

April 6, 2004

Mike Stevenson
Ark Land Company
c/o Skyline Mines
HC 35, Box 380
Helper, Utah 84526

Re: Coal Exploration / Seam Thickness and Quality, SITLA Lease, Ark Land Company, Dugout Canyon Mine, C/007/0039, Task ID #1834, Outgoing File

Dear Mr. Stevenson:

The above-referenced amendment has been reviewed. There are deficiencies that must be adequately addressed prior to approval. A copy of our Technical Analysis is enclosed for your information. In order for us to continue to process your application, please respond to these deficiencies by July 6, 2004. Your application will be denied if a response is not received within 90 days of the date of this letter.

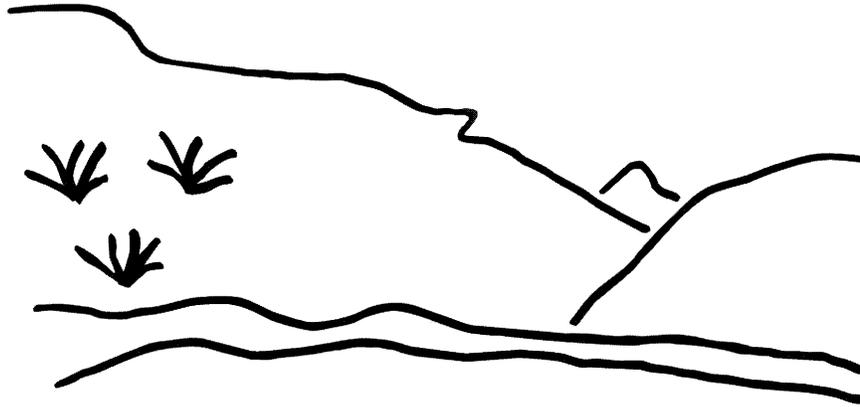
If you have any questions, please call me at (801) 538-5268 or Peter Hess at (435) 613-5622.

Sincerely,

Pamela Grubaugh-Littig
Permit Supervisor

PHH/sd
Enclosure
cc: Price Field Office
O:\007039.DUG\FINAL\DEF1834.DOC

State of Utah



Utah Oil Gas and Mining

Coal Regulatory Program

Ark Land Company for
Dugout Canyon Mine
SITLA Lease
Seam Thickness and Quality
C/007/0039, Task ID #1834
Minor Exploration Analysis and Findings
April 2, 2004

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INTRODUCTION

EXPLORATION TECHNICAL ANALYSIS

INTRODUCTION

Ark Land Company, which is a subsidiary of Arch Coal, Inc., submitted an application to permit three coal exploration holes to evaluate coal quality and seam thickness relative to the School and Institutional Trust Lands Administration lease ML 48435-OBA, which is relative to Canyon Fuel Company's Dugout Canyon Mine. The application was received on February 9, 2004. All surface lands are under private ownership, being held by the heirs of the Milton and Ardith Thayn Trust. Approximately 2,560 acres of reserves are associated with the SITLA lease.

SUMMARY OF OUTSTANDING DEFICIENCIES

SUMMARY OF OUTSTANDING DEFICIENCIES

The Technical Analysis regarding the proposed permit changes is not complete at this time, pending submittal of additional information by the Permittee and further review by the Division, to address outstanding deficiencies in the proposal. A summary of those outstanding deficiencies is provided below. Additional comments, concerns, and deficiencies may also be found within the analysis and finding made in the Draft Technical Analysis which have not been presented in this summary. Upon finalization of this review, any outstanding deficiencies will be evaluated for compliance with the regulatory requirements. Such deficiencies may be conditioned to the requirements of the permit issued by the Division, result in denial of the proposed permit changes, or may result in other executive or enforcement actions as deemed necessary by the Division at that time to achieve compliance with the Utah Coal Regulatory Program.

Accordingly, the permittee must address those deficiencies as found within this Draft Technical Analysis and provide the following, prior to approval, in accordance with the requirements of:

Regulations

- R645-201-130**, The applicant must inform the heirs of the Thayn Trust of the proposed exploration drilling activities for 2004 and 2005..... 8
- R645-201-225**, 1) The Permittee must notify the Division if cultural or historic sites are discovered during operations or reclamation. 2) The Permittee must include a description of the measures that will protect observed raptors and nests. 3) The Permittee needs to reassess whether TES species or their habitat, including the Mexican Spotted Owl, are within the disturbed sites. The Permittee must include a description of the measures that will protect TES species and their habitats from the proposed project (also R645-202.231)..... 18
- R645-201-225**, The practices that will be followed to protect the area from adverse impacts of the exploration activities (must be described). This deficiency pertains to the measures which the applicant will implement to protect the surface waters where water will be pumped from the Dugout Creek / Pace Canyon Creek, (i.e., prevent additional contributions of sediment to those waters). 11
- R645-202-231**, 1) The Permittee must conduct raptor surveys in May 2004/2005 to assess existing nest and potential raptor habitat within the SITLA Dugout Coal Tract project area. 2) The Permittee must provide the anticipated volume of water that will be extracted during the drilling operations. The Division anticipates that operations will consume very small volumes

