ASX Announcement **31 July 2017**
ASX: BOE

FIELD LEACH TRIAL - DRILLING COMPLETED

HIGHLIGHTS

- Successful completion of 2 Sonic Core and 10 Mud Rotary drill holes in preparation for the imminent commencement of the Field Leach Trial at the Honeymoon Deposit
- Excellent grade results confirm site selection for Field Leach Trial and the high grade of the Honeymoon deposit in general
- Significant intercepts encountered include:
  - 7.75m @ 3,705 ppm pU_3O_8 (BFW002 from 109m)
  - 9.25m @ 1,376 ppm pU_3O_8 (BFW003 from 106.25m)
  - 6.50m @ 1,808 ppm pU_3O_8 (BFW004 from 109.25m)
  - 7.00m @ 1,414 ppm pU_3O_8 (BSC005 from 108.25m)

Boss Resources Limited (ASX: BOE) ("Boss" or the "Company") is pleased to announce that results from recently drilled 10 mud-rotary holes (BFW001 to BFW010) and 2 sonic core holes (Figure 1) have been received and validated. This drilling was undertaken in preparation for the Field Leach Trial ("FLT") which is due to commence in early August 2017 (see BOE announcement 19 June 2017). The FLT forms an integral part of the Definitive Feasibility Study and will include a wellfield leach and an ion exchange pilot plant, all on the Honeymoon Mining Licence.

Boss CEO, Mr Duncan Craib stated, "*the drill data confirms results predicted from our 3-Dimensional resource model of that area. During the past year significant effort has been put into consolidating and reformatting the various geological data bases received from Uranium 1 at the time of asset purchase. It is pleasing to therefore see our geological model being validated by these results and I now look forward to a successful Field Leach Trial.*"

Drilling activities commenced in May 2017 with 2 sonic core holes drilled at the proposed site of the FLT to confirm ore grade, host lithology and detailed mineralogy. The sonic core holes confirmed the suitability of the selected area following which locations for the 2 well-patterns were finalised. A grade x thickness ("GT") minimum value of 1200 was used to select the trial location, along with the requirement that the mineralisation is hosted in permeable sands (as opposed to less permeable clays and silts).

10 mud rotary holes were then drilled in two standard 5-hole patterns, consisting of 8 injection wells and 2 extraction/production wells. These patterns will provide access to the orebody through discrete apertures in the mineralised portions of the sedimentary sequence and allow for the operation of a FLT.

The two patterns are not contiguous and are separated from each other by approximately 25 metres. This will provide flexibility during the operation for testing leach performance in zones with various grades and allow the solution stacking concept to be investigated.

The mud-rotary drilling, screen placements and well development were performed by contract driller Watson Drilling, a South Australian company highly experienced in the preparation of wells for in-situ recovery ("ISR") of uranium.

Suite 23, 513 Hay St, Subiaco WA
P: +61 (8) 6143 6730
E: admin@bossresources.com.au
ABN 38 116 834 336

The wells were constructed using a specialist ISR well design, which incorporates a very precise production zone that directs the injected leach solution directly into contact with the target ore horizons. The opening between the well and the ore horizon is precisely cut (under-reamed) out of a sealed PVC bore casing. This well design is standard ISR technology.

Appendix 1 summarises the significant intercepts above a nominal 250ppm pU_3O_8 lower cut-off and with greater than 0.5m in thickness (and less than 1m of internal dilution). Based upon logging of the drilling muds and sonic core, the mineralisation encountered is within sandy units of the Middle and Lower Eyre Formation and along sand/clay interbeds and interfaces (Figure 2).

The results from this drilling campaign and historical drilling in the same area will be used to calculate an estimate of pounds of uranium under leach for the FLT and allow for an evaluation of recovery at the end of the trial.

Boss probed the holes using its Prompt Fission Neutron ("**PFN**") tools, which provide calibrated pU_3O_8 grade data that is unaffected by radioactive disequilibrium. The PFN tools were calibrated using four on-site test pits which were established by the previous owners of the operation. The operating, calibration and results of the PFN tool have been reviewed by an independent PFN expert. Full sampling and drilling details are shown in Appendix 2.

