ASX Release 2 February 2022

Honeymoon Uranium Project, South Australia

Strong drilling results highlight potential to increase production rate and mine life

Further exploration drilling set for this quarter; Plus, infill drilling planned to upgrade Inferred Resources as part of strategy to grow forecast production rate

Highlights

- **Strong results received from the first phase of the Accelerated Discovery Initiative (ADI) exploration drilling at Honeymoon**
- **The drilling intersected mineralisation outside the current JORC Resource, with intersections including: (PFN results, ppm pU_3O_8)**
  - **BMR109 (Brooks Dam North): 2.25m @ 774ppm pU_3O_8 from 82.25m (GT = 1,742 m.ppm)**
  - **BMR113 (Jason's South): 2.00m @ 907ppm pU_3O_8 from 110.00m (GT = 1,814 m.ppm)**
  - **BMR108 (Brooks Dam North): 1.00m @ 1,727ppm pU_3O_8 from 99.50m (GT = 1,727 m.ppm)**
  - **BMR092 (Brooks Dam Ext): 1.50m @ 903ppm pU_3O_8 from 113.25m (GT = 1,355 m.ppm)**
  - **BMR120 (Jason's South): 0.75m @ 1,715ppm pU_3O_8 from 105.00m (GT = 1,286 m.ppm)**
- **The drilling was completed in December 2021, comprising 37 rotary mud holes for 4,448m**
- **Second phase of the ADI exploration campaign planned for March 2022, supported by cultural heritage clearance survey completed in December 2021 over key priority areas**
- **Planning underway for infill drilling at Jason's; This is aimed at upgrading Inferred Resources to increase the production profile contained in the Enhanced Feasibility Study**
- **Boss' exploration strategy has already been highly successful, increasing the JORC Resource at Honeymoon from 16.57Mlbs to 71.67Mlbs (~433% increase) since project acquisition in December 2015[1]**
- **Enhanced Feasibility Study on Honeymoon provides a base case to fast-track uranium production from Honeymoon's Restart Area utilising only 35.9Mlb of the Project's global mineral resource (JORC 2012) of 71.6Mlb.**

[1] *Refer to ASX: BOE announcement dated 25 February 2019. Refer Appendix 1 for Honeymoon JORC 2012 Resource.*

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Boss Energy Limited (ASX: BOE; OTCQB: BQSSF) is pleased to report strong results from the first phase of its new exploration drilling strategy at the Honeymoon Uranium Project in South Australia (Figure 1).

The results are significant because they highlight the potential to grow the project's inventory, forecast production and mine life.

The first phase of exploration drilling, which as part of the Company's Accelerated Discovery Initiative, was conducted in November and December 2021. The program comprised 37 holes for 4,448m across three lightly explored prospects both close to the Honeymoon Restart Area (HRA) and up to ~10km north (Figure 2). These areas include:

- Brooks Dam Extension (BDE): This target was drilled primarily to test for extensions of significant uranium mineralisation within isolated drill holes on the northern boundary of the HRA.
- Brooks Dam North (BDN): This target is close to existing mine infrastructure (~900m north of the HRA) and has only been lightly drilled historically. The drilling was designed to follow up previous encouraging drill results and to establish potential continuity of uranium mineralisation.
- Jason's South (JSS): The northern portion of the JSS target is located ~2km south-east of the Jason's Resource and was drilled to test for extensions of historical drill results in a lightly drilled area. The southern portion of the JSS target was drilled testing a conceptual target derived from recent geophysical surveys completed over the area.

Results shows significant potential for high-grade mineralisation outside the HRA. Furthermore, there is significant scope for continuing refinement and potential expansion of these target areas.

Geological modelling of the first-phase drill results is underway and will be used, in conjunction with existing datasets, to plan further scout and extensional/infill drilling of key targets and deposits during 2022.

A significant cultural heritage clearance survey over high priority areas in the Eastern Regions tenements was also completed in late December 2021. The survey facilitates access to high priority exploration areas and to prepare for infill drilling at the Jason's satellite deposit.

Boss Managing Director Duncan Craib said: "These results demonstrate the substantial growth potential at Honeymoon, which is already poised to be Australia's next uranium producer.

"The Enhanced Feasibility Study was based on just half the existing JORC Resource and these results show there is significant scope to expand the inventory further.

"We will resume exploration drilling this quarter, thereafter infill drilling, with the aim of growing the forecast production rate and mine life at Honeymoon".

