BOSS awarded SA Government exploration funding

ASX Release 24 June 2020

Highlights

- **South Australian Government awards A$275,000 exploration grant to support Boss' innovative uranium geophysical exploration techniques at Honeymoon uranium project.**
- **Exploration to focus on potential new uranium discoveries to increase Honeymoon's production profile distal to existing JORC Mineral Resources (total 71.6Mlbs U_3O_8), including ongoing review of existing Exploration Targets[1].**
- **Boss' Honeymoon project is fully permitted to export 3.3Mlbs U3O8 equivalent per year.**
- **Geological database analysis reveals prospective copper and zinc targets at Honeymoon in addition to uranium.**

Boss Resources Limited (ASX: BOE) (Boss or the **Company)** is pleased to announce it has been awarded 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.



Figure 1: *Boss' Honeymoon Uranium Project in South Australia, 80km north-west of Broken Hill.*

[1] *Refer to ASX: BOE announcement dated 25 March 2019*

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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 (totalling 71.6Mlbs U_3O_8).

Boss' Honeymoon project is fully permitted to export 3.3Mlbs U_3O_8 equivalent per annum and an outstanding January 2020 Feasibility Study for Honeymoon positioned Boss as Australia's next uranium producer with the ability to restart production in 12 months in response to a market upswing.

Meanwhile, the Company is continuing a comprehensive desktop analysis of historical results and has completed an initial review of several prospective Iron Ore-Copper-Gold (**IOCG**) and base metal targets, specifically copper and zinc, on Honeymoon's tenements. Although not a primary focus, preliminary field investigations are warranted to indicate economic potential for farming-out to third parties.

Boss Resources Managing Director and CEO Duncan Craib said, "*South Australia's proactive initiatives to support the mineral industry provides significant support and endorsement of Boss's exploration efforts on Honeymoon through the use of innovative geophysical, such as passive seismic and high-definition seismic reflection. Specific focus remains on progressing the development of known uranium targets in order to increase Honeymoon's production profile distal to the existing JORC mineral resources.*

"Pleasingly, the Company has also identified potential IOCG and base metal targets, which we envisage to farm-out once their mineral prospectivity has been confirmed by minor field investigations, to thereby enhance shareholder returns."

Honeymoon Resource and Exploration Potential

The global Honeymoon Mineral Resource stands at 52.4 Mt at 620ppm U_3O_8 for 71.6 Mlb U_3O_8, using a cut-off grade of 250ppm.[2]

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

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

[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*

In addition to the global Mineral Resource, Boss has an Exploration Target for the Honeymoon Uranium Project 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 Mlbs to 190 Mlbs 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.

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 2,600km^2. It consists of one granted Mining Licence, five granted Exploration Licences, three Retention Leases and two Miscellaneous Purpose Licenses (Figure 2).