SUMMARY OF OUTSTANDING DEFICIENCIES

of water. 18

R645-202-233 and R645-201-225, (1) Since the Trag and Rottulee soils vary greatly in topsoil depth, and since there is a possibility that the DUG0104 lies in the 20% of the Map Unit described as “other soils”, there must be a reconnaissance inspection of drill hole DUG0104 prior to soil salvage to determine the depth of the topsoil layer to be salvaged. Or, the Applicant could commit to salvage of one foot of topsoil/subsoil from DUG0104 (about 400 CY/0.25 ac) and provide for some alternative to a mud pit for collecting drilling waste. **(2)** The Applicant must salvage four inches of topsoil and eight inches of subsoil from DUG0205 (400 CY/0.25 ac). **(3)** Since the Midfork family and Commodore bouldery loam soils have nine and seven inches of topsoil depth, respectively, and since there is a possibility that the DUG0105 lies in the 30% of the Map Unit described as “other soils”, there must be a reconnaissance inspection of drill hole DUG0105 prior to soil salvage to determine the depth of the topsoil layer and depth to bedrock. Or, the Applicant could commit to salvage of one foot of topsoil/subsoil from DUG0105 (or about 400 CY/0.25 ac) and provide for some alternative to a mud pit for collecting drilling waste. **(4)** At DUG0205, where depth to bedrock is between 20 and 40 inches, the Applicant must either provide the results of a reconnaissance inspection determining that a mud pit development is possible and describe the depth and width of the mud pit or provide for some alternative to a mud pit for collecting drilling waste..... 19

R645-202-235, Provide a drawing indicating the size of the disturbance necessary for the drill pads and their proximity relative to the stream. Identify how drill site drainage will be routed and treated prior to mixing with undisturbed surface runoff (either with a drawing or in text). 19

R645-202-235, Provide a narrative of the treatment/disposal of water, in the event the drill holes begin making excess water. 20

R645-202-235, Text needs to commit to keeping geologic logs of the drilling and identify where any appreciable water is encountered, noting depth, geology, flow, etc. These areas will be evaluated for potential water monitoring well locations..... 20

R645-202-235, The text needs to address whether mitigative measures are necessary for springs identified on Plate 7-1 (as shown in the currently approved MRP), or state why the springs will not be adversely impacted by the proposed drilling activities..... 20

R645-202-236, The application must provide a contingency plan which states what plan of action will be followed in the event that acid or toxic forming materials are encountered..... 20

R645-202-241, the application must address how the sites will be returned to approximate original contour. 22

SUMMARY OF OUTSTANDING DEFICIENCIES

R645-202-242, and R645-201-225, (1) The application should indicate that the soils of the disturbed area will be ripped or otherwise treated for compaction, prior to replacement of topsoil. **(2)** To encourage prompt reclamation, through water harvesting and wind protection, the final soil surface must be gouged. **(3)** All bentonite and cement spilled during the sealing process must be hauled off-site or buried and mixed into the subsoil at a depth below two feet. 22

R645-202-244, the application must contain a commitment to promptly remove all facilities and equipment upon completion of the exploration activities. 22

R645-301-358, “the operator will, to the extent possible...minimize disturbances and adverse impacts on fish, wildlife, and related environmental values and will achieve enhancement of such resources where practicable”. The application must specify what roads will be used to access the exploration hole locations. Also, the specific improvements relative to surfacing, drainage control, and sediment control must be designated. 19

R645-301-527.230, A maintenance plan describing how the roads will be maintained throughout their life must be included. This plan must include a commitment to control fugitive roadway dust in order to minimize adverse effects to fish, wildlife, and related environmental values. 19

SUMMARY OF OUTSTANDING DEFICIENCIES

COAL EXPLORATION

COAL EXPLORATION

Regulatory Reference: R645-200.

SCOPE AND RESPONSIBILITIES

Regulatory Reference: 30 CFR 772.1; 30 CFR 772.10; 30 CFR 772.11; R645-100-400; R645-200-100; R645-200-200; R645-201-100.

Analysis:

The coal reserves and surface access are located in Carbon County, Utah, approximately fifteen miles northeast of Wellington, Utah. The legal description of the area, as included on page 3 of the coal exploration application indicates the following; State Lease ML 48435-OBA is located as follows: T.13 S., R.13E, SLB&M. The following sections are included within the lease:

Section 17: SW/4, SW/4,SE/4
Section 19: NE/4SE/4, S/2SE/4
Section 20: All
Section 21: SW/4NW/4,SW/4
Section 28: NW/4, N/2SW/4, SW/4SW/4
Section 29; All
Section 30: E/2,E/2W/2.

