LETlhAKANE METALLURGICAL TESTWORK UPDATE

A-Cap Resources Limited (‘A-Cap’ or ‘the Company’), the ASX listed company targeting uranium in Botswana, provides an update of recent metallurgical testwork at the Company’s Letlhakane Project which to date has a JORC compliant resource of 158 Mlbs U₃O₈.

There are three significant ore types that occur in the deposit;

- **Secondary Ore** typically occurs within 15m of the surface and is characterised by carnotite as the main ore mineral. Secondary ore occurring close to the surface often contains significant amounts of carbonate which gradually decrease with depth.

- **Oxide Ore** has been variously affected by weathering and oxidation, some examples are strongly oxidised and some are only weakly oxidised and are termed **transitional** ores that are mineralogically similar to primary ore. Oxide ores occur between 10m to 25m below the surface.

- **Primary Ores** represent the uranium ores as they originally formed and are unaffected by weathering and oxidation from the earth’s surface, primary ore types occur below 25m depth.

The current metallurgical testwork has been carried out on the secondary and oxide ores which will form the basis of the initial production profile at the project. Testwork on the primary ore commenced in March 2010.

**HIGHLIGHTS**

- All secondary and oxide ores agglomerate well with these agglomerated ores exhibiting high percolation rates in columns confirming their suitability for heap leach treatment.

- The carbonate rich secondary ore is amenable to the use of alkaline reagents achieving recoveries of up to 80% in the mini column testwork.

- The recovery of uranium from the remaining secondary and oxide ores types is optimised using an acid leach with recoveries up to 86%.

- The application of a strong acid during leaching has resulted in excellent recoveries of over 80% in some oxide/transitional ores that had been initially difficult to leach.

- Initial results from the beneficiation work on oxide and primary ores are encouraging with significant upgrades of uranium grades from radiometric sorting.
Managing Director Andrew Tunks said, “The test work confirms the suitability of all ores for heap leach treatment and also provides strong indications for the best process options for the various ore types. The good metallurgical recoveries coupled with positive results from the radiometric sorting are very encouraging. Further testwork is required to finalise the leaching conditions and optimise reagent applications and we look forward to updating our shareholders as we progress.”

MINI COLUMN LEACH TESTS AND ASSOCIATED TESTWORK

Metallurgical testwork for heap leach deposits is usually carried out in “column leaches” where the ore is usually agglomerated and packed into cylindrical columns. Chemical reagents are added to leach the target metal from the host rock simulating the conditions of a heap leach pad. The current round of testwork was carried out in “mini columns” which allows multiple metallurgical variables using a large number of columns to be tested. The objective of the current testwork was to:

- Determine the chemical composition of the ore types
- Assess the agglomeration and percolation characteristics of the ores with respect to heap leach processing
- Trial acid versus alkaline reagents for the various ore types

The samples tested have grades varying from 135ppm U₃O₈ to 519ppm U₃O₈ and include high carbonate and low carbonate secondary ores as well as oxide ores from across the deposit. The secondary ore types were sourced from deep pits, down to 12m and contain mainly carnitite mineralisation. The oxide samples were all taken from large diameter diamond core ranging from 20-30m in depth.

The results from the testwork indicate that:-

1. All the secondary and oxide ores respond well to agglomeration and percolation tests with high percolation rates observed in all ore types. These agglomeration tests were carried out under both alkaline (cement) and acid (sulphuric acid) conditions and agglomerate stability and strength were good, indicating the ores are suitable for a heap leach style operation.

2. The secondary ore within 8m of the surface ore are high acid consuming due to the presence of carbonate minerals in the ores. These ore types will need to be treated with alkaline reagents. **Recoveries in the secondary ore types of up to 80% were achieved.**

These recoveries confirm previously published results announced as part of the Scoping Study on the Letlhakane Project.

Graph 1.

*Uranium recovery versus leach time for secondary-calcrete (carbonate rich) mineralisation. Recoveries of up to 80% were achieved.*
3. The remainder of the **secondary** and **oxide** ore types have only minor or no carbonate minerals and responded well to the use of acid reagents resulting in recoveries of up to 86%. Acid reagents leach the uranium in a much shorter time period than alkaline reagents (see Graph 2) which is important from an ore handling and operating cost per pound U₃O₈ perspective.