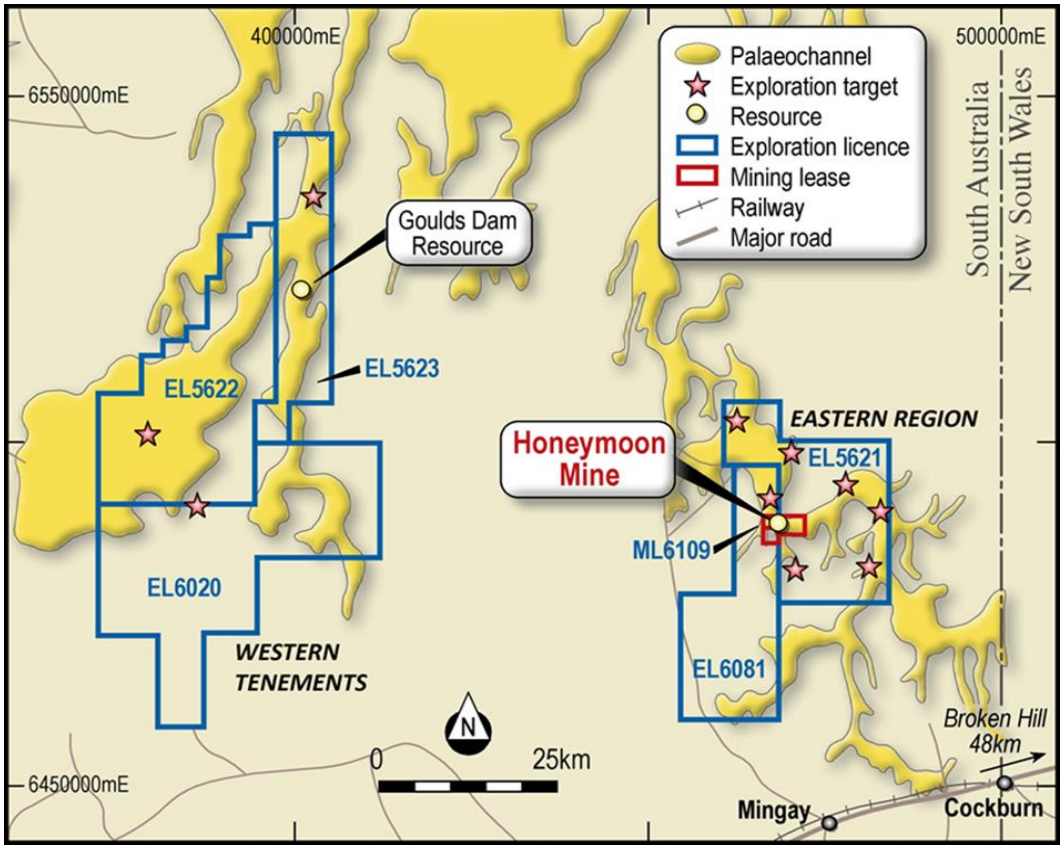


Figure 2: *Location Map for the Honeymoon Uranium Project*

Accelerated Discovery Initiative

The Company's exploration team is currently engaged on completing a comprehensive desktop review on extensive historical exploration information inherited from vendor, Uranium One, and data derived since project acquisition in 2015[5]. The objective of defining new uranium exploration targets will be enhanced by the ADI supported exploration initiative, to identify drill-ready targets that will assist in converting the estimated Exploration Target into additional JORC mineral resources.

[5] *Refer to ASX: BOE Announcement dated 28 May 2020*

In March 2020, the Company applied for the ADI grant as provided under the South Australian Government's Growth State Agenda, to increase the discovery of new mineral resources through exploration within the State. Boss Resources demonstrated its use of innovative geophysical exploration techniques are supported and encouraged by the South Australian government in an effort to increase the State's mineral resources.

On 23 June 2020, Boss Resources was notified of its successful application and award of funding totalling A$275,000, to financially assist the Company's planned fieldwork for completing the geophysical activities particularly in the Western Region tenements. Following this, the Company plans to trial the Slalom High-Definition Seismic Reflection method to provide additional 3-Dimensional imaging of the sand, silt and clay layers within the host Eyre Formation. When combined with the passive seismic data, this information will prove invaluable in tailoring the design of drillholes to suit the specific target areas for uranium exploration which remains the Company's focus mineral commodity.

Potential for IOCG and base metal mineralisation

While the Exploration Target areas are based on the potential to add to existing uranium mineral resources, consideration was also given to other mineral commodities that had been actively explored in the region by multiple companies over the past 50 years. The comprehensive desktop review has revealed historic IOCG targets and multiple, high-grade zinc intercepts from various generations of drilling into basement bedrock that have yet to be further investigated. The development of the Company's regional-scale, 3D structural model[5] strongly supports the influence of faults on both palaeochannel development and accumulations of IOCG/ base metal mineralisation. The Company will look to farm-out IOCG prospects once preliminary fieldwork has indicated the economic potential of the various targets.

Historical exploration over the Honeymoon Uranium Project revealed anomalous zinc, lead and copper mineralisation within basement bedrock lithologies underlying the Yarramba Palaeovalley. Drilling focused predominantly on the edge of a northeast-southwest (NE-SW) magnetic anomaly (Figure 3) and coincident low gravity anomaly, situated approximately 12km northeast of the Honeymoon Uranium Mine. Results subsequently revealed an apparent NE-SW trend for anomalous zinc and copper mineralisation that surpassed 30km of strike length and followed the edge of magnetic basement, as interpreted from the combination of regional airborne magnetics and drilling information.

