



## **Quarterly Review of Operations June 2012**

**ASX ANNOUNCEMENT**

**31 July 2012**

### **Highlights**

- Secured rights to the ablation process for concentrating ore to be mined from the Hansen/Taylor Ranch Uranium Project
- A joint venture established for development and marketing of the ablation process world wide
- Commenced the permitting process for a underground borehole mining test
- The JV provides the opportunity to secure involvement in additional uranium projects
- Mr George Glasier, a highly experienced uranium executive with extensive skills in uranium marketing and project development, has joined BLR's team

### **September Quarter Planned Activities**

#### **Hansen Taylor/Ranch Uranium Project**

- Continue to progress a Preliminary Economic Assessment of the development of the Hansen Uranium Deposit
- Undertake further underground bore hole mining development work
- Submit a draft plan of operations to the regulators of the mine permitting process for review and comment
- Further baseline data collection at site
- Obtain bids for the installation of groundwater monitoring wells

#### **Ablation JV**

- Evaluate opportunities to utilise Ablation at other uranium projects where successful testwork has already be carried out
- Conduct test work to determine the suitability for the application of ablation on additional projects
- Commence construction of the first full-scale Ablation production equipment



USA-focused uranium development company Black Range Minerals Limited (ASX: BLR; "Company") is pleased to report its activities the quarter ending 30 June 2012.

## Overview

BLR holds a 100% interest in the 90 million pound Hansen/Taylor Ranch Uranium Project (Project) in Colorado, USA. The Hansen Taylor Project comprises a number of deposits, the most advanced of which is the Hansen Uranium Deposit (Hansen). During the recently completed quarter the Company moved Hansen into a development phase, with completion of a scoping study and selection of the preferred development approach.

Also during the quarter, in a major achievement, the Company entered into a joint venture with Ablation Technologies LLC (see announcement dated 6 July 2012) to develop its ablation mineral concentration process. This agreement provides the Company the right to utilise this technology at the Hansen/Taylor Ranch Uranium Project and also provides it exposure to this rapidly emerging technology on other uranium projects, worldwide.

## Hansen Taylor Ranch Uranium Project

BLR controls 100% of the Project, which covers an area of more than 13,500 acres (55 sq. km) and encompasses numerous deposits that combined, contain Indicated and Inferred Mineral Resources of 90.1Mlbs of  $U_3O_8$  at a robust grade of 600ppm. More than 2,200 drill holes for approximately 350,000m have been drilled on the Project.

The largest of these deposits the Hansen has been selected for initial production as it is the more technically advanced of the deposits in terms of historical permitting and drilling.

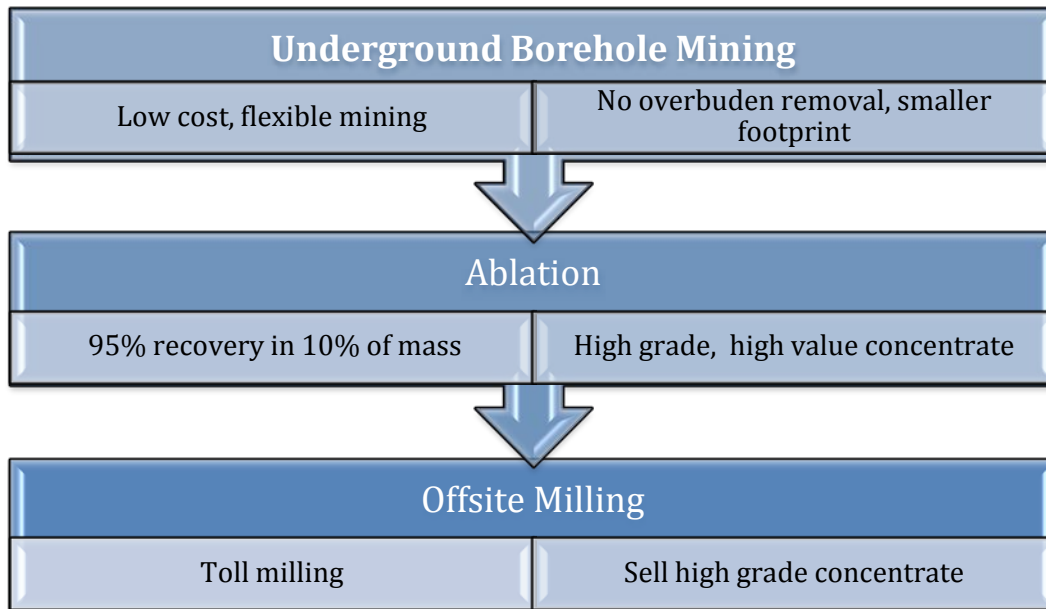
More detail on the Project is included in the "About Black Range" section at the end of this document.