As previously noted, all surface area is privately owned. Thus, the review of this coal exploration application is the responsibility of the State of Utah, Department of Natural Resources, Division of Oil, Gas, and Mining (R645-201-100, 110).

The lands/coal reserves described above do not meet the requirements of 43 CFR 3480-3487, as the coal reserves are owned by the State of Utah.

It is the Division's responsibility to coordinate activities in reviewing coal exploration projects with other agencies with the objective of reducing duplication of operator effort, and at the same time, maximizing the effect of its protection of the State from the environmental effects of coal exploration activities. As of February 27, 2004, the Division is currently reviewing the SITLA lease application, submitted by Canyon Fuel Company's Dugout Canyon Mine. The surface lands are owned by the heirs of the Milton and Ardith Thayn Trust, and are managed by same. Thus, the Division considers the heirs to be the surface management "agency".

As part of the permitting process for three degasification wells for the Dugout Canyon Mine, (Task ID# 1642, approved September 19, 2003), the permittee included a copy of the

notification letter sent to the heirs of the Milton and Ardith Thayn Trust. That letter describes the drilling activities that were being proposed by the applicant on the Thayn Trust lands for 2003. This included the three degasification wells and three proposed exploration holes. **The applicant needs to issue a new letter to the Thayn Trust describing the 2004 and 2005 proposed exploration / drilling activities**, and provide verification to the Division that the notification has been made.

Findings:

The applicant has made submittal of this proposed coal exploration to the proper responsible reviewing agency, which is the Utah Division of Oil, Gas, and Mining.

R645-201-130, The applicant must inform the heirs of the Thayn Trust of the proposed exploration drilling activities for 2004 and 2005.

REQUIREMENTS FOR NOTICE OF INTENTION TO CONDUCT MINOR COAL EXPLORATION

Regulatory Reference: 30 CFR 772.10; 30 CFR 772.11; R645-100-412; R645-201-200.

Analysis:

The permittee's application intends to permit three exploration holes, one of which (DUG0103) will be drilled during 2004. Holes DUG0105 and DUG0205 are being proposed for the 2005 drilling season. Page 5, paragraph two, of the application states "the only coal removed during exploration activities will be cores. Cores will be a nominal three inches in diameter. Assuming an average thickness of seven feet for the Rock Canyon coal seam and eight feet for the Gilson coal seam, an estimated 300 pounds of coal will be removed." The three hundred pounds of coal is the total amount of coal that will be removed during the drilling of all three of the proposed exploration holes. As 300 pounds is minimal compared to the 250 tons of coal specified as classifying a minor / major coal exploration in the R645 coal rules, this coal exploration can be **classified as a minor coal exploration** application. The depths of the holes to be drilled vary from 1,700 feet to 3,150 feet (See page 6 of the application). The exploration is not being proposed on lands that have been designated as being unsuitable for surface coal mining operations.

COAL EXPLORATION

R645-201-221, The application contains the name, address, and telephone number of the applicant seeking to explore on page 2 of the submittal. The applicant is as follows:

Ark Land Company
c/o Skyline Mines
HC35 Box 380
Helper, Utah 84526
(work) 435-448-2634

This information meets the requirements of R645-201-221.

R645-201-222, The applicant is the same as the operator of the proposed exploration plan. The applicant's representative is indicated on page 2 of the application and is listed as follows:

Mike Stevenson
Ark Land Company
c/o Skyline Mines
HC 35 Box 380
Helper, Utah 84526
(work) 435-448-2634.

This information meets the minimum regulatory requirements of R645-301-222.

R645-201-223 requires that the application contain a narrative and a map describing the exploration area and indicating where the exploration will occur. Page 3 of the application contains this information by listing the township and range as well as the section information. References to Maps 1 and 2 are made. Map 1 gives the general location of the exploration activities that are located 15 miles NE of Wellington, Utah. Map 2 depicts the general surface topography and the access roads that will be used for the exploration.

The minimum regulatory requirements of R645-201-223 have been met.

R645-201-224 requires that the application contain "a statement of the period of intended exploration". This is provided on page 4 of the submittal. The permittee states that it is anticipated that the exploration will be initiated during the third week of July in both 2004 (DUG0103) and 2005 (DUG0105 and DUG0205). Exploration activities will continue for approximately eight weeks as depicted by the bar graph on page 4.

This information is adequate to meet the minimum regulatory requirements of this section.

R645-201-225 requires the following from a coal exploration application:

- 1) A description of the method of exploration to be used.
- 2) The amount of coal to be removed.
- 3) The practices that will be followed to protect the area from adverse impacts of the exploration activities.
- 4) (The methods to be used) to reclaim the area in accordance with the applicable requirements of R645-202.

