

Tuesday, 31 January 2012

**AUSTRALIAN SECURITIES EXCHANGE  
COMPANY ANNOUNCEMENTS PLATFORM  
ASX CODE USA**

## **ACTIVITIES REPORT 3 MONTHS ENDED 31<sup>st</sup> DECEMBER 2011**

### **OVERVIEW**

UraniumSA has an inventory of 42 million pounds (Mlb) of sediment-hosted U<sub>3</sub>O<sub>8</sub> mineralisation in JORC Inferred Resources at its Blackbush and Plumbush deposits in the Samphire uranium project, located south of Whyalla on the Eyre Peninsula in South Australia.

During the October – December 2011 quarter uranium mineralisation discovered in granite basement below the 28M lb U<sub>3</sub>O<sub>8</sub> Inferred Resource of sediment-hosted mineralisation at the Blackbush deposit was recognised as potentially economically significant. This uranium in granite basement will not be extractable by in-situ recovery mining (ISR) which is the method which the Company has been actively investigating for the development of the Blackbush resource.

The Company had been preparing during the period being reported to commit significant capital to a field trial of the ISR method at Blackbush. With the recognition of the potential economic significance of the granite basement hosted mineralisation below the resource to be tested by the field trial the Company has commenced a dual-track process to optimise the value of its Samphire uranium assets by:

1. Growing the total inventory of sediment and granite basement hosted uranium mineralisation at Blackbush while investigating the use of conventional mining methods.
2. Continuing a reduced program of ISR field trails to develop it as a potential mining method in this setting.

#### **During the March 2012 quarter the Company will:**

1. For the established Inferred resource of sediment-hosted mineralisation at Blackbush:
  - a) Review the geology, metallurgy and mining characteristics of the sediment-hosted mineralisation for a conventional open pit mining operation.
  - b) Pursue the grant of the Retention Lease over the Blackbush deposit and re-scope the size and expenditure commitment required for the projected field trial of the ISR method.
2. For the exploration of the granite basement hosted mineralisation underlying the sediment-hosted resource at the Blackbush deposit the Company has:
  - a) Contracted an aeromagnetic survey to map out detail of the granite below the sedimentary cover. This is scheduled for completion January 2012.
  - b) Started negotiating for a drilling contract with the objective of commencing drilling the granite basement in the first quarter 2012.

## ASX REPORTING

The Company made four releases on technical and other issues with the potential to influence share price to the ASX during the reporting period.

1. Friday 21 October 2011 - Progress Report. An update on the technical progress with metallurgical and hydrogeological components of the ISR program.
2. Friday 2 December 2011 – Presentation to the SA Exploration and Mining Conference. A technical presentation of the conceptual development of the Samphire uranium project with a focus on the source of the uranium mineralisation.
3. Monday 5 December 2011- Board and Technical Changes. Announcement of changes to the Board to strengthen the technical and corporate governance of the Company, and a detailed technical discussion of the potential economic significance of the newly recognised uranium mineralisation in granite basement below the Inferred Resource of sediment-hosted mineralisation at Blackbush.
4. Wednesday 21 December 2011 – Forward Strategy for the exploration and development of the Samphire uranium project.

In addition to the above releases on issues with the potential to influence the share price, there were 17 releases of a routine nature to ASX during the reporting period.

## ACTIVITIES

### EXPLORATION

No exploration field work for sediment hosted uranium was carried out in the Samphire uranium project area during the reporting period. Office based assessment and analysis of data continued.

Exploration conducted in the Tarcoola project in South Australia during the current reporting period is reported below.