Figure 1: Drilling locations for the Field Leach Trial

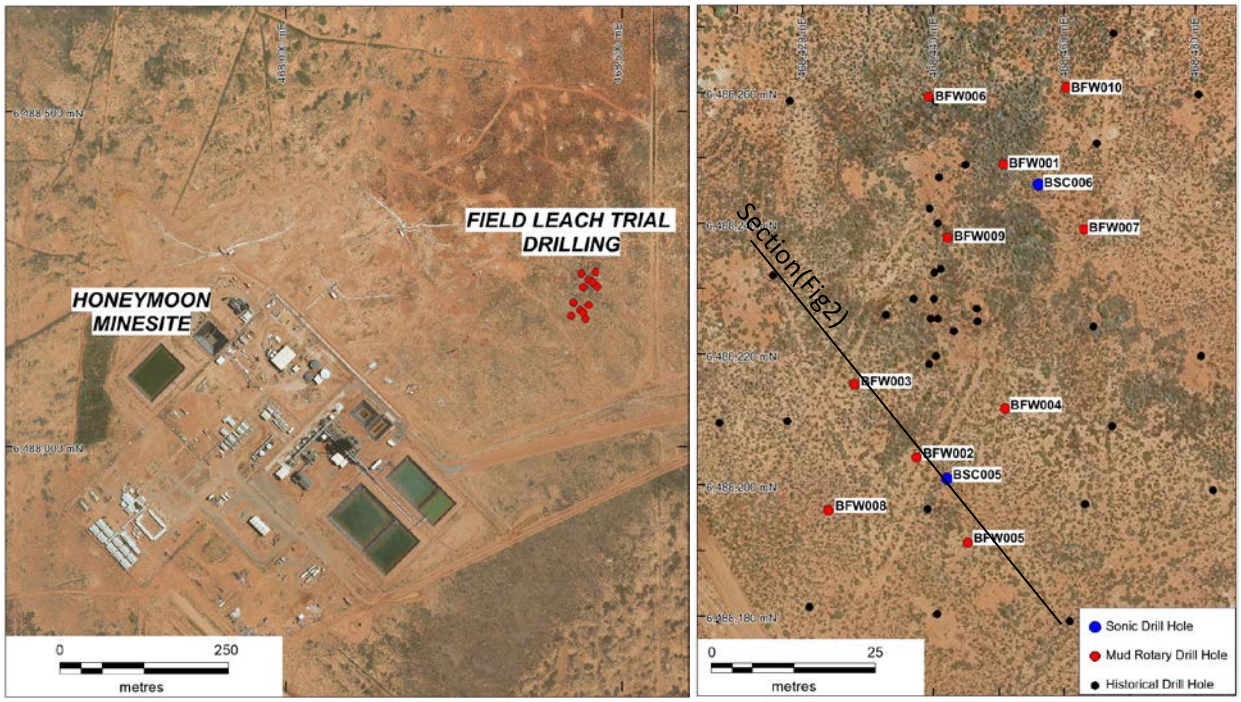
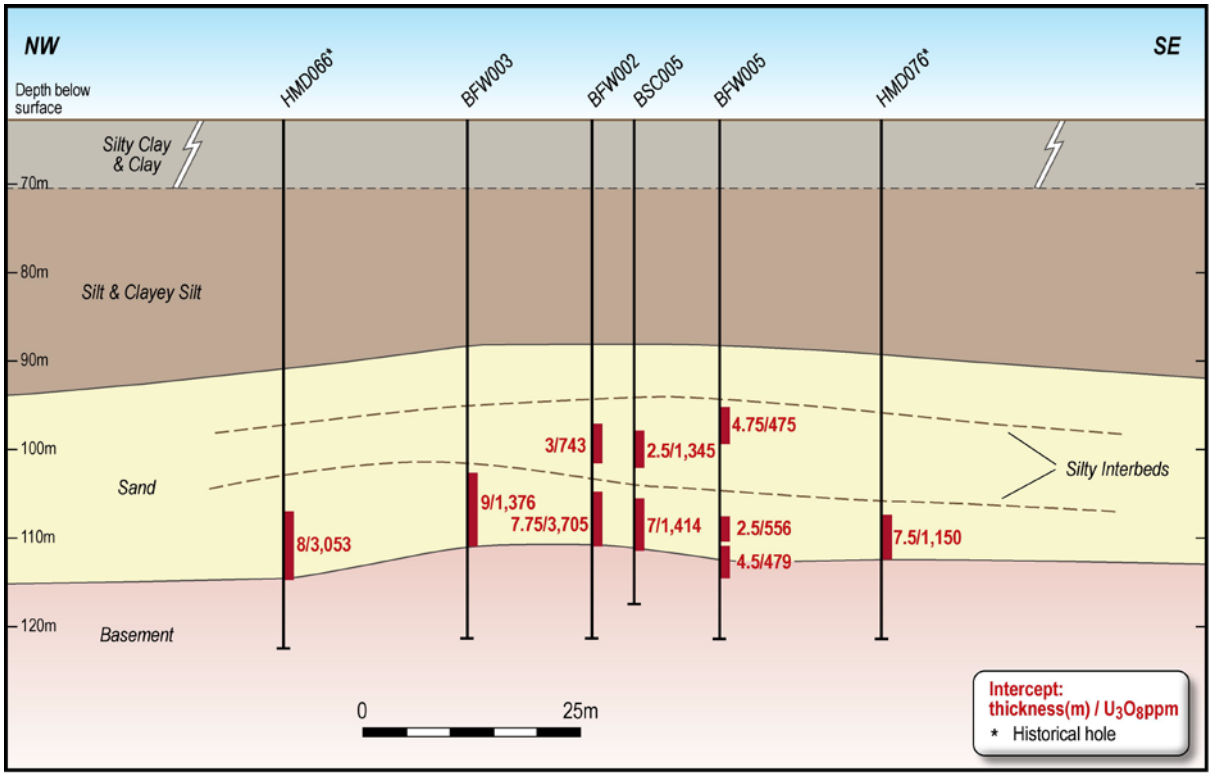