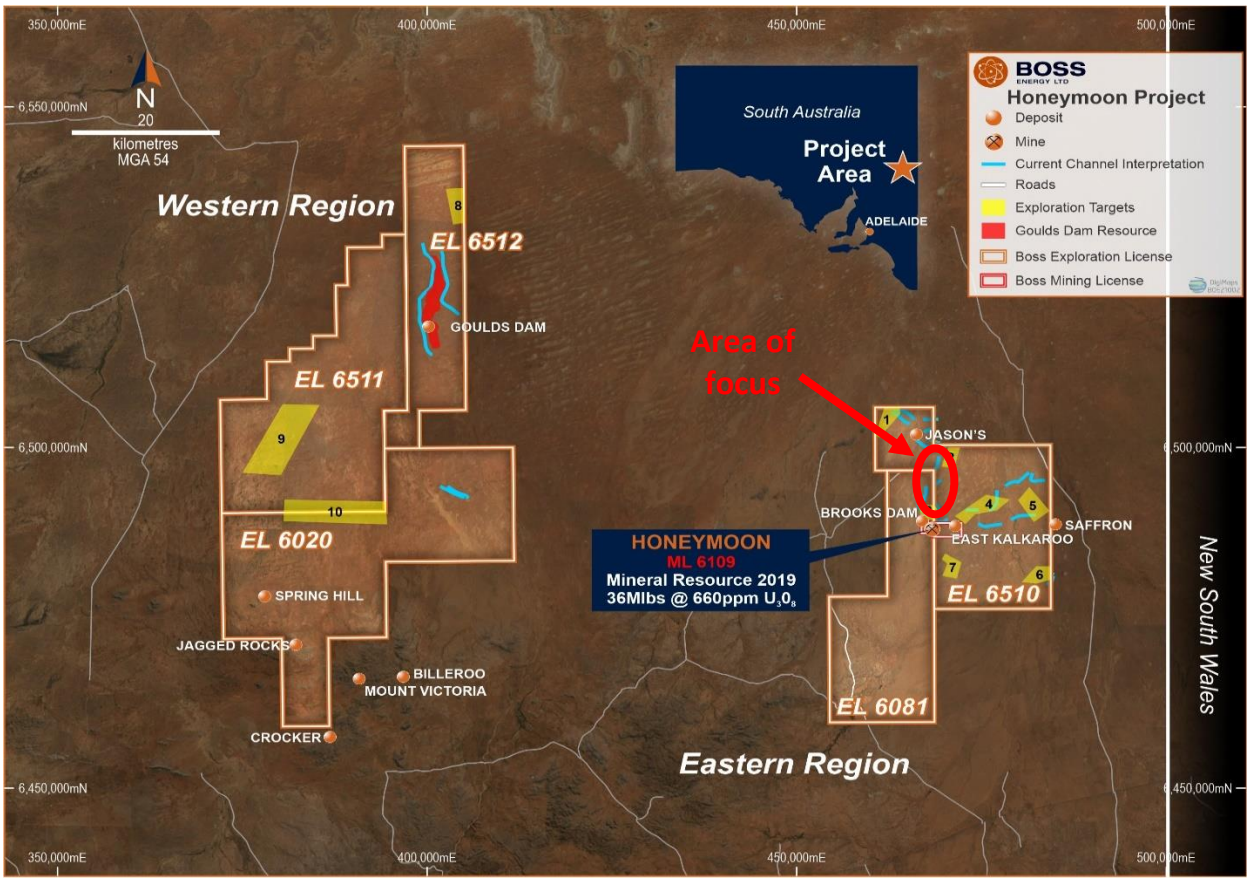


Figure 1: *Boss' Eastern Region tenements, South Australia.*

Phase 1 ADI Exploration Drill Campaign Results

Brooks Dam Extension (BDE)

Phase 1 drilling at the BDE prospect comprised five holes and was designed to test primarily for potential northern extensions of uranium mineralisation within isolated historic holes on the northern extremity of the HRA. These significant historical results include (gamma results, ppm eU_3O_8):

- SE116: 6.5m @ 1,355ppm eU_3O_8 from 82.50m (GT = 8,808 m.ppm)
- BDE010: 3.58m @ 700ppm eU_3O_8 from 81.79m (GT = 2,506 m.ppm)
- BDE008: 1.91m @ 1,200ppm eU_3O_8 from 112.67m (GT = 2,292 m.ppm)

Interpretation of available historical downhole geophysics confirms that the mineralisation in this area is hosted by two distinct sand units within the upper Eyre Formation (i.e SE116) and the lower Eyre Formation (i.e BDE008 & BDE010). Recent drilling successfully identified a continuation of the uranium mineralisation within the lower Eyre Formation, albeit at lower tenor, while only weak uranium mineralisation was detected in the upper Eyre Formation units which suggests that the high-grade mineralisation is more likely to extend to the south of SE116. The best result from the BDE prospect from the recent phase 1 drilling included (PFN results, ppm pU_3O_8):

- BMR092: 1.50m @ 903ppm pU_3O_8 from 113.25m (GT = 1,355 m.ppm)

