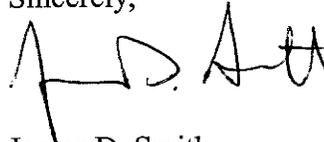


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Greg Hunt
January 27, 2011

During the review of your application the review team noted that there were inconsistencies in the table of contents, conflicting statements in the text, and typographical errors in several chapters of the application. Some of these may not have been included in the following list of deficiencies; therefore, it is important that you thoroughly review your application - including all changes made in response to these deficiencies - for any such inconsistencies before resubmitting the document to the Division.

Please respond to these deficiencies as soon as possible such that we may efficiently process your application.

Sincerely,

A handwritten signature in black ink, appearing to read "J.D. Smith". The signature is written in a cursive style with a large initial "J" and "S".

James D. Smith
Permit Supervisor

JDS/JCH/sqs
Attachment
cc: Price Field Office
O:\007047.KN2\WG3646\WG3646defletter.doc

Deficiency List

Task ID #3646
Kinney #2 Mine

The members of the review team include the following individuals:

Priscilla Burton-[PB]
April Abate-[AA]
Steve Christensen- [SC]
Joe Helfrich- [JCH]
James Owen-[JCO]

ADMIN

R645-300-113, Proof of current registration is discussed in Volume 1, Chapter 1, Page 1 20, R645-301-115.300 and a copy of the registration is included in Volume 2, Exhibit 4. The renewal lapsed on 12/01/2010. The applicant will need to renew the registration. [JCH]

R645 301-114.100, The reviewer is referred to page 1-18, (Documentation of Ownership). Page 1-19 includes a legal description of the of the permit boundary. The text on page 1-19 of the application also needs to include a reference to a permit area boundary map of scale no less than 1"=1000' that clearly shows the boundary of the permit area in order to verify the legal description. [JCH]

R645-300-114.400, Volume 2, Exhibit 4 includes the entity id # for Carbon Resources, LLC. Entity id #'s for Western Reserve Coal Company, Inc. and WRCC, LLC also need to be included in the application. [JCH]

R645-301-121.200, The legend provided for Regional Land Use Map 4 provides a hatch marking for Bureau of Reclamation land, but Scofield Reservoir is not marked with this legend and the Scofield Lake State Recreation Area boundary should be marked on the Regional land Use Map 3.4.1.4-1. • The application should note the connection between Exhibit 1.2-1 photographs and the pre-mining site condition Map 4.5.1.2-4 that provides photograph locations. Likewise, the application should refer to Exhibit 1.2-1 on Map 4.5.1.2-4 for photographs of numbered locations shown on that map. [PB]

The Regional Land Use map # 4 has been revised to include Scofield Reservoir. The Scofield Lake State Recreation Area boundary should be marked on the Regional land Use Map # 4. If they are one and the same then maps 4, 11, 12 and any other maps that include this area all need to have the same delineation. Map 12 needs to be revised to show the correct location of Scofield Reservoir, it is currently located in the PIT MIN fee property. The PIT MIN legend needs to include all of the PIT MIN parcels, see section 27. The permit area boundary needs to be clearly defined and included in the legend. The PDF version of

map12 is different than the one in the application. The application version appears to be the most recent. [JCH]

Exhibit 1 includes a reference to map #14 for the photo locations and map 14 includes a reference to Exhibit 1.

Map 14 includes three areas noted as disturbed area boundaries. Typically disturbed areas are delineated by a boundary line and noted as such in the legend. Map 14 should include this type of delineation for the entire disturbed area. . [JCH]

Map 13, Surface Facilities, needs to include the entire disturbed area boundary. [JCH]

SOILS

R645-301-121.100, Section R234.220 & 234.230 states that the proposed stockpile locations are shown on Map 13, Surface Facilities, however this map shows only one topsoil stockpile location. It should also identify the location west of SR96. [PB]

R645-301-121.122, The MRP states that any unused material stored in the Temporary stockpile will be taken under contract with a third party to a processing facility. To verify this arrangement, the Division requests that the contract be included in the confidential files of the application. [PB]

R645-301-731.300 and R645-301-536.320, Provide a sampling plan to identify acid/toxic characteristics of waste stored on the surface. At a minimum, the plan should include a commitment to sample the temporary waste pile during periods of temporary cessation. [PB]

BIOLOGY

R645-301-322, -301-333, -301-342, -301-358, Chapter 3, Page 3-55, Section R645-301.330 ;(Operation Plan) includes a list of mitigation measures. The text at the bottom of page 3-55 needs to include the appropriate section,(s) that describe each of the previously listed mitigation measures looks like there is a typo or omission here and several other places in this section where the word section was just an S, also “Provisions to minimize Total Disturbance” are described before the list of mitigation measures on page 3-55. The applicant may choose to include this measure after the list as referenced on the bottom of page 3-55. These measures are further defined in the text on pages 3-56 through 3-60 some clarification is needed here as there appears to be other topics included in these pages. Perhaps listing them as bullets beginning on page 3-56 would present the information more clearly. [JCH]