Appendix 1, Tables 1 and 2, provides the full listing of drill collars and associated anomalous assay results, however best significant intercepts include the following from the Hunter Dam Prospect:

- HDD002 – 11.9m @ 1.7% Zn, 2611ppm Pb, 716ppm Cu from 437.00m
- HDD001 – 13m @ 1.1% Zn, 1404ppm Pb, 192ppm Cu from 187.00m
- HD117 – 10m @ 1.3% Zn, 3242ppm Pb, 175ppm Cu from 124.00m
- HDD002 – 4.4m @ 2.6% Zn, 126ppm Pb, 253ppm Cu from 302.00m
- HD204 – 5m @ 1.6% Zn, 1644ppm Pb, 554ppm Cu from 108.00m
- HD216 – 3m @ 2.5% Zn, 897ppm Pb, 588ppm Cu from 119.00m
- HD210 – 5m @ 1.5% Zn, 3380ppm Pb, 170ppm Cu from 108.00m
- HDD001 – 4.6m @ 1.5% Zn, 3033ppm Pb, 205ppm Cu from 305.10m
- HDD002 – 3m @ 1.4% Zn, 17ppm Pb, 1400ppm Cu from 478.00m

- HD205 – 4m @ 1.1% Zn, 3575ppm Pb, 163ppm Cu from 106.00m
- HDD001 – 3.7m @ 1% Zn, 1965ppm Pb, 264ppm Cu from 295.00m
- HD155 – 2m @ 1.8% Zn, 1520ppm Pb, 910ppm Cu from 120.00m
- HDD068 – 1.45m @ 2.3% Zn, 3890ppm Pb, 239ppm Cu from 193.80m
- HD159 – 2m @ 1.3% Zn, 990ppm Pb, 910ppm Cu from 134.00m
- HD158 – 2m @ 1.1% Zn, 120ppm Pb, 370ppm Cu from 130.00m

Significant, non-radioactive mineralisation has been shown to exist in areas surrounding the Company's exploration licences, for example the IOCG mineral potential as evidenced by Havilah Resources' Portia / North Portia mine (Cu/Au), and Kalkaroo deposit (Cu/Au – Figure 4).

The zinc and copper anomalism is hosted in a metasedimentary suite of graphitic pelites, psammites, calc-silicates and schists, and appears to be concentrated in selected areas, consequently named the Hunter Dam, Hunter Dam South, McLennon Dam and McLennon Dam North Prospects (Figure 3 and Figure 4).