### SAMPHIRE PROJECT (PREVIOUSLY MULLAQUANA)

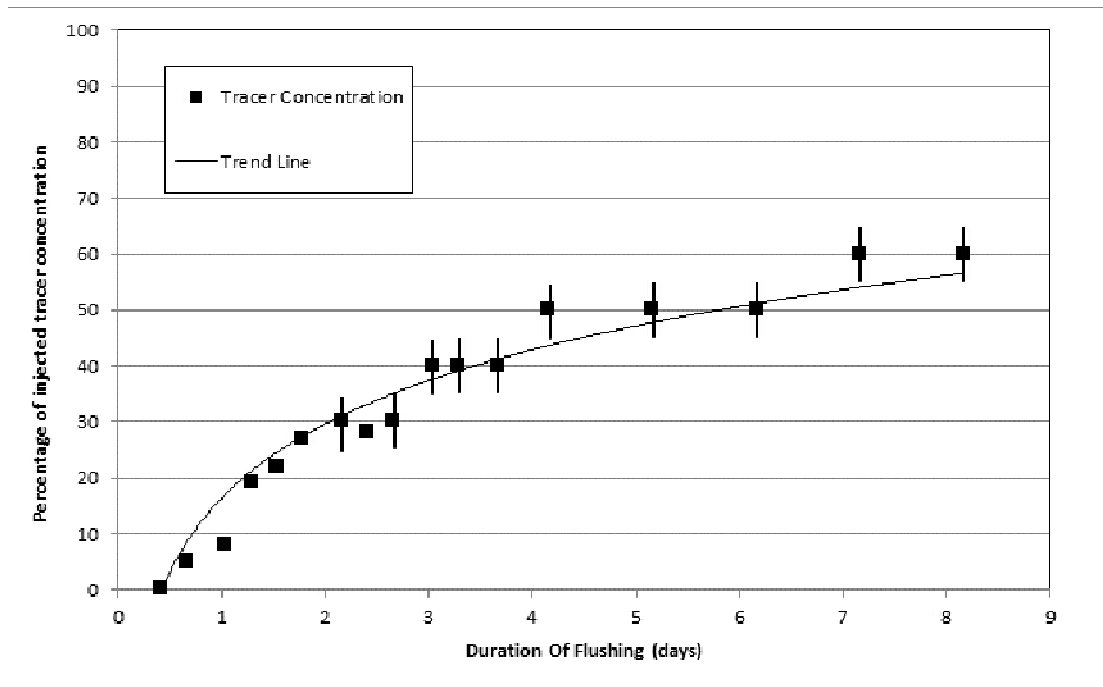
#### BLACKBUSH DEPOSIT

**Circulation Trial.** The circulation trial within the Blackbush deposit has been completed. The field work ran as planned and results obtained were in line with expectations. Significant outcomes from the trial were:

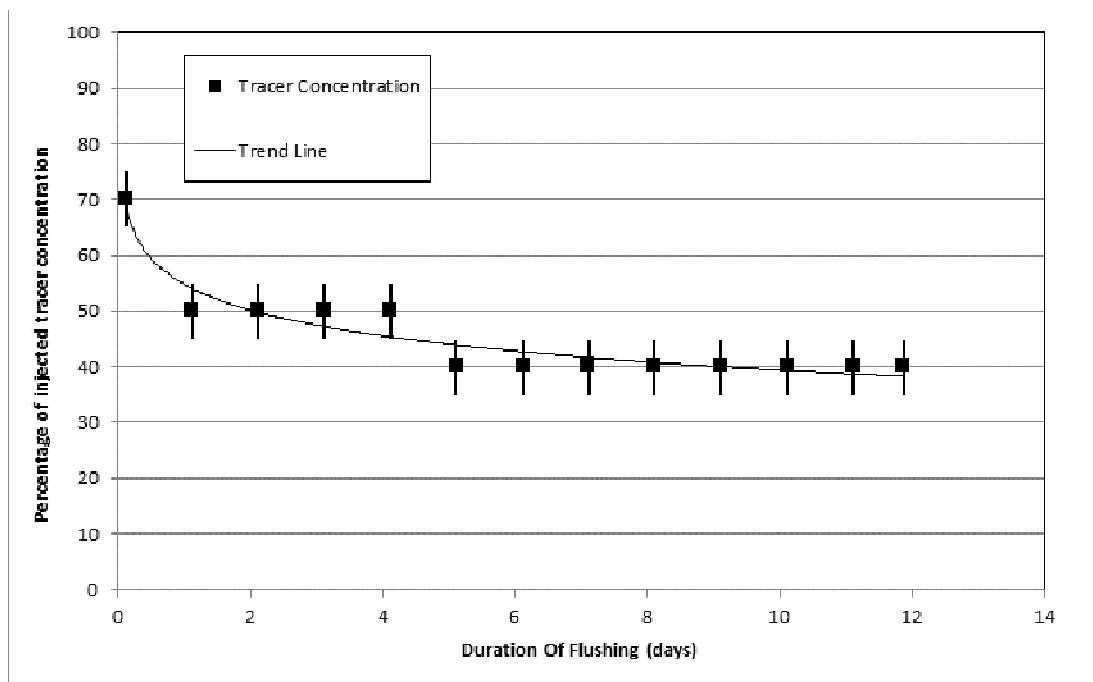
1. A moderately stable plume of injected water was established over the 14 days of the trial (8 days flushing, 5 days circulation).
2. The tracers injected into the formation were contained and recovered at acceptable levels and rates: A 60% concentration of the bromide tracer used was recovered after ~8 days of flushing (Figure 1).
3. During the circulation phase, the injected water plume was diluted by up to 40% by formation waters (Figure 2).

