### ASX ANNOUNCEMENT 23 October 2012

URANIUM EQUITIES LIMITED ACN 009 799 553



ASX Market Announcements Office via electronic lodgement

# Quarterly Report Quarter ended 30 September 2012

### **Highlights**

### PhosEnergy – Uranium Extraction Technology

- USA Demonstration Plant successfully completed
- Results confirm high (>90%) uranium recovery
- Hatch to complete Engineering Study with results expected in the March 2013 quarter

### **Exploration – Australia**

- Uranium Equities' secures the right to move to a 100 per cent ownership and management of the highly prospective tenements surrounding the historic Nabarlek Uranium Deposit
- Interpretation of magnetic and newly acquired geophysics at the Marla Project highlights a basement structural regime analogous to known IOCG deposits such as Olympic Dam and Prominent Hill

### Our Strengths

- Breakthrough PhosEnergy Process
- Extensive exploration portfolio >24,000km²
- Multiple near term growth opportunities

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#### 1. URANIUM EXTRACTION TECHNOLOGY

Uranium Equities and global uranium leader Cameco Corporation have jointly developed a potentially industry-changing process for the extraction of uranium from phosphoric acid streams produced in the production of phosphate-based fertilisers, "the PhosEnergy Process". Cameco is funding the development of this Process through a staged investment of up to US\$16.5 million, with a further commitment to fund a minimum of 50 per cent of Uranium Equities' share of the capital cost for construction of the first commercial plant, should this occur. Cameco have invested US\$12.5 million to date.

Uranium Equities estimates the cash operating cost of uranium production employing the PhosEnergy Process to be US\$20-25 per pound of  $U_3O_8$  based on a 1Mtpa  $P_2O_5$  phosphate production facility operating in the USA (including a 40 per cent contingency). The initial focus of the development team is on the phosphate fertiliser industry in the USA, where we estimate there is an opportunity to recover approximately 6Mlbs of uranium per annum. The worldwide opportunity is in the region of 20Mlbs per annum. Operating in the USA also has several potential synergies with Cameco's existing US operations.

In September 2012 the Company announced that it has successfully completed the first operating phase of its PhosEnergy Demonstration Plant in the USA, marking another step towards commercialisation of this ground-breaking technology (Figure 1).



Figure 1 – The PhosEnergy Demonstration Plant

Four, 10 day tests were completed from June to August 2012 on phosphate streams from two different fertiliser facilities. The PhosEnergy Process proved effective on a demonstration scale with multiple cycles of unit operations showing exceptional results.



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All analytical results have been received with key outcomes of the work to date being:

- Consistently high uranium recovery (greater than 90 per cent) from the phosphate stream during steadystate operation;
- No deleterious build-up of impurities in the extraction media across multiple cycles;
- Chemical and reagent consumptions within expected range;
- Purification and concentration of uranium is achievable without significant uranium losses;
- Chemistry of the phosphate stream is unaffected except for the removal of uranium;
- A concentrated product was shipped to a uranium production facility where a saleable product can be produced.

Uranium Equities estimates the cash operating cost of uranium production employing the PhosEnergy Process to be US\$20-25 per pound of  $U_3O_8$ , with a capital intensity of \$100 per pound ( $U_3O_8$ ) of annualised nameplate capacity. These estimates are based on phosphate streams from a 1Mtpa  $P_2O_5$  fertiliser facility operating in the USA and include a 40 per cent contingency.

The design criteria derived from the Demonstration Plant runs is being fed into an Engineering Study which commenced in October 2012 to further increase confidence in the capital and operating cost estimates.

The Study will be completed by global engineering and professional services consultancy Hatch. Hatch has extensive experience in the phosphate industry and assisting companies with commercialising technologies such as the PhosEnergy Process. The Study will be run out of Hatch's Tampa, Florida offices where their Phosphate Fertilizer Center of Excellence is based.

Results of the Study are expected in the March 2013 quarter.





#### 2. EXPLORATION ACTIVITIES

Uranium Equities has an extensive exploration portfolio of high quality exploration projects covering a total area in excess of 24,000km² in a number of Australian states and territories and including a number of different deposit styles and targets.

The West Arnhem Joint Venture, with Cameco Australia (Uranium Equities right to earn 100%) and the 100%-owned Nabarlek Mineral Lease, located in the Alligator Rivers Uranium Field in the Northern Territory, represent a rare near-mine uranium exploration opportunity surrounding the historic Nabarlek Uranium Deposit (previous production:  $24Mlbs @ 1.84\% U_3O_8$ ) – the Nabarlek Project.