Figure 2: Cross Section



About the Honeymoon Uranium Project

The Honeymoon Uranium Project ("**Project**") is located in South Australia, approximately 80km north-west from the town of Broken Hill near the SA / NSW border. In addition to holding a mining lease and exploration licences, there exists infrastructure on site to the value of $170M which incorporates an 880,000 lb per annum solvent extraction plant, currently placed on care and maintenance.

The Project is fully permitted with a 3.3Mlb U_3O_8 per annum export licence.

The Project has a combined JORC 2012 Mineral Resource across three main Project areas of 43.5 Mt at an average grade of 660 ppm eU_3O_8 (for 63.3Mlb eU_3O) above the 250ppm lower cut-off. See original announcement dated 15 March 2017 for further information.

The Project also has a combined Exploration Target of between 32Mt to 78Mt at a grade of between 450ppm and 1400ppm eU_3O_8 with a potential target endowment of between 42Mlb and 100Mlb of contained uranium. This Exploration Target is conceptual in nature and there has been insufficient exploration to estimate a Mineral Resource. It is uncertain if further exploration will result in the estimation of a Mineral Resource. See original announcement dated 8 December 2015 for further information.

The Honeymoon processing plant was placed into care and maintenance over the summer of 2013/14 due to several factors, primary of which was a decline in uranium price. During the 18-month commissioning period the plant successfully produced and exported over 670,000lbs of uranium. To optimise processing performance Boss's assessment of the plant also identified:

- The existing plant is constrained by volume, and production rates (and costs) are driven by the uranium tenor in the feed solution to the plant; and
- The uranium tenor in the feed solution is dependent on wellfield performance and this is where the previous operator encountered their key issue.

Accordingly, Boss has taken the considered approach that:

- A minimum production rate of 2Mlbs/annum is required to be competitive;
- The 2Mlb/annum process plant has been designed with a lower feed tenor of 47mg/l compared the previous average operating tenor of 53mg/l so that the new plant will not be volumetrically constrained;
- A dedicated process for managing gypsum has been included in the process design, and recent results (announced May 2017) demonstrate that the calcium (gypsum) can be successfully managed; and
- Any upside in feed tenors achieved from the improved leaching and/or wellfield performance should result in higher production rates and therefore even lower costs.