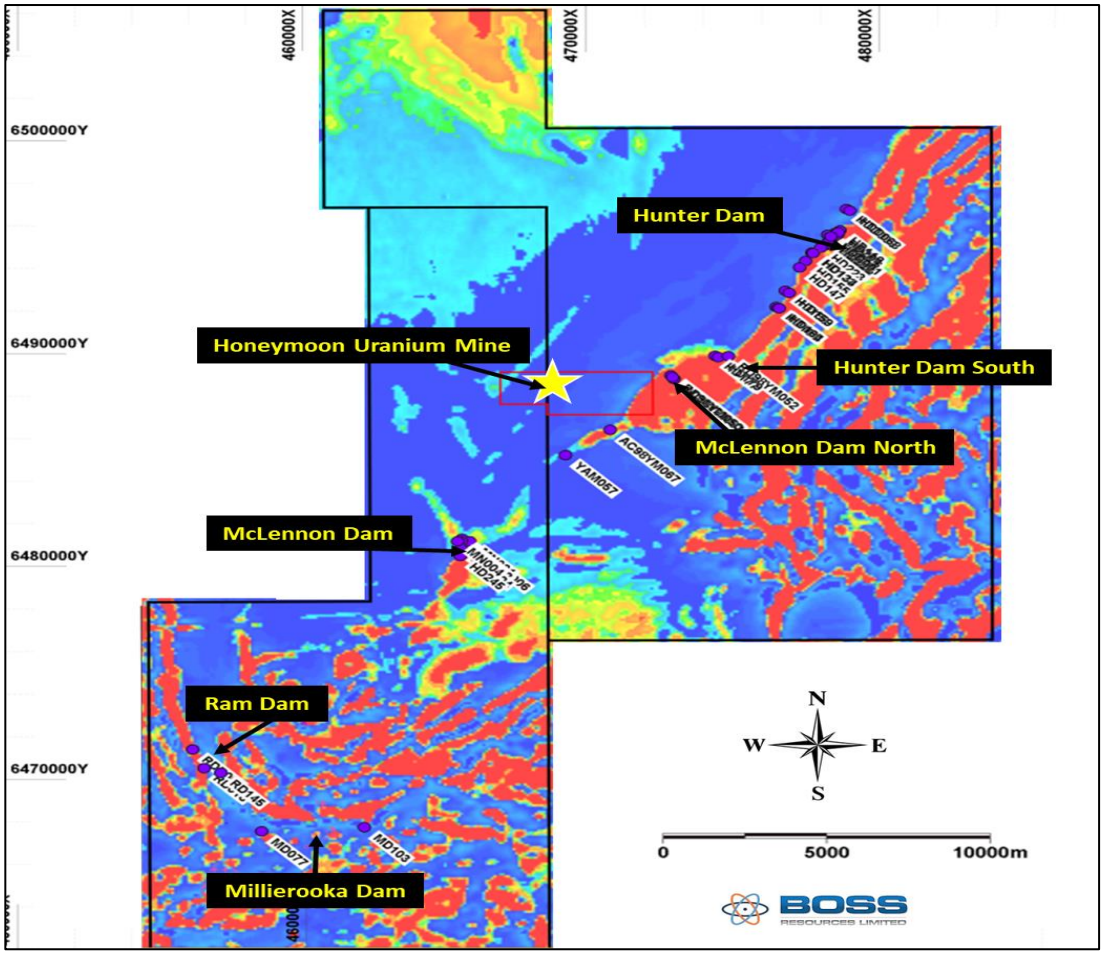


Figure 3: *Honeymoon Uranium Project – Eastern Region tenements: base metal prospect locations overlying regional magnetics (First Vertical Derivative, Total Magnetic Intensity)*

