

BOSS RESOURCES LAUNCHES RE-START STRATEGY FOR HONEYMOON URANIUM PROJECT

Boss Resources Limited (ASX: BOE) (“Boss” or the “Company”) is pleased to announce that it has launched the re-start strategy for the Company’s Honeymoon Uranium Project in South Australia. Since Boss Resources’ acquisition of Honeymoon in December 2015, it has progressively de-risked the project both technically and commercially to the point where on completion of the re-start strategy, the Company will be ready to execute the programs of work required to restart Honeymoon assuming a specified uranium price has been achieved.

HONEYMOON RE-START STRATEGY

The re-start strategy has commenced and is categorised into three key phases;

Phase 1: The generation of the final input data required for the Definitive Feasibility Study (“DFS”) including the drilling program to deliver the measured and indicated resource, an optimisation program to deliver further cost savings and/or process improvements and a preliminary execution plan, updated cost estimate and schedule for the re-start of the existing solvent extraction (“SX”) plant.

Phase 2: The second phase comprises the DFS and permitting updates.

Phase 3: The third phase covers the detailed execution planning, operational readiness inclusive of the SX plant recommissioning plan, in conjunction with the ion exchange plant detailed design.

Boss Resources Managing Director, Duncan Craib, said,

“Phase 1 of the re-start strategy has commenced and the Company’s initial activities are focused on the planning and preparation of the infill and step-out drill program. Consultants and engineering support for optimisation and trade-off studies have been identified and proposals are currently being finalised.

“The Company will provide ongoing updates as the re-start strategy progresses, with Phase 2 planned to commence in early 2019 and Phase 3 starting later that year.

“On completion of the three-phase strategy, we will be in a position 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 to maximise shareholder value. Being an ISR mine in combination with IX production, the Honeymoon Uranium Project will operate in the lowest cost quartile of world-wide producers.”

HONEYMOON URANIUM PROJECT HIGHLIGHTS

- Honeymoon is located in the premier uranium mining state of South Australia and consists of:
 - A fully permitted uranium operation with export license
 - Approved Heritage and Native Title mining agreements
 - A **JORC resource of 63.3M lb U₃O₈**
 - Significant resource expansion upside¹
- Based on Pre-feasibility Study (“PFS”) estimates², the Honeymoon Uranium Project is expected to produce an average of 3.2Mlbs per annum, at an average life-on-mine **AISC of US\$23.90/lb U₃O₈** and direct operating cost (at mine gate) or **Cash Costs of US\$15.60/lb U₃O₈** equivalent. This is largely made possible by the In-Situ Recovery methods that account for over half the world’s uranium supply and all of the lowest cost quartile uranium operations globally.
- **Technically de-risked.** An Ion Exchange processing plant has been selected as the most efficient, lowest risk and lowest cost approach. The identification of optimal resin followed extensive laboratory test work in 2017 with ANSTO, which lead to an overwhelmingly successful Field Leach Trial³, in which the modified leaching regime produced significantly higher uranium tenors than had previously been achieved at Honeymoon. The ion exchange (“IX”) pilot plant also performed exceptionally well, delivering the key technical validation step on recovering uranium efficiently from real leach liquor. The outstanding Field Leach Trial results indicates significant potential for economic upside.
- **CAPEX and construction de-risked.** Honeymoon comprises A\$170M of established infrastructure and a plant under care and maintenance which remains in good condition. A capital cost requirement of US\$68M⁴ will achieve:
 - Re-start for Solvent Extraction Plant for production of 0.88Mlbs per annum U₃O₈ equivalent (US\$10M), with a quick restart potential of 9 months
 - Incorporation of Ion Exchange Plant for production of 2Mlbs per annum U₃O₈ equivalent (US\$58M), with a construction timeframe within 24 months
- **Finance progressing.** Tribeca Investment Partners (“Tribeca”) has been mandated to arrange Project Finance Facilities of up to US\$65m to assist in funding the development and re-start.