An endorsed restart strategy is in place following the successful development work undertaken in the expansion study and Pre-Feasibility Study (announced 31 May 2017). Final technical confirmation will be provided by the current Field Leach Trial to validate assumptions made regarding wellfield production rates and production profiles to attain the planned 2 Mlb U_3O_8/annum and 3.2 Mlb U_3O_8/annum considered in the Pre-Feasibility Study (see original announcement dated 31 May 2017). **All material assumptions underpinning these production targets as announced on 31 May 2017 continue to apply and have not materially changed.** These staged developmental steps are to ensure Honeymoon can operate in the lowest cost quartile of competitive global producers. As underlying uranium prices rise, Honeymoon is arguably being positioned to be Australia's next uranium producer.

Competent Person's Statement

The information in this report that relates to the Exploration Targets, Exploration Results and Mineral Resources are based on information compiled by Dr M. Abzalov, a Competent Person who is a Fellow of Australasian Institute of Mining and Metallurgy. He has sufficient experience in estimation Resources of uranium mineralisation, and have a strong expertise in the all aspects of the data collection, interpretation and geostatistical analysis to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves'. Dr M. Abzalov is a director of Boss Resources Limited and is also working as an independent consultant and director of 'MASSA Geoservices (Australia)'. Dr M. Abzalov consents to the inclusion in the report of the matters based on their information in the form and context in which it appears. The Company confirms that the form and context of the results presented have not been materially modified from the original market announcements released on 8 December 2015, 6 December 2016, 8 December 2016, 14 December 2016 and 15 March 2017 (available at http://bossresources.com.au/announcements/).

Appendix 1: Results from 2017 Honeymoon FLT Drilling

Summarised above a nominal 50cm minimum thickness, 1m internal dilution, and > 250ppm U3O8

Hole ID	Hole Type	Easting	Northing	RL	Hole Depth(m)	Dip	Az.	From	Length (m)	eU3O8 1 (ppm)	pU3O8 2 (ppm)
		MGA94 Zone 54S									
BFW001	MR	468450.607	6488249.095	122.12	126	-90	0	106.25	2.25	360	297
								110	5.50	862	639
BFW002	MR	468437.344	6488204.262	122.16	124	-90	0	94.25	3.25	299	286
								98.75	3.00	589	743
								109	7.75	6929	3705
BFW003	MR	468427.801	6488215.39	122.16	124	-90	0	106.25	9.25	2771	1376
BFW004	MR	468450.877	6488211.734	122.16	124	-90	0	109.25	6.50	1754	1808
BFW005	MR	468445.153	6488191.239	122.16	124	-90	0	94.25	4.75	511	475
								109.5	2.50	671	556
								112.75	4.50	653	479
BFW006	MR	468439.237	6488259.348	122.12	124	-90	0	107	1.50	354	211
								109.5	5.00	522	328
BFW007	MR	468462.951	6488239.143	122.12	126	-90	0	92.5	2.00	263	473
								94.5	3.75	469	664
								107.25	3.00	402	235
								112	2.75	316	319
BFW008	MR	468423.883	6488196.174	122.16	127	-90	0	115.75	2.75	575	346
BFW009	MR	468442.135	6488237.747	122.12	124	-90	0	108	6.25	1032	847
BFW010	MR	468460.243	6488260.742	122.12	124	-90	0	110.75	0.50	260	308
								111.75	3.00	438	337
BSC005	Sonic	468442	6488201	122.16	120	-90	0	94	3.75	341	328
								98	2.50	713	1345
								108.25	7.00	1323	1414
BSC006	Sonic	468456	6488246	122.12	120	-90	0	92.25	1.75	260	744
								95	1.75	338	351
								99.5	2.25	464	504
								106.5	2.00	299	279
								109.25	1.75	280	382

1 - eU_3O_8 grade data derived from natural gamma downhole tool calibrated and operated by Boss Resources using the Amdel calibration pits in Adelaide. No top cuts applied.