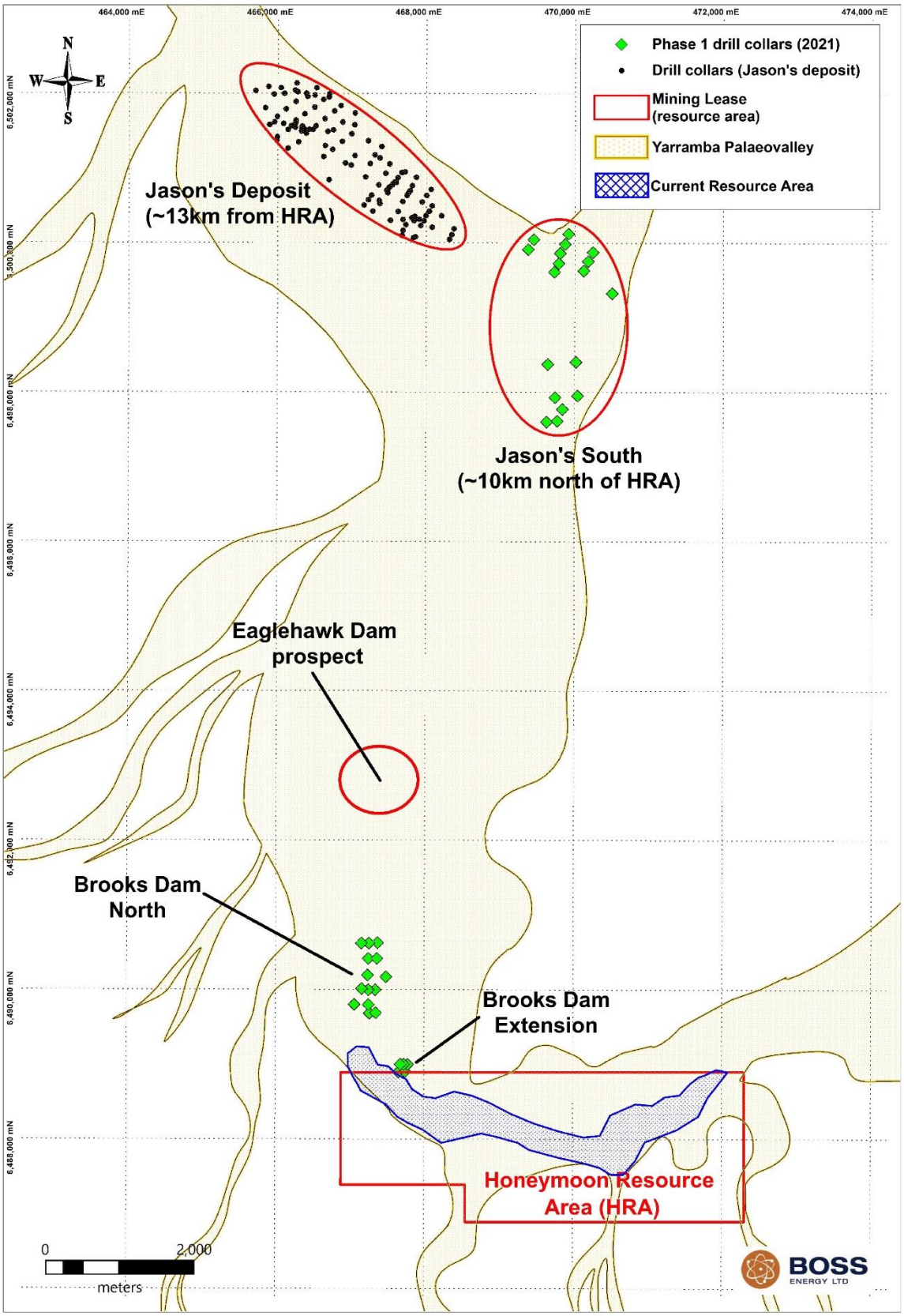


Figure 2: *Location of phase 1 drill collars (2021) and existing infrastructure & deposits/prospects.*

Brooks Dam North (BDN)

Drilling at the BDN prospect ~1.1km north of the HRA produced particularly encouraging results, especially in the northern section where little to no previous drilling had been carried out (Figure 3). In this northern section, two drill lines comprising a total of 5 holes were completed to test for potential continuity of uranium mineralisation to the north, with all holes returning highly encouraging results including (PFN results, ppm pU_3O_8):

- BMR109: 2.25m @ 774ppm pU_3O_8 from 82.25m (GT = 1,742 m.ppm)
  - plus 1.00m @ 1,010ppm pU_3O_8 from 97.00m (GT = 1,010 m.ppm)
- BMR108: 1.00m @ 1,727ppm pU_3O_8 from 99.50m (GT = 1,727 m.ppm)
- BMR105: 1.75m @ 809ppm pU_3O_8 from 90.00m (GT = 1,416 m.ppm)
- BMR110: 2.25m @ 594ppm pU_3O_8 from 85.75m (GT = 1,337 m.ppm)
  - plus 1.25m @ 829ppm pU_3O_8 from 96.50m (GT = 1,036 m.ppm)

These drill lines are ~200m apart with a hole spacing of ~100m along each line, with the strongest zone of mineralisation in holes BMR108 – BMR110 open to the north, west and east. Furthermore, there are two isolated historical holes located ~400m north of these new results (SE012 – drilled in 1972 and H450 – drilled in 2002) which contain highly encouraging intercepts at similar stratigraphic levels, including (gamma results, ppm eU_3O_8):

- H450: 2.25m @ 406ppm eU_3O_8 from 85.50m (GT = 914 m.ppm)
  - plus 1.25m @ 780ppm eU_3O_8 from 97.00m (GT = 975 m.ppm)
- SE012: 4.25m @ 336ppm eU_3O_8 from 81.25m (GT = 1,428 m.ppm)
  - plus 1.25m @ 616ppm eU_3O_8 from 93.50m (GT = 770 m.ppm)

There has been no previous drilling between the new drill lines and historical holes SE012 & H450, and also no previous drilling for at least ~700m north of these historical holes. Given the proximity of this prospect to the HRA, the lack of historical drilling and highly encouraging results from the phase 1 drilling program, this area is a high priority for further exploration drilling to commence in March 2022.