Page 4, section R645-201-225 of the application indicates the following; “the drilling procedure for the exploration holes will be either to continuously core to total depth, rotary drilling and spot coring of selected zones, or a combination of both. If the rotary drilling and spot coring method is used, casing will be set in the hole to below the Price River Formation.”

Page 5, paragraph 2 of the application indicates that all three holes will penetrate both the Rock Canyon and Gilson seams. “The only coal removed during exploration activities will be cores. Cores will be a nominal three inches in diameter. Assuming an average thickness of 7 ft for the Rock Canyon Coal Seam and 8 ft for the Gilson Coal Seam, an estimated 300 pounds of coal will be removed.”

Practices that will be implemented to protect the area from adverse impacts include the following:

- 1) ”Excavation will include grubbing, removal and separate storage of the soil A horizon and, if needed, removal and separate storage of material below the soil A horizon to make a level drill site.
- 2) “Two mud pits will be excavated in the material below the soil A horizon if there is sufficient soil depth.”
- 3) “The only material disposed of at the drill sites will be cuttings and any drilling foam and/or mud which will be placed in the mud pits”. “It is not anticipated that acid or toxic forming materials will be encountered during exploration because none have been encountered previously.”

Page 5 of the application states that water will be pumped and /or hauled from the right fork of Dugout Creek and/or Pace Creek to the drill sites (Map 2). Page 7 of this minor coal exploration application states under section R645-202.230 that “no adverse impacts to the stream channel will occur during pumping activities. No water will be pumped from the North Fork of Dugout or Pace Canyon Creeks without an approved “Temporary Change of Water” from the Division of Water Rights. A copy of the approved Temporary Change will be forwarded to DOGM and will be in possession of the on-site geologist.” CFC has two water rights in the Dugout Creek / Pace Canyon Creek area. The two rights are 91-409 and 91-519. The applicant transfers 2.5 acre-feet from each of these water rights (1.63 million gallons, total) to use for drilling activities. **The approved “Temporary Change of Water” must be forwarded to the**

COAL EXPLORATION

Division prior to receiving a recommendation for approval of this minor coal exploration application. Measures that will be taken to minimize additional contributions of sediment to the respective streams at the water collection point(s) must be described within the application.

The coal exploration plan submitted states the following relative to the reclamation of the three coal exploration holes; “The exploration holes will be plugged with a cement, cement/bentonite slurry, or bentonite chips to their full depth. The completion method includes pulling surface casing when possible; when (this is) not possible, cutting it flush with the ground, then pumping the cement/bentonite slurry through the drill pipe starting at the bottom of the hole. Plugging will then be done in stages by tripping-out of the hole 3-4 joints (60-80 ft) and pumping again. This process will be repeated to the surface. If bentonite chips are used, the chips will be dumped down the annulus of the hole in such a manner to prevent bridging in the hole and drilling water added to the hole as specified by the manufacturer.”

Findings:

Prior to receiving a recommendation for approval of this minor coal exploration application, the permittee must provide the Division a copy of the approved Temporary Change of Water from the Utah DNR/ Division of Water Rights.

R645-201-225, The practices that will be followed to protect the area from adverse impacts of the exploration activities (must be described). This deficiency pertains to the measures which the applicant will implement to protect the surface waters where water will be pumped from the Dugout Creek / Pace Canyon Creek, (i.e., prevent additional contributions of sediment to those waters).

COMPLIANCE DUTIES

COMPLIANCE DUTIES

Regulatory Reference: 30 CFR 772.13; R645-202.

OPERATIONAL STANDARDS

Regulatory Reference: 30 CFR 772.13; R645-202-100.

Analysis:

The Permittee plans to rotary spot and wire line core-drill DUGO104 in 2004, and DUGO205 and DUGO105 in 2005. Drill hole DUGO104 is near the western edge of the SITLA Dugout Coal Tract in section 20. Drill holes DUGO205 and DUGO105 are near the northwestern edge of the SITLA Dugout Coal Tract in section 17.

There is no cultural and historic evaluation that focuses on the SITLA Dugout Coal Tract. Although the Notice of Intent contains a commitment (See page 7, R645-202-231) to conduct a site-specific cultural resource survey in the spring of 2004, the NOI does not adequately address protective measures for possible cultural and historic sites at the proposed disturbed sites. The Permittee must notify the Division if cultural or historic sites are discovered during operations or reclamation (R645-201-225).

Biology

The Division has concerns for elk and deer populations, as well as, stream bank habitat. The wildlife map (Plate 3-2, 2004) shows that the drill hole sites are in elk high value yearlong and deer critical summer ranges. The Permittee plans to drill in the third week of July 2004/2005, which follows the calving exclusionary period (May 15 through July 5). The Division believes that the exploration project will not impact these ungulate populations because of the project time schedule.