The Honeymoon Uranium Project (**Figure 1**) is situated approximately 80km north-west from the town of Broken Hill near the South Australia / New South Wales border. The Project consists of 1 granted Mining Lease, 5 granted Exploration Licenses, 3 Retention Leases and 2 Miscellaneous Purpose Licenses.

¹ See Exploration Update announcement released on ASX on 8 December 2015

² See PFS announcement released on ASX on 31 May 2017. Boss confirms that all material assumptions underpinning the production target and forecast financial information as disclosed in that announcement continue to apply and have not materially changed.

³ See announcements released to ASX on 26 October 2017 and 1 November 2017.

⁴ See PFS announcement released on ASX on 31 May 2017.

Honeymoon’s current Total combined Mineral Resource (JORC 2012) is 43.5 Mt at 660ppm eU₃O₈ for a total contained uranium oxide mass of 63.3Mlb (28,800 t) using a cut-off grade of 250 ppm. This consists of:

- Inferred Resource: 35.9 Mt at 586 ppm eU₃O₈ for total contained uranium oxide of 46.2 Mlb (21,000 t) at 250 ppm cut-off
- Indicated Resource: 5.9 Mt at 810 ppm eU₃O₈ for total contained uranium oxide of 10.5 Mlb (4,800 t) at 250 ppm cut-off
- Measured Resource: 1.7 Mt at 1720 ppm eU₃O₈ for total contained uranium oxide of 6.5 Mlb (3,000 t) at 250 ppm cut-off