Also, there has been little to no drilling between this highly prospective area and the high priority Eaglehawk Dam prospect ~2.2km north of the latest drill holes, which contains several significant historical intercepts including (chemical assay results, U_3O_8):

- K-61: 2.7m @ 1,572ppm U_3O_8 from 85.80m (GT = 4,244 m.ppm)
- K-69: 0.5m @ 2,065ppm U_3O_8 from 73.50m (GT = 1,032 m.ppm)
  - plus 2.15m @ 598ppm U_3O_8 from 80.10m (GT = 1,285 m.ppm)
  - plus 1.45m @ 1,083ppm U_3O_8 from 88.25m (GT = 1,570 m.ppm)

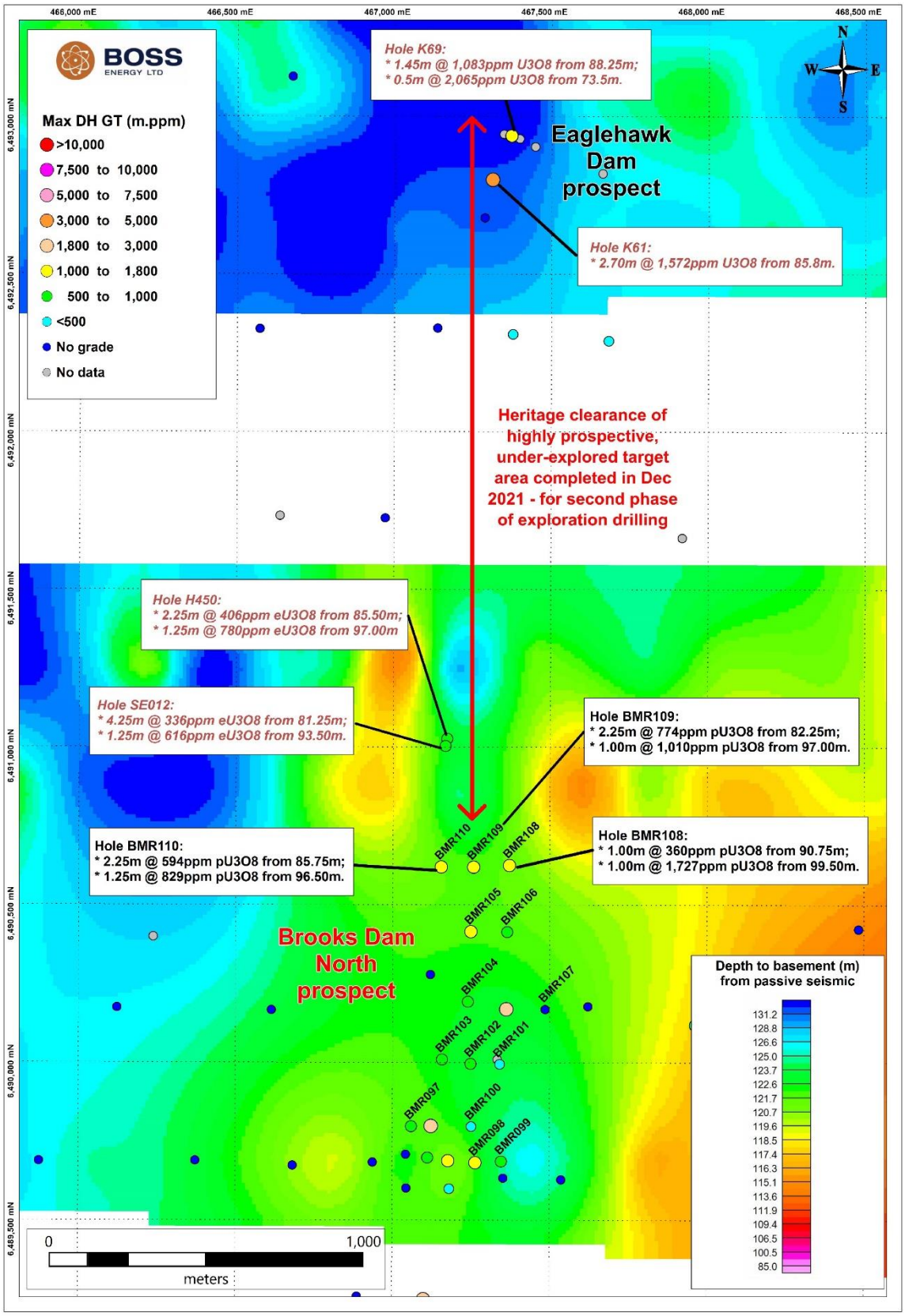


Figure 3: *Phase 1 drill results at the Brooks Dam North (BDN) prospect – Nov/Dec 2021.*

Jasons South (JSS)

Drilling completed at the JSS prospect as part of the phase 1 program was designed to test for extensions to historical drill results in the northern part of the prospect, and also to test for mineralisation associated with an apparent "pinch" and/or palaeotopographic high in the palaeovalley at the southern end of the prospect identified from the recent seismic surveys.

