

ASX Release November 30, 2023

Honeymoon Uranium Project, South Australia

Pre-flushing of start-up wells yields production-grade uranium

Latest milestone achievement ensures project remains on time and budget, with processing ponds set to be filled with Pregnant Leach Solution this year

Boss Energy Limited (ASX: BOE; OTCQX: BQSSF) is pleased to announce it has passed another key milestone in the development of its Honeymoon project, with production-grade uranium generated during the pre-flushing of the start-up wells.

This is significant because it shows Boss is on track to fill the Pregnant Leach Solution (PLS) processing ponds by the end of this calendar year in line with the overall development timetable.

Boss Managing Director Duncan Craib said: “To see production-grade uranium in well pre-flushing augurs extremely well for the start of commissioning and production ramp-up.

“We continue to execute our development strategy in line with the timetable and budget.

“With the uranium price recently hitting a 15-year high of US\$81 a pound¹, we are perfectly positioned to capitalise on this huge opportunity.

“Our position is further strengthened by the fact that we have no debt, cash on hand of \$63 million² and a strategic uranium stockpile now worth \$156³ million based on current spot prices, representing a book profit of more than \$100M since acquisition in March 2021”.

Procurement

Committed expenditure under the Honeymoon re-development program now totals A\$98M (or 92%) of the budgeted ~A\$106M CAPEX, excluding a A\$7M contingency, with incurred costs amounting to A\$81M.

All critical path items remain on track for delivery in line with the project schedule. More than 279 procurement packages have been issued. The packages awarded to date are in line with the front-end engineering design (FEED) released to the ASX on 31 March 2022.

ISR Wellfields

Pre-conditioning of Honeymoon’s start-up wells to facilitate efficient leaching and uranium capture are already showing leached uranium in the solution. Targeted calcium and chlorides are being removed from the orebody, leading to highly favourable flushing results.

¹ Source: TradeTech, LLC (www.uranium.info) as at 24 November 2023

² As at 30 September 2023 (excluding 100% cash backed environmental bond of approximately A\$9M)

³ Strategic uranium stockpile valued at A\$156M based on a spot U₃O₈ price of US\$81/lb and an exchange rate of A\$1:US\$0.65

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Once flushed, Honeymoon will start the leaching with optimal lixiviant to achieve targeted tenors of uranium. This involves fortifying the pre-conditioned groundwater with reagents prior to injecting the lixiviant into and through the orebody to dissolve uranium. The uranium-rich solution is then pumped to the surface via extraction wells and discharged to the Pregnant Leach Solution (PLS) process ponds. Uranium is captured via Ion Exchange (IX), precipitated and calcined to produce a high-quality saleable uranium oxide (U_3O_8) product.

Honeymoon's goal is to fill the PLS pond this calendar year in preparation for commissioning the IX circuit in January with the first drum of uranium on track to be produced as planned in Q1 2024.

The supporting infrastructure is operating to design specifications, including the raw water system, the 25,000 ton gypsum repository, reagent handling systems and first fills of key reagents.



Figure 1: Pre-flushing of the Start-up Wellfields

IX Processing Plant

The first set of NIMCIX loading and elution columns for the new Ion Exchange (IX) circuit have been installed, with electrical and piping works nearing completion. Delivery of 160,000 litres of IX resin has been completed to facilitate the process, enough to operate one column for 10 years.

The adoption of IX technology, which is central to the processing plant, will enable highly efficient capture, concentration and purification of the uranium from the wellfields. This will result in increased throughput, more production and lower costs than was possible using the solvent extraction system previously employed at Honeymoon.

The IX circuit will drive efficiencies at Honeymoon, increasing production throughput to nameplate capacity of 2.45Mlb/annum of U_3O_8 while reducing ramp up time and technical risks. It will also reduce operating costs to industry benchmarks. This was proven by the extensive tests conducted by Boss and leading independent industry experts, before and during the Honeymoon feasibility studies.

Although not needed for first production, the next two IX circuits arrived in Port Adelaide this week.



Figure 2: Installation of last section of the absorption Column 1 & steelworks

Commissioned plant currently operating includes:

- Safety showers
- High-pressure air services
- Reverse Osmosis (RO) Plant
- Water Treatment Plant (WTP)
- Start-up wellfield injection/ extraction wells
- 25,000 ton gypsum repository
- Potable water RO plant
- Borefields

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

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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, which could cause actual results to differ materially from such statements. Boss 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.

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