

Tallahassee Area Community, Inc.

Fremont County, Colorado

Board of Directors
P.O .Box 343
Cañon City, Colorado 81212
(www.taccolorado.com)

July 12, 2012

U.S Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Attention:

Mr. Duncan White, Branch Chief, Agreement State Programs;
Division of Materials Safety and State Agreements
Mr. Randolph (Bill) Von Till, Branch Chief, Uranium Recovery ;
Division of Waste Management and Environmental Protection

Federal and State Materials and Environmental Management Programs

Via email attachment (Duncan.White@nrc.gov; RWV@nrc.gov)

Dear Mr. White and Mr. Von Till:

This letter is related to the reference to Emerging Technologies in Uranium Recovery at the recent April 17, 2012 IMPEP review meeting with the Radiation Management Unit of the Colorado Department of Public Health and Environment (CDPHE). Black Range Minerals, Ltd. (ASX:BLR) has made numerous recent announcements regarding their expected utilization of both Underground Bore Hole Mining (UBHM) and Ablation technologies for uranium recovery at their Hansen/Taylor Ranch Uranium Project. Please see: www.blackrangeminerals.com, Investor Relations, ASX Announcements.

The Tallahassee Area Community, Inc. (TAC) is a Colorado not-for-profit organization consisting of residents and property owners in the Tallahassee area of northwest Fremont County, Colorado who are concerned about the potential adverse human health and environmental impacts of large scale uranium exploitation in the immediate vicinity. Please see: www.taccolorado.com.

Both UBHM and Ablation for uranium recovery are acknowledged experimental technologies. To the best of our knowledge, neither have ever been used commercially nor have been specifically considered in NRC or Agreement State regulations or guidance.

TAC believes that their regulatory status is unclear and that there appears to be a conflict between NRC and Colorado definitions and possible interpretations with respect to the question of whether either or both of these technologies should require the issuance of Colorado Radioactive Materials Licenses.

A. Underground Bore Hole Mining

1. Black Range, and its consultant Kinley Exploration, LLC, describes the process as the injection of high pressure water, without added chemicals, into large bore holes drilled to the depth of the targeted uranium ore body which then, by use of an "under reamer", excavates a "cavern" by fragmenting the uranium containing rock and returning those fragments to the surface as a water slurry.
<http://www.blackrangeminerals.com/content/wpcontent/uploads/2012/05/New/BlackRangeSelectsDevelopmentApproachForHansenDeposit26Apr12.pdf>
2. The company has not disclosed many details about the process ,however, TAC research has revealed that up to 50,000 gallons per hour of water pressurized to 1000 - 1500 psi or greater would be required to fragment the sandstone-embedded uranium ore body.
3. The water recovered from the slurry would be reused -- supplemented with make-up water, re pressurized and re injected into the bore hole -- until the cavern is exhausted of the targeted material.
4. It is, at present, unknown what concentration of atmospheric oxygen would be dissolved in the water injected into the bore hole. It would surely be greater than for water at standard temperature and pressure conditions. Oxidation of insoluble uranium oxide to the soluble state, depending on the pH and other conditions in the cavern, would be enhanced. It is expected that as the water is reused, the concentration of uranium, other radioactive constituents , and heavy metals would increase.
5. Some portion of this high pressure water would inevitably be forced out of the cavern into the surrounding sandstone aquifer and threaten the quality of the groundwater and local domestic water wells. Ultimately, the remaining water would be impounded on the surface and presumably left to evaporate away.
6. While UBHM poses many of the same environmental issues as does In-Situ Leach Uranium Recovery, it does not meet the current definition since only the fragmented ore pieces are processed for its uranium content; the "leachate" is not processed for recovery of uranium but rather would be treated as waste.
7. The Colorado Hard Rock Mining Rules distinguish between In-Situ Leach Uranium Mining, which it regulates concurrently with CDPHE, and In-Situ Mining. However, the point at which uranium mining ends and uranium processing begins appears to be defined by conflicting definitions of CDPHE and NRC. The difference is: precisely when does "ore" becomes "source material". CDPHE regulations specify that uranium ore prior to chemical processing is not source material but rather the product of mining. The NRC Office of General Counsel has ruled to the contrary.
8. OGC has said that the line between "mining" and "processing" is drawn at the point of "unrefined and unprocessed ore" in its "natural form" and when "its gross appearance...has not been altered from the point of mining". <http://www.nrc.gov/about-nrc/radiation/protects-you/hppos/hppos184.html>.