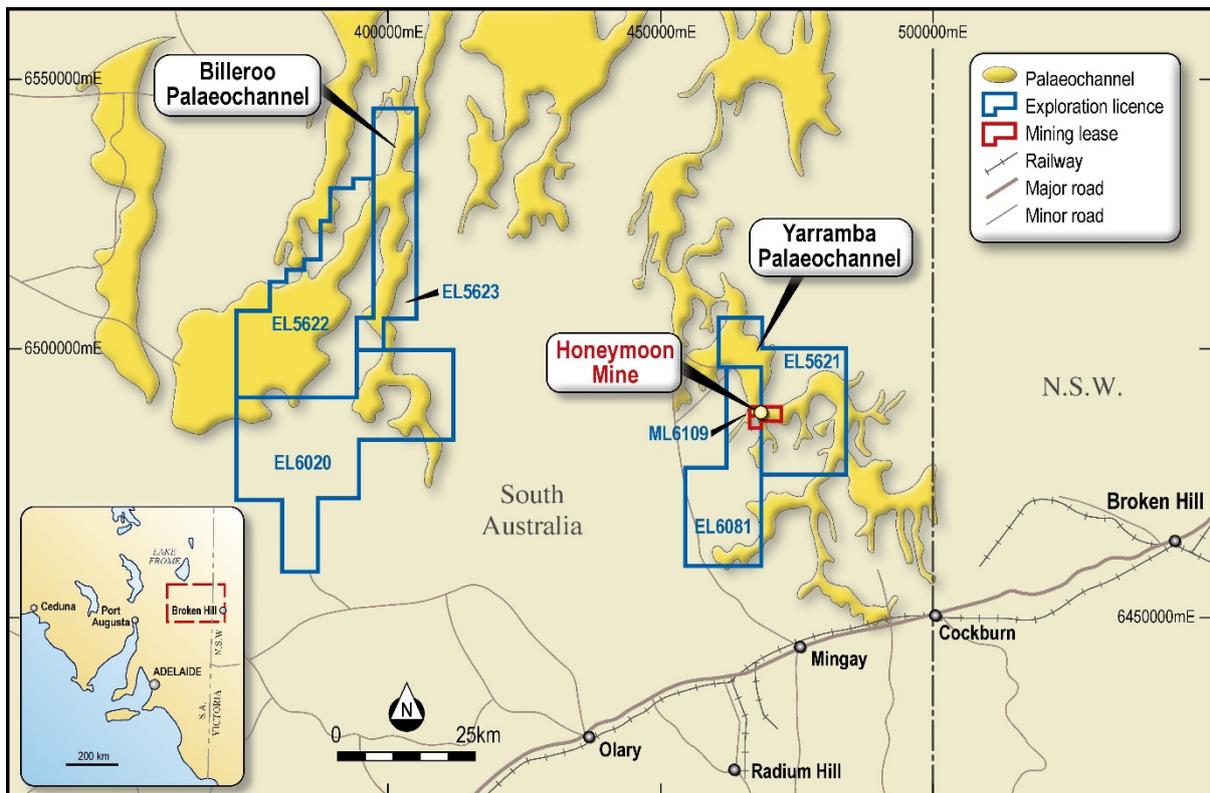


Figure 1: Honeymoon Uranium Project. The yellow shaded regions represent paleochannels which have potential to host uranium mineralisation and are the focus of exploration efforts.

In addition, Honeymoon’s Exploration Target is currently between 32Mt to 78Mt at a grade of between 450ppm and 1400ppm U₃O₈. This points towards a potential target endowment of between 42Mlb and 100Mlb of contained U₃O₈. The Exploration Target is conceptual in nature and there has been insufficient exploration to date to estimate a Mineral Resource. It is uncertain if further exploration will result in the estimation of a Mineral Resource⁵.

⁵ See Exploration Update announcement released on ASX on 8 December 2015

RE-START PHASE 1

Drilling Program

Honeymoon comprises two main resource areas:

1. The Eastern Region (EL 6081 and 5621) which hosts the Honeymoon, Brooks Dam and East Kalkaroo Deposits (all on the existing Mining Licence); and
2. The Western Region (EL 6020, 5623 and 5622) which hosts the Gould's Dam and Billeroo Deposits (**Figure 1**).

The proposed drilling will be conducted in two parts comprising infill (**Part A**) and step-out, exploratory drilling (**Part B**).

Part A of the drill program has been designed to infill existing drill holes based on the expected locations of the uranium roll fronts in the currently defined Mineral Resource area. Infilling of existing drill holes will obtain a drill spacing of approximately 80m x 40m which is required for the conversion of Inferred to Indicated resource, and 40m x 20m which is considered for the conversion of Indicated to Measured resource category.

The focus of the infill drilling program will be the Eastern Region located on the Mining Licence, targeting defined areas of the resource as well as areas extensional to the Brooks Dam and East Kalkaroo Deposits. The main objective of this phase of the drilling is to upgrade the existing Mineral Resources (JORC 2012) by:

1. converting the Inferred Resources to Indicated category;
2. upgrading a portion of the Indicated Resources to Measured category, with the ultimate purpose of converting Indicated and Measured Resources to Ore Reserves.

Part B of the program comprises step-out exploration drilling designed to define areas of likely extension following up on previously identified zones of high grade uranium mineralisation to the immediate northeast of the East Kalkaroo Deposit. The objective of this phase of drilling is to prove the continuation of the high-grade mineralisation and add to the Inferred Resource category of the currently defined Mineral Resource. If successful and of sufficient drill spacing, it is likely this data may be used to increase the size of the Global Mineral Resource estimate.

Optimisation Program

Ion Exchange

The piloting of the ion exchange process as part of the highly successful Field Leach Trial plant showed that there may be some opportunity to improve the uranium tenors in the eluate with alternative eluant solutions or elution strategies. A program of testwork is therefore being undertaken to

investigate these alternatives to determine if an improved elution process can be identified. This work will be carried out by ANSTO Minerals.

