

June 2020 Quarterly Report



ASX Release 30 July 2020

Boss Resources Limited (ASX: BOE) (Boss or the Company) is pleased to provide its quarterly activities report for the three months ending 30 June 2020.

HIGHLIGHTS

- **Boss undertakes advanced desktop review of project-wide historical exploration data at Honeymoon Uranium Project to assess mineral prospectivity.**
- **Exploration of new targets may lead to new uranium discovery to increase Honeymoon's production profile distal to existing JORC mineral resources of 71.6Mlbs U₃O₈; and possible IOCG mineral prospects.**
- **Database compilations and systematic reviews to be completed by December 2020, including ongoing review of each existing Exploration Target at Honeymoon.**
- **South Australian Government awards A\$275,000 exploration grant to support Boss' innovative uranium geophysical exploration techniques at Honeymoon Uranium Project.**
- **Dudley Kingsnorth appointed to Boss Board as part of restructure to prepare for transition to low-cost uranium producer.**
- **Boss strategic and marketing adviser, Ms Sashi Davies, elected to the Board of Governors of the World Nuclear Fuel Market.**

Exploration Update

In April 2020, the South Australian Department of Energy and Mining, supported by the South Australian Chamber of Mines, proactively responded to the COVID-19 situation with an immediate deferral of mineral exploration licence fees until 31 December 2020, and a 12-month waiver of committed expenditure for all mineral exploration licence holders. Boss welcomed these supportive measures enabling project-enhancing exploration initiatives to continue on Honeymoon.

After completing a positive Feasibility Study (FS) for Honeymoon in January 2020, which positioned Boss as Australia's next uranium producer with the ability to restart production in 12 months, 2020 fieldwork activities temporarily paused. This created an opportunity for the Boss exploration team to complete a comprehensive desktop review on extensive historical exploration information inherited from vendor, Uranium One, and since project acquisition in 2015 to define new uranium exploration targets.

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Boss Resources' 100%-owned Honeymoon Uranium Project is 80km northwest of Broken Hill, near the border of South Australia and New South Wales and covers an area of 2,600km². It consists of one granted Mining Licence, five granted Exploration Licences, three Retention Leases and two Miscellaneous Purpose Licenses. In March 2019, Boss defined 10 Exploration Target areas, five of which were situated extensional to the existing Mineral Resources (Figure 1), and five that targeted significant geophysical anomalies.

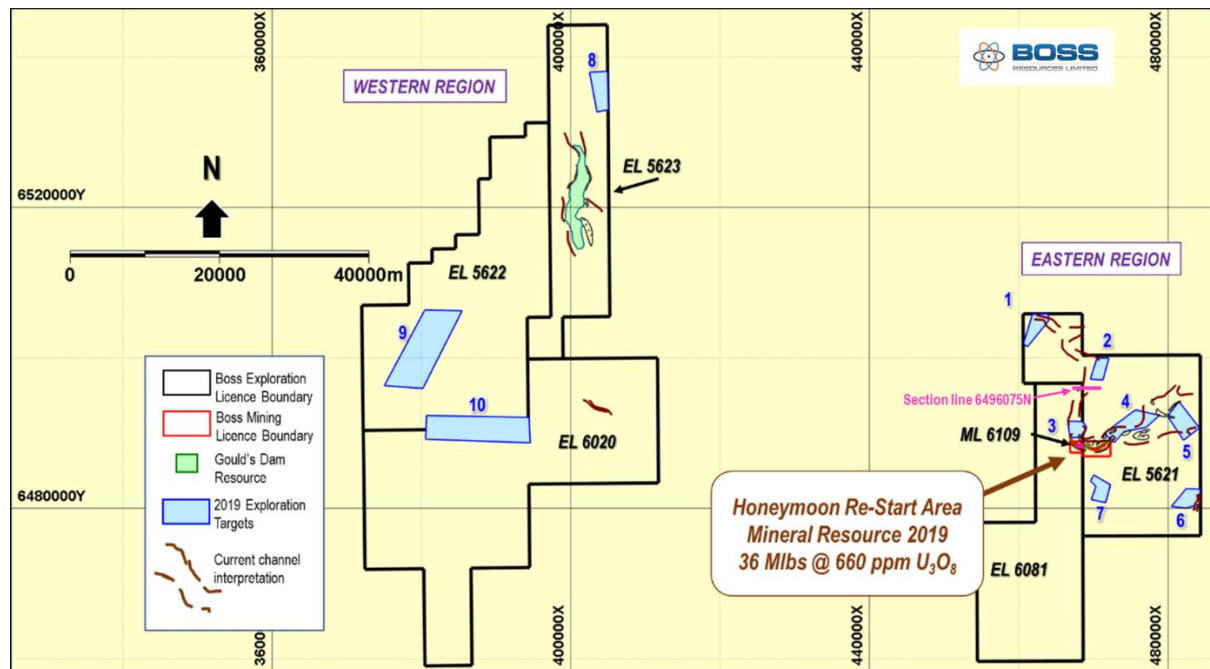


Figure 1: Honeymoon Uranium Project Area, showing Exploration Targets 1 – 10.