## Hansen Uranium Deposit

Early in the quarter, BLR received the results of a scoping study (Study) prepared by TREC, Inc. (TREC) of Casper, Wyoming, that indicated underground borehole mining (UBHM) coupled with concentration of ores with the ablation process (Ablation) is the best approach for the development of Hansen.

Whilst other development options such as open pit and underground were potentially viable alternatives, BLR selected UBHM as its preferred development option due to the advantages it offers in significantly lower operating and capital costs as well as minimising the overall environmental impact on site. Following the completion of the Study, BLR determined that processing ore at an off-site mill would be incorporated into the preferred development option because Ablation facilitates the production of a high-value, low volume concentrate which can be transported to an off-site processing facility for conversion to yellowcake, which further reduces the capital cost of developing the Project while also minimising the environmental impact.

## Hansen Development Scenario



The key parameters for the development of Hansen are set out below:

- Indicated and Inferred resources of 19.72Mlb  $U_3O_8$  at an average grade of 1,270 ppm when applying a 750ppm cut-off grade
- Production rate of 2Mlbs  $U_3O_8$  per annum
- Initial mine life 7-8 years
- Operating costs estimated at US\$30/lb  $U_3O_8$  (excluding royalties, taxes & contingency)
- Recovery of ~95%  $U_3O_8$  in ~10% of mined material when utilising Ablation
- Offsite milling selected – reduces capital costs and streamlines mine permitting
- Capital costs <US\$80m
- Use of Ablation expected to help streamline the mine permitting process

During the quarter BLR secured a licence to use Ablation for the concentration of ore at the Project, which is a separate licence to the JV licence (see below). Under the terms of this licence it is envisaged that the JV will provide the Ablation services in return for reimbursement of its operating costs, plus a margin as well as a royalty on production.

Having already established a strategic alliance with Kinley Exploration LLC to utilise UBHM, the agreement to utilise Ablation was the second of two significant milestones that together secure the rights to key technologies that will be utilised to develop Hansen.

In confirming the development scenario for Hansen, BLR has taken a significant step forward in its desire



to transition from an explorer to a uranium miner.

### **Mine Permitting Progress**

During the quarter, BLR continued preparation work on the permit process including:

- Consultation with the Colorado Department of Public Health and Environment and the Colorado Division of Reclamation Mining and Safety
- Development of groundwater, surface water, air and meteorological monitoring plans
- Preparation of applications for installation of an air monitoring station
- Quarterly Conditional Use Permit groundwater and surface water monitoring and reporting
- Continuing with the development of hydrology model
- Commencement of the permitting process for a UBHM test scheduled for 2013
- Submitted approximately 25 drill core samples from drilling completed at Hansen during 2011 for disequilibrium analyses

BLR is targeting completion of the mine permitting process late in 2015.

### **Community Engagement**

During the quarter, BLR established a local Cañon City office to facilitate public outreach and project information dissemination. The Cañon City office gives BLR a local presence so that emerging issues from stakeholders can be identified and addressed.

At the end of the quarter BLR gave a presentation to the South-T Bar Property Owners Association, whose members hold the majority of the surface owners' rights over the Hansen Deposit. The majority of these members are also members of STB Minerals LLC, the third largest shareholder in BLR.

BLR has further refined its public outreach plan to set forth specific strategies and techniques for the engagement of and effective response to private citizens, businesses, government entities, media and other organizations potentially affected by the Project.

### **Preliminary Economic Assessment**

During the quarter TREC continued work on a Preliminary Economic Assessment (PEA) for Hansen. The PEA will incorporate mining Hansen using UBHM and Ablation and transporting the ablated concentrate off site to a third party uranium mill for processing into yellowcake.