The results are in line with expectations and provide a sound basis of information on the hydrogeology of the target mineralised formation.

The trial results provide crucial information to design and operate lixiviant management systems for the ISR-Field Trial. The next rounds of work leading to the commencement of a field trial for in-situ recovery will commence once the Retention Lease is granted and the PEPR documentation completed and approved.



**Figure 1:** Concentration of injected tracer recovered at the production well during flushing phase. Error bars show analytical precision.



**Figure 2:** Concentration of injected tracer recovered at the production well during circulation phase. Error bars show analytical precision.

**Metallurgy.** Australian Nuclear Science and Technology Organisation laboratories (ANSTO) has completed uranium loading test work on nine candidate resins. Following an appraisal of the results four of the resins have been selected for further test work involving loading, elution and precipitation of uranium. The four resins selected cover a range of chemical functionality, elution and precipitation methods and the test work will provide flow sheet options for further analysis. Two of these resins were used for the precipitation test work reported to ASX on 12<sup>th</sup> August 2011.

ANSTO has completed the second column leach test involving a bulk sample of mineralised drill core from the Blackbush deposit and a sea water based sulphuric acid lixiviant. The column was initially operated for calcium flushing during which the pH of the sea water based lixiviant feed was slowly lowered and the column discharge was rejected. When the targeted feed of pH 1.5 was introduced the column was operated in a closed circuit to simulate ISR operations.

This second round of column leach testing achieved similar results to the first column leach trial, the results of which were reported to ASX on Monday 29th August 2011. Specifically:

1. ~ 85% of the calcium in the ore was preferentially leached before uranium leaching commenced.
2. 82% uranium extraction after 12.5 days leaching at pH 1.5.
3. Low levels of impurities in leach liquor after 36 days of recirculation (< 3 ppm of Th, Zr, Mo, P, and V).
4. No evidence of reduced permeability at ~1.0 gpl calcium in circulating leach liquor, indicating increased calcium solubility in sea water chloride environment.

**Tenure.** All public comment on the Samphire Uranium Pty Ltd Retention Lease application has been received and the Department for Manufacturing, Innovation, Trade, Resources and Energy (DMITRE, incorporating Minerals & Energy Resources which was formerly within Primary Industries and Resources South Australia – PIRSA) has provided a final schedule of questions to be addressed. The questions principally relate to cross-referencing of materials and similar issues and the Company anticipates providing its response early in the first quarter 2012.

## PLUMBUSH DEPOSIT

The Company is negotiating access terms to enable drilling of the extensions of the Plumbush deposit within the Stellar Resources Limited Joint Venture area. It is hoped that this will be achieved during the first quarter of 2012.