Seven holes were completed as part of the phase 1 drilling program on both the upstream and downstream side of the apparent palaeovalley "pinch" at the southern end of JSS. Mineralisation identified from limited historical drilling in this area includes (gamma results, ppm eU_3O_8):

- H442: 1.85m @ 699ppm eU_3O_8 from 108.66m (GT = 1,293 m.ppm)
  - plus 2.00m @ 410ppm eU3O8 from 104.16m (GT = 820 m.ppm)
- 580_031: 1.50m @ 900ppm eU_3O_8 from 111.90m (GT = 1,350 m.ppm)

The latest round of drilling around this apparent palaeovalley "pinch" was somewhat restricted due to limited access, with the best result identified comprising the following (PFN result, ppm pU_3O_8):

- BMR113: 2.00m @ 907ppm pU_3O_8 from 110.00m (GT = 1,814 m.ppm).

Encouragingly, this result from BMR113 is open to the north, west and south, with redox interfaces noted from a number of holes within the Eyre Formation sands in this area. Likewise, further step-out drilling in closer proximity to the historic results listed above is still warranted once more suitable access is granted.

Eleven holes were drilled at the northern end of the JSS prospect to test for extensions to historical drill results on what is believed to be the northern edge of a major bend in the Yarramba Palaeovalley, which subsequently heads off to the west/northwest towards the Jason's Resource area ~2km away. All holes drilled in this area as part of the phase 1 program returned at least one mineralised interval, with highlights including (PFN results, ppm pU_3O_8):

- BMR120: 0.75m @ 1,715ppm pU_3O_8 from 105.00m (GT = 1,286 m.ppm)
- BMR127: 1.25m @ 911ppm pU_3O_8 from 100.50m (GT = 1,138 m.ppm)
- BMR126: 0.75m @ 1,537ppm pU_3O_8 from 101.00m (GT = 1,152 m.ppm)
- BMR128: 1.00m @ 1,116ppm pU_3O_8 from 103.25m (GT = 1,116 m.ppm)
- BMR118: 1.00m @ 969ppm pU_3O_8 from 93.25m (GT = 969 m.ppm)

Overall, the drilling at the northern end of the JSS prospect has confirmed the continuation of mineralisation identified from historical drilling along the inferred northern edge of the Yarramba palaeovalley. Furthermore, the average uranium grades encountered in the phase 1 drilling were generally strong, which is highly encouraging given the typically wide spacing between drill holes in this area (typically greater than 150m).

Interpretation of the downhole geophysical data and drill samples collected from the whole phase 1 drilling program is ongoing, which will provide a better understanding of the geological setting and mineralisation characteristics and help provide vectors towards potentially more significant accumulations of uranium.

Heritage clearance survey

A cultural heritage clearance survey was carried out within the Eastern Region tenements in late December 2021 with 8 representatives from the Ngadjuri Adnyamathanha Wilyakali Native Title Aboriginal Corporation (NAWNTAC). The survey was designed to cover several key priority areas for future exploration and infill drilling, including the Jason's resource area, Brooks Dam, Brooks Dam North, Eaglehawk Dam and East Kalkaroo Extension. Boss Energy would like to thank the Traditional Owners and all others involved in the organisation and execution of what was a very successful clearance survey.

Next steps

The successful completion of the phase 1 drilling program and heritage clearance survey, in combination with ongoing drill data interpretation and modelling, will allow Boss Energy to commence planning for both the phase 2 drilling of the ADI program (scheduled for March 2022), and resource infill drilling of the satellite deposit at Jason's proposed for the 2022 field season.

ADI grant

The Company's long-term regional investigation strategy had always included using new innovative methods for large-scale exploration. The first phase of the ADI program involving seismic surveying is now complete and apportioned grant funding banked. Phase 2 drilling in early 2022 will complete the requirements for the ADI $275,000 exploration grant, which 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.

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

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APPENDIX 1 - Honeymoon Project Mineral Resource (lower cut-off of 250 ppm U_3O_8)

The global Honeymoon Mineral Resource stands at **71.6 Mlb (52.4Mt) with an average grade of 620ppm U_3O_8, using a cut-off grade of 250ppm,** as summarised in **Table 1**.[2]

In addition to the global Mineral Resource, the Honeymoon Uranium Project also has an Exploration Target range of **28 Mt to 133 Mt of mineralisation at a grade of 340 ppm to 1,080 ppm U_3O_8 for a contained 58 Mlb to 190 Mlb U_3O_8 (26,300 to 86,160 tonnes of contained U_3O_8), 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.

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

Resource Classification	Tonnage (Million Tonnes)	Average Grade (ppm U_3O_8)	Contained Metal (Kt, U_3O_8)	Contained Metal (Mlb, U_3O_8)
Jason's (March 2017)[3]				
Inferred	6.2	790	4.9	10.7
Gould's Dam (April 2016)[4]				
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**

Competent Person's Statement

The information contained in this announcement that relates to exploration results is provided by Mr Jason Cherry, who is a Member of the Australasian Institute of Geoscientists (AIG). Mr Cherry has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration, and to the activity being undertaken to qualify as a Competent Person, as defined in the JORC 2012 edition of the "Australasian Code for Reporting of Mineral Resources and Ore Reserves". Mr Cherry has 17 years' experience and is a full-time employee as Geology Manager for Boss Energy Ltd. Mr Cherry consents to the inclusion in this report of the matters based on this information in the form and context in which they appear.