Due to the postponement of field activities, including the inability to undertake heritage surveys over the Company's Western Tenements, where it had designed and proposed passive seismic surveys for the 2020 field season, Boss has refocused exploration efforts on a comprehensive desktop study involving the systematic review of all historical information within the Eastern and Western Region tenements.

Boss received a large collection of historical information from Uranium One and Boss has subsequently added to this since acquisition of the project in 2015. The historical data is currently still in their original form, i.e. old data formats and coordinate systems (often local grid), outdated styles of geological logging, PDF images of geology mapping and geophysical survey results.

Through its assessment of historical data, Boss aims to identify drill-ready targets that will assist in converting the estimated Exploration Target into additional JORC mineral resources. The Exploration Target range would be exploited when the anticipated upswing in uranium fundamentals occurs.

The final compiled datasets will be utilised to further optimise the Native Title heritage clearance and passive seismic survey programs planned for Honeymoon's Western Region tenements, as well as generating multiple, project-wide, drill-ready targets for future drilling programs. Internal work scheduling is on track to be completed by July 2020 (Project-wide). Database compilations and systematic reviews are scheduled to be completed by December 2020 at the latest, which includes the ongoing review of all data located within each existing Exploration Target.

The Company looks forward to updating shareholders as results of the desktop study come to light.

SA Government Exploration Grant

In June 2020, Boss announced it had received a South Australian Government exploration grant of \$275,000 via an Accelerated Discovery Initiative (ADI). The ADI forms part of the Growth State Agenda that aims to accelerate mineral discoveries through innovative exploration and research projects in regional and frontier terrains throughout South Australia.

Boss will use the grant to support its innovative geophysical exploration alternatives, including 3D Passive Seismic and the trial of Slalom High-Definition Seismic Reflection method, focussing on palaeochannel definition as part of investigating pre-defined Exploration Targets and adding to existing Honeymoon uranium JORC mineral resources.

Honeymoon Resource and Exploration Potential

The Mineral Resource for the Honeymoon Re-Start Area (**Re-start Area**) totals 24Mt at 660ppm U₃O₈ for 36Mlbs U₃O₈, while the global Honeymoon Mineral Resource stands at 52.4Mt at 620ppm U₃O₈ for 71.6Mlbs U₃O₈, using a cut-off grade of 250ppm.¹

Resource Classification	Tonnage (Million Tonnes)	Average Grade (ppm U ₃ O ₈)	Contained Metal (Kt, U ₃ O ₈)	Contained Metal (Mlb, U ₃ O ₈)
Jason's (March 2017) ²				
Inferred	6.2	790	4.9	10.7
Gould's Dam (April 2016) ³				
Indicated	4.4	650	2.9	6.3
Inferred	17.7	480	8.5	18.7
Honeymoon Restart Area (January 2019)				
Measured	3.1	1,100	3.4	7.6
Indicated	14	610	8.7	19
Inferred	7.0	590	4.1	9.1
GLOBAL HONEYMOON URANIUM PROJECT				
Measured	3.1	1,100	3.4	7.6
Indicated	18.4	630	12.0	25.5
Inferred	30.9	570	18.0	38.5
Total	52.4	620	32.5	71.6

Table 1: Summary of upgraded Mineral Resource for the global Honeymoon Uranium Project

In addition to the global Mineral Resource, Boss has an Exploration Target⁴ for the Honeymoon Uranium Project of **28 Mt to 133 Mt of mineralisation at a grade of 340 ppm to 1,080 ppm U₃O₈ for a contained 58 Mlbs to 190 Mlbs U₃O₈ (26,300 to 86,160 tonnes of contained U₃O₈), using a cut-off of 250ppm.** Note the potential quantity and grade of the Exploration Target range is conceptual in nature. There has been insufficient exploration to estimate a Mineral Resource and it is uncertain whether future exploration will result in the definition of a Mineral Resource.

¹ Refer to ASX: BOE announcement dated 25 February 2019

² Refer to ASX: BOE announcement dated 15 March 2017

³ Refer to ASX: BOE Announcement dated 8 April 2016

⁴ Refer to ASX: BOE Announcement dated 25 March 2019

Honeymoon Restart and Expansion

Boss’s Restart and Expansion plans have been split into three separate stages, of which Stage 1 and 2 are presented as the base case for the Honeymoon FS⁵, showing that production can recommence within a 12-month period. Stage 1 development will focus 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.

