Alligator Energy Ltd: Very Encouraging Desktop Study Findings & Exploration Review

15.12.2020 | ABN Newswire

Brisbane, Australia - Alligator Energy (ASX:AGE) is pleased to announce results from an initial Samphire Project desktop study commissioned through Inception Consulting Engineers (ICE). A full review of the exploration potential has also been conducted by AGE's internal exploration team highlighting resource expansion potential and extensive targets throughout the tenement which are yet to be tested.

Samphire DeskTop Study Findings:

ICE's Desktop Study - Processing Review and Opportunities of the newly acquired Samphire project in SA has highlighted the following positive findings:

- Previous testwork and modern advances in resins indicate the project is highly amenable to In-Situ Recovery (ISR) production, with updated ANSTO testwork planned

- An intermediate product could be produced for toll processing offsite reducing capital costs in any future development

- An updated and improved flowsheet for uranium extraction / processing was established based on the consistent higher grade portion of the Blackbush resource

- An alternate open pit operation would be feasible but not the preferred option

- Initial OPEX and CAPEX cost estimates were calculated that were competitive with similar ISR operations - these will be confirmed and disclosed in the next phase of work

- Due to the Blackbush resource being currently 100% inferred, ASX guidelines do not allow the publication of forward-looking financial figures / statements at this stage

Samphire Exploration Review:

Extensive review of previous exploration confirmed the high quality of work - over 790 historic drill holes totalling over 58,000m, mainly focused on the Blackbush and Plumbush resources. Previous drilling in Blackbush higher grade zones showed impressive results including hole MRM881 which intercepted 15.9 metres at 0.3% eU3O8 (3,000 ppm) including 4.5 metres at 1.02% eU3O8. Interpretation of existing electromagnetic geophysical data has identified a series of prospective palaeochannel continuations from the Blackbush deposit for immediate follow up drilling. Alligator is now planning the following work:

- Drilling to expand the previously identified higher grade zones within Blackbush

- Initial testing of the potential tonnage increase in Blackbush channel targets

- Applying the extensive studies and learnings at Blackbush to southern extension areas

- Continuing our re-engagement with community, landowner and indigenous groups

- Undertaking sonic core drilling to obtain high quality cored samples at Blackbush to progress the ANSTO testwork mentioned above

Uranium Market movement: The US Senate recently passed a Bill allowing the Dept of Energy to purchase up to US$120 million of US produced uranium per year for a strategic reserve, with the market anticipating purchase prices in the US$45 to $50 per lb range to be supportive of US producers cost base. Further detail below.

Greg Hall, Alligator CEO said "We are excited to be able to update the market with results from our desktop study and exploration review. This includes a review of previous Samphire work by UraniumSA, combined with up-to-date technology and processing opportunities, and latest exploration techniques.

The Samphire project represents an exciting opportunity for Alligator within an improving uranium market for

a timely potential development.

*Note on Desktop Study and Exploration Review, and Cautionary Statement:

The Desktop Study and associated work referred to in this report is based on low-level technical and economic assessments and is insufficient to support estimation of Ore Reserves or to provide assurance of an economic development case at this stage, or to provide certainty that the conclusions of the Desktop Study will be realised.

Key assumptions:

The Blackbush inferred resource is a JORC 2012 compliant resource previously released by UraniumSA (see ASX release by USA - 27 Sept 2013) and compiled by Mr Russel Bluck & Mr Marco Scardigno, both sufficiently competent persons at the time of release.

Inception Consulting Engineers (ICE) were selected by Alligator Energy to undertake a Desktop Study - Processing Review and Opportunities report, due to the extensive experience that their team has with In-Situ Uranium Recovery (ISR) projects within Australia and overseas.

ICE, in discussion with Alligator, selected a grade cut-off of 400ppm eU3O8 from the Blackbush JORC resource table (refer Table 1 below*) as the target resource for the basis of design in the Desktop Study. This provided an inferred resource of 6.5 Mt mineralised material at 810 ppm eU3O8 containing 5,400 t eU3O8 (11.9 million lbs eU3O8) with most of the resource contained within the permeable Kanaka beds. Due to its non-2012 JORC nature, the Plumbush deposit was not incorporated into this study.

Based on this resource an assumed production level was selected for the Study, and other recovery and metallurgical factors were applied based on the previous leach testing and known similar operation experience.

The report reviewed previous Blackbush mineralised sample uranium leach testwork, which was found to be of a high quality. Based on this known uranium solution information, direct comparisons were made with other publicly available and more recent uranium extraction testwork on the potential for newly developed resin extraction techniques to enable extraction of uranium onto a loaded resin, and ultimately into a final product. These comparisons were made on similar ISR deposits in similar conditions, and in consultation with ANSTO (Australian Nuclear Science and Technology Organisation) who coordinated and undertook this more recent uranium extraction testwork.
The ICE technical report on "Samphire Project - Processing Review and Opportunities" undertaken as part of this Desktop Study was undertaken by Mr Jon Weir and Mr James Davidson. Mr James Davidson is a Fellow of the Australasian Institute of Mining and Metallurgy (AusIMM) and is General Manager / Consulting Metallurgist with Inception Consulting Engineers. Mr Davidson has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration in the areas of in-situ recovery, wellfield design and operations, uranium leachate processing and extraction, and uranium production, to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Davidson consents to the inclusion in this release of the matters based on his information in the form and context in which it appears.