The drill hole sites DUGO104 and 105 are near the Pace Creek and an unnamed drainage or stream channel. The DUGO104 site is approximately 1000' from Pace Creek, while the DUGO105 site is 250' from an unnamed drainage or stream channel. The dimensions of the disturbances are 100' x 100'. The Permittee plans to improve the roads leading to these sites by grading or applying gravel if necessary. The Division believes that the exploration project will not impact these stream bank habitats.

There is no raptor evaluation that thoroughly covers the SITLA Dugout Coal Tract, specifically sections 17 and 20. The Division is concerned that exploration and reclamation operations could disturb nesting raptors. Exploration operations for this project will occur within

COMPLIANCE DUTIES

the raptor exclusionary time frame (approximately January 1 through August 31). A May survey will reveal if birds are nesting in the area of concern. If birds are nesting near the sites, the Division will coordinate with DWR to determine what measures the Permittee must take to minimize impact. The Permittee must conduct raptor surveys in May 2004/2005 to assess existing nests and potential raptor habitat within the SDCT project area (R645-202.231). The Permittee must include a description of the measures that will protect observed raptors and nests. (R645-201.225).

There is no survey for threatened, endangered, or sensitive (TES) species that includes the disturbed areas within the SITLA Dugout Coal Tract. The Notice mentions that bald eagles and peregrine falcons (no longer listed) are likely to exist within the exploration area. The Permittee needs to reassess whether other TES species or their habitat, including the Mexican Spotted Owl, are within the disturbed area. The Permittee must include a description of the measures that will protect TES species and their habitats from the proposed project. (R645-201.225, R645-202.231).

The Permittee mentions that drilling will include pumping water from Pace Creek and the right fork of Dugout Creek. The Notice does not adequately address possible adverse effects to the four Colorado River endangered fish species: the Colorado pike minnow, the humpback chub, the bonytail chub, and the razorback sucker. The Permittee must provide the anticipated volume of water that will be extracted during the drilling operations. (R645-202.231). The Division anticipates that operations will consume very small volumes of water.

Roads

R645-202-232 Roads / Associated Performance Standards; “All roads.....used for coal exploration will comply with the applicable provisions of:

- 1) **R645-301-358**, “the operator will, to the extent possible...minimize disturbances and adverse impacts on fish, wildlife, and related environmental values and will achieve enhancement of such resources where practicable”. The three exploration holes being proposed by Ark Land Company are due east of the degasification well G-3, which was permitted by the Division and approved for implementation in September of 2003. The distances from the permitted degasification well G-3 to the proposed exploration holes range from 1.25 to 1.63 miles. It is not clear what roads will be specifically used to access the exploration hole locations. Also, the specific improvements that will be made to those specified roads must be designated. This information must be provided.
- 2) **R645-301-526.200**, Utility Installation and Support Facilities. As far as this minor coal exploration submittal is concerned, it is believed that there are no facilities (oil, gas, water wells, oil, gas or coal slurry pipelines, railroads, electric

COMPLIANCE DUTIES

and telephone lines, water and sewage lines which pass over or under or through the permit area or which may be impacted by the surface disturbance created by the development of the exploration well pads) as described within the exploration area. No new roads are to be constructed. This regulation is not applicable.

- 3) **R645-301-527.230**, A maintenance plan describing how the roads will be maintained throughout their life (must be included) to meet their design standards throughout their use. Page 3 of the application states the following, “As necessary, existing roads will be made travelable by hauling gravel to fill rough areas on bedrock ledges and grading rutted areas.” Although this maintenance plan may seem adequate, it needs an additional commitment from the applicant to control fugitive dust on the access roads via roadway watering. This commitment is necessary to meet the requirement of minimizing adverse effects to fish, wildlife, and related environmental values (R645-301-358).
- 4) **R645-301-534.100**, Roads will be located, designed, constructed, reconstructed, used, maintained, and reclaimed, so as to...The minor coal exploration application has generally met all of these requirements. No new roads will be constructed; therefore, the location, design and construction requirements of this regulation are not applicable. The existing ranch and logging roads will be utilized to provide all access to the exploration sites. Use and maintenance commitments are in place for the existing roads to meet the previously mentioned requirements. None of the roads or any improvements made to the existing roads will be reclaimed, as confirmed in the minor coal exploration application, and the in place surface use agreement.
- 5) **R645-301-742.410 et al. through 742.420 et al**, Drainage and Sediment Control. The application does not contain any description of methods which may need implementation to control drainage or prevent to the extent possible additional contributions of suspended solids to stream flow. Although Map 2 contained in the submittal shows the unimproved roads in the exploration area, there is no route specified by which the exploration equipment will access the sites. The Pace Canyon road parallels the Creek; thus, the applicant must describe any methods of treatment that need to be implemented to prevent water pollution from traffic involved with the coal exploration activities. Also, methods that will be implemented to prevent additional contributions of sediment to the streams where water for the drilling activities is obtained must be described.