Chapter 3, Pages 3-11 through 3-13, Section R645-301.220 include a description of high value or crucial habitats for several species of animals within the permit and disturbed areas. These habitats are clearly defined on maps 2A through 2G. The maps and associated legends also define the range of these habitats. Pages 3-64 through 3-69 Section R645-301.330 include a description of “some of the conservation and mitigation plans for the wildlife species that have

been described as occupying crucial or substantial habitat within and adjacent to the Kinney #2 permit area". They include: Black Bear, Blue Grouse, Moose, Mule Deer, Elk, Sage Grouse and snowshoe Hare. Preliminary site visits, (Dr. Collins 2009), indicate little evidence of long term occupancy. More so along the lines of occasional, passing through or avoidance due to the close proximity to highway 96 and the presence of human activity. During the life of the mine said species of wildlife will be displaced from the 27 acre area of disturbance. The displacement of these species to areas of as good or better habitat should not result in a negative impact to their respective life cycles or populations. The application will need to include a commitment from Carbon Resources to participate in a site visit that includes representatives from the FWS, DWR and DOGM in the spring of 2011 to verify this assumption. Personal observations from site visits several years ago and from driving by the area indicate that there are most likely areas of this type adjacent to the proposed 27 acre disturbed area. [JCH]

The Raptor Map, map #2, includes the location of the raptor nests and the species and status associated with each nest. According to the information in chapter 3, Section R645-301.330, page 3-57 there is presumably a Red Tailed hawk nest # 1541 approximately 650 feet from the south east corner of the proposed disturbed area. Spatial buffers for this species are ½ mile temporal buffers run from March 15th through August 15th according to information published by The U S Fish and Wildlife Service.

Consultation with representatives from the FWS, (Nathan Darnall), Carbon Resources' consultant, (Dr. Pat Collins) and DOGM, (Joe Helfrich) was initiated on Wednesday, January 5th and is pending with DWR, (Leroy Mead).

The results of the consultation included the following recommendations for protection measures for nest #1541;

A commitment to conduct 2 raptor surveys, (ground surveys in mid March and mid April of 2011, ground surveys would be adequate), of nest, #1541, prior to the initiation of mining activities to determine occupancy;

A commitment to limit any mining activities to within ½ mile of the nest from March 15th through August 15th if the nest is occupied, and

A commitment to consult with the FWS, DWR and DOGM biologists if the nest is not occupied and the applicant wishes to commence mining activities within the spatial and temporal buffers. [JCH]

Page 4.3-5 paragraph two should be deleted as it makes reference to the "Barn Canyon air ventilation shaft" The applicant has noted that the paragraph has been deleted. It would be nice to know what page that was located on for verification purposes. [JCH]

The proposed mining activities are located in a watershed that contributes water to the upper Colorado River. Within that section of the river are four endangered fish species, the Colorado pike Minnow, Razorback Sucker, Humpbacked Chub and Bonytail. Page 3-59 of the application

needs to be revised to include the figure of 66 acre feet per year, (personal conversation with Greg Hunt 1/5/2011), based on the water rights allotted to Carbon Resources. The figure will then be used by the Division and FWS to determine potential adverse effects to the referenced species and to complete the consultation process with the FWS. [JCH]

Chapter 3, Section R645-301.330, Page 3-56, Paragraph 1 needs to include the names of the individual(s) and the data collected during the baseline field surveys used to determine that there were no jurisdictional wetlands located within the proposed disturbed area. [JCH]

R645-301-330, -301-331, -301-332. According to the text on page 1 of exhibit 3.2 Map 5 shows the location of these vegetative communities and the reference area as related to previous and proposed mining activities. There are two vegetation maps in the application that show these features, Map 3.2.1.2-1 and Figure 1 but no Map 5. There are several other references to map 5 in exhibit 3.2 that need to be corrected. The study also references the compilation of a list of threatened, endangered and sensitive plant species for the area. The list should be included in the application. In order to verify this it would be nice to know on what page or exhibit these changes have been made. [JCH]

CULTURAL RESOURCES

R645-301-411, Volume I, chapter IV, appropriate sections of pages 4-14 and 4-15 of the application need to be revised to reflect the current status of the SHPO consultation. [JCH]

LAND USE

R645-301-411, Map 4, the Regional Land Use map needs to include the Carbon County Lakeshore zone (SL). [JCH]

R645-301-411, The Land Use information is included in chapter 4 and map #4 (Regional Land Use) of the application. The proposed disturbed area includes two zoning classifications for the proposed disturbed area, Scofield Commercial and Carbon County Mountain Range. A portion of the area is a reclaimed abandoned mine site and the remaining is an undisturbed grass, shrub aspen community both of which are used primarily for wildlife, grazing and outdoor recreation according to the text on page 4-9. These current land uses as described by the applicant are clearly components of what is defined as the Watershed zone. However the applicant has stated that "There are no planned facilities associated with the Kinney #2 Mine within the WS zone". The applicant needs to provide a rationale that clearly explains and clarifies this information. [JCH]

Map #4, the Regional Land Use map does not include the current and post mining land uses for the proposed disturbed area. Since map #4 is actually a land use zoning map it should be renamed to indicate that it is a zoning map, an additional map, perhaps 4A Titled Current and Postmining Land Uses should be included that clearly shows the current and postmining land uses within the proposed disturbed area. [JCH]

R645-301-412, -301-413, -301-414, Chapter 4, Section R645-301-412.100, Page 4-18, Paragraph 1 needs to be revised to state that “The post mining land use for the reclaimed area is wildlife, grazing and recreation”. The terms Mountain Range, Watershed and Commercial are classifications established by Carbon County and the Scofield Town for zoning purposes described in chapter 4 on page 4-4. [JCH]

ENGINEERING

R645-301-526.116.1, The applicant must provide a detailed plan on the changes/work that will be done on Utah Highway SR 96 in connection with mine access. This plan must be presented along with the appropriate UDOT approval. [JCO]

R645-301-522, -301-523, -301-521.100, The applicant must update the information (the dates, in particular) that are outlined in the general coal development and production sequence located on pages 5-17, 5-19, and any other location where the sequence is describe in the permit application. Map 15, Mine Plan Layout & Production Schedule, must also be updated to reflect the appropriate projected development & production dates. [JCO]