### 2.1 The Nabarlek Project

### 2.1.1 West Arnhem Joint Venture (WAJV)

In September 2012 the Company announced it had reached agreement with Cameco Australia Pty Ltd to rationalise the ownership of two key uranium exploration joint ventures.

The agreements, relating to the West Arnhem and Rudall River Joint Ventures, simplify the structure of Uranium Equities' uranium exploration portfolio in line with the Company's long-held desire to consolidate 100 per cent ownership and management of the highly prospective tenements surrounding the historic Nabarlek Uranium Deposit.

The Company has secured the right to move to 100 per cent ownership in the West Arnhem Joint Venture tenements (Figure 2) under the following terms:

- Uranium Equities to spend \$2 million over 48 months to complete the acquisition of Cameco's 60% interest bringing Uranium Equities' total ownership to 100%;
- If Uranium Equities elects to withdraw before acquiring a 100% interest, it will revert to its 40% contributing interest in the WAJV; and
- Cameco retains the right to 'Claw Back' to a 51% interest in the project on delineation of a Measured and Indicated JORC Compliant Resource of greater than 50 million pounds U<sub>3</sub>O<sub>8</sub>.

This consolidation of ownership of the Nabarlek Project will provide Uranium Equities a renewed focus in the region.





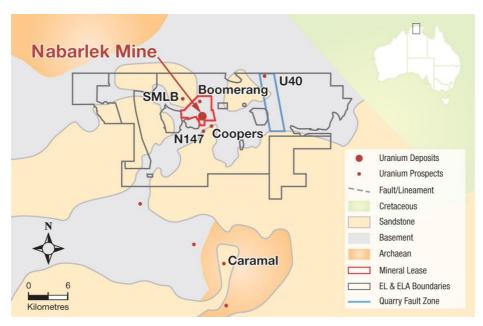


Figure 2 – Nabarlek Project Prospects

#### 2.1.2 Nabarlek Mineral Lease

In 2011 a detailed ground gravity survey over the northern portion of the Mineral Lease was completed,. The survey, which includes the Boomerang Prospect drilled in 2010 and 2011 (Figure 3), was designed to identify structures at the unconformity surface, beneath transported sands and outcropping Kombolgie Sandstone cover sequences. Data has been merged with a previous survey covering the adjacent SMLB Prospect, on the West Arnhem Joint Venture, and is currently being interpreted in conjunction with the basement geology established by drilling campaigns.

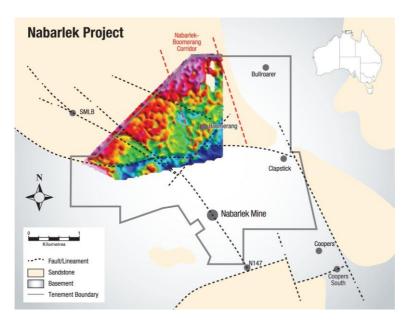


Figure 3 - Nabarlek Ground Gravity Survey





### 2.2 Oodnadatta & Marla Projects (SA)

The Oodnadatta and Marla Projects cover a total area of 15,283 km² in the northern Gawler Craton in South Australia (Figure 4) and are considered prospective for IOCGU (iron-oxide-copper-gold-uranium) deposits, possible Broken Hill-style meta-sedimentary hosted copper — gold mineralisation and Kazakhstan-style sandstone-hosted uranium deposits.

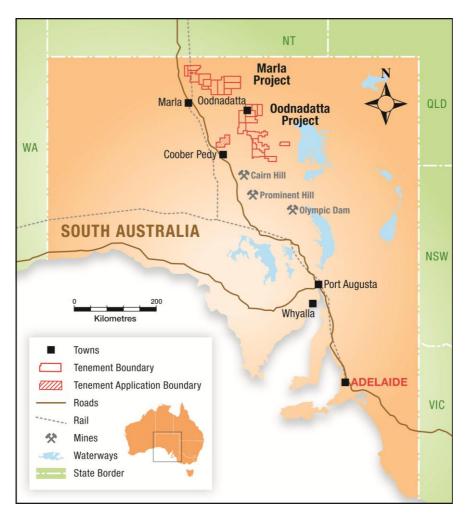


Figure 4 – Project Location Map

Further geophysical and structural modelling has been completed primarily focussed on Marla magnetic and gravity images. Based on interpreted regional tectonic framework of the region, the gravity response shows distinct regional linear features in at least three dominant orientations (Figure 5).





This has produced interpreted basement architecture similar to that observed in the Olympic Dam – Carrapateena – Prominent Hill region, where the primary structural control on IOCGU deposit location is known to be proximal to steeply-plunging intersection zones of regional east-northeast and second order northwest – north-northwest trending faults.