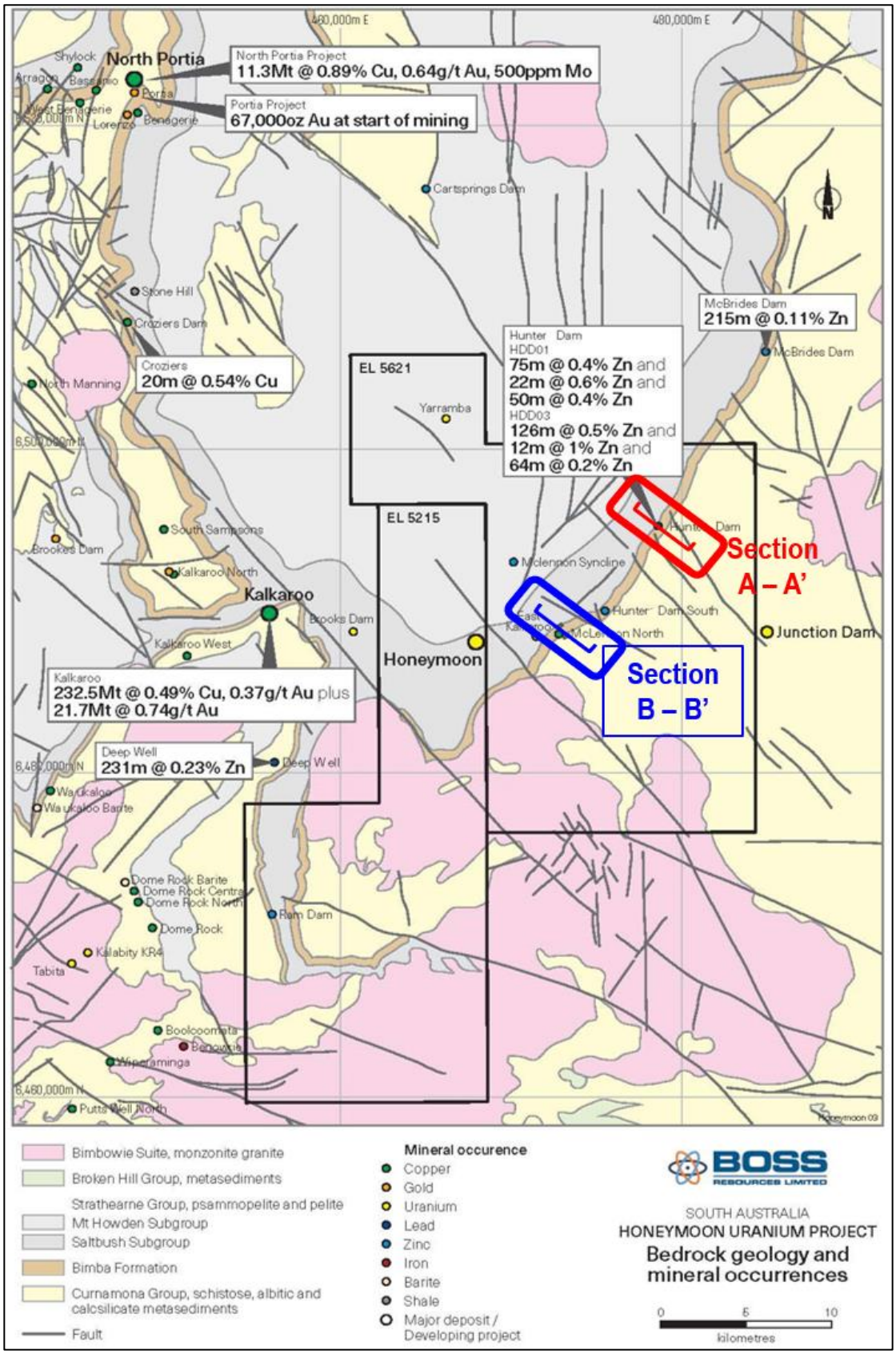


Figure 4: *Honeymoon Uranium Project – base metal mineral occurrences and underlying bedrock geology.*

Figure 5 and Figure 6 provide cross-sectional views along two lines of base metal anomalism from the Hunter Dam, and Hunter Dam South / McLennon Dam North Prospects, respectively. An increase in zinc grades observed at Hunter Dam (Figure 5) correlates with the position of a fault zone intersected by drilling, and an interpreted fault structure observed from regional-scale AEM data, that may also have been instrumental in the sudden change in orientation of the Yarramba Palaeovalley from broadly NE-SW to more north-south (N-S).

The correlation between the position of fault structures and base metal anomalism is a pattern that is repeated throughout the Eastern Region exploration tenements. The predominant orientation of interpreted, regional-scale structures is northwest-southeast (NW-SE) which appears to perpendicularly intersect the NE-SW trending edge of magnetic basement. It is possible that this intersection has opened up pockets of dilation into which mineralisation have subsequently formed. Additionally, drilling confirmation of the fault zone at Hunter Dam proves the hypothesis that fault structures in the underlying, older, basement bedrock have also influenced the formation of younger palaeochannels and palaeovalleys in the overlying stratigraphy. A concluding statement can therefore be made that areas of intersecting fault structures provide excellent targets for future drilling for the purpose of both palaeochannel-hosted uranium and deeper IOCG/base metal mineralisation.