2 - pU_3O_8 grade derived from Boss's Prompt Fission Neutron (PFN) tools. These have been calibrated to the groundwater and sedimentary conditions at the Honeymoon Mine Site. MR= Mud rotary drilling, Sonic = Sonic core drilling.

Appendix 2 - JORC TABLES

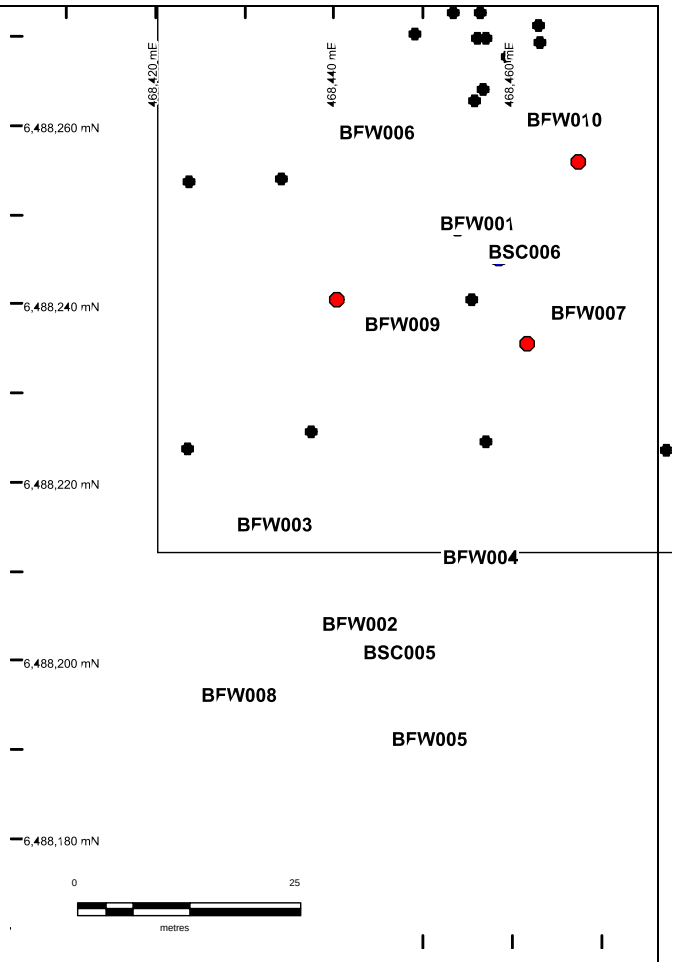
JORC Table 1: Section 1 Sampling Techniques and Data