Estimated costs for the scoping study (Jan 2009) assumed an alkaline leach for all ore types, whereas the work in this series of tests clearly show that an acid leach is far more efficient both in terms of recovery and leach time which will have a positive impact on operating costs.

![Graph 2– Comparison between acid and alkaline leaches for some of the Oxide ores from the Gorgon Prospect. Recoveries using acid reagents are at 86% with fast leach times. Alkaline reagents provide inferior leach kinetics.](image)

4. Good metallurgical recoveries have been achieved from oxide/transitional material that have dominantly “primary” ore mineralogy. The recoveries are enhanced by the application of a strong acid during the leach process. This method of treatment may have significant application to the true primary ores which have previously shown poor recoveries. A detailed examination of the mineralogy of the deeper and transitional oxide material suggests that while the rock is oxidised, the ore mineralogy contains substantial quantities of primary uranium minerals including uraninite, coffinite and uranophane. **Importantly**, testwork showed that the application of a strong acid dose as part of the leaching conditions can result in recoveries in excess of 80%.

![Graph 3– Clearly demonstrates initial recoveries stabilising at 56% however an additional dose of strong acid reagent at day 32 results in marked increase in recovery.](image)
**BENEFICIATION OF PRIMARY AND OXIDE ORES**

A detailed program of beneficiation test work commenced at SGS Lakefield in early 2010 using both oxide and primary ores from across the deposit. This detailed program includes the following:

- Radiometric ore sorting - Initial work completed
- Gravity – Commenced April 2010
- Flotation – Commenced April 2010

**Results of Radiometric Ore Sorting**

Six (<200kg) samples of oxide and primary mineralisation were tested using a portable laboratory Radiometric Sorter. In this method ores are passed beneath a scintillometer device which detects radiation and mechanically sorts ore particles into radioactive (accepted fraction) versus non radioactive (rejected fraction) sub-samples. Important considerations in evaluating these tests are the:

- Initial grade
- Grade of the accepted sample
- The percentage of the total uranium in the accepted sample
- The percentage of the total mass in the accepted sample

Initial results from the trial Radiometric Sorting are encouraging with significant increases in uranium grade seen in all samples. Further work needs to be completed on larger samples to test and optimise this process particularly for lower grade samples. Additional large tonnage samples will be trialled in the coming weeks.

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<th>Initial grade U ppm</th>
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Table 1. All samples received a significant increase in grade when processed through the Radiometric Sorter.
MINI COLUMN TESTS ON PRIMARY ORE

Mini column leach tests on some of the primary ore concentrate from the radiometric sorting are in progress. The positive result received from the application of the strong acid reagent to transitional oxide material, which has similar mineralogy to the primary ore, is very encouraging and points to improved metallurgical recoveries within the primary. In previous testwork on the primary ore recoveries of less than 50% were achieved, however the success of this “strong acid” application is very promising for improved recoveries in the primary.

CONCLUSIONS OF THE CURRENT TESTWORK

The current round of testwork has clearly shown that the secondary and oxide ores are amenable to heap leaching with good strength and percolation rates within the agglomerated ores. Metallurgical recoveries are good across the spectrum of ore types and it is anticipated that the next phase of work will continue to refine and optimise the leaching process. The suitability of the near surface secondary ores to alkaline leaching and the remainder of the ores to acid leaching will require that separate heap leach pads are used before the uranium rich solutions are extracted from the pads and are treated in a common extraction facility.

Initial results of the beneficiation work are encouraging and it appears that a significant increase in grade may be possible by radiometric sorting before ore is placed onto the leach pads. Any form of beneficiation is positive in that less ore at higher grades is treated resulting in improved economics for the operation.

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Information in this report that relates to exploration results, data and cut off grades is based on information compiled by Dr Andrew Tunks who is a member of the Australian Institute of Geoscientists. Dr Tunks is a fulltime employee of A-Cap Resources. Dr Tunks has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which 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.” Dr Tunks consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.