The PEA process, which was originally forecast for completion during the third quarter is now expected to be completed in the fourth quarter 2012. Slippage in the schedule for the PEA is due in part to BLR negotiations to secure Ablation for Hansen.

## **Ablation Joint Venture**



During the quarter, BLR executed a binding Heads of Agreement (HOA) with Ablation Technologies LLC (ABT) to establish a Joint Venture (JV) to commercialise ABT's Ablation mineral technology process (Ablation).

The development of Ablation has been progressed over the past five years by ABT of Casper, Wyoming, from an initial concept to the point that it has been fully developed and tested in a pilot scale test unit (750lbs/hr – See Figure 1). The next stage of development is to build a full scale unit to gather operating data, prior to applying it on a commercial basis.

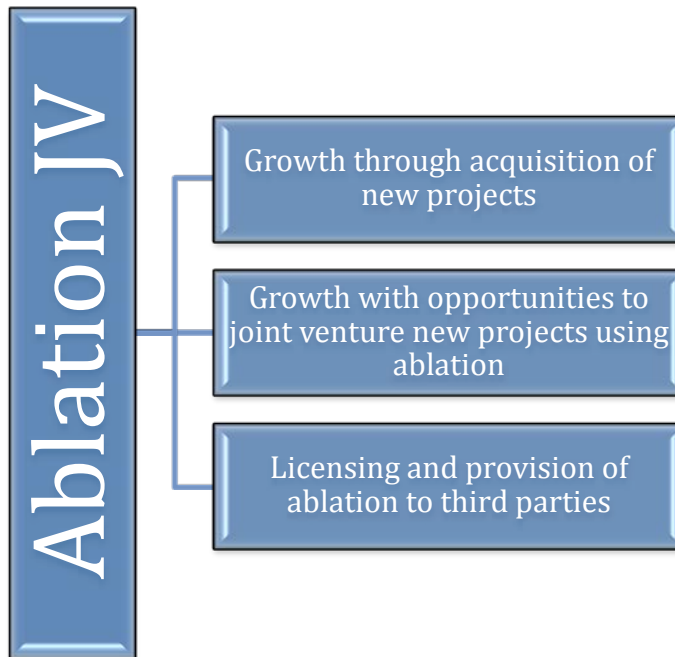
ABT and BLR have established a Wyoming Limited Liability Company, Mineral Ablation LLC, in which each member will hold a 50% interest. ABT has granted this company an exclusive licence to apply Ablation to uranium projects worldwide.

Ablation is a low-cost, efficient and robust technology that mechanically separates uranium from the host rock without the use of chemicals; producing a high-grade, high-value concentrate. Further information on ablation is provided in the "About Black Range" section at the end of this report.

#### **Highlights of the HOA between BLR and ABT**

- 50/50 JV formed in respect of the commercialisation and application of Ablation
- The JV applies worldwide for use in uranium and associated minerals
- ABT grants BLR a separate licence to use Ablation at the Project
- Next step in development of Ablation is building a commercial-scale unit
- BLR will initially fund 100% of the operating costs of the JV, with ABT's 50% share recovered from revenues earned
- The concentration of ore using Ablation, to produce a high-grade, high-value concentrate, has the potential to make some marginal uranium projects economical
- The JV will seek opportunities to apply Ablation within the USA and throughout the world

The establishment of the Ablation JV is an important milestone in the evolution of BLR from an explorer to a uranium development company, as it will open up a number of growth opportunities that could be brought into production earlier than our Hansen/Taylor Ranch Uranium Project. These opportunities may take several forms as shown in the growth model for the JV below.



Concurrent with entering into the HOA, BLR entered into a Call Option Agreement with G & K Glasier (or nominee) whereby BLR has an option to acquire all of the issued capital of Mineral Ablation Inc., a company that held certain prior rights to Ablation. Details of the Call Option Agreement are set out in an announcement dated 6 July 2012.