R645-301-525, The applicant must provide a complete subsidence control plan. Specifically, the applicant must demonstrate how they will comply with each of the regulations within R645-301-525. This includes but is not limited to the following sub-deficiencies:

R645-301-525.100, As part of the subsidence control plan, the applicant must conduct and present the results of a pre-subsidence survey as well as provide a narrative indicating whether subsidence, if it occurred, could cause material damage or to diminish the value or reasonable foreseeable use of structures, resources, or water supplies. If the pre-subsidence survey described in R645-301-525.100 shows that no such structures or renewable resource lands exist, or no material damage or diminution could be caused in the event of mine subsidence, and if the Division agrees with such conclusion, no further information need be provided in the application under this section. [JCO]

R645-301-525.300, -301-525.490, As part of the subsidence control plan, the applicant must include a narrative or description of the subsidence control methods that will be applied (some are described in R645-301-450 through R645-301-454). This may include such methods as backfilling of voids; leaving support pillars of coal; leaving areas in which no coal is removed, including a description of the overlying area to be protected by leaving the coal in place. [JCO]

R645-301-525.440, -301-525.490, As part of the subsidence control plan, and non-dependent upon the results of the pre-subsidence survey, the applicant should include a description of the subsidence monitoring that will be conducted to determine the commencement and degree of subsidence so that, when appropriate, other measures can be taken to prevent, reduce, or correct material damage. This may include visual monitoring (using photography), elevation monitoring (using point surveys/GPS/elevation control points), aerial monitoring (using aerial surveys), etc. This monitoring will be used to demonstrate and prove whether or not subsidence is occurring using the mining/filling methods that are described in the permit application. [JCO]

R645-301-525.500, -301-525.490, As part of the subsidence control plan, the applicant must include a commitment to correct any material damage resulting from any subsidence caused to surface lands, to the extent technologically and economically feasible, by restoring the land to a condition capable of maintaining the value and reasonably foreseeable uses which it was capable of supporting before subsidence, and, to the extent required under applicable provisions of State law, either correct material damage resulting from subsidence caused to any structures or facilities by repairing the damage or compensate the owner of such structures or facilities in the full amount of the diminution in value resulting from the subsidence. Repair of damage includes rehabilitation, restoration, compensation, or replacement of damaged structures or facilities. [JCO]

R645-301-525.500, As part of the subsidence control plan, the application must include a commitment to mail a notification to all owners and occupants of surface properties and structures above the underground workings at least 6 months prior to mining, or within that period if approved by the Division. The notification shall include, at a minimum, identification of specific areas in which mining will take place, dates that specific areas will be undermined, and the location or locations where the operator's subsidence control plan may be examined. [JCO]

R645-301-512.250, The applicant must have Maps 20 through 22 correctly certified. Figure 25 appears to have a copy of a professional engineer's certification but is unreadable due to its insufficient size. The Division recommends that the applicant follow the requirements detailed in State Rules R156-22-601 for seal requirements. Other forms of certification are acceptable. [JCO]

R645-301-512.120, -301-121.200, The applicant must remove any text within the permit application that states that no coal preparation or processing plant is planned for the mine. According to the definitions in the Administrative Introduction to the Utah Coal Mining Rules (R645-100), a "Coal Processing Plant" means any facility where coal is subjected to chemical or physical processing or the cleaning, concentrating, or other processing or preparation. Coal processing plant includes facilities associated with coal processing activities, such as but not limited to, the following: loading facilities, storage and stockpile facilities, sheds, shops, and other buildings; water treatment and water-storage facilities, settling basins and impoundments, and coal processing and other waste disposal areas. "Coal Preparation or Coal Processing" means the chemical and physical process and the cleaning, concentrating, or other processing or preparation of coal. [JCO]

R645-301-528.320, -301-121.200, Within Chapter 5 of the permit application, the applicant must refer to any "underground development rock" or "mine development rock" as either coal mine waste, underground development waste, or coal processing waste. According to the definitions in the Administrative Introduction to the Utah Coal Mining Rules (R645-100), "Coal Mine Waste" is divided into two categories: coal processing waste and underground development waste. "Coal Processing Waste" means earth materials which are separated from the product coal during cleaning, concentrating, or other processing or preparation of coal. "Underground Development Waste" means waste-rock mixtures of coal, shale, claystone, siltstone, sandstone, limestone, or related materials that are excavated, moved, and disposed of from underground workings in

connection with underground coal mining and reclamation activities. The applicant must clearly define which material is which. The Division considers the rock materials that are encountered during mining operations that *are not* separated or “cleaned” from coal materials to be underground development waste and will be approved to be returned to designated areas underground. The Division considers the rock materials encountered during mining that *are* separated, cleaned, or processed in anyway through any type of coal preparation or coal processing plant, from coal materials to be coal processing waste and will be not be approved to be returned to designated areas underground unless the applicant can demonstrate compliance with R645-301-528.321, R645-301-536.520, R645-301-536.700, and R645-301-746.400. Any materials (high or low ash content) that are stockpiled and sold as combustible carbonaceous rock that can be classified as anthracite, bituminous, sub-bituminous, or lignite are considered coal. [JCO]

R645-301-528.320, The applicant states that underground development waste will be temporarily stored at an area on the load-out pad and that the area is capable on containing approximately 3,900 tons of material. The applicant must state the maximum amount of time that the material will remain on the load site. The Division needs this information so that there will be no confusion about what constitutes temporary storage. If the Division considers the maximum storage time to be greater that temporary status, the applicant must demonstrate compliance with all regulations in R645-301-536. [JCO]