Topsoil

Topsoil depth was not described, although the application indicates that the “A” horizon will be salvaged and if needed, separate storage of material below the “A” horizon to create a level drill site. Each site will have two mud pits excavated for disposal of cuttings, drilling foam and/or mud, “if there is sufficient soil depth.”

The Division reviewed the 1988 Carbon County Soil Survey to find general descriptions of the soils in the locations of the proposed drill holes. Information from the 1988 Order III Soil Survey is summarized below.

DUG0104 is in Map Unit 97, the Rottulee family-Trag complex. Sixty percent of this map unit is the Rottulee family loam having 30 – 60% slopes, described as having a two inch deep surface layer that is reddish brown in color. The subsoil is divided into a thirteen inch reddish brown loam and clay loam and a lower eight-inch layer of reddish brown gravelly silty clay loam. **Shale is encountered at 34 inches.**

Twenty percent of Map unit 97 is in the Trag stony loam having 30 – 60% slopes. The surface layer is a ten-inch thick dark grayish brown stony loam. The 26 inches of subsoil is dark grayish brown clay loam. The substratum is dark grayish brown and very pale brown clay loam **extending to 60 inches or more.**

Since the Trag and Rottulee soils vary greatly in topsoil depth and depth to bedrock, and since there is a possibility that the DUG0104 lies in the 20% of the Map Unit described as “other soils”, there must be a reconnaissance inspection of drill hole DUG0104 prior to soil salvage to determine the depth of the topsoil layer to be salvaged and the potential for mud pit excavation. Or, alternatively, the Applicant could commit to the salvage of one foot of topsoil/subsoil from DUG0104 (or about 400 CY/0.25 ac) and eliminating a mud pit at DUG0104.

DUG0105 is in Map Unit 62, Midfork Family-Commodore Complex. Fifty percent of this unit is described as Midfork family bouldery loam having 50 to 70 percent slopes. The surface of the Midfork family soil is covered with a partially decomposed organic layer about 2 inches thick. The topsoil is brown bouldery loam about 7 inches thick. Below this is a layer of yellowish brown very channery loam, 10 inches thick. And below this to a depth of **60 inches or more** is yellowish brown very gravelly loam.

Twenty percent of this Map unit is described as Commodore bouldery loam, 50 – 70% slopes. The Commodore soil has an organic layer about 1 inch thick and a surface layer of brown bouldery loam about 6 inches thick. The underlying material (to a depth of 19 inches) is brown very stony loam. **Bedrock is between 10 and 20 inches.**

COMPLIANCE DUTIES

Since the Midfork family and Commodore bouldery loam soils have nine and seven inches of topsoil depth, respectively, and since there is a possibility that the DUG0105 lies in the 30% of the Map Unit described as “other soils”, there must be a reconnaissance inspection of drill hole DUG0105 prior to soil salvage to determine the depth of the topsoil layer and depth to bedrock. Or, alternatively, the Applicant could commit to the salvage of one foot of topsoil/subsoil from DUG0105 (or about 400 CY/0.25 ac) and eliminating a mud pit at DUG0105.

DUG0205 is in Map Unit 100, Senchert loam, having 3 – 15% slopes. This unit is on plateaus and ridges. The Senchert loam surface layer is very dark grayish brown loam about 4 inches thick. The subsoil is brown loam (twelve inch depth) over brown clay loam (13 inches). **Calcareous sandstone is found between 20 and 40 inches.** The Applicant must salvage four inches of topsoil and eight inches of subsoil from this drill location (400 CY/0.25ac). A mud pit will not be possible at DUG0205 where depth to bedrock is between 20 and 40 inches.

Diversions of Overland flows and streams

R645-202-234, (R645-301-742.300); Page 5, paragraph 5 of the NOI states “There will be no diversion of overland flows.” These requirements are not applicable to this application.

Hydrologic Balance

The application does not contain a generalized map indicating the size of the disturbance necessary for sites DUG0104 and DUG0105, their proximity relative to the stream, the general size and location of any cut-banks necessary in the disturbance, and drainage from the drill site. A drawing needs to be provided to address these issues, and the text needs to identify the proposed treatment of runoff/sediment leaving the drill site.

Proposed drill hole DUG0105 is in an area having many springs. The road passes water-monitoring site SC-116 and the drill pad is located in the vicinity of springs SC-93, SC-94, and SC-95. The proposal needs to indicate whether these springs will be adversely impacted due to the proposed drilling activity.