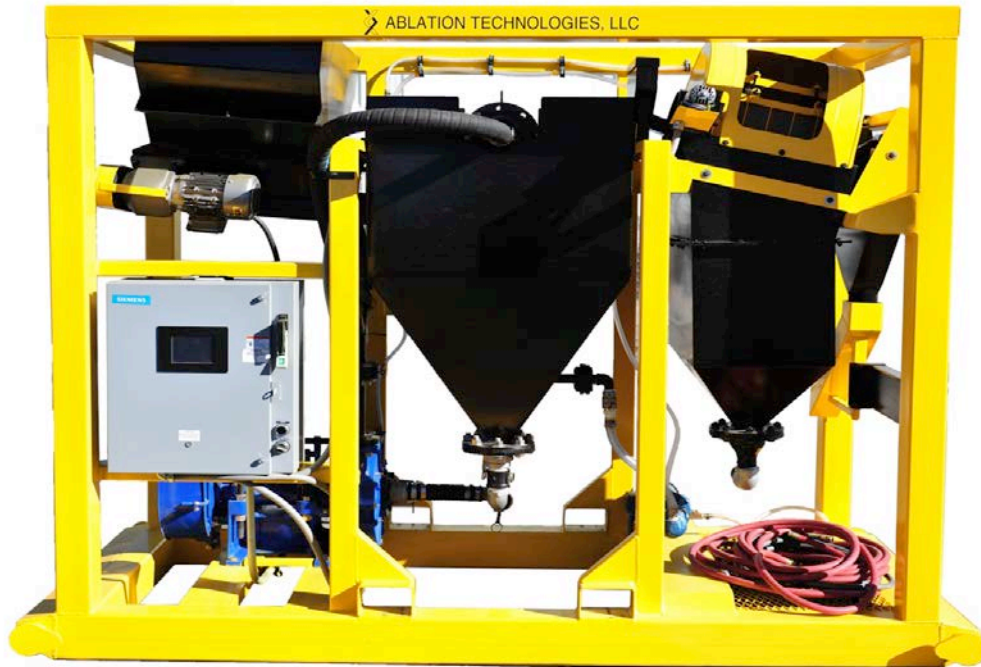
### **Applications for Ablation**

Because of the time, cost and complexity involved in permitting and building a uranium mill, a number of projects do not have the resources or grades required to justify the expense. In many such cases these projects are located in areas where transport of run of mine ore to an existing mill is not viable. In instances such as these, Ablation may be the key to unlocking the potential of these sub-economic resources, as a high-grade, high-value concentrate can be much more economically transported to a mill facility.

A number of these deposits already have existing mining permits, as such they could be brought into production in a 12-18 month timeframe. Should the JV can enter into arrangements for the development of these types of deposits then BLR may be in a position to benefit from earlier production and cash flow from these projects whilst it continues to move Hansen through the permitting process, which is scheduled to be complete, near the end of 2015.

The JV brings the project development and operational skills of BLR together with an innovative solution to concentrate uranium ores.

Even for projects that have an on-site milling facility, concentration with Ablation before processing into yellow cake may significantly reduce processing costs by reducing reagent consumption and waste streams.



**Figure 1 – Pilot Scale Ablation Unit**

### **Key Appointment**

BLR was pleased to announce in July that Mr George Glasier had joined the Company as a consultant. Mr Glasier will use his extensive knowledge of, and contacts within, the uranium industry to assist BLR to identify opportunities to apply the Ablation process.

Mr Glasier has over 40 years' experience in the uranium industry, with extensive experience in sales and marketing, project development, and permitting uranium processing facilities.

Mr Glasier was most recently President and CEO of American Strategic Minerals Corporation (ASMC), which in early 2012 had established a JV with ABT for the Ablation process. After ASMC elected to focus its efforts away from uranium, he resigned as CEO and was assigned ASMC's rights to Ablation. As previously mentioned, BLR has in turn acquired all of the rights held by Mr Glasier with respect to Ablation. BLR has subsequently established its own joint venture with ABT LLC to commercialise the Ablation process for use in uranium on a world-wide basis.