R645-301-536.510, If the applicant wants to ship coal processing waste or underground development waste off site, the applicant must state specifically to which permitted disposal site the material will be sent. In addition, the receiving site must also be permitted to receive material from the Applicant. All pertinent details and information pertaining to a Letter of Intent for disposal with Arch Coal must be included in Chapter 5 of the permit application or referenced in the appropriate sections of Chapter 5 of the permit application. [JCO]

R645-301-524.240, The applicant must include a commitment that in the event that surface blasting is required, the applicant will submit a certified blast design as an amendment to the generic blat plan provide. The applicant must commit to not blasting until the certified blast design has been reviewed and approved by the Division. [JCO]

R645-301-551, As per MSHA 30 CFR 75.1711, the applicant must edit the plan for reclamation of mine openings to include a commitment to backfill all portal openings with a minimum of 25 feet of material. This backfill must be placed in addition to the portal seals that will be constructed. Map 17 should be edited to include a backfilled adit in final reclamation status. [JCO]

R645-301-512.130, All reclamation maps should be properly certified. For example, Map 29, Mine Surface Facilities Area Post-Mining Topography, has not been properly certified. [JCO]

HYDROLOGY

R645-301-120, The Permittee should revise the table of contents in Chapter 7 to accurately depict the page numbers of the corresponding sections. For example, the table of contents indicates that the climatological information is located on page 7-68; however, the information is presented beginning on page 7-74. [SC]

R645-301-120, The Permittee should revise the application so referenced tables/figures etc., are in ascending chronological order. For example, Table 8 is on page 7-130. Table 12 is on page 7-72. Table 13, is on page 7-34. [SC]

R645-301-711 THRU 720, This section does not address the regulations that detail methods and calculations utilized to comply with hydrologic design criteria, the hydrologic performance standards, and an explanation or a reference to reclamation activities. These requirements are found in R645-301-711.300, 400, 500 and need to be addressed in this section. These requirements can either be addressed in this section or referenced in this section to where they are addressed elsewhere in the MRP. [AA]

R645-301.712, The following maps will require a stamped certification by a Utah-licensed professional engineer or geologist: Map 7 – Regional Hydrology; Cross sections 7A and 7B; Map 8 – Works, Wells, springs, Faults; Map 9 – Groundwater Level Data. [AA]

R645-301-722, Maps 30 and 31: Several of the groundwater rights within the search radius are associated with change or exchange applications as noted with an Identification number starting with an A or a E before the number. When discussing water rights in the narrative, these A or E water rights are referred to but they are not shown on Map 30, so it is difficult to cross-reference. In addition to the water right number, please also reference the change or exchange water right numbers on the map for clarity. [AA]

Surface water right information needs to be expanded upon to address the surface water rights within the permit boundaries. The application needs to be updated to include updates to Map 31 explaining the “See Note 1” comment next to water right number 91-3588. Additional information about the status and nature of the two individual water rights is needed on page 7-53 of the application. [AA]

Map 7: There are several locations with “Eagle Spring” in the title on Map 7 – Regional Hydrology map: Eagle Spring 1, Eagle Spring 1A, Eagle Spring 2, Eagle Pond 2, and Eagle Seep 3. Furthermore, Table 9 on page 7-18 of the permit application lists Eagle Seep 1, Eagle Seep 1A, Eagle Spring 2, and Eagle Seep 3. Presumably, Eagle Seeps 1 and 1A correspond to Eagle Spring 1 and 1A on Map 7. This requires clarification on both Map 7 and Table 9. [AA]

Maps 7A and 7B: There are several letter and number demarcations on these maps which presumably denote the exploratory boreholes that were drilled – but it is not explicitly stated what these letters/numbers represent on the maps. These boreholes should either be explained in

the legend or removed altogether. Monitoring wells CR-06-01 and CR-06-02 were not depicted on Map 7B. [AA]

Map 28 needs to be updated to show any additional surface and groundwater monitoring locations added to the plan. Groundwater samples locations in Long Canyon and in Eagle Canyon that will be monitored as part of the water monitoring program should be updated on the map to show which of these samples have a water right attached to them. [AA]

R645-301-724.100, The Permittee must revise the application to clearly demonstrate the frequency and dates of monitoring visits that were conducted at Eagle Springs 1, 1A, 2 and 3 and provide the data obtained. Exhibit 10, *Surface and Ground Water Field Measurements* and Figure 17, *Baseline Water Sampling* does not provide any documentation of monitoring activity for these springs. Table 9, *Seep and Spring Flow Summary* does list Eagle Seep 1, Eagle Seep 1A, Eagle Spring 2 and Eagle Seep 3, but it's not possible to determine the frequency and timing of the site visits that were utilized in characterizing the nature and seasonal fluctuation of these groundwater resources. This deficiency was identified in the previous technical analysis. The Permittee has indicated that the springs were visited and that water samples were captured when available. Documentation of the field visits to these springs and the obtained data should be provided in the application. [SC]

R645-301-724.100, The Permittee should address the baseline data collection of Aspen Spring. Based upon a review of Table 6, *Kinney #2 Mine Baseline Monitoring Stations* and Exhibit 10, *Surface and Ground Water Field Measurements*, it does not appear that enough data was collected to establish the baseline characterization of that spring. Exhibit 10 shows the spring as having been sampled five times beginning in 2008 (June, August and October), but then not sampled again until June of 2010. The gap in the data must be addressed. If additional field data is available, the Permittee should provide it in the application. [SC]

R645-301-724.100, The Permittee must place a footnote in Exhibit 9, *Seep and Spring Survey* that directs the reader to Map 7, *Regional Hydrology* where the seeps and springs identified in the survey are depicted. [SC]