Nano-filtration

The Pre-feasibility Study assumed the incorporation of nano-filtration technology on the IX eluate stream. This was to recover the eluate reagent (sodium chloride), but also to increase the uranium tenor in the feed liquor to precipitation circuit. The benefits of this technology were primarily seen as a reduction in reagent consumption and therefore operating costs. The PFS assumed general operating parameters but was not specific to the Honeymoon process therefore a program of testwork has been planned provide data that can be used to more accurately define performance and costs of such as unit. The testwork will be carried out by ANSTO Minerals with the engineering and costing by the engineering consultant.

Uranium Precipitation

The PFS considered minimal changes to the existing solvent extraction strip and precipitation circuit but would incorporate a new fluidised bed type reactor for the precipitation of the uranium produced from the IX plant, i.e. there would be two precipitation circuits running in parallel. After discussions with various parties, it has been agreed that it is possible to combine the SX strip liquors with the IX eluates (post nano-filtration) to produce one feed liquor for the precipitation process. The existing batch circuit should have sufficient capacity for the full stream and as such capital cost savings with regard to the second precipitation circuit can be made.

Alternate Leach Oxidant

One of the major findings from the Field Leach Trial was the importance of oxidant and potentially the costs associated with maintaining a high oxidant concentration in the liquor. It is therefore proposed to undertake an investigation into alternative oxidants for the leaching process. Inception Group has a patented process for in-situ oxidant generation which would be ideal for the Honeymoon deposit and a joint testwork program to pursue this further is being considered.

Trade-off Studies

Ion Exchange Columns

The most significant capital cost items in the expanded plant proposed in the PFS are the Ion Exchange columns. NIMCIX columns were selected as the preferred equipment type due to their reduced resin inventory and higher eluate grades. Other ion exchange columns used in the uranium mining industry may also be applicable to Honeymoon and a trade-off study will be conducted to investigate these alternates.

Yellow Cake Dryer Capacity

A thorough assessment of the drying capacity at Honeymoon is to be undertaken. The current set-up has two batch pin dryers, with a shared vacuum and hot oil system. This configuration has a design throughput of 880klbs per annum. The Pre-feasibility Study assumed that incorporating a new vacuum and hot oil system to allow the two dryers to run independently combined with improved yellow cake filtration characteristics (i.e. reduced moisture content) would allow the increased throughput of 2Mlbs per annum to be achieved. Confirmation of the modifications and upgrades that are possible and whether these will allow the expanded production rate to be achieved will be investigated as part of this study.

Re-Start Assessment

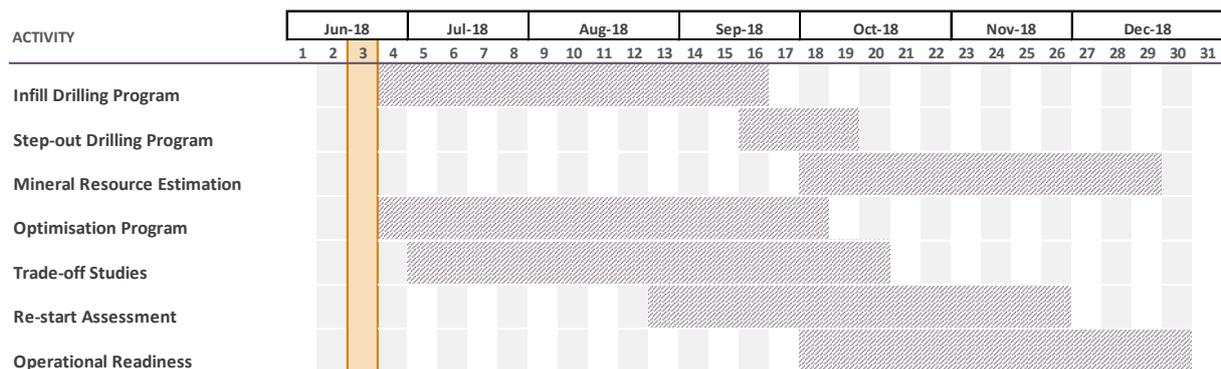
An important component for the Project is the re-start of the existing solvent extraction processing plant at Honeymoon. These facilities have been on care and maintenance since the plant shutdown in 2015 with only critical maintenance activities undertaken. A complete assessment of the current state of the plant is required to determine the refurbishment or replacement costs for valves, piping, pumps, instrumentation etc. An engineering study will be undertaken to determine the scope, timing and updated cost estimate for the re-start scope.