Mr Glasier's in-depth knowledge of the uranium industry will play an integral part in unlocking value from the Company's current uranium projects as well as other potential opportunities





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#### **Competent Person's Statement**

*The information in this announcement that relates to Mineral Resources at the Hansen/Taylor Ranch Uranium Project is based on information compiled by Mr Rex Bryan who is a member of the American Institute of Professional Geologists. The American Institute of Professional Geologists is a "Recognised Overseas Professional Organisation". Mr Rex Bryan compiled this information in his capacity as a Principal Geologist of Tetra Tech. Mr Rex Bryan has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Rex Bryan consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*





## About Black Range Minerals Limited

Black Range Minerals Limited (BLR) is listed on the Australian Securities Exchange (ASX:BLR) and is focused on growth through acquisition, exploration and development of uranium projects.

### Directors & Management

Management		
<b>Tony Simpson</b>	Managing Director	USA
<b>Mike Drew</b>	Chief Financial Officer	USA
<b>Rod Grebb</b>	Vice President Regulatory Affairs	USA
<b>Nick Day</b>	Company Secretary	AUS
<b>George Glasier</b>	Consultant	USA
Board		
<b>Alan Scott</b>	Non-Executive Chairman	AUS
<b>Ben Vallerine</b>	Non-Executive Director	AUS
<b>Mike Haynes</b>	Non-Executive Director	AUS
<b>Duncan Coutts</b>	Non-Executive Director	AUS

### Share Structure

The share structure of Black Range Minerals Limited at 31 July is as follows:

<b>Ordinary Shares</b>	840,934,800
<b>Unlisted Options</b>	23,350,000
<b>Fully Diluted</b>	864,284,800

### Hansen/Taylor Ranch Uranium Project

BLR is currently advancing the high-grade Hansen/Taylor Ranch Uranium Project, located northwest of Cañon City, Colorado, USA, toward production (refer map).

BLR controls 100% of the Hansen/Taylor Ranch Uranium Project (the Project), which encompasses more than 13,500 acres (55 sq. km). The vast majority of these mineral rights have been secured under four lease and option agreements with surface landowners, together with several State and Federal leases. The Project contains JORC Code-compliant Indicated and Inferred resources of approximately 90.9 million pounds U<sub>3</sub>O<sub>8</sub> at a very robust grade of 600 ppm U<sub>3</sub>O<sub>8</sub>, making it one of the largest uranium projects within the USA.

Details of BLR's Mineral Resources are shown in the table below:



JORC Classification – Mineral Resources	Million Tonnes	Grade (PPM)	Million Pounds U <sub>3</sub> O <sub>8</sub>
<b>At 250ppm U<sub>3</sub>O<sub>8</sub> (0.025%) Cut off</b>			
<b>Indicated</b>	28.93	620	39.75
<b>Inferred</b>	40.06	580	51.18
<b>Total</b>	68.99	600	90.92
<b>At 750ppm U<sub>3</sub>O<sub>8</sub> (0.075%) Cut off</b>			
<b>Indicated</b>	7.71	1210	20.52
<b>Inferred</b>	8.86	1190	23.33
<b>Total</b>	15.58	1200	43.85

Resources in this table are based on an August 2010 estimate by Tetra Tech Inc.

BLR has assembled a highly reputable team of US-based experts to guide the Project through the mine permitting process. These team members have a solid track record in preparing high-quality permitting documents and in conducting comprehensive and successful public outreach. BLR is targeting completion of permitting activities and commencement of production in 2016.

Wherever practical, BLR seeks to utilise mining technologies that are both environmentally sensitive and economically viable by identifying and evaluating new technologies, and by embracing innovation in existing technologies.

The Hansen Uranium Deposit (Hansen) is part of the larger Hansen/Taylor Ranch Uranium Project and has been selected for initial production as the more technically advanced of the deposits in terms of historical permitting and drilling. Hansen was discovered in 1977 and fully permitted for mining by Cyprus Minerals Corporation (Cyprus) in 1981.

More than 600 holes were drilled and three feasibility studies completed to evaluate Hansen. Cyprus concluded that the Project was economically viable; however the Project was never brought to production due to the subsequent collapse of the uranium price. BLR's work to date has confirmed the historical work completed by Cyprus.

### **Ablation Joint Venture**

In July 2012 the Company executed a binding Heads Of Agreement (HOA) with Ablation Technologies LLC (ABT) to establish a Joint Venture (JV) to commercialise ABT's ablation mineral processing technology (Ablation).