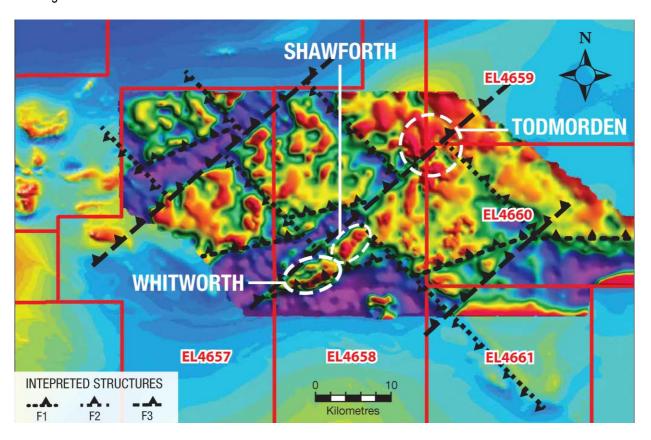


Figure 5 – Marla Structural Interpretation

The northwest trending structures are likely to be related to the compression and uplift of the Peake and Dennison Ranges to the southeast of the Marla Project. Large continuous regional structures are evident in the gravity and magnetic images linking the Marla and Oodnadatta projects to that same stage of deformation.

The northeast trending structural features off-set the northwest trending structures and thus represent a later stage of deformation possibly linked with the compression and folding of the Adelaidean equivalent basin sediments. The orientation of these structures indicates a possible compressional strain between the Musgrave and Gawler Blocks.

The validity of the structural interpretation has been examined by comparison with a seismic section that traverses across the region. This shows a good correlation between basement position and the interpreted positions of the structures. It also shows a direct correlation between gravity response, structures and depth to basement.

The new structural model of the region will be assimilated with geophysical inputs to help prioritise drill targets.





### 2.3 Rudall River (WA) (Cameco 85% : UEQ free carried 15% conditional JV)

The Rudall River Project (Uranium Equities free carried 15% interest) consists of three Exploration Licence Applications and three Prospecting Licence Applications covering a total area of  $175 \text{km}^2$  (Figure 6). The westernmost Exploration Licence Application adjoins the Cameco/Mitsubishi Kintyre Project (current published resource of  $55 \text{Mlbs} \ @ 0.58\% \ U_3 O_8$ ).

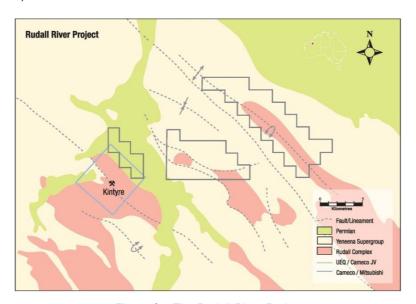


Figure 6 – The Rudall River Project

The Rudall River Joint Venture tenements cover historical uranium prospects as well as geological and structural settings analogous to those seen at Kintyre.

As part of the broader agreement with Cameco to simplify ownership of key uranium projects in Western Australia and Northern Territory announced in September 2012, Uranium Equities will move from a 40 per cent contributing interest to a free-carried 15 per cent interest in the Rudall River Joint Venture. Moving to a free-carried position at Rudall River allows Cameco significant synergies with its existing exploration operations in the region, while giving Uranium Equities shareholders continued exposure to any future exploration success on these tenements.

Under the terms of a revised agreement, Cameco may increase equity from 60% to 85% of the Rudall River Project under the following terms:

- refunding 60% of Uranium Equities' sunk cost to date on the Rudall River Project;
- sole-funding a minimum of \$1 million over three years; and
- free-carrying Uranium Equities' residual 15% joint venture interest to a Decision to Mine.

The agreement is conditional on agreement being reached with the Native Title holders and the tenements being granted. Native title negotiations to allow exploration access have subsequently moved to a point whereby the Company is confident that agreement can be reached in the near term, allowing access for exploration and precipitating the new Joint Venture arrangement with Cameco.





#### Frome Basin, South Australia

Uranium Equities has consolidated a strategic ground position totalling 953km² in one of Australia's most prospective uranium provinces, South Australia's Lake Frome district. The ground position consists of 100%-owned exploration licences principally along the western margin of the Frome Embayment and is considered prospective for Beverley and Four Mile-style uranium deposits.

In October 2012, following a strategic review of its Frome Basin Projects, the Company announced its withdrawal from the West Lake Frome Joint Venture with Cauldron Energy Limited (ASX:CXU) into which it has been earning an interest. To satisfy all outstanding obligations under the joint venture agreement, including the balance of the Company's minimum commitment, the Company issued 4,000,000 fully paid ordinary shares to Cauldron Energy.