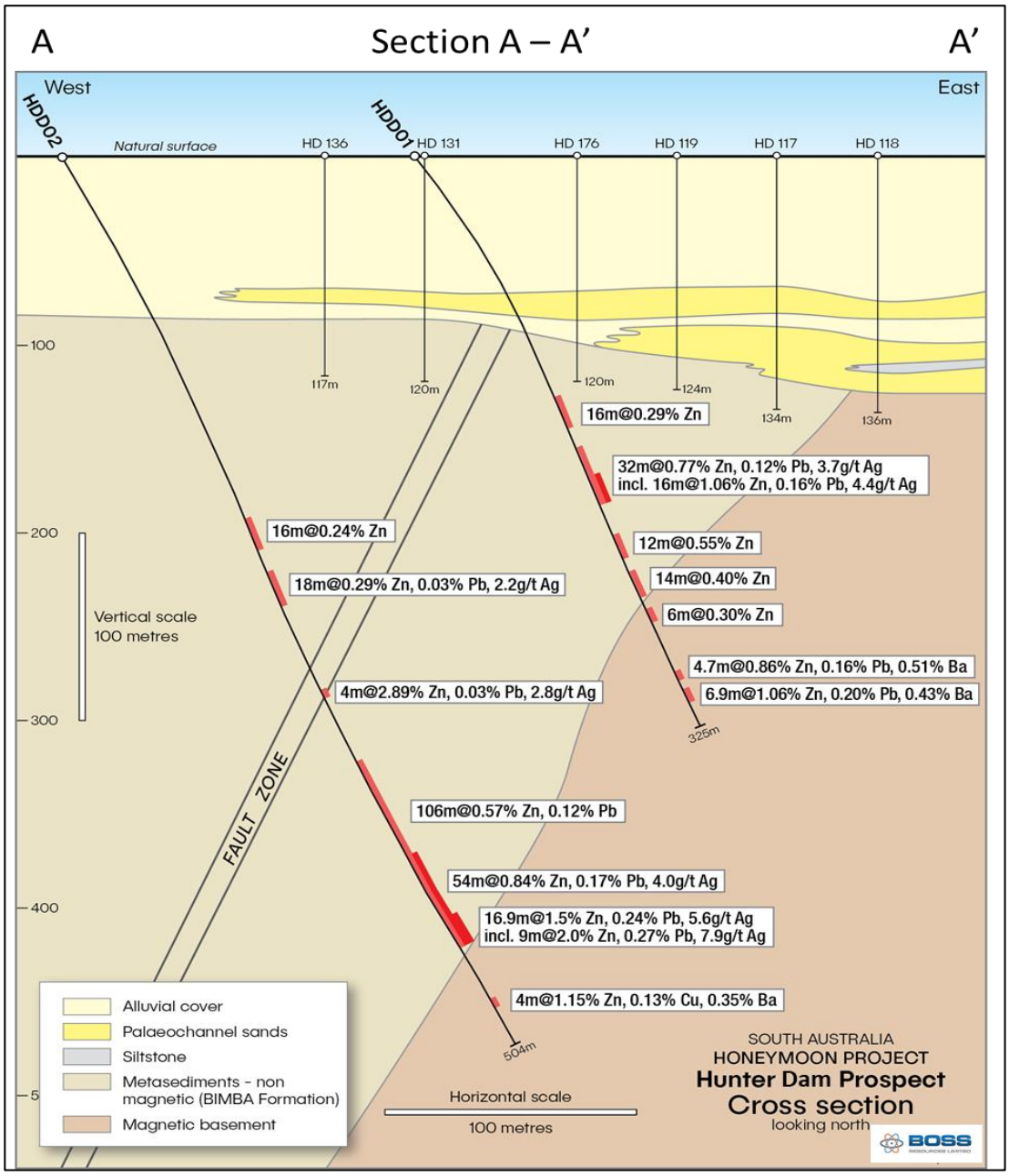


Figure 5: *Section Line A – A': significant base metal intercepts from historical drilling at Hunter Dam Prospect*

The cross-section illustrated in Figure 6 presents shallow historical drilling over the McLennon Dam North and Hunter Dam South Prospects, situated immediately to the east of the Honeymoon Restart Area (approximately 4.5km east of the Honeymoon Uranium Mine, Figure 4) and is also situated over an area of anomalous magnetism (Figure 3). Regionally, the metasedimentary rocks within the Bimba Formation are known to host copper and gold mineralisation, which appears to be reflected in the anomalous copper and gold assays returned from historical drillholes such as RD98YM50 (46m @ 580ppm Cu, 0.05ppm Au, from 65m depth).