Criteria of JORC Code 2012	Reference to the Current Report Comments / Findings
Sampling techniques	Boss is utilising it's own PFN tools to obtain pU3O8 grades which when properly calibrated reduce the efect of radioactive disequilibrium. All tools were maintained by specialised electronic companies and technicians based in Adelaide. Calibration for the PFN tool was regularly undertaken using in-house calibration pits available at the Honeymoon Project and for the gamma tools externally, at the certified calibration facilities at Glenside, ConyIngham St, Adelaide. Standard industry procedures were used for geophysical logging of the drill holes and estimation from the geophysical logs for the eU3O8 (from the gamma-ray logs) and pU3O8 (from the PFN instruments) grades.
Drilling techniques	The mud rotary holes for the FLT were drilled by Watsons Drilling with a 9" diameter. The Honeymoon sonic core holes were drilled by Star Drilling.
Drill sample recovery	100% recovery was achieved in the 2 sonic holes drilled at Honeymoon. Depth corrections utilising gamma peaks applied to core during the sampling process to allow for expansion of retrieved material during the sonic coring process. Calliper readings indicate that mud- rotary hole size diameters are predominantly consistent.
Logging	Chip samples are collected every 2m and piles are photographed and geologically logged. Documentation has included colour, grain size, texture, sorting, alteration and oxidation state. All mineralised intervals were geologically logged with logging standards compliant with the industry standards.
Sub-sampling techniques and sample preparation	QA/QC of the geophysical data has included systematic control of the depth logged and control of the recorded U3O8 grade values. Geophysical tools estimate uranium content at large volumes, approximately 25 to 40 cm radius. The volume is sufficiently large allowing accurate measure of the grade. ¼ sonic core sampled for chemical assaying.
Quality of assay data and laboratory tests	Company Geophysical tools used to collect data include: • Auslog Gamma (with Guard) S422 • Prompt Fission Neutron tool PFN#27 • Prompt Fission Neutron tool PFN#32 • Gamma combined with guard S058 • Auslog 3 arm calliper A326 Borehole wireline tools used to collect data include: Natural gamma, Induction, SP, Density, Spectral Gamma, deviation and 3 arm calliper. Holes were logged in down and up directions, which provided a good control of logging consistency. All geophysical tools were regularly calibrated, using in-house facilities and the certified laboratories in Adelaide. QA/QC of the geophysical data has included systematic control of the depth logged and control of the recorded eU3O8 grade values. The winches in the logging truck have their depth calibration checked periodically. Core samples were digested with a mixture of Acids including Hydrofluoric, Nitric, Hydrochloric and Perchloric Acids. U has been determined by Inductively Coupled Plasma (ICP) Mass Spectrometry by Bureau Veritas Minerals Pty Ltd, Thebarton S.A.
Verification of sampling and assaying	The gamma-log data were additionally validated against the PFN logs.
Location of data points	Positions are set out using a Garmin handheld GPS, after drilling. DGPS was used to pick up holes BFW001-010. The projection adopted for surveying is GDA 94, MGA zone 54 with AHD elevation. All surveys were tied to the existing registered base stations. Topographic control was improved by Aerometrx Pty. Ltd flying 10cm pixel aerial photography which was rectified using registered survey points installed at site before plant construction began.

Data spacing and distribution	Drill spacing is approximately 20x15m in each field leach pattern. Uranium grade is composited to 0.25cm to aid in interpretation.
Orientation of data in relation to geological structure	All holes are drilled vertically which provides an accurate intersection of the flat laying mineralised bodies.
Sample security	N/A
Audits or reviews	A independent review of the PFN calibration and sampling has been undertaken by Mr J Oram in December 2016, the review conculded tha the PFN data is suitable for eporting.

JORC Table 1: Section 2 Reporting of Exploration Results

Criteria of JORC Code 2012	**Reference to the Current Report** **Comments / Findings**
Mineral tenement and land tenure status	The Project consists of 1 granted Mining Lease, 5 granted Exploration Licenses, 8 Retention Leases and 2 Miscellaneous Purpose Licenses. The Mining license expires in 2023, exploration licenses expire in 2017 (except EL 5043 which expires in 2016). Renewal documents have been lodged to extend the tenements for an additional 2 years.
Exploration done by other parties	The Honeymoon deposit and surrounding areas of the Yarramba palaeochannel have been intensely explored and systematically drilled starting from 1969. The Honeymoon Project was evaluated several times, with the degree of details varying from scoping studies to bankable feasibility undertaken in 2006. Resource estimates have been made from 1998 to 2016.
Geology	Palaeochannel type sandstone hosted uranium roll and tabular style.
Drill hole Information	See previously exploration announcements and drillhole collar diagrams. The topography in this region is predominantly flat. All holes were drilled vertically with an average hole length of approximately 120m.
Data aggregation methods	Mineralised intervals were chosen based upon a nominal 250ppm U3O8 cutoff. Consideration was given to mineralisation defined by a combination of PFN eU3O8 and natural gamma eU3O8 co-existent intervals.
Relationship between mineralisation widths and intercept lengths	Drill traverses are oriented at right angle across the domain strike. Holes are drilled vertically down.

Diagrams	Appropriate and relevant diagrams have been included in the announcement. The following diagram illustrates currently drilled holes. Red collars denote mud rotary drill holes, blue collars denote sonic drill holes and black collars denote historical drill holes.	
Balanced reporting	Balanced reporting has been adhered to. See previous exploration announcements.	
Other substantive exploration data	Mineralisation is still open along the strike of the domain.	
Further work	Field leach trial using 10 mud rotary holes to be undertaken from August 2017.	