[2] *Refer to ASX: BOE announcement dated 25 February 2019.*
[3] *Refer to ASX: BOE announcement dated 15 March 2017.*
[4] *Refer to ASX: BOE Announcement dated 8 April 2016.*

Reference to previous ASX announcements

In relation to the results of the Enhanced Feasibility Study announced 21 June 2021, 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.

The mineral resource estimates in this announcement were reported by the Company in accordance with listing rule 5.8 on 25 February 2019. The Company confirms it is not aware of any new information or data that materially affects the information included in the previous announcement and that all material assumptions and technical parameters underpinning the estimates in the previous announcement 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 announcement.

The exploration target referred to in this announcement was reported by the Company in accordance with listing rule 5.7 on 25 March 2019. The Company confirms it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the estimates in the previous announcement continue to apply and have not materially changed. The exploration target does not include areas of the 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.

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

APPENDIX 2 – Table 1: Exploration Drill Results - 2021

In accordance with ASX Listing Rule 5.7.2, the Company provides the following information:

Table 1: Summary of results from the phase 1 drilling program – Nov/Dec 2021. All holes were drilled vertically (-90˚ inclination and 0˚ azimuth).

Hole ID	Easting	Northing	RL	EOH	Depth From	Thickness	pU_3O_8	GradeThickness
	MGA94, z54		(m)	(m)	(m)	(m)	(ppm)	(m.ppm)
BMR092	467,657	6,488,897	121	120	82.50	0.75	544	408
plus					113.25	1.50	903	1,355
BMR093	467,745	6,488,902	123	120	88.75	0.50	911	456
BMR094	467,778	6,488,999	121	119	111.50	1.75	651	1,139
BMR095	467,727	6,489,001	122	121	114.25	1.50	550	825
BMR096	467,681	6,489,001	124	131	103.00	1.25	446	558
plus					114.50	2.00	567	1,134
BMR097	467,060	648,799	113	119	97.75	0.75	473	355
plus					103.25	1.25	415	519
BMR098	467,264	6,489,684	116	120	91.50	1.00	512	512
plus					100.50	1.00	1116	1,116
BMR099	467,347	6,489,688	117	120	91.00	1.00	324	324
plus					100.75	0.75	1137	853
BMR100	467,251	6,489,798	119	120	99.00	0.75	523**	392
plus					106.50	0.75	322**	242
plus					108.50	0.50	823**	412
BMR101	467,341	6,489,996	122	126	107.00	0.50	445**	222
BMR102	467,249	6,489,997	125	120	96.75	0.75	744	558
BMR103	467,158	6,490,011	127	120	97.00	1.00	895	895
BMR104	467,240	6,490,194	124	120	93.50	0.50	581	291
plus					99.25	0.75	921	691
BMR105	467,249	6,490,416	122	120	90.00	1.75	809	1,416
BMR106	467,365	6,490,415	121	120	86.50	2.00	449	898
plus					97.25	1.00	975	975
BMR107	467,486	6,490,170	121	120	*No significant results*			
BMR108	467,371	6,490,626	121	120	90.75	1.00	360	360
plus					99.50	1.00	1727	1,727
BMR109	467,257	6,490,621	120	120	82.25	2.25	774	1,742
plus					86.25	0.75	630	473
plus					97.00	1.00	1010	1,010
BMR110	467,154	6,490,621	120	120	85.75	2.25	594	1,337
plus					96.50	1.25	829	1,036
BMR111	469,767	6,497,613	110	125	*No significant results*			
BMR112	469,835	6,497,771	109	125	*No significant results*			
BMR113	469,624	6,497,604	109	120	110.00	2.00	907	1,814
BMR114	470,040	6,497,951	102	120	*No significant results*			
BMR115	469,736	6,497,930	103	119	*No significant results*			
BMR116	470,018	6,498,404	104	120	*No significant results*			

Hole ID	Easting	Northing	RL	EOH	Depth From	Thickness	pU_3O_8	GradeThickness
	MGA94, z54		(m)	(m)	(m)	(m)	(ppm)	(m.ppm)
BMR117	469,638	6,498,374	106	120	*No significant results*			
BMR118	470,503	6,499,323	103	125	93.25	1.00	969	969
BMR119	470,120	6,499,626	108	120	82.75	1.25	352	440
plus					107.50	0.75	412	309
plus					111.50	0.75	474	356
BMR120	470,179	6,499,754	109	120	105.00	0.75	1715	1,286
BMR121	470,245	6,499,873	108	120	91.25	1.00	676	676
BMR122	469,916	6,500,121	104	120	89.00	1.25	306	383
BMR123	469,869	6,499,981	102	120	94.25	0.50	526	263
BMR124	469,804	6,499,862	101	120	82.50	0.75	537	403
plus					111.00	0.75	706	530
BMR125	469,785	6,499,725	105	114	106.75	0.75	654	491
BMR126	469,725	6,499,611	103	107	101.00	0.75	1537	1,153
BMR127	469,373	6,499,912	102	114	79.75	1.25	316	395
plus					100.50	1.25	911	1,139
BMR128	469,446	6,500,046	107	120	80.25	1.75	307	537
plus					103.25	1.00	1116	1,116