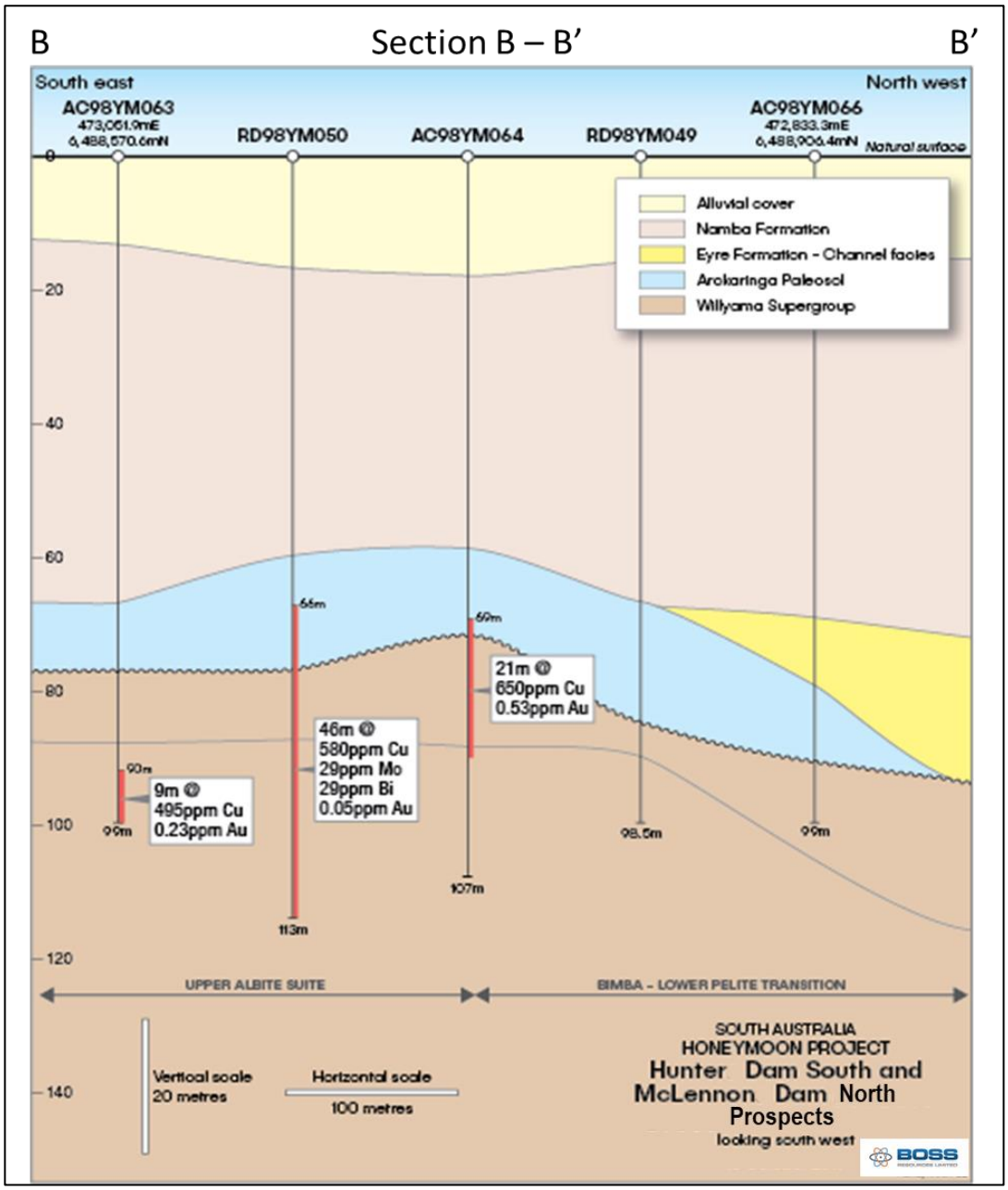


Figure 6: *Section Line B – B': significant base metal intercepts from historical drilling at Hunter Dam South and McLennon Dam North*

In 1999, Rio Tinto Exploration Pty Ltd completed a short IP program of 5 lines at the McLennon Dam and McLennon Dam North Prospects. The IP technique is commonly used in the exploration of sulphide-related minerals, such as gold, copper and nickel, and targets large accumulations of massive sulphide mineralisation. This geophysical method can, however, be very expensive and so is often used sparingly by junior exploration companies. Two of the lines were subsequently drill tested, however only one of the drillholes (YAM057) intersected weakly anomalous and thin intercepts of zinc (0.25%) and copper (550ppm). The other three lines remain untested, providing targets of interest for future drilling programs.

During the 2019 field season, brief geological reconnaissance interspersed the main passive seismic surveying program. The geological reconnaissance targeted areas of anomalous base metal mineralisation, during which a historical copper working was discovered to the south of McLennon Dam. Hand specimens of the copper carbonate mineral, malachite, were observed along with minor amounts of azurite and chalcopyrite. Handheld XRF readings were taken at random locations around this historical working and returned results of up to 39% copper, 14% zinc and 0.14% lead. Although these readings are indicative only and still require confirmation by formal geochemical assaying, the location of this copper working correlates with the position of the southern arm of the currently-interpreted base metal mineralisation trend, which extends from Hunter Dam in the northeast to Millierooka Dam in the south (refer to Figure 3). This coincidence gives the area an exciting prospectivity and justifies additional exploration to further investigate its true mineral potential.

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

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Competent Person's Statement

The information contained in this announcement that relates to exploration results is provided by Ms Asha Rao, who is a Member of both the AusIMM and the Australasian Institute of Geoscientists (AIG). Ms Rao 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". Ms Rao has 15 years of experience and is a full-time employee as Geology Manager for Boss Resources Ltd. Ms Rao consents to the inclusion in this report of the matters based on this information in the form and context in which they appear.

The information contained in this announcement that relates to Mineral Resources and Exploration Targets, 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 announcement.

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.