Groundwater monitoring of the geology in the vicinity coal seam is non-existent in the SITLA Lease area. If any measurable water is encountered during drilling, the depth, geology, and flow/head need to be noted in the drill logs. In consultation with the Division, this information should be evaluated for each exploration hole, and a determination made as to the need to establish the exploration hole as a potential water monitoring well. This must occur prior to reclamation of the hole.

During drilling of the exploration holes, any water necessary for drilling will be pumped from the North Fork of Dugout or Pace Canyon Creeks. No water will be pumped from the creeks without an approved "Temporary Change of Water" permit issued from the Division of Water Rights. A copy of the permit will be forwarded to the Division and will be on-site during drilling activities. In the event the drill holes begin making excess water, the application needs to identify the method of treatment/disposal of the water.

Acid- or toxic forming materials

The application indicates no provisions have been made for the disposal of acid- or toxic-forming materials because none have been previously encountered in the geologic formations. Although this reasoning may seem logical, the Division requires that a contingency plan be in place prior to drilling activities. The reasoning that this type of material has never been encountered before is not adequate to preclude the necessity of having an established plan. This plan must state what plan of action will be followed in the event that acid or toxic forming materials is encountered.

Findings:

R645-201-225, 1) The Permittee must notify the Division if cultural or historic sites are discovered during operations or reclamation. 2) The Permittee must include a description of the measures that will protect observed raptors and nests. 3) The Permittee needs to reassess whether TES species or their habitat, including the Mexican Spotted Owl, are within the disturbed sites. The Permittee must include a description of the measures that will protect TES species and their habitats from the proposed project (also R645-202.231).

R645-202-231, 1) The Permittee must conduct raptor surveys in May 2004/2005 to assess existing nest and potential raptor habitat within the SITLA Dugout Coal Tract project area. 2) The Permittee must provide the anticipated volume of water that will be extracted during the drilling operations. The Division anticipates that operations will consume very small volumes of water.

The Division needs to have additional information on the existing roads (as designated on Map 3 of the submittal) requiring upgrades. On roads that will be specified as requiring improvements, (specifically roads leading to DUG0104 and DUG0105), 1) describe what types of improvements will be necessary, and 2) address drainage from the roads and how drainage will be treated prior to entering the respective creeks. This same information is also necessary for the section of road leading out of Pace Creek to the plateau.

R645-301-358, "the operator will, to the extent possible...minimize disturbances and adverse impacts on fish, wildlife, and related environmental values and will

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achieve enhancement of such resources where practicable”. The application must specify what roads will be used to access the exploration hole locations. Also, the specific improvements relative to surfacing, drainage control, and sediment control must be designated.

R645-301-527.230, A maintenance plan describing how the roads will be maintained throughout their life must be included. This plan must include a commitment to control fugitive roadway dust in order to minimize adverse effects to fish, wildlife, and related environmental values.

The information provided does not adequately describe protection the topsoil resource from adverse impacts associated with drilling activity. The applicant should provide the following, prior to approval, in accordance with:

R645-202-233 and R645-201-225, (1) Since the Trag and Rottulee soils vary greatly in topsoil depth, and since there is a possibility that the DUG0104 lies in the 20% of the Map Unit described as “other soils”, there must be a reconnaissance inspection of drill hole DUG0104 prior to soil salvage to determine the depth of the topsoil layer to be salvaged. Or, the Applicant could commit to salvage of one foot of topsoil/subsoil from DUG0104 (about 400 CY/0.25 ac) and provide for some alternative to a mud pit for collecting drilling waste. **(2)** The Applicant must salvage four inches of topsoil and eight inches of subsoil from DUG0205 (400 CY/0.25 ac). **(3)** Since the Midfork family and Commodore bouldery loam soils have nine and seven inches of topsoil depth, respectively, and since there is a possibility that the DUG0105 lies in the 30% of the Map Unit described as “other soils”, there must be a reconnaissance inspection of drill hole DUG0105 prior to soil salvage to determine the depth of the topsoil layer and depth to bedrock. Or, the Applicant could commit to salvage of one foot of topsoil/subsoil from DUG0105 (or about 400 CY/0.25 ac) and provide for some alternative to a mud pit for collecting drilling waste. **(4)** At DUG0205, where depth to bedrock is between 20 and 40 inches, the Applicant must either provide the results of a reconnaissance inspection determining that a mud pit development is possible and describe the depth and width of the mud pit or provide for some alternative to a mud pit for collecting drilling waste.

R645-202-235, Provide a drawing indicating the size of the disturbance necessary for the drill pads and their proximity relative to the stream. Identify how drill site drainage will be routed and treated prior to mixing with undisturbed surface runoff (either with a drawing or in text).

R645-202-235, The text needs to address whether mitigative measures are necessary for springs identified on Plate 7-1 (as shown in the currently approved MRP), or state

why the springs will not be adversely impacted by the proposed drilling activities.