This will allow Uranium Equities to focus on its remaining 100%-owned tenements where a broad-spaced reconnaissance rotary mud drilling program was completed in 2011 to test the stratigraphy and regional structural features along the western margin of the Frome Basin. The drilling provided an insight into the geological framework of the region and confirmed the company's interpretation of the structural setting.

The drilling identified differing redox conditions in both the Namba and Eyre Formations with reduced and permeable sands in the Eyre Formation, making the unit ideal for trapping uranium from migrating oxidised fluids.

#### Lake Blanche

The Lake Blanche Project is targeting sandstone-hosted uranium located within the Eromanga Basin, 80 to 190km north-east of the highly uraniferous Mt Painter Block, in South Australia. The tenement package comprises seven exploration licences covering a total area of 6,074km<sup>2</sup>.

The Project is considered prospective for sandstone-hosted uranium mineralisation. The tenement package overlies thick sequences of the Miocene aged Namba Formation, host to the Beverley and Four Mile Deposits, and the Eocene aged Eyre Formation, host to the Honeymoon Deposit. Widespread anomalous uranium was intersected at the Lake Blanche Project in 2011.

Joint Venture partner Cameco Australia Limited advised it has withdrawn from the Lake Blanche Joint Venture following a corporate decision to exit South Australian greenfields projects. As part of the withdrawal conditions Cameco has reimbursed data sale revenue of \$200,000 to Uranium Equities.





#### **Headwaters**

The Headwaters Project is located within the Arnhem Land Plateau along the western margin of the Proterozoic McArthur Basin.

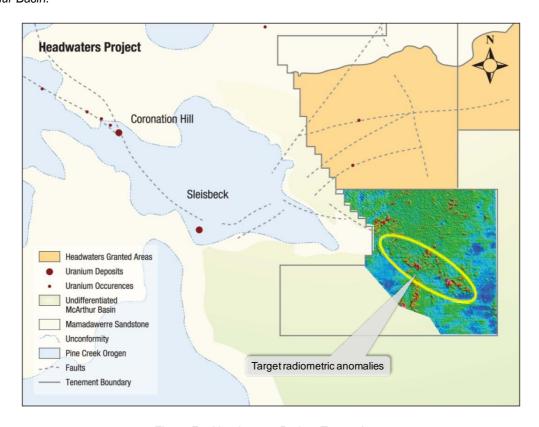


Figure 7 – Headwaters Project Target Areas

A reconnaissance reverse circulation drilling program consisting of 6 drillholes in the southern exploration licence of Headwaters tested three target areas defined from radiometrics and lying adjacent to a regionally significant Spectre Fault Zone (Figure 7).

A majority of drillholes encountered McArthur Basin sedimentary sequences as expected with one of the drillholes intersecting dolerite along the Spectre Fault. However, none of the drillholes reported significant mineralisation.

Vale Exploration Pty Ltd subsequently notified the Company of their intention to withdraw from the Headwaters Joint Venture into which they had been earning an interest.





#### 3. **CORPORATE**

The Group's cash balance at the end of the quarter was \$1.8 million (refer Appendix 5B for further information).

**Bryn Jones** Managing Director

#### **Competent Person Statement**

The information in this report that relates to Exploration Results is based on information compiled by Mr. Grant Williamson, Geology Manager - Exploration of Uranium Equities Limited, who is a Member of the Australian Institute of Geoscientists. Mr. Williamson has sufficient experience in the field of activity being reported 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, and consents to the release of information in the form and context in which it appears here.

#### **About Uranium Equities**

Uranium Equities Limited (UEQ) has two main areas of focus: The development of the PhosEnergy Process; and exploration activities directed at high quality exploration assets covering more than 24,000km2 in a number of Australian states and territories and various deposit styles.

The PhosEnergy Process is an innovative patented process for the extraction of uranium as a by-product from phosphate in the production of phosphate based fertilisers.

The global annual production potential of uranium from the phosphate industry is in the order of 20 Mlbs U₃O<sub>8</sub>. This quantity of uranium is mined in phosphate ores but not recovered annually on a worldwide basis. The major phosphate based fertiliser producers are located in Northern Africa, North America and Asia.

The PhosEnergy Process has been proven to pilot scale with results establishing a robust process capable of achieving high levels of uranium recovery at the lower end of the cost curve.

The Nabarlek Project provides a rare near mine exploration opportunity surrounding the historic Nabarlek uranium deposit (previous production: 24 Mlbs @ 1.84% U<sub>3</sub>O<sub>8</sub>). The deposit lies within an extensive uranium mineral system which extends over more than 50 square kilometres within the Mineral Lease and the surrounding tenements. The mineral system which contains widespread anomalous uranium geochemistry and ore grade mineralisation at several locations remains largely untested.