Operational Readiness

Work will be undertaken on developing the first pass of an operational readiness plan which will cover what the Company needs to do at both a corporate and operational level to be ready to execute and re-start operations.

RE-START PHASE 1 SCHEDULE

RE-START Phase 1 proposed timeline is detailed below.



NEXT STEPS

The drilling program and optimisation / trade-off studies will commence in July 2018. The mineral resource estimate will run off the backend of the drill program, while the preliminary restart and operational readiness programs will overlap with the last stages of the studies.

The estimated dates for the main deliverables are as follows:

- Drilling program to be completed by mid-October
- Mineral Resource Estimate update by mid-December
- Optimisation work programs to be completed by early October
- Trade-off Studies to be completed by early October
- Preliminary Re-Start assessment delivered by beginning December
- Preliminary Operational Readiness plan delivered by beginning December

FEDERAL & STATE LICENCE UPDATES

With a planned expanded production initially to 2.0Mlbs U₃O₈ equivalent per annum and then a further step up to 3.2Mlbs U₃O₈ equivalent per annum, the existing Program for Environment Protection and Rehabilitation (“PEPR”) associated with the Honeymoon mining lease ML6109 needs to be updated to reflect the new wellfield production rates and plant throughput. This process is ongoing and will be finalised along with the re-start strategy. As part of this work both the Radiation Management Plan and Radioactive Waste Management Plan will also be updated accordingly.

Boss Resources is currently updating the uranium export licence as part of the current activities to align with the PEPR and future production plans.

There are also a number permits and/or plans that the previous owners, Uranium One, obtained as part of their licence to operate and these need to be updated and revised accordingly for Boss Resources. Requirements include various management plans, transport plans, permits and agreements. The activities and work program for these will start following the approval of the updated PEPR and will run in parallel with the Definitive Feasibility Study and detailed design work.

FUTURE WORK PROGRAMS

On completion of Phase 1 of the re-start strategy, the activities associated with the delivery of the DFS will commence. This will begin with the wellfield design based on the geological and resource models.

The engineering works (process, engineering design and cost estimation), will use the results from the Phase 1 studies along with the outputs of the wellfield design (wellfield solution tenors and flowrates) to deliver an independent feasibility study report. As part of this work program the solvent extraction re-start assessment and operational readiness programs will be updated to reflect any changes and a detailed execution plan developed.

For further information, contact:

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Competent Persons' Statement

The information in this report that relates to Mineral Resources for the Honeymoon Project was initially reported to the ASX on 20 January 2016, 6 April 2016, 14 June 2016 and 15 March 2017. The Company is not aware of any new information or data that materially affects the information included in the relevant announcements and, in the case of the Mineral Resource estimates, that all material assumptions and technical parameters underpinning the Mineral Resource estimates in the relevant announcements continues to apply and have not materially changed.

The information in this document that relates to the Honeymoon Project Exploration Target and associated Exploration Data is based on information provided by Mr. Neil Inwood, who is a Fellow of the AUSIMM. Consent is granted only for the purposes of outlining an Exploration Target, no warranty is made on the use of the exploration information and data for other purposes. Mr Inwood is a consulting geologist and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity undertaken to qualify as Competent Persons as defined in the 2012 edition of the "Australasian Code for Reporting of Mineral Resources and Ore Reserves". Mr. Inwood has consented to the inclusion of this information in this document in the form and context in which it appears. An entity associated with Mr Inwood has shares in Boss Resources.