



COLORADO

**Division of Reclamation,
Mining and Safety**

Department of Natural Resources

1313 Sherman Street, Room 215
Denver, CO 80203

January 29, 2015

Mr. Patrick C. Siglin
Black Range Minerals
110 N. Rubey Drive, Suite 201
Golden, CO 80403

**Re: Hansen Uranium Project; DRMS NOI File No. P-2009-025;
Notice of Deficiencies NOI Modification 3 (MD-3)**

Dear Mr. Siglin:

On December 31, 2014, the Division of Reclamation, Mining and Safety (Division) received the completed Notice of Intent (NOI) to Conduct Prospecting Modification Application for the Hansen Uranium Project, File No. P-2009-025. Our review indicates the NOI modification application contains deficiencies as defined by Rule 5.1.3 of the Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for Hard Rock, Metal, and Designated Mining Operations. The Division requires the deficiencies described below be addressed before we can approve the NOI modification application.

The comments below use both Form 1 (confidential filing) and Form 2 (public filing) references as the cover letter appears to reference parts from Form 1, even though only Form 2 was submitted.

- 1) Page 3, Item L (Form 2, Item F on Form 1) – The box is checked for “Evidence of notification is attached to this NOI for BLM Land”. The Division has been in contact with the BLM, but did not receive an attachment with the application confirming BLM notification. Please clarify the evidence of BLM notification.
- 2) Page 4, Item 11 (Form 2, Item 5 on Form 1) – The Division is concerned with the potential for subsidence as a result of the formation of a cavern at an unspecified depth, diameter, and duration of being open prior to the proposed backfill with the cement-bentonite mix. Please clarify:
 - a. The expected depth range of the cavern, expected horizontal extents of the cavern and/or geologic structure above the cavern that might be expected to mitigate subsidence;
 - b. The expected duration the cavern is to be open – from initial operation of the hydraulic jet cutting to the ultimate backfilling with the cement-bentonite mix.



- 3) Page 4, Item 12 (Form 2, Item 6 on Form 1) – The Division’s understanding of the hydrogeology in the area includes as many as three water bearing zones above the targeted ore zone. The proposed method of obtaining the bulk sample utilizes high water pressure.
 - a. Please describe how the aquifers above the ore zone are protected from cross contamination; especially consider the high pressure of the proposed system.
 - b. Please indicate the maximum expected horizontal and vertical extents of the high pressure water intrusion (i.e., beyond the edge of the cavern).
- 4) Page 4, Item F (Form 2, Item D on Form 1) – Please clarify:
 - a. In which water bearing zones the clustered monitoring wells will be completed; and
 - b. What is the expected horizontal proximity of the limits of the proposed cavern to the monitoring wells?
- 5) Page 4, Item G (Form 2, Item E on Form 1) – The list of chemical stored on site is limited to those brought in for the project. The nature of the bulk sample acquisition will likely add uranium to or include uranium in the water used for hydraulic cutting as well as the coarser and finer material collected “coarser material. Please clarify the ultimate disposition of:
 - a. The decanted “jet” water (after the completion of the cavern and collection of the bulk sample,
 - b. The “coarser material directed to a mobile storage bin” (reference the fourth paragraph on page 1 of the December 16, 2014 cover letter), and
 - c. The “finer material directed to a mobile upright tanks”.
- 6) Page 6, Item 9 (Form 2, Item 4 on Form 1) – The bulk sample cavity abandonment description appears adequate to the Division. However, for the purpose of estimating the bond for the abandonment of the borehole and cavity, the Division will need an estimate of the total borehole/cavity volume. Please provide:
 - a. An estimated borehole/cavity volume and a basis for estimate, and
 - b. A unit cost for the cement-bentonite.
- 7) Page 6, Item 10 (Form 2, Item 5 on Form 1) – The Division appreciates and accepts the commitment from Black Range to sample the mud pit contents and provide the Division a complete suite analysis for metals along with an analysis for uranium, radium 226 and radium 228 per Stipulation No. 1, NOI Modification No. 2 (MD-02). No response necessary.

Stipulation No. 1

The contents and cover of the backfilled mud pits will not exceed the following limits:

1. *The concentration of radium 226 or radium 228 may not exceed the background level by more than 5 picocuries per gram (pCi/g).*

2. *The concentration of natural uranium with no radioactive decay products present may not exceed the background level by more than 30 pCi/g.*
 3. *Background levels shall be determined by sampling each proposed mud pit location prior to any disturbance associated with the proposed drilling activity.*
- 8) Page 7, Item 12 (Form 2, Item 7 on Form 1) – Modification No. 2 increased the seeding rate for Mountain Mahogany from 0.10 (original application) to 1.80. Modification No. 3 now reduces the rate back to the original 0.10. Please explain the reason for the change.

Other Issues Non-specific to the NOI Modification Application

- 9) UIC Permit – The Division was contacted by Craig Boomgaard, EPA’s UIC Program about the need for an injection well permit. Mr. Boomgaard indicated he has spoken with Rod Grebb regarding the need for a UIC Class III Well Permit. Please comment on the status of that permit.
- 10) Geochemistry – The Division is aware that under certain conditions bicarbonate (HCO_3^-) may be used in the alkaline in situ leaching of uranium. Ms. Kay Hawkle’s January 17, 2015 letter of objection provided a copy of, and references a white paper authored by Adrian Brown, P.E. Geohydrologist, Denver, Colorado; titled “Groundwater and Soil Conditions at the South T-Bar Ranch” (no publication or date). This paper suggests the Hansen orebody has a bicarbonate concentration of 3150 mg/l. Please provide some discussion on the known and/or expected geochemistry of the orebody and what effect the injection of water with dissolved oxygen used for the hydraulic cutting is expected to have on the solubility of uranium and other metals in the orebody.
- 11) Source of water – The Division understands Black Range intends to purchase water for the borehole drilling and hydraulic cutting. Please provide a source and estimated volume of water.
- 12) Borehole size – Please confirm the proposed 12-inch borehole will be adequate for the purpose of the bulk sample collection.
- 13) Groundwater Baseline Monitoring – So that the Division may determine an acceptable groundwater monitoring plan for MD-03, please consult with the Division regarding previously collected baseline groundwater monitoring data in the vicinity of MD-03.

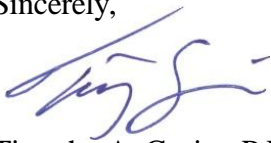
Be advised that if these items have not been addressed within 60 days of the date of this letter (i.e., March 30, 2015); the Division may terminate the NOI modification application in accordance with Rule 5.1.3(c) of the Hard Rock Rules.

Please remember to designate as appropriate those materials in the application that you desire to be kept confidential versus those to be made public. Additionally, if you have received any pertinent correspondence from the Bureau of Land Management, please forward copies to the Division.

The Division forwarded five comments received via email to Black Range from: a) Mr. Lee J. Alter (one as an individual and one on behalf of the Tallahassee Area Community), b) Ms. Kay Hawkle, c) INFORM, and d) CARD. If you did not receive all of these emails from the Division, please let me know.

If you have any questions, please contact me (303-866-3567 ext. 8169).

Sincerely,

A handwritten signature in blue ink, appearing to read 'Tim Cazier', with a stylized flourish at the end.

Timothy A. Cazier, P.E.
Environmental Protection Specialist

cc: Tom Kaldenbach, DRMS
Jennifer Thurston, INFORM
Jim Woodward, CARD
Kay Hawkle
Lee J Alter, Tallahassee Area Community, Inc.
DRMS file