Boss’ defined Exploration Target range could potentially extend the mine and increase the production profile through the development of satellite operations on its Western tenements. The Honeymoon plant would be modified with an additional IX column and downstream circuits to meet an increased production target as required by the market. The approach for Stage 3 will be confirmed once the source of the additional production has been better defined through exploration programs currently underway.

Honeymoon’s Federal EPIP Act approvals allow export of more than 3Mlbs/annum U₃O₈ equivalent⁶.

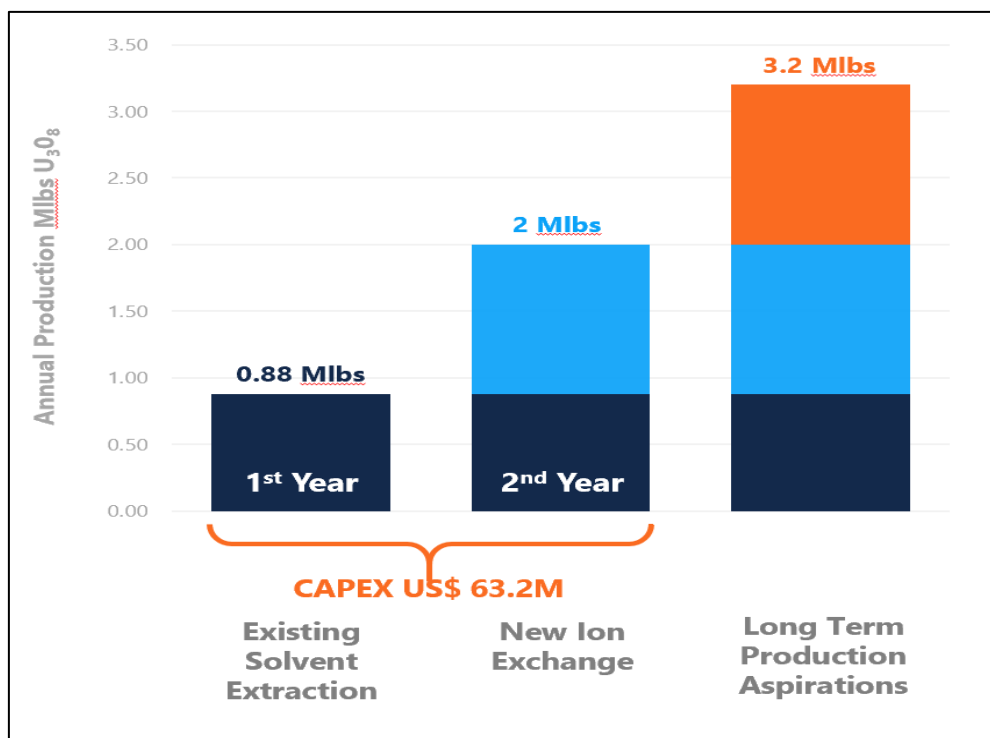


Figure 1: Stage production approach for the Honeymoon Uranium Project

Uranium Market Analysis

The spot uranium price rose from \$23.95/lb on March 23rd to a peak of to \$34.25/lb and is now stable around \$33/lb. The price trend is upwards and is currently event and perception driven. Inventory is decreasing, access to capital remains a barrier for green field exploration and development of new mines and utilities have significant unfilled requirements in the mid/long term. There is a clear mismatch between the spot price and the price to bring back idled production or encourage new production.

⁵ 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.

⁶ Refer ASX: BOE announcement dated 8 April 2019

The underlying trends existed long before Covid-19, but the nature of its impact on uranium production and inherent related uncertainties, is effectively bringing the recovery curve forward.

As noted previously, in September 2019, the World Nuclear Association forecast a need for the restart of idled mines and new production from 2024. The reduction in available supply in 2020 will further accelerate the drawdown of mobile inventories. Supply in the future will be impacted by the decrease in inventories and a deteriorating environment for investment in uranium exploration, particularly ones with high capital requirements, if the predicted global economic recession materialises.

Following the March 23rd 2020 announcement that Cameco would be temporarily suspending production at its Cigar Lake uranium mine, due to the threat posed by the COVID-19 pandemic, the company announced, in April, that that mine would remain on care and maintenance for 'an indeterminate period'. Cigar Lake produces approximately 18m lbs U₃O₈ per year, which represent a reduction of approximately 1.5m lbs/month.

In parallel, Kazatomprom announced a three-month period of reduced in-situ recovery operations which they estimated would reduce total 2020 production by 10.4 million lbs from the previous forecast of 59.3 million lbs. Kazakhstan, at the beginning of July, went into a second country-wide lockdown for an initial period of 2 weeks. This prompted Kazatomprom to issue a market update where they announced a one-month extension to their reduced operational activity.

The Cameco investor update on 29th July followed by Kazatomprom's on 3rd August will be closely watched for any indication of further supply disruptions.

