ASX Announcement

ASX: BOE

26 October 2017

HONEYMOON FIELD LEACH TRIAL OUTRIGHT SUCCESS

HIGHLIGHTS

- Boss Resources achieves uranium leaching aligned with historical results and in excess of PFS processing plant design.
- Dr Dennis Stover completes independent and highly positive review, stating the IX resin is a "major breakthrough for commercial development of Honeymoon."
- 1st Ion Exchange campaign demonstrates excellent performance of the selected resin on Honeymoon conditions.
- 2nd Ion Exchange campaign commenced to demonstrate benefits of higher feed tenors.
- High-grade wellfield achieving targeted uranium tenor.

Boss Resources Limited (ASX: BOE) ("**Boss**" or the "**Company**") is pleased to announce that the operation of the Field Leach Trial ("FLT") and Ion Exchange ("IX") pilot plant at its Honeymoon Uranium Project ("Project") in South Australia is providing excellent data that confirms the assumptions made in the Prefeasibility Study ("PFS"). Results clearly indicate uranium contained within the Honeymoon deposit can be leached, and as historically demonstrated by recovery data (335 tonnes of recovered uranium), confirming that the recovery of uranium from underground is achievable.

Furthermore, the leach results have achieved the base case requirements and revised leaching conditions are now being tested to confirm if these results can be further improved upon. The IX pilot plant operating conditions are now also being modified to test further upside possibilities. The program remains on schedule for completion in November 2017.

Boss Managing Director, Mr Duncan Craib stated "*We are delighted that we have achieved the targeted uranium tenors from the wellfields while continuing to demonstrate excellent performance of the selected resin on Honeymoon type solutions. Attaining these desired outcomes is a fantastic achievement and successfully completes the core objectives of the Field Leach Trial. Further testing of leach conditions will now be performed to determine potential upside with improved processes.*"

"*Formal executive feedback from Dennis is also very positive and encouraging, providing additional expertise into overall strategies for the Honeymoon Project and identifying other process areas that may be improved upon.*"

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Ion Exchange Piloting

The IX process has continued to perform well since the most recent ASX announcement dated 4 October 2017. Operations are stable with consistent loaded resin grades being achieved (see Figure 1). This stable operation has presented an opportunity to test more aggressive conditions in the elution stage that target higher eluate (IX product) tenor. The step change in the eluate tenor as a result of this change is highlighted in Figure 2 (occurring on 8 October 2017). These more aggressive conditions have resulted in an increase in the eluted resin grade (refer Figure 1), but they still remain within the PFS design parameters. The increase eluate grades would benefit the downstream operation in terms of both cost and operating efficiency.

The first campaign, with a fixed feed grade of 50mg/l U_3O_8, has now been completed with all necessary data for the base case design collected. The initial analysis proves the resin has performed exceptionally well and validates the PFS bench scale testwork and design criteria. A second campaign is now underway with an increased feed tenor (75mg/l U_3O_8). This campaign represents potential upside in which the modified leach conditions (being tested now in the FLT) produce higher grade solutions for the IX plant. Bench scale testwork has shown increased resin loadings and eluate tenors are possible with these higher-grade feeds, and this benefits the Project by reducing equipment size (capital cost) and increasing efficiency (operating cost reduction), or allowing higher production rates for the same capital spend.

The second campaign is scheduled to be completed in mid-November 2017 after which the pilot plant will be shut-down.