Ablation is a mineral concentrating technology that is low-cost, efficient and robust. It is a technique that mechanically separates uranium from the host rock without the use of chemicals; producing a high-grade, high-value concentrate.



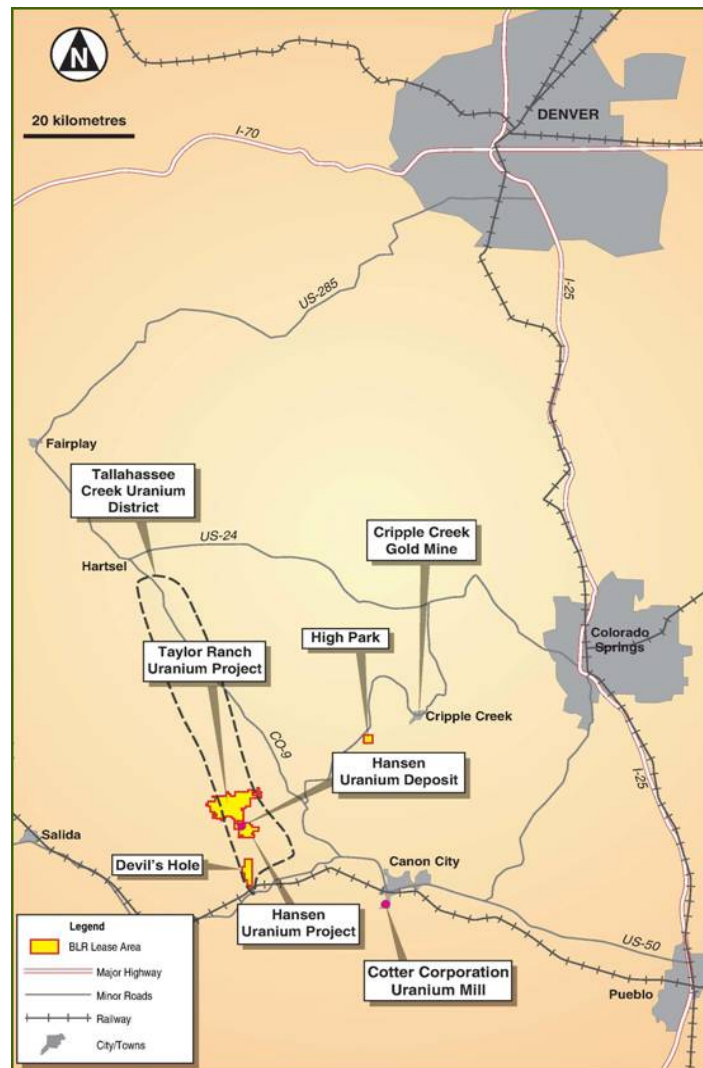
In the Ablation process, ore slurry is ejected from two opposing nozzles to create a high-energy impact zone. Collision of particles within this high-energy impact zone separates the mineralised patina (coating) of uranium from the underlying grain. The uranium bearing particles are recovered in the fine fractions separated in a subsequent screening process.

Ablation allows approximately 90% of barren material to be separated from mineralised material prior to milling, greatly reducing the operating and capital costs required to process the highly concentrated ore. The final product is an ablated concentrate which comprises approximately 10% of the original mineralised material, which will be processed with conventional processing techniques.

ABT and BLR have established a Wyoming Limited Liability Company, Mineral Ablation LLC, in which each member will hold a 50% interest, and which has a licence from ABT to apply Ablation on a worldwide basis for uranium and associated minerals.

Not only does the Ablation JV provide BLR the right to utilise Ablation at the Hansen/Taylor Ranch Uranium Project, it also opens up a number of opportunities for the Company to actively assess, whereby it may be able to utilise the technology at uranium deposits in other areas in the USA and around the world. Many projects that may not currently be economically viable could be with the application of Ablation.

**Further information on Black Range can be sourced from [www.blackrangeminerals.com](http://www.blackrangeminerals.com)**



**Figure 2: Location of Black Range Minerals' Hansen/Taylor Ranch Uranium Project in Colorado, USA**