## BASEMENT MINERALISATION

**Present knowledge.** Following the recognition of the potential significance of the intersections of uranium mineralisation in granite basement below the Blackbush Inferred Resource of sediment-hosted mineralisation re-logging and re-interpretation of the retained materials has been carried out. At Blackbush, this has identified a broad footprint of alteration and mineralisation extending ~ 2.7 km along magnetic strike and ~1.7 km across strike. The dimensions of the footprint indicate there is significant size potential for the granite bedrock mineralised system.

The re-logging identified four drill holes which have recorded partial intersections from the Eocene unconformity (base of sediment) through granite hosted mineralisation and into background granite basement. These partial intersections provide an indication of the potential grade/thickness of the systems. In each case the top portion of the zone is assumed

to be incomplete because of erosion during Eocene deposition, the information is presented below.

**Table 1:** available information of thickness/grade of granite hosted mineralisation underlying the Blackbush deposit.

Hole ID	east	north	from	Length (m)	Average eU <sub>3</sub> O <sub>8</sub> ppm	Peak eU <sub>3</sub> O <sub>8</sub> ppm
MRM599	722700	6324901	61	8	640	5,709
MRM614	722697	6324297	72	9	603	1,908
MRM647	722697	6323898	83	9	438	835
MRC006	722747	6324350	74	6	602	1,775
average				<b>8</b>	<b>571</b>	<b>2,557</b>

**NOTE.** Intercepts have been visually picked using a cut-off of >100 eU<sub>3</sub>O<sub>8</sub>ppm and assume no other parameters. They are indicative only of the geological occurrences and should not be used for any other purpose.

**Scheduled exploration.** The granite-hosted mineralisation occurs at depths of 60 - 80m and below sediment overburden. To detect structure within the granite which may be related to the distribution of this mineralisation the Company has contracted a detailed aeromagnetic survey. The Company is negotiating to contract drilling programs for the first quarter of 2012 to test targets which are identified.

## JOINT VENTURES

Preparations are in hand to drill the extensions of the Plumbush deposit into the area of the SRZ-JV (Stellar Resources Limited, ASX code SRZ).

Preparations are in hand for exploration drilling in the area of the AAO JV (Adept Solutions Limited, ASX code AAO).

## OTHER SOUTH AUSTRALIAN PROJECTS

### CLEVE PROJECT, EASTERN EYRE PENINSULA (SA)

Preparations are being made to recommence field work at the Boothby prospect. Soil geochemical surveys will be undertaken over Boothby and other prospects to identify possible drill targets.

Our Joint Venture partner, Archer Exploration Limited (ASX code AXE), has continued its exploration work for commodities other than uranium.

### TARCOOLA PROJECT, KINGOONYA PALAEO DRAINAGE SYSTEM (SA)

Exploration drilling in the Tarcoola Joint Venture area (Stellar Resources Limited) was carried out during the reporting period. Fourteen holes were completed to confirm palaeodrainage locations interpreted from airborne electromagnetic surveys previously flown in the area. Some minor anomalies were encountered in the drilling.

## CORPORATE

Following the recognition of the potential economic significance of the uranium in bedrock below the sediment-hosted Inferred Resource at the Blackbush deposit the Board conducted a review of forward planning and expenditures. The results of this review are as outlined at the start of this report.

## FORWARD WORK PROGRAM TO END MARCH 2012

### SAMPHIRE PROJECT (FORMERLY MULLAQUANA)

**Blackbush deposit.** The review of the geology, metallurgy and mining characteristics of the sediment-hosted mineralisation for a conventional open pit operation will continue. Results will be reported as they become available.

The Company will pursue the grant of the Retention Lease over the Blackbush deposit and re-scope the size and expenditure commitment required for the projected field trial of the ISR method.

**Plumbush deposit.** It is anticipated that drilling of the extensions of the Plumbush deposit into the SRZ-JV will commence.

**Bedrock uranium mineralisation.** Results of the airborne magnetic survey will be completed and drillers contracted for initial drilling of targets identified.