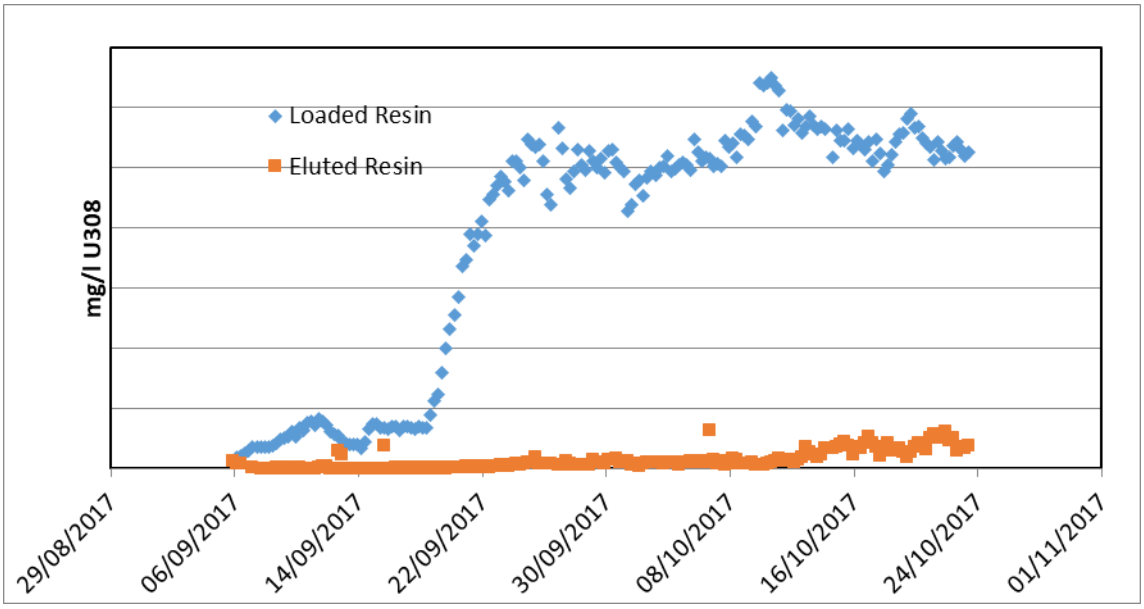

Figure 1: Resin Performance

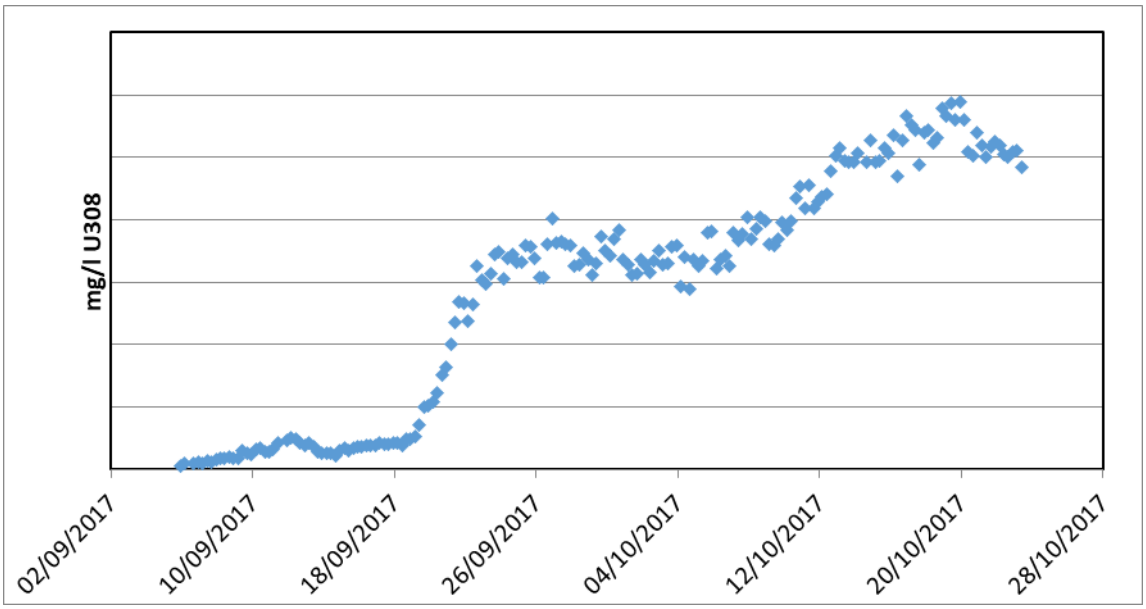

Figure 2: IX Pilot Plant Loading Columns

Leaching Progress

The leaching process on the two well field patterns (low-grade [E3] and high-grade [E1]) continued during the period. E1 has achieved the average feed tenors assumed for the PFS (45-55mg/l U_3O_8) (see Figure 3). The conditioning period appears to be nearing completion and the uranium tenors have started to rise further.

The uranium tenors in E3 have started to increase over the last few weeks (see Figure 4). The data indicates that the conditioning period (i.e. the time required to stabilise the pH and specifically in this area of the deposit the ORP (oxidation-reduction potential)) has been completed and the "leaching" stage has now commenced. Based on the E3 results it would show that ~15 PVE (pore volume exchanges) are required to complete conditioning in this high pyrite zone. This is corroborated by the increases starting to be seen in the E1 pattern at around the same point (15 PVE). In the PFS a total 45-50 PVE were considered in the base case to achieve the optimal recovery from the wellfield. The results over the coming weeks will determine if this is still valid or has to extended (for at least the high pyrite zones).

As mentioned in previous announcements the increased oxidant consumption (ferric) is due to the elevated pyrite content observed in the core samples from this area. This high pyrite content appears to be localised and the results to date have shown this can be managed through increased oxidant addition rates and or longer conditioning times. Alternatives to the increased oxidant addition (ferric) rates are being considered with other oxidants e.g. sodium chlorate or the in-situ generation of dissolved chlorine being looked at. More cost-effective process for regenerating ferric in a recirculating system will also be considered.

Both patterns continue to be run in parallel and will do so for the next few weeks while the alternate oxidant tests are being run. The program also includes a role reversal and /or push-pull test for a short

period of time in order to determine the maximum possible grad that can be achieved from each wellfield. On completion of this the wellfields will be configured in a series arrangement to test the solution stacking concept that is important for the low-grade patterns. This will run for a minimum of 3 weeks prior to shutting down.

The planned work program is schedule for completion by end November 2017.