TAC believes that it is reasonable and prudent, in view of health & safety and environmental considerations of the UBHM technique, that the fragmenting of ore in the underground cavern be considered as a uranium processing activity requiring (in Colorado) a Radioactive Material License.

B. Ablation

1. The name of the technology should properly be "Impact Ablation" to distinguish this uranium concentration process from Laser Ablation, which is used to identify minerals and in other applications.

2. Black Range and Ablation Technologies, LLC, its consultant and recently announced Joint Venture partner, describes the process as follows: "In ablation, the slurry from UBHM is ejected from two opposing injection nozzles to create a high energy impact zone. This high energy impact separates the mineralized patina of uranium from the underlying grain. The uranium bearing particles are found in the fine fractions separated in a subsequent screening process. As tested on material from Hansen, ablation allows approximately 90% of barren material to be separated from mineralized material prior to milling, greatly reducing the total OPEX and CAPEX costs to process mineralized material. The final product is an "ablated concentrate" which consists of approximately 10% of the original mineralized material, which will be processed with conventional milling techniques."

<http://www.blackrangeminerals.com/content/wp-content/uploads/2012/07/07-06-2012-BLR-Secures-Rights-to-Ablation-Technology.pdf>. (Emphasis added).

3. Clearly, the company does not consider that this process is "milling" and subject to licensing by CDPHE. It appears to be relying on the Colorado Radiation Control Regulations definition of "ore" as a product of mining and before it becomes "source material". "'Ore" means naturally occurring uranium-bearing, thorium-bearing, or radium-bearing material in its natural form, to be processed for its uranium or thorium content, prior to chemical processing including but not limited to roasting, beneficiating, or refining, and specifically includes material that has been physically processed, such as by crushing, grinding, screening, or sorting." 6 CCR 1007-1 Part 1.2 Definitions. (Emphasis included in the recent PowerPoint presentation by the Black Range Vice President of Regulatory Affairs to the National Mining Association in Denver). http://www.nma.org/pdf/urw_2012/grebb.pdf

4. Regardless of the determined status of the UBHM fragmented ore in the cavern, the material undergoing impact ablation is being subjected to source material processing and the resultant waste, both the "barren" rock and process water, is 11e.(2) byproduct material. The high energy impact which separates the uranium grains from the "barren" rock is the functional equivalent of crushing or grinding. The grains are then separated and sized by a screening and elutriation process to isolate the "ablated concentrate" which is then transported off-site to a conventional mill for final processing into yellowcake.

5. As stated in 40 CFR 261.4(b)(7) the beneficiating of ore (including uranium ore) includes every one of those steps. The fact that they would be done at other than a conventional mill does not change the fact that impact ablation is a milling activity subject to a Radioactive Materials License.

6. In the 2002 Office of General Counsel document entitled *Uranium Milling Activities at Sequoyah Fuels Corporation*, the question of "What Constitutes Uranium Milling" was considered: "A fundamental,

plain-language, working definition of uranium milling can be constructed from the somewhat circular references contained in the ... regulatory definitions (in 10 CFR 40.4, of uranium milling, byproduct material and source material): Uranium milling is an activity or series of processes that extracts or concentrates uranium or thorium from any ore primarily for its source material content, and the resulting tailings or waste are 11e.(2) byproduct material." <http://www.nrc.gov/reading-rm/doc-collections/commission/secys/2002/secy2002-0095/attachment5.pdf>.

7. The OGC document further discussed non-conventional milling and milling at multiple locations. It stated: " Non-conventional processing ... comprise other technologies.... The distinction among non-conventional milling activities is that these activities often occur at locations other than a uranium mill.... Uranium milling entails many processing steps , which ... are not required to occur at a single location, but often do."

We respectfully request that you consider the regulatory status of both UBHM and Impact Ablation uranium recovery technologies as promptly as possible since Black Range is expected to finalize their intentions for the Hansen/Taylor Ranch Uranium Project by the end of 2012.

Thank you for your attention. I look forward to your response.

Respectfully submitted,

Lee J Alter
Chairman, Government Affairs Committee
Tallahassee Area Community, Inc.

0489 Fremont County Road 21A
Cañon City, Colorado 81212
719.276.0864
AlterConsult@Starband.net