**Joint Ventures.** As is noted above, drilling is being scheduled in both the SRZ-JV and the AAO-JV.

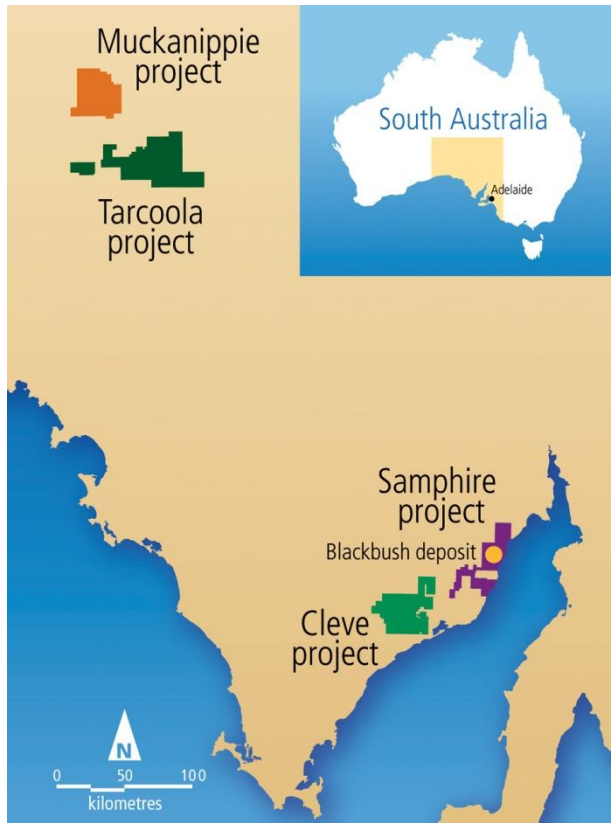
### OTHER SOUTH AUSTRALIAN PROJECTS

**Cleve project, eastern Eyre Peninsula (SA).** Exploration of the Boothby prospect is scheduled to recommence. Our Joint Venture partner, Archer Exploration Limited (ASX code AXE), will be continuing its work on the ground.

## CORPORATE

The focus of the Board will remain on the continuation of a dual-track process to optimise the value of its assets as outlined at the start of this report, and re-commencing exploration in other areas.

## ABOUT URANIUMSA LIMITED



UraniumSA is an Adelaide based uranium only explorer specialising in sediment hosted styles of uranium mineralisation within a substantial portfolio of properties in South Australia's Gawler Craton.

The Company has discovered sediment hosted uranium mineralisation within Exploration Licence 3652, Samphire, which is located 20km south of the industrial city of Whyalla on the eastern Eyre Peninsula in South Australia. The exploration Licence is owned and operated by Samphire Uranium Pty Ltd, a wholly owned subsidiary of UraniumSA Limited.

The inventory of sediment-hosted uranium mineralisation in the Blackbush and Plumbush deposits within the Samphire project (previously the Mullaquana project) is some 19,000 tonnes of  $U_3O_8$  (equivalent to approximately 42 million pounds).

The recent discovery of uranium in granite basement below the known sediment hosted uranium has provided significant new exploration/development opportunity.

An evaluation of mining methods to optimise the recovery of uranium from the identified resources of mineralisation has commenced. This will include consideration of open cut options for the sediment-hosted and granite basement hosted uranium mineralisation in addition to an ongoing evaluation of in-situ recovery operations. Application has been made for a Retention Lease for an in-situ recovery field trial at the Blackbush deposit.

Through its own tenure and by Joint Venture the Company has exploration control over what it considers the most prospective portions of the Pirie Basin.

Russel Bluck  
Managing Director  
UraniumSA Limited

*The exploration results mineral resources reported herein, insofar as they relate to mineralisation, are based on information compiled by Mr Russel Bluck an employee of UraniumSA Limited and Member of the Australian Institute of Geoscientists with sufficient experience relevant to the style of mineralisation and type of deposits being considered, and to the activity which is reported to qualify as a Competent Person as defined by the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2004 Edition). Mr Bluck consents to the inclusion in the report of matters based on his information in the form and context in which it appears. It should be noted that the abovementioned exploration results are preliminary.*