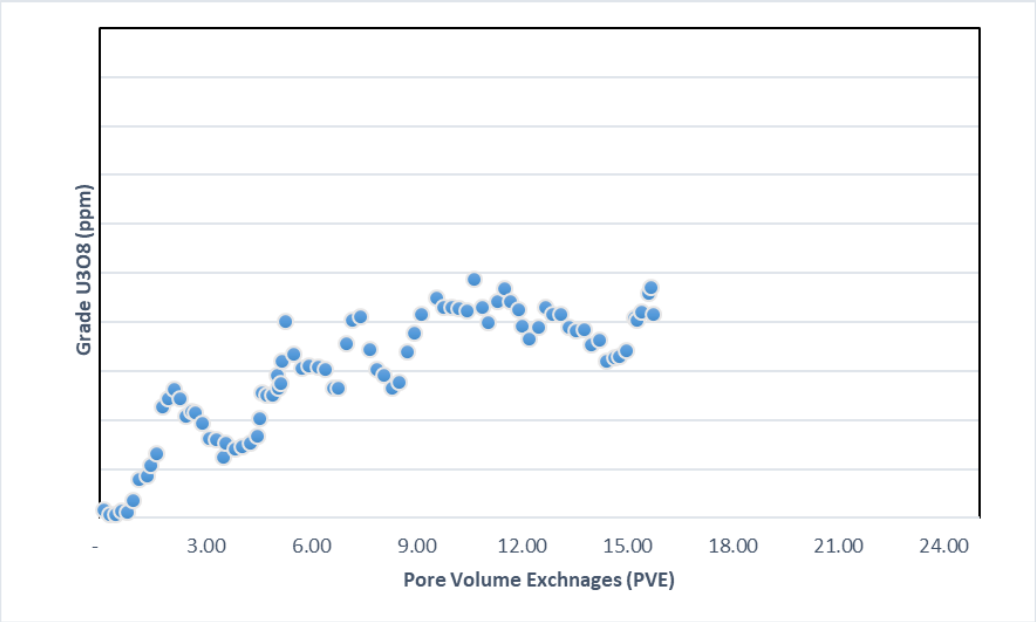

Figure 3: FLT High-Grade (E1) Pattern Uranium Tenor Profile

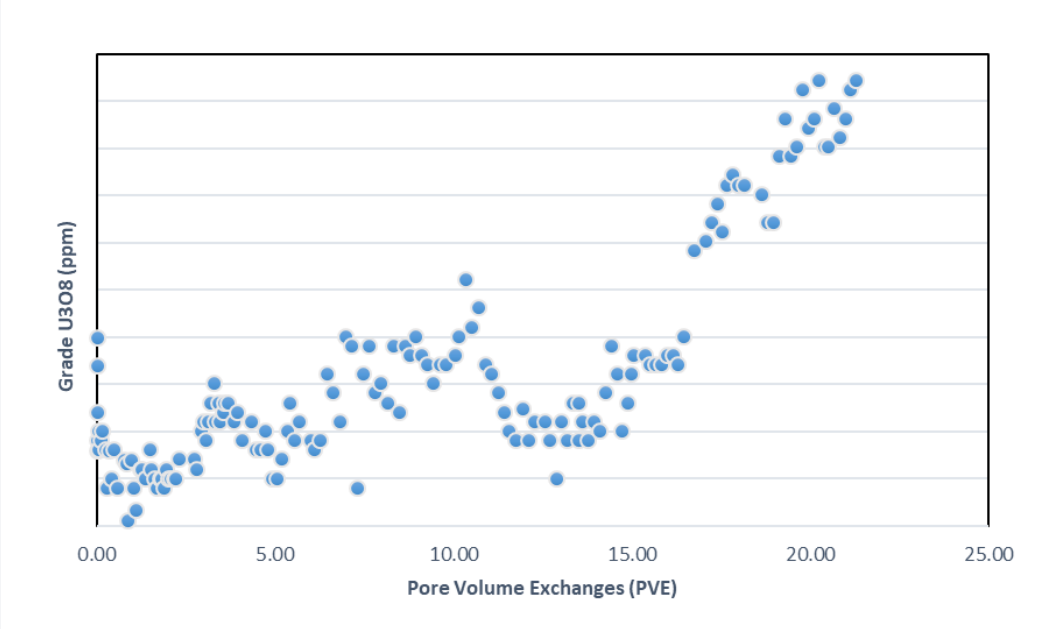

Figure 4: FLT Low-Grade (E3) Pattern Uranium Tenor Profile

Dr Dennis Stover Feedback

Formal feedback from Dr Stover is very encouraging and he has provided further insight into overall strategies for the Project and identified other process areas that may be improved upon. Specifically relating to the FLT and IX pilot plant he stated the following:

1. The Field Leach Trial as planned is a well-designed program which addresses the key issue which has limited past commercial development efforts at Honeymoon; namely, the inability to efficiently recover dissolved uranium from well field lixiviate.
2. Laboratory testing which led to the identification of an ion exchange resin which appears to be highly selective for uranium recovery even from lixiviates with very high levels of total dissolved solids is a major breakthrough for commercial development of Honeymoon. The FLT is the next critical step in verifying the validity of these laboratory findings.
3. Ongoing FLT activities as observed at the Honeymoon site are consistent with the original FLT plan. The operating team is intently monitoring Trial parameters and results. Timely adjustments to operational conditions are being implemented as dictated by observed Trial results.
4. Execution of the FLT is excellent.

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