

HONEYMOON URANIUM STUDY PROGRESSES TO THE NEXT STAGE

HIGHLIGHTS

- Option study results ensure that the study is progressed to the next stage
- Next phase of study to focus on significantly increasing the production capacity
- Success with resins and increase in processing capacity points towards reduced opex
- A combination of resins and solvent extraction (Hybrid Eluex) to be studied in the next phase of study

Boss Resources Limited (ASX: BOE) (“Boss”) is pleased to announce that the preliminary results from the Option Study being undertaken in conjunction with GR Engineering Services (“GRES”) and the Australian Nuclear Science and Technology Organisation (“ANSTO”) have been received.

The option study has focused on selecting the most appropriate technology that will optimise and reduce costs for the planned expansion and minimise start-up issues for the processing plant. Initially three core processes were investigated in the study:

- Optimisation and expansion of the current solvent extraction plant in the near term, with an expansion to include satellite resin plants in the future for the remote satellite deposits (“SX Option”).
- Implementation of a combined ion exchange (resin) and solvent exchange process, with the resins upgrading the solutions prior to solvent extraction purification. Expansion will be based on satellite resin plants (“Eluex Option”).
- Implementation of an ion exchange only process. Expansion will again be based on satellite resin plants (“IX Option”).

A fourth option was added during the evaluation process and is a modification of the Eluex Option that allows better utilisation of existing equipment and hence potential for reduced up-front capital costs and competitive opex (“Hybrid Eluex”).

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The ANSTO testwork has focused primarily on selected resins to confirm the selectivity and loading capacity in the presence of high chloride levels and significant iron concentrations. Both resins tested, the weak based anion (“WBA”) and the chelating resins, showed positive results indicating that they can be used in the Honeymoon application. A final stage of continuous loading and eluting test work is ongoing and will confirm the long term performance of both resins.

The four options were developed to a concept level using a combination of historical operating data from the Honeymoon plant prior to shut down and the results of the ion exchange testwork being undertaken by ANSTO. Engineering work comprised of preliminary flowsheets, design criteria and mass balances.

The decision as to the exact sizing of the upgraded, larger plant will form part of the Pre-feasibility Study (“PFS”). Boss used a selection of current operating ISL mines and projects to help benchmark its scoping study from a technology and production rate point of view.

Peer Comparison			
Location	Project / Operation	Production (Mlbs/annum)	Operating Cost (C1) US\$/lb U ₃ O ₈
USA	Ur-Energy (lost Creek)	0.8Mlbs	\$16.27
Kazakhstan	Uranium One (South Inkai)	4.8Mlbs	\$8.50 (estimated)
Kazakhstan	Uranium One (Akdala)	3.6Mlbs	\$7.50 (estimated)
Kazakhstan	Uranium One (combined)	~21Mlbs	\$11.00

The Hybrid Eluex Option has been selected as the preferred option to be carried forward to the next phase of work and developed such that the scope for the PFS can be accurately defined. This option allows the maximum utilisation of the existing plant onsite (initially designed for 880klbs U₃O₈ production and was installed for a cost of ~A\$146million) which can be restarted and brought up to design capacity. This option also allows for an early start of the existing facility while the expansion plant is being constructed.

NEXT STEPS

The Hybrid Eluex Option will be advanced in the next phase of work so that the scope for a prefeasibility study (“PFS”) can be accurately defined.

The opportunity to progress a significant production rate is being considered. This can be considered due to the recently announced increase to the global Honeymoon Resource (350%) made by Boss since acquiring the project in December 2015 (see ASX announcement “Maiden Resource of 5.2Mlb for Jason’s Deposit” released on 14 June 2016). An important point to note

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is that a key part of the resource increase comes from satellite deposits located up to 70 km away from the main processing plant. These satellite deposits are ideally suited to satellite ion exchange processing units that form the basis for the expansion in the selected Hybrid Eluex Option.

Further work will also be done on the IX Option so as to ensure the best technology has been considered for the satellite plants.

The definitive results from the option study are on schedule for delivery at the end of August 2016.

Executive Director, Grant Davey, commented, “I am exceptionally encouraged by the interim results of our option study which has proven that resins can be used to successfully treat the Honeymoon resource. Through a combination of resin technology as well as utilising our current processing infrastructure we will be able to expand our operation to optimise the use of our increased resource and in so doing reduce opex for the operation while we take full advantage of the current processing facility. ”

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