R645-301-724.100, The Permittee must address water reading discrepancies obtained from monitoring wells CR 06-01 BLW and CR 06-02. Based upon a review of the data presented in Exhibit 10, *Surface and Ground Water Field Measurements* and the figures in Exhibit 11, *Monitoring Well Completion Details*, it appears that 11 water level readings obtained from CR 06-01 BLW and 7 water level readings from CR 06-02 were obtained from within the screened interval indicating the presence of groundwater. Based up on the discussion within the text of the application, these monitoring wells are dry. The discrepancy must be addressed. [SC]

R645-301-724.100, The Permittee must revise/address the datum elevations presented in Exhibit 10, *Surface and Ground Water Field Measurements*. It appears that the datum elevations utilized to calculate the screened interval elevations and Hiawatha Seam interval elevations were obtained from the top of the PVC riser of the monitoring wells. However; according to the information presented in Exhibit 11, *Monitoring Well Completion Details*, it appears that the elevation of the ground was utilized to calculate these intervals. [SC]

R645-301-724.100, The Permittee must address water level readings obtained at monitoring well CR 06-01. Based upon a review of the data presented in Exhibit 10, *Surface and Ground Water Field Measurements* and the figures in Exhibit 11, *Monitoring Well Completion Details*, it appears that 5 water level readings were obtained from below the bottom elevation of the monitoring well's blank. [SC]

R645-301-724.100, The Permittee must address the 'static water levels' reported in Exhibit 10, *Surface and Ground Water Field Measurements* for monitoring wells CR 06-02, CR 06-02 ABV and CR 06-05A. Based upon a review of the data presented in Exhibit 10, *Surface and Ground Water Field Measurements* and the figures in Exhibit 11, *Monitoring Well Completion Details*, numerous water level measurements were obtained from the blank section of the monitoring well. The Permittee should not present these water levels as "Static Water Level Elevations" in Exhibit 10 as they do not represent an actual water level associated with a groundwater system. If a true groundwater level was not obtained, the Permittee should clearly indicate that in Exhibit 10. Additionally, the Permittee should provide a brief discussion as to how water accumulated in the blanks and why they were initially reported as "Static Water Level Elevations". [SC]

R645-301-724.100, The Permittee must address the lack of baseline data obtained from monitoring wells CR 10-11 and CR 10-12. Based upon the data presented in the application, these monitoring wells have been sampled two times in July and August of 2010. Two sampling events do not establish seasonal variation in terms of water quality or quantity. [SC]

R645-301-724.100, Table 6, *Kinney #2 Mine Baseline Monitoring Stations*, should be revised to reflect the number of sampling events at *each* of the monitoring stations based on the information contained in Exhibit 10, *Surface and Ground Water Field Measurements*. For example, Table 6 appears to depict that Eagle Spring was monitored four times. However; upon review of the field measurement information in Exhibit 10, the site was visited approximately 30 times. [SC]

R645-301-724.100, The Permittee should revise discrepancies in the third paragraph on page 7-83. The Permittee states, "*Water measured on May 29th, 2007 within wells CR 06-01, CR 06-01 BLW and CR 06-02 during and after drilling has noted at a maximum water elevation of 7,898 feet msl, over 100 feet below the lowermost spring elevation.*" Based upon the discussion in Chapter 7, monitoring wells CR 06-01, CR 06-01 BLW and CR 06-02 are characterized as being "*dry holes*". The sentence is misleading in that it appears to convey that a maximum water level was obtained at 7,898 feet msl. Based upon Map 7A, *W-E X-Section A-A* it appears the piezometric surface of the regional aquifer is above the coal seam in the location of CR 06-01 and CR 06-02. [SC]

R645-301-724.100, The third paragraph on page 7-83 references, "*springs located along the western facing slope...all located south of the mine permit area*". The spring and seep survey in Exhibit 9 and Map 7 do not depict any springs south of the permit area. As such, its not possible for the reader to determine what springs are being discussed. Please address this discrepancy and provide a figure that depicts the location of the springs being discussed. [SC]

R645-301-724.100, The Permittee must provide additional information/clarification as to the regional aquifer and associated water level. Map 7A, *W-E Section A-A'*, depicts the piezometric surface of the regional aquifer. Upon comparison of Map 15, *Mine Plan Layout and Production Schedule*, with Map 7A, it's unclear as to whether the proposed mine works are above or below the regional groundwater table. The Permittee should:

- Clearly depict the western extent of the Eagle Canyon Graben on Map 7A and Map 15.
- Modify Map 7A or provide another cross-section that depicts the extent of the mine works relative to the piezometric surface.
- Discuss within the text of the application the extent of mine workings (i.e. no mining planned within the Eagle Canyon Graben).
- Adjust the piezometric surface line on Map 7A to account for the lack of encountered groundwater in Monitoring Well CR 06-05A. [SC]

R645-301-724.100, The Permittee must provide further discussion as to the groundwater flow direction of the regional aquifer. On page 7-16 of the application, the Permittee discusses how the regional aquifer system flows in a "*general east to west direction toward Mud Creek and Scofield Reservoir*". Based on the presented geological information, the dip of the regional stratigraphy is to the north, north-east. Additional information/clarification should be provided as to the processes that produce the westerly flow direction of the regional aquifer. [SC]

R645-301-724.100, The Permittee should revise the text describing groundwater rights on page 7-30 and surface water rights on page 7-53 with what's depicted on maps 30 and 31 respectively. The text in each section indicates that a "*4 mile radius of the central mine area*" is depicted. Maps 30 and 31 do not depict a 4 mile radius from the permit boundary. [SC]