International uranium market analysts TradeTech estimates the impact of the Covid-19 restrictions will amount to around 17m lbs in 2020 assuming 3 months reduced operations in Kazakhstan, four months shutdown at Cigar Lake and 21 days of minimal activity in Namibia and South Africa. This figure will rise if Cigar Lake stays of line for more than 3 months. There has been a decrease in production of approximately 45m lbs/ year between 2016 and 2020.

Boss Resources and its Honeymoon Uranium Project is one of the few advanced uranium projects ready to take advantage of market improvement.

We are engaging with utilities world-wide and continue to watch the market closely. Plans to recommence production on Honeymoon can be brought forward if prices rise as anticipated.

CORPORATE

During the quarter, the Company's strategic and marketing adviser, Ms Sashi Davies, was elected to the Board of Governors of the World Nuclear Fuel Market (**WNFM**). The WNFM was established in 1974 to promote international commerce in nuclear fuel materials. WNFM membership comprises about 76 companies representing around 21 countries, and is dedicated to facilitating trade of nuclear materials and increasing the availability of accurate, timely and useful price information to the industry.

Board Restructure

During the quarter, Boss announced several Board changes as it transitions into a low-cost uranium producer with global first mover advantage on an anticipated uranium price upswing, after completion of a landmark FS for its Honeymoon Uranium Project in January 2020.

Directors Peter Williams and Evan Cranston both resigned from the Board due to increasing commitments for other roles.

Boss announced the appointment of Dudley Kingsnorth as a Non-Executive Director with effect from July 1, 2020. Mr Kingsnorth has extensive executive experience in the international mining sector including positions with Bechtel, Alcoa, Shell (Billiton), Rio Tinto, Ashton Mining and at the Greenbushes lithium mine in WA. His career includes a focus on comprehensive management of process development, project feasibility studies and project development through to successful mine start-up.

The Company is currently undertaking an international executive search to compliment the Board with additional project execution and operational skills in preparation of Honeymoon's restart.

On-market share acquisitions by Directors

During the quarter, the following directors intermittently acquired shares of Boss on market:

Peter O'Connor	(Chairman)	2,800,000 shares
Bryn Jones	(Technical Director)	200,000 shares

Change of Address

During the quarter, Boss' registered corporate office and principal place of business moved to:

Suite 3, Churchill Court
234 Churchill Avenue
Subiaco WA 6008
Telephone: +61 (8) 6263 4494

Appendix 5B Disclosures

In line with its obligations under ASX Listing Rule 5.3.5, Boss Resources Ltd notes that the only payments to related parties of the Company, as disclosed in the Appendix 5B (quarterly Cashflow Report) for the quarter ended 30 June 2020, pertain to payments for executive directors salary and superannuation, non-executive director fees and accountancy and bookkeeping services provided to the Company.

During the quarter ended 30 June 2020, the Company spent \$435,000 on project and exploration activities relating to its Honeymoon Uranium Project where comprehensive desktop studies involving systematic review of all historical information within the Eastern and Western Region tenements continued in addition to the ongoing care and maintenance activities required at the Honeymoon Uranium Project. The expenditure represents direct costs associated with these activities as well as capitalised wages which can be directly attributable to the Honeymoon Uranium Project.

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

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SCHEDULE OF MINING TENEMENTS

The following information is provided pursuant to Listing Rule 5.3.3 for the quarter ended 30 June 2020.

Tenement Name	Location	Licence Number	Interest
Yarramba	South Australia	EL5621	100%
South Eagle	South Australia	EL6081	100%
Gould's Dam	South Australia	EL5623	100%
Katchiwilleroo	South Australia	EL5622	100%
Ethiudna	South Australia	EL6020	100%
Gould's Dam	South Australia	RL83-85	100%
Honeymoon Mine	South Australia	ML6109	100%

There were no mining tenement acquisitions or divestments during the quarter.

Competent Persons Statements

Mineral Resources

The information contained in this announcement that relates to the Mineral Resources on the Honeymoon Project were initially reported by the Company to ASX on 20 January 2016, 8 April 2016, 15 March 2017, and 25 February 2019. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

Exploration Target

The information contained in this announcement that relates to the Exploration Target was first reported by the Company to the ASX on 25 March 2019. The Exploration Target does not include areas of existing Mineral Resource and the potential quantity and grade reported are conceptual only in nature. Insufficient exploration has been conducted to estimate a Mineral Resource and it is uncertain whether future exploration will lead to the estimation of a Mineral Resource in the defined areas. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original announcement.

Exploration Results and Feasibility Study

In relation to the results of the Feasibility Study announced on 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.

In relation to previous announcements containing exploration results referred to in this announcement, the Company confirms that it is not aware of any new information or data that materially affects the information included in those announcements.