

IX Breakthrough at Honeymoon

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BOSS
RESOURCES LTD

Highlights

- Study confirms NIMCIX IX system can replace current Solvent Exchange infrastructure, potentially increasing Honeymoon Uranium Project's production profile and lowering operating costs over Life of Mine
- GR Engineering Services Limited engaged to integrate these findings and previously announced process optimisations to update the outstanding economics detailed in the 2020 Feasibility Study
- Honeymoon is a fully permitted Uranium mine capable of re-starting production in 12 months and is already positioned to be one of the lowest cost uranium producers globally
- Boss continues to engage with utilities for off-take and commercial discussions continue

Boss Resources Limited (ASX: BOE) (Boss or the Company) is pleased to announce plans to evaluate the replacement of the existing Solvent Extraction columns on the Honeymoon mine site with new NIMCIX columns. Initial results indicate the potential for this to increase production profile and reduce operating costs for the Honeymoon Uranium Project.

Following its highly successful Feasibility Study (FS) in January 2020, the Company has embarked on technical optimisation studies which included completing NIMCIX IX process detail design and testing. On 20 August 2020, cost saving results relating to reduced site power demand and transmission line upgrade costs were announced to the ASX. These savings, along with today's outstanding results have incentivised Boss to initiate an Enhanced Feasibility Study (EFS) to incorporate the potentially significant enhancements identified.



Figure 1: Boss's 100%-owned Honeymoon, one of the world's most advanced restart uranium mines

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Boss Resources Managing Director and CEO Duncan Craib said, “A core objective of any mining operation is to increase production profile and reduce operating costs. The potential of the IX technological breakthrough announced today combined with previous technical advancements to increase throughput and lower operating costs is an exciting next step in the Honeymoon development.

Building on the recently identified 10% saving in CAPEX amounting to US\$6.3m and an OPEX saving of US\$1.22/lb U₃O₈ the Enhanced Feasibility Study has the potential to increase the production profile and lower operating costs thereby further reinforcing the robust economic proposition of Honeymoon.

Our experienced team continues to deliver potentially accretive technical and commercial advancements, strengthening Honeymoon’s potential to be one of the lowest cost uranium producers globally.”

IMPLEMENTATION OF NIMCIX TECHNOLOGY

Boss’s Restart and Expansion plans have been split into separate stages, of which Stage 1 and 2 are presented as the base case for the Honeymoon FS¹, showing that production can recommence within a 12-month period. Stage 1 development focused on the restart of the existing solvent extraction (SX) plant, which has a nameplate capacity of 0.88Mlb/annum U₃O₈ equivalent. Stage 2 is an expansion strategy that will increase production to 2Mlb/annum U₃O₈ equivalent and involves the construction of a new ion exchange (IX) circuit.

Additional work has now been completed by Boss, ANSTO and GR Engineering Services Limited (GRES) examining the potential to replace the existing Solvent Extraction columns on site with new NIMCIX columns. The results show that it is entirely possible to eliminate the envisaged Stage 1 and incorporate a NIMCIX system with the following stipulations:

- The flow rate through the new NIMCIX columns must be equivalent to or higher than the SX system;
- The lead time to commissioning should not be significantly impacted;
- The overall Project CAPEX intensity should not be impacted; and
- As much of the current SX structural and process infrastructure as possible to be re-used.

The conclusion of this review is that these criteria are achievable and highlighted the potential for lower unit operating cost and higher production rates over the Life of Mine.

Additional potential benefits of the conversion include:

- Significantly higher throughput through the plant during Stage 1 and beyond;
- Improved safety outcomes through the elimination of combustible solvents in process;
- Improved environmental outcomes through elimination of the potential for organic entrainment to the wellfield; and
- Simplification of the process through standardisation of uranium extraction technology.

¹ Refer to ASX: BOE Announcement dated 21 January 2020. All material assumptions underpinning the forecast financial information (and the production targets on which such forecast financial information is based) as announcement on 21 January 2020 continue to apply and have not materially changed.

Enhanced Feasibility Study

The Company now plans to incorporate both the IX Process Optimisations announced previously and the pure NIMCIX adoption into an Enhanced Feasibility Study (EFS) level estimate for the Honeymoon Uranium Project restart to assess the economic impacts of these changes.

Boss is pleased to re-engage GRES as the engineering and lead study consultant for its EFS leveraging on the recently completed FS completed in January 2020.

Through the EFS Boss aspires to increase the ramp up production schedule and nameplate capacity of Honeymoon through the adoption of a wholly IX (NIMCIX) system with the first stage of production ramp up delivered within the original 12 month delivery timeline from an investment decision.

The Company expects any associated savings to further assist the pursuit of financing and off-take discussions in order to make a decision to proceed to mine, assuming a specified global uranium price has been achieved to satisfy the targeted IRR and NPV return so as to maximise shareholder value.

This ASX announcement was approved and authorised by the Board of Boss Resources Limited.

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Reference to previous ASX announcements – Feasibility Study

In relation to the results of the Feasibility Study announced 21 January 2020, the Company confirms that all material assumptions underpinning the production target and forecast financial information included in that announcement continue to apply and have not materially changed. Nothing in this announcement pre-empts the findings of the Enhanced Feasibility Study proposed to be undertaken.

Forward-Looking Statements

This announcement includes forward-looking statements. These forward-looking statements are based on the Company's expectations and beliefs concerning future events. Forward-looking statements are necessarily subject to risks, uncertainties and other factors, many of which are outside the control of Boss Resources, which could cause actual results to differ materially from such statements. Boss Resources makes no undertaking to subsequently update or revise the forward-looking statements made in this announcement, to reflect the circumstances or events after the date of this announcement.