R645-301-724.100 and -724.200, The Permittee must consult with the Price Division of Water Rights to produce a more accurate listing/depiction of the surface and ground water resources within the permit and adjacent area. Upon consultation with the Division of Water Rights, Price Field Office, ground and surface water resources within 2 miles of the permit boundary were omitted/missed from the information in the application. [SC]

R645-301-724.100 and -724.200, The Permittee should revise Table 10, *Surface and Ground Water Quality Summary* to depict the analytical results for total iron and total manganese for Angle Spring, Aspen Spring, Eagle Spring, Sulfur Spring, Miller Outlet, Mud Creek and Res-1. Upon review of Exhibit 12, *Surface and Ground Water Quality Data*, it appears that these analyses were conducted and should be included in Table 10. [SC]

R645.724.100 and .200, The groundwater and surface water operational sampling plan should be expanded to include additional sampling locations. *All* groundwater monitoring wells should be sampled for water quality parameters. Currently the applicant is stating that they will only be monitored for water level data. The Division recognizes that most of these wells are dry; however, in the event that water is present in the wells during a given quarter, the water should

then be sampled for the required operational parameters to help gain a better understanding of the water quality data in the wells when and if it becomes available. [AA]

Table 7 should be updated to include water quality parameter sampling for all groundwater monitoring wells in the monitoring well network and ephemeral drainages within the permit area. [AA]

The ephemeral drainages within the permit area include: Kinney Draw, Columbine Draw and Jones Draw. None of these drainages were proposed for monitoring in the operational water monitoring plan likely because there has been no evidence of any ephemeral flow since the baseline monitoring period began. However, since these drainages are located within the permit area, they should still be monitored for flow and water quality parameters if water is present. The Division recommends that the operational water monitoring plan be expanded to include quarterly monitoring of the ephemeral drainages within the permit area. [AA]

Springs within the Long Canyon area will be considered part of the Cumulative Impact Area and will also require monitoring when/if the mine expands further eastward. Therefore, the applicant should identify the critical springs within Long Canyon and add them to the water monitoring plan for operational parameters. Additional characterization of the springs in Long Canyon is needed to determine if these springs exhibit seasonal variability that would indicate that they are susceptible to recharge, or if they represent a confined perched system that discharges on a continuous basis. [AA]

As a result of CR-06-03-ABV being decommissioned, only six month worth of baseline data were collected from this well. If extraction of the Hiawatha seam is expected to make its way eastward right up to fault that delineates the western side of the Eagle Canyon graben, then the Permittee must provide a commitment to install a replacement well in order to measure any possible negative effects that adjacent mining would have on the groundwater found within Eagle Canyon Graben. [AA]

Baseline data from monitoring well CR-06-09/ABV/BLW were limited to depth to water only. Baseline water quality parameters for this well have not been collected due to limitations in collecting water samples from this well. This well is located further to the west and in an area considered geologically separate from the coal seam to be mined. Therefore, it has been determined that the water quality and quantity data that this well would yield, does not directly effect the current mine plan operation. However, it is recommended that should the mine plan to expand their operation further eastward, redeveloping CR-06-09/ABV/BLW for the collection of water quality parameters is recommended in enough time to establish seasonal variation prior to mine expansion into this area. [AA]

Eagle Springs 1, Eagle Springs 1A, Eagle Spring 2, Eagle Spring 3 are located within the permit boundary, and should be added to the operational water monitoring plan. [AA]

Monitoring of Aspen Spring began in June 2008 and then resumed in June 2010. The data presented indicates that flow was "not measured or at a trickle". Several dates on the analytical

data table were listed but no information was given. Field parameter data were given despite flow measurements not being recorded. How can field parameter data be collected if no water is flowing? If dates are given with no information, the table should note that the spring was monitored but not flowing. Please clarify this information and update the analytical tables accordingly. It is important to note that even if a sample location is dry and not flowing, it is still imperative that it be recorded as data collected. For example, Eagle Spring has been monitored consistently since 2005 yet according to Table 6, it appears that data collection is sporadic because only dates when water quality data were available are shown. [AA]

Angle Spring is located approximately 300 feet topographically below the mine permit area and in a down gradient location to any groundwater flow from perched aquifer systems, or any recharge areas within the permit boundary. As such, this spring would be an important point to monitor. The Division asks that every effort to regain access to this sampling point be pursued. [AA]

Eagle Spring flow data ranged from Dry to <10 gpm. Normally, any value over 1 gpm is significant and would best be presented as a value, rather than <10 gpm. Eagle Spring has been monitored since May 2005 up to the present time. Baseline data collection requirements for this spring appear to be met. However, the footnote at the bottom of the table in Appendix 10 is an incomplete sentence and needs to be corrected. [AA]

R645-301-724.200, The Permittee should depict point to point diversions for surface water rights on Map 31. By depicting the extent of a point to point diversion, a more accurate assessment of potential coal mining related impacts can be assessed. [SC]

R645-301-724.200, The Permittee should address the characterization of intermittent streams within and adjacent to the permit area. On page 7-33, the Permittee states, "several small *intermittent* and ephemeral tributaries are located within and adjacent to the permit area, including UP Canyon to the south and Eagle Canyon to the North." There is no discussion of '*intermittent streams*' on page 7-35. The State of Utah R645-Coal Mining Rules defines ephemeral, intermittent and perennial drainages. If, as the reference suggests, all three drainages are present within the permit and adjacent area, there should be a discussion/characterization for intermittent streams. This deficiency was identified in the previous technical analysis. [SC]