*** Grade data for holes BMR100 & BMR101 derived from calibrated gamma tool (eU_3O_8). Results for all other holes derived from calibrated Prompt Fission Neutron (PFN) tools (pU_3O_8). Values are reported above the nominal 250ppm eU_3O_8 cutoff grade, 0.5m minimum interval thickness and maximum 1m internal dilution.*

Table 2: Historical Drill Results

In accordance with ASX Listing Rule 5.7.2, the Company provides the following information:

Table 2: Summary of historical drill holes listed within this report. All holes were drilled vertically (-90˚ inclination and 0˚ azimuth)

Hole ID	Easting	Northing	RL	EOH	Depth From	Thickness	eU_3O_8	GradeThickness
	MGA94, z54		(m)	(m)	(m)	(m)	(ppm)#	(m.ppm)
BDE008	467,599	6,488,901	120	120	112.67	1.91	1200	2,292
BDE010	467,697	6,488,903	120	120	81.79	3.58	700	2,506
SE012	467,167	6,491,005	117	120	81.25	4.25	336	1,428
plus					93.50	1.25	616	770
SE116	467,730	6,488,880	120	119	82.50	6.50	1355	8,808
H442	469,743	6,498,156	102	112	108.66	1.85	699	1,293
plus					104.16	2.00	410	820
H450	467,171	6,491,027	117	112	85.50	2.25	406	914
plus					97.00	1.25	780	975
580_031	469,885	6,497,973	103	119	111.90	1.50	900	1,350

 # Historical eU_3O_8 grade data derived from calibrated gamma tool data sampled historically at the time of drilling these holes. Values are reported above the nominal 250ppm eU_3O_8 cutoff grade, 0.5m minimum interval thickness and maximum 1m internal dilution.

APPENDIX 3 – JORC TABLE 1, SECTIONS 1 – 2

JORC Table 1: Section 1 Sampling Techniques and Data

Criteria of JORC Code 2012	Reference to the Current Report Comments / Findings
Sampling techniques	The historical drillholes released in this announcement were completed between 1972 and 2002. Due to the historic nature of these data, it is not always possible to comment on the accuracy or quality of the uranium grades derived from downhole gamma logging. Uranium grade data derived from various generations were sourced from numerous historical reports between 1969 and the early 2000s, with all reports written by qualified geologists employed by, or consulting to, the company in question. The majority of the historical data have been reviewed by Boss' Competent Person who is satisfied that the information contained therein is of sufficient enough quality to provide a reasonable, indicative basis for the existence of potentially economic mineralisation within the specified target areas. All drilling completed prior to 2003 was logged predominantly by downhole gamma tools. In 2003, due to the highly variable radioactive disequilibrium within the Honeymoon Deposit, three PFN (Prompt Fission Neutron) logging tools were purchased by Southern Cross Resources. The PFN tool measures the uranium-235 radioactive isotope, allowing a more direct measurement of the uranium within the host formation, thereby reducing the effect of the disequilibrium. A series of calibration test pits were constructed at the Honeymoon Uranium Mine to enable regular calibration of the PFN tools. Gamma data was collected at variable sample rates between 5 and 10cm. PFN logging data was collected at sample rates between 1 and 3cm. Geochemical samples were collected on intervals of various thickness, ranging from 0.10m to 0.50m, based on lithology and core recoveries. Data is subsequently composited to 25cm intervals for reporting purposes and consistency.
Drilling techniques	Historical drilling was completed by a mixture of rotary mud and core. The 2021 drilling program was completed by Watson Drilling using the rotary mud method. The typical hole diameter is ~145mm.
Drill sample recovery	Drill samples were collected for geological logging purposes only, therefore no determinations of sample recovery are required.
Logging	Chip samples from the 2021 drilling program were collected every 1m, photographed and geologically logged (lithology). Documentation also includes colour, grain size, texture, sorting, alteration and oxidation state. All mineralised intervals were geologically logged with logging codes compliant with industry standards. Due to the historic nature of the sampling results included in this report, it is not possible to comment on the accuracy or quality of any geological logging used to produce the results described therein. However, based on more recent drilling programs and verification of the lithologies through drilling completed by Boss in 2018, the Competent Person has reviewed the available historical logging data and is satisfied that the information contained therein is of sufficient enough quality to provide a reasonable, indicative basis for the existence of potentially economic mineralisation within the specified target areas.
Sub-sampling techniques and sample preparation	QA/QC of the geophysical data included systematic control of the depth logged and control of the recorded U_3O_8 grade values. Two PFN tools were run consecutively where possible within the same drillhole to provide a repeatability/duplicate set of data. Also, gamma-derived eU_3O_8 from the Borehole Wireline logging suite is also used as a back-up and depth check for the Boss Energy PFN data. 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.