Alligator announced the completion of the Samphire uranium project acquisition in October 2020. The project is approximately 20kms south of Whyalla in South Australia. Alligator staff and consultants commenced the undertaking of an initial high level desktop study and exploration review to determine the best value-add propositions for the newly acquired project in the near-term future. The overall scope of work for this included:

1. ISR Processing update and options

2. Open pit potential

3. Resource expansion and exploration potential

4. Community and Environment

Inception Consulting Engineers - Desktop Study- Processing Review and Opportunities

The detailed brief provided to Inception Consulting Engineers (ICE) included the following:

- Review the historical processing flowsheets for ISR and open pit developed by UraniumSA

- Provide a high-level assessment of ISR and open pit mining options and process treatment options

- Investigate recent developments in chloride tolerant ion exchange resins and the potential for application to the Samphire project

- Investigate opportunities for improvements to the historical processing flowsheet

- Investigate intermediate uranium bearing product alternatives for processing at other uranium processing facilities taking into consideration logistics and transport

- Identify and recommend a testwork program on fresh samples for the various ore lithologies for the selected chloride tolerant resin for both loading and elution

- Provide concept level capital and operating cost estimates for the options investigated.

Summary of work undertaken

A review of the existing historical processing flowsheet alternatives, completed in previous studies by UraniumSA / Samphire Uranium Ltd. (SUL) and ANSTO, was undertaken with respect to developments in high chloride ion exchange resins and the expected highly saline environment. Post this review, preliminary processing flowsheets were developed for both in-situ recovery (ISR) and open pit mining methods, with supporting process descriptions.

The report basis of design studies was 400ppm eU3O8 cut-off with 200ppm and 300ppm eU3O8 cut-off grades examined for comparative purposes. Due to limited resource information, the Plumbush deposit was not considered in this report. The Blackbush inferred resource used for the desktop evaluation was using a cut-off of 400ppm was 6.5Mt @ 810ppm grade eU3O8 for 11.9 Mlbs contained uranium. (*Refer Note page 2)

The project previously has been considered as an ISR project in the upper permeable sandstone horizons (Kanaka beds) but with some indications of further uranium at deeper depths (Saprolite zone). A previous metallurgical review conducted by Inception Engineers of historic hydrogeological test work undertaken by UraniumSA indicated that the orebody was suited to ISR, supported by the leaching extent and the reagent consumption of the orebody being in line with other operational ISR mines. The high chloride content of the resource previously precluded the use of the strong base ion exchange resins and tertiary amine solvents that are currently used in mining operations for uranium recovery. However, in recent years, several promising alternative resins and solvents for use in high chloride applications have been identified by ANSTO Minerals (ANSTO).

It is recommended by ICE that a program is conducted with ANSTO for the saline leaching and ion exchange testwork, and this will include an outcome or recommendation on confirmation of water qualities required.

Inception evaluated the potential to produce and transport a few types of intermediate processed uranium products and determined that the most viable was the production of a loaded resin for sale or toll treatment. All capital and operating cost estimates prepared in the Desktop Study were determined in Australian Dollars as of November 2020.

Key outcomes

The Samphire project was identified as a resource best suited to uranium recovery by In Situ Recovery (ISR) methods for the bulk of the resource contained within the Kanaka bed lithologies.

Development of the resource as an open pit operation is considered feasible but not economically attractive with uncertainty relating to uranium recovery in the unconformity and saprolite zones with no previous testwork in these zones.

The potential for intermediate products for downstream processing to final uranium product has been evaluated with the potential for transporting a loaded uranium resin product considered to be the most viable with similar transport examples evident nationally and internationally.

Flowsheet optimisation opportunities have been identified at a concept level that can be further tested with collection of fresh samples, and through a detailed testing program in conjunction with ANSTO.

High level capital and operating costs have been developed for the flowsheet options identified. These initial cost estimates were in line with similar ISR operations within Australia, and competitive with these. As we advance our resource and exploration drilling, and upgrade the resource accordingly, we will confirm and disclose these costs during the next phase of work on the Samphire project.

Due to the Blackbush resource being currently 100% inferred, ASX guidelines do not allow the publication of forward-looking financial figures / statements at this stage.

Next Steps - Planning for 2021 Processing Testwork

A program is being planned to obtain fresh core samples through sonic drilling in key areas of the Blackbush resource (refer to Exploration Program next steps below).

A detailed uranium leach and resin recovery testwork program will be carried out in conjunction with ICE and ANSTO.

Based on these results, further processing flowsheet optimisation and evaluation work will be undertaken at a level that will update this Desktop Study and feed into any potential resource upgrade.

*To view all tables, figures and supporting information, please visit:
https://abnnewswire.net/lnk/2K6Q1923

About Alligator Energy Ltd:

Alligator Energy Ltd. (ASX:AGE) is an Australian, ASX-listed, exploration company focused on uranium and energy related minerals, principally cobalt-nickel.

Alligator's Directors have significant experience in the exploration, development and operations of both uranium and nickel projects (both laterites and sulphides).

Source:
Alligator Energy Ltd.

Contact:

Mr Greg Hall Executive Director and CEO Alligator Energy Ltd. Email: gh@alligatorenergy.com.au Mr Mike Meintjes Company Secretary Alligator Energy Ltd. Email: mm@alligatorenergy.com.au