R645-301-724.200, The Permittee must address the first sentence of the last paragraph of page 1 of Exhibit 20, *Ephemeral Drainage Determination*. The Permittee states, "*The documented lack of running water alone, at any point in the year, disqualifies all four of these drainages from being classified as Perennial, a stream that flows year round.*" The lack of running water is not documented in the application. A tabulation of the number of times that zero flow was observed in the ephemeral drainages throughout the baseline data collection period would provide documentation to substantiate the statement. [SC]

R645-301.724.320, The applicant states the regulation mostly verbatim without any supporting narrative. Additional explanation or references to how reclamation will be accomplished to

prevent material damage to the hydrologic balance is needed to meet the requirements of this section. [AA]

R645-301-725, The Permittee must address the baseline data deficiencies outlined previously in order for the Division to assess the probable cumulative hydrologic impacts from the proposed operation on ground and surface water systems. The Permittee must address the baseline data deficiencies outlined previously in order for the Division to make that assessment. [SC]

R645-301-726, The Permittee should provide further discussion/information as to the water modeling that was conducted in analyzing the regional aquifer. The application discusses how SURV CAD was utilized. Please provide a discussion as to how the model was constructed (i.e. assumptions, data points utilized, limitations etc). Additionally, provide any summary reports or outputs from the model that can be reviewed in determining how the model was applied and constructed. [SC]

R645-301-728, In order to accurately assess the PHC Determination provided in the application, the Permittee must first address the baseline data deficiencies outlined in the Baseline Information section. Per R645-301-728, "*The PHC determination will be based on baseline hydrologic, geologic and other information collected for the permit application*". Once the baseline deficiencies have been addressed, the Division will be able to accurately assess the probable hydrologic consequences associated with the proposed mining activity. [SC]

R645-301-729, In order for the Division to make a finding that the mine plan has been designed to prevent material damage to the hydrologic balance outside the permit area, the Permittee must provide additional hydrologic information relative to ground and surface water resources located within and adjacent to the proposed permit area. [SC]

R645-301-731.210, The Permittee first address the deficiencies relative to groundwater baseline data, geologic baseline data and the PHC before the Division can make a finding that the proposed operational phase groundwater monitoring plan meets the requirements of the State of Utah R645-Coal Mining Rules. Per R645-301-731.211, the groundwater-monitoring plan must be based upon the PHC determination as well as all baseline hydrologic and geologic information. [SC]

R645-301-731.220, The Permittee must address the deficiencies relative to surface water baseline data, geologic baseline data and the PHC before the Division can make a finding that the proposed operational phase groundwater monitoring plan meets the requirements of the State of Utah R645-Coal Mining Rules. Per R645-301-731.220, the surface water-monitoring plan must be based upon the PHC determination as well as all baseline hydrologic and geologic information. [SC]

R645-301-731.520, The Permittee must reinstate language from the previous application regarding the potential for discharge of mine water. The previous application had discussed proposed methods for the disposal/handling of any in-mine water that's encountered including: 1) discharging the water into remote or abandoned mine workings, 2) request a new NPDES

discharge permit for surface drainage, 3) construct shallow or deep injection wells, 4) treat and discharge the water into Mud Creek or 5) evaporate the discharge with new settling ponds. It appears that the new application has omitted options 2, 3, 4 and 5. [SC]

R645-301-731.800, The Permittee must provide a commitment that if significant amounts of groundwater are encountered underground; a water right will be obtained or an existing water right altered by the Utah Division of Water Rights prior to utilizing in-mine ground water encountered during active coal operations. On page 7-102, the potential for discharge of mine water to surface drainages is further discussed. The Permittee states, "*If sufficient quantities of mine drainage are available, stored mine drainage will be utilized to supplement the operational mine water supply.*" [SC]

R645-301.731.800, There appears to be no direct hydrologic connection to the groundwater water rights located in the Pleasant Valley and the water rights located north the Scofield Reservoir. The Hiawatha seam in the permit area is located between 172 and 223 feet above these water rights and therefore, any impacts to them are unlikely.

Surface water rights in the permit area and within Long Canyon and Miller Creek need to be field checked by the Division and the Department of Water Rights in order to better establish baseline conditions to determine if any of these water rights are being put to beneficial use (i.e. stockwatering troughs). The Division would like to perform this fieldwork weather permitting during the 2011 field season.

On Map 28 the surface water sample locations in Long Canyon and in Eagle Canyon that will be monitored as part of the water monitoring program should be updated on the map to show which of these samples have a water right attached to them. [AA]

R645-301-731.400, The Transfer of Wells regulation was not addressed in the application. Please address this regulation. [AA]

R645-301- 531, -742.300, -760, The Permittee must clarify the diversion language in Section R645-301-742.300. In the third paragraph of the section, the application states, "*As can be seen on Map 29, Mine Surface Facilities Area-Post Mining Topography, the reclaimed channel is in reality short, and thus has little potential for significant alignment variation.*" Upon review of Map 23 and Map 29, there is an irrigation ditch in the area of where undisturbed culvert UDC-1 is located. It's unclear if the text is referring to the irrigation ditch or the ephemeral channel that is being diverted with culvert UDC-1. The paragraph also refers to "*culverted channel USC-1*". It appears that this is a typo that should be revised as it appears there is no drainage feature labeled "USC-1". [SC]

R645-301- 531, -742.300, -760, The Permittee should revise Map 29, *Mine Surface Facilities Area-Post Mining Topography*. The third paragraph of page 7-122 states, "*Ditches UDD-1 and UDD-2 remain as permanent structures.*" However; upon review of Map 29, these diversions are not depicted. Based on this statement, these features should also be depicted on the interim drainage map as well. [SC]