	The Competent Person has reviewed the available historical sampling records and is satisfied that the information contained therein is of sufficient enough quality to provide a reasonable, indicative basis for the existence of potentially economic mineralisation within the specified target areas.
Quality of assay data and laboratory tests	In-house geophysical logging tools run by Boss Energy during the 2021 campaign included: ○ Prompt Fission Neutron tool PFN27 ○ Prompt Fission Neutron tool PFN32 ○ Prompt Fission Neutron tool PFN08 The calibration of the PFN tools was determined both prior to and following the conclusion of the drilling program at the certified PIRSA calibration pits in Adelaide. The geophysical logging suite run by contractor Borehole Wireline included: ○ Dual Laterolog / Gamma / MDEV stacked tool (DLL3). ○ Dual Induction / Gamma (EM50). ○ Formation Density / 3-arm Caliper (FDSC) ○ Neutron Porosity (DNNS) ○ Fullwave Sonic (FWS) – only on limited holes. Calibration of the relevant tools was determined prior to the drilling program by Borehole Wireline at the certified PIRSA calibration pits in Adelaide, along with regular gamma jig and caliper calibration checks while in the field. Due to the historic nature of the logging data and uranium grades for historical drill holes included in this report, it is not possible to comment on the accuracy or quality of any calibration systems or methods used to produce the historical results from drilling completed prior to 2003.
Verification of sampling and assaying	The gamma-log data were additionally validated against the PFN logs. PFN grade data was only reported where there was a good correlation between PFN and gamma anomalies; and where PFN tool readings were considered to be robust. Due to the historic nature of uranium grade data from historical drilling included in this report, it is not possible to comment on the accuracy or quality of the historical assays from drilling completed prior to 2003. However, based on successive drilling completed since 2003 (after acquisition of the PFN tools), resulting PFN grades have been shown to correlate well with indicative gamma assays reported by historical drilling within the main deposits of the Honeymoon Re-Start Area. The Competent Person has reviewed and verified these data and is satisfied that the assays are of sufficient quality to provide reasonable, indicative basis for the existence of potentially economic mineralisation within the specified target areas.
Location of data points	Drill collar locations are set out using a Garmin handheld GPS prior to drilling and the location confirmed again, by handheld Garmin GPS, after drilling. The projection adopted for surveying is GDA94, MGA zone 54 with AHD elevation.
Data spacing and distribution	The Competent Person has reviewed all available data and, based on their knowledge and experience with the various exploration techniques employed, is satisfied that the historical drilling data included here is of sufficient quality and accuracy to provide a reasonable, if indicative, basis for the mineralisation reported herein. The drilling completed in 2021 was essentially scout exploration drilling and, as such, the line and hole spacing was variable. Where drilling was positioned on fence lines, however, the holes were spaced between approximately 90 and 150 metres. The spacing variations were designed specific to the prospect area being targeted.

Orientation of data in relation to geological structure	All modern & historical holes were drilled vertically which provides an accurate intersection of the flat laying mineralised bodies.
Sample security	Due to the historic nature of the downhole geophysical data reported therein, it is not always possible to comment on the sample security methods employed for the data used to produce the results described in this report. As these data are from areas that are in a purely exploratory stage of operation, the Competent Person has considered that any issues potentially relating to sample security do not present a material risk at this current stage of evaluation.
Audits or reviews	All information and data used in this report have been reviewed by the Boss Energy Competent Person. Due to the historic nature of the results reported therein, no further reviews or audits have been undertaken.

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, 3 Retention Leases and 2 Miscellaneous Purpose Licenses. The Mining license expires in 2023, exploration licenses expire in 2022.
Exploration done by other parties	The Honeymoon deposit and surrounding areas of the Yarramba Palaeovalley have been systematically explored and 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 2019.
Geology	Palaeovalley-type, sandstone-hosted, tabular style uranium of the following model: - Narrower, mineralised, palaeochannels within a broader palaeovalley system, - Underlying basement faults reactivated sporadically, greatly influencing the shape and formation of the overlying fluvial system, creating uplifted ridges of basement and the meandering narrow palaeochannels described above; - REDOX interfaces from the vertical and lateral movement of uraniferous (oxidised) fluids from south (granitic source rocks in the Olary Ranges) to north (towards Lake Frome); - Organic/sulphide-rich horizons and possible hydrocarbon fluids, the latter seeping upwards along the basement faults. Organic- and sulphide-rich material formed within shallow channel embankments and ledges.
Drill hole Information	Please refer to Figure 2 for the locations of the 2021 drill holes and relevant historical holes referred to in this announcement. 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 U_3O_8 cutoff, 0.50 m minimum interval thickness and maximum 1 m internal dilution for reporting. Where available, Prompt Fission Neutron (PFN) data is used which is designated pU_3O_8. For historical drilling or in instances during modern drilling where the PFN tool data was unavailable, gamma toll derived data is used which is designated eU_3O_8 and may be affected by radiometric disequilibrium.
Relationship between mineralisation widths and intercept lengths	Historic drill traverses were oriented at oblique angles across the strike of the palaeovalley as per the historical interpretation current at the time of drilling. Modern drill traverses are often oriented at right angle across the domain strike, although this can vary depending on the interpreted geological setting of each area. All holes from the 2021 program have been surveyed downhole with only minimal deviation identified (e.g., <2m over 100m).
Diagrams	Appropriate and relevant diagrams have been included in the announcement.
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 various domains referred to herein.
Further work	Additional exploration for the 2022 field season involves completing phase 2 of the ADI drilling program, along with further resource definition drilling at the Jason's deposit.