R645-202-235, Text needs to commit to keeping geologic logs of the drilling and identify where any appreciable water is encountered, noting depth, geology, flow, etc. These areas will be evaluated for potential water monitoring well locations.

R645-202-235, Provide a narrative of the treatment/disposal of water, in the event the drill holes begin making excess water.

R645-202-236, The application must provide a contingency plan which states what plan of action will be followed in the event that acid or toxic forming materials are encountered.

RECLAMATION STANDARDS

Regulatory Reference: 30 CFR 772.13; R645-202-200.

Analysis:

Approximate original contour

R645-202-241, there is no discussion or commitment within the minor coal exploration application relative to the return of the three exploration sites to their approximate original contour. This is a deficiency that must be addressed.

Revegetation

The Permittee plans to immediately seed each of the 0.25-acre disturbed sites approximately eight weeks following the start of the drilling projects. This September seeding schedule will occur in the fall season, which will increase the potential of success. The goal of seeding the 0.25-acre sites is to stabilize the sites by seeding with a diverse species mix that has a similar seasonal variety as the neighboring environment.

The vegetation map (Plate 3-1, 2004) shows that the drill hole sites are in sage (DUGO205), deciduous streambank (DUGO105), and mixed conifer (DUGO104) plant communities. There is no vegetation survey that specifically lists the species within the SITLA Dugout Coal Tract. The Richardson vegetation survey (1980; Appendix 3-1), however, details primary plant species found in communities similar to those within the drilling project.

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The seed mix contains nine native species – two are in the Richardson survey. The species and planting rates are the following:

Species	PLS/sq.ft.
Kentucky bluegrass	16
Mountain brome	3
Sandberg bluegrass	25
Bluebunch wheatgrass	12
Bottlebrush squirreltail	4
Mountain lupine	1
Rocky Mountain penstemon	11
Wyoming big sage	29
Snowberry	5
TOTAL	106

The plan should describe a method for breaking up the soils of the disturbed area prior to replacement of topsoil (such as ripping). To encourage prompt reclamation, through water harvesting and wind protection, the final soil surface must be gouged.

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Boreholes

R645-202-243, Reclamation of Exploration Holes. Page 5, paragraph four of the minor coal exploration application specifically addresses the plugging of each of the exploration boreholes, (See R645-301-529, 301-551, 301-631, 301-765). The holes will be sealed with cement, cement/bentonite slurry or bentonite chips.

All bentonite and cement spilled during the sealing process must be buried and mixed into the subsoil at least two feet below the surface or hauled off-site and disposed of in a properly permitted State land fill. This commitment must be stated within the application.

Facilities and Equipment

R645-202-244, Prompt Removal of Facilities and Equipment. Although page 5 of the minor coal exploration application generally addresses the reclamation of the exploration sites, there is no mention of the permittee's intent to meet the requirements of R645-202-244. This is a deficiency that must be addressed.

Findings:

The following deficiencies must be addressed in accordance with:

R645-202-241, the application must address how the sites will be returned to approximate original contour.

R645-202-242, and R645-201-225, (1) The application should indicate that the soils of the disturbed area will be ripped or otherwise treated for compaction, prior to replacement of topsoil. **(2)** To encourage prompt reclamation, through water harvesting and wind protection, the final soil surface must be gouged. **(3)** All bentonite and cement spilled during the sealing process must be hauled off-site or buried and mixed into the subsoil at a depth below two feet.

All bentonite and cement spilled during the sealing process must be hauled off-site or buried and mixed into the subsoil at a depth below two feet.

R645-202-244, the application must contain a commitment to promptly remove all facilities and equipment upon completion of the exploration activities.

PUBLIC AVAILABILITY OF INFORMATION

PUBLIC AVAILABILITY OF INFORMATION

Regulatory Reference: 30 CFR 772.15; R645-203.

Analysis:

Ark Land Company submitted five copies of the notice of intent to conduct coal exploration activities to the Division of Oil, Gas, and Mining on February 12, 2004. One copy of the submittal was forwarded to the Division's Public Information Center in the Department of Natural Resources headquarters in Salt Lake City, Utah, where it is available for public review. This meets the minimum regulatory requirements of R645-203-100.

R645-203-200. Confidentiality.

Ark Land Company has requested, on page 6 of the minor coal exploration application, that any drilling information that is determined as a result of the completion of the coal exploration activities **NOT be made available for public inspection** relative to coal seam thickness or quality. The information is crucial to Ark Land's competitive rights, and will be provided to the School and Institutional Trust lands Administration for their confidential files. This is a right, which is granted the applicant through R645-203-210. The written request contained within the submittal is adequate to meet the requirements of that regulation.

Findings:

The minimum regulatory requirements of this section have been met.