R645-301- 531, -742.300, -760, The Permittee should revise chapter 5 and 7 to provide a clearer discussion of the temporary and permanent diversion/drainage controls. In the third paragraph on page 7-131, the application states, “*When no longer required for sediment control, all temporary diversions and associated structures will be removed and the affected lands reclaimed, with the exception of permanent diversion ditches UDC-2 and culvert CP-2*”. There is no mention of ditches UDD-1 and UDD-2 in this section. In the last paragraph on page 5-39, the application indicates that UDD-1 and UDD-2 are “*permanent collection ditches*”. Additionally, the final reclamation information on page 5-84 indicates that UDD-1 and UDD-2 remain as part of final reclamation. Please address this discrepancy. [SC]

R645-301- 743, The Permittee must provide a discussion as to how it will be determined when clean-out of the sediment pond is required. On page 5-42, the Permittee states, “*Before sediment accumulations reach the point where they would encroach on stormwater storage capacity, CR will schedule and implement measures to remove the accumulated sediments*”. Address how it will be determined when the sediment pond no longer has the capacity to adequately treat/retain the design storm. Typically this is done by establishing an elevation marker within the pond that denotes the sediment clean-out level. [SC]

R645-301-746, The Permittee should provide a clear and concise discussion as to how generated coal mine waste will be handled. The application discusses the handling of ‘*mine development rock*’, which is not defined by the State of Utah R645-Coal Mining Rules. Depending on the nature of the material, specific hydrologic design criteria must be addressed. [SC]

R645-731.500, CR proposes several alternatives under Section R645-731.500 in the event that a gravity discharge does occur. The first of these options states that discharge will be directed into remote or abandoned underground workings. This practice is permissible under rule R645-731.513 provided that specific additional hydrology requirements are met as stated in the regulation. The applicant should add language as per the regulation making it clear that this provision regarding the diversion of underground from workings to abandoned workings is understood and update this section as well as the section on page 7-102 of their plan accordingly. [AA]

Sludge materials that end up in the sediment pond are combinations of underground development waste and non-coal waste as defined in the regulations under R645-100-200 and R645-301-528.331, -542.741 and -747.100. Non-coal wastes include, but are not limited to, grease, lubricants, paints, flammable liquids, garbage, abandoned mining machinery, lumber and other combustible materials generated during mining and reclamation activities. Non-coal waste streams are not an accepted form of waste allowed to be discharged into underground mine workings as per R645-731.511 & 512. It is recommended that this sentence be removed and language associated with the applicant’s intent to haul sediment pond sludge offsite be inserted. [AA]

R645-301-731, -760, The Permittee must provide a final reclamation map that depicts the permanent features and final drainage configuration of the site. [SC]

BONDING

R645-301-800, The applicant must demonstrate compliance with all of the regulations pertaining to bonding at such a time as bond calculation and reclamation cost estimates can be evaluated based on the details within an approved permit application. All direct and indirect reclamation costs must be included for proper bond calculation. The Division will evaluate the bonding requirements after technical issues with the permit application have been addressed. [JCO]

ALUVIAL VALLEY FLOORS

R645-302-320, According to the information in the application section 3.2.1.2-1 "Facilities Area Vegetation Map contain resource values consistent with the AVF criteria" the applicant needs to explain what that means in their own words. The resources values consistent with the AVF criteria should be correctly identified. [JCH]

The "E" mail from Greg Hunt to Joe Helfrich, dated 12/21/2010 stated that "Vegetation species in the area adjacent to the permit area west of highway 96 (as stated in the original application) include species consistent with AVF's", yet the text in Chapter 9, Page 9-10, Paragraph 3 states that "Although no species identification has been conducted on the 8.69 acres. It is evident from casual observation that grasses make up the predominant vegetative community". The applicant needs to explain this contradiction. [JCH]

R645-302-321.100, The application needs to include a vegetation study for the proposed AVF adjacent to the permit area that includes a description of the vegetative communities including dominate species and a map to appropriate scale showing the location of the vegetative communities in the referenced 8.69 acre area. [JCH]

R645-301-131,132 All technical data needs to be accompanied by the name of the persons or organizations that collected and analyzed the data, dates of collection and analysis of the data, and descriptions of the methodology used to collect and analyze the data. The technical analysis needs to be planned by or under the supervision of a professional qualified in the subject to be analyzed. [JCH]

R645-302-321.260, The application needs to include the analysis of a series of aerial photographs including color infrared imagery flown at a time of year to show any late summer and fall differences between upland and valley floor vegetative growth and of a scale adequate for reconnaissance identification of areas that may be alluvial valley floors. [JCH]

R645-302-324, Chapter 9, Section R645-302-320 pages 9-3 through 9-14 include a discussion and information about Alluvial Valley Floors. The text in paragraph 1 on page 9-4 is not included in R645-302.100 as stated in the application. [JCH]

Page 9-5, the bulleted topics are not included in nor do they appear to be a part of R645-100 as

stated in the bold text on the lower portion of the page. [JCH]

Page 9-8, paragraph 5, the application needs to include the "Marsh" study, including the name(s) of the individual (s) who conducted the study, a description of the vegetative communities including dominate species and a map to appropriate scale showing the location of the marsh area. [JCH]

Page 9-10, Paragraph 5, states that "the present vegetation in most areas is mainly Kentucky blue grass, wire grass, carex and arrow grass", the application needs to include the vegetation survey data, including the name(s) of the individual (s) who conducted the survey, their qualifications, a description of the vegetative communities including dominate species and a map to appropriate scale showing the location of the vegetative communities in the area referenced. [JCH]

The applicant also needs to demonstrate whether or not the marsh area is a jurisdictional wetland. [JCH]

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