APPENDIX 1 – Table 1: Historical Drill Collars – Base Metals

Hole ID	Drill Type	MGA East	MGA North	MGA RL	Hole Depth (m)	Prospect Name	Depth (m)	Dip (°)	MGA Azimuth (°)
AC98SE006	AC	465522	6481078	139	72	McLennon Dam North	0	-90	0
AC98YM063	AC	473051	6488570	121	99	McLennon Dam North	0	-90	0
AC98YM064	AC	472941	6488737	120	107	McLennon Dam North	0	-90	0
AC98YM067	AC	470784	6486188	125	114	McLennon Dam North	0	-90	0
HD073	RM	478766	6495408	105	93	Hunter Dam	0	-90	0
HD075	RM	478835	6495364	105	102	Hunter Dam	0	-90	0
HD076	RM	478867	6495344	106	110	Hunter Dam	0	-90	0
HD116	RM	478943	6495536	106	122	Hunter Dam	0	-90	0
HD117	RM	478752	6495165	105	134	Hunter Dam	0	-90	0
HD119	RM	478734	6495194	105	124	Hunter Dam	0	-90	0
HD123	RM	478618	6495123	106	131	Hunter Dam	0	-90	0
HD127	RM	478526	6494947	105	105	Hunter Dam	0	-90	0
HD128	RM	478554	6494931	106	111	Hunter Dam	0	-90	0
HD129	RM	478599	6495133	106	136	Hunter Dam	0	-90	0
HD131	RM	478628	6495243	106	120	Hunter Dam	0	-90	0
HD133	RM	477947	6494497	108	112	Hunter Dam	0	-90	0
HD134	RM	477988	6494473	108	112	Hunter Dam	0	-90	0
HD136	RM	478601	6495263	106	117	Hunter Dam	0	-90	0
HD147	RM	477512	6493804	109	136	Hunter Dam	0	-90	0
HD155	RM	477722	6494102	108	134	Hunter Dam	0	-90	0
HD156	RM	477002	6492708	111	136	Hunter Dam	0	-90	0
HD158	RM	477098	6492641	108	136	Hunter Dam	0	-90	0
HD159	RM	477137	6492609	111	147	Hunter Dam	0	-90	0
HD161	RM	476678	6491952	111	143	Hunter Dam	0	-90	0
HD163	RM	476758	6491903	111	151	Hunter Dam	0	-90	0
HD164	RM	476784	6491886	111	140	Hunter Dam	0	-90	0
HD176	RM	478708	6495246	105	120	Hunter Dam	0	-90	0
HD177	RM	474512	6489654	116	126	Hunter Dam South	0	-90	0
HD179	RM	474625	6489592	116	132	Hunter Dam South	0	-90	0
HD204	RM	478886	6495449	106	113	Hunter Dam	0	-90	0
HD205	RM	478854	6495470	101	110	Hunter Dam	0	-90	0
HD210	RM	478788	6495248	99	113	Hunter Dam	0	-90	0
HD211	RM	478770	6495262	104	106	Hunter Dam	0	-90	0
HD216	RM	478549	6495062	106	122	Hunter Dam	0	-90	0
HD217	RM	478587	6495040	106	105	Hunter Dam	0	-90	0
HD219	RM	478473	6494854	105	120	Hunter Dam	0	-90	0
HD220	RM	478438	6494874	106	112	Hunter Dam	0	-90	0

Hole ID	Drill Type	MGA East	MGA North	MGA RL	Hole Depth (m)	Prospect Name	Depth (m)	Dip (°)	MGA Azimuth (°)
HD223	RM	478270	6494737	107	131	Hunter Dam	0	-90	0
HD227	RM	478569	6495052	106	109	Hunter Dam	0	-90	0
HD245	RM	465464	6480271	140	93	McLennon Dam North	0	-90	0
HDD001	DD	478623	6495253	106	325	Hunter Dam	0	-60	0
HDD002	DD	478507	6495331	105	504	Hunter Dam	0	-65	0
HDD003	DD	479171	6496539	105	474	Hunter Dam	0	-60	0
HDD068	DD	479292	6496463	105	280	Hunter Dam	0	-70	0
MD077	RAB	458410	6467364	167	63	Millierooka Dam	0	-90	0
MD103	RAB	462058	6467551	163	12	Millierooka Dam	0	-90	0
MN001	RM	465800	6480960	139	98	McLennon Dam North	0	-90	0
MN004	RM	465372	6480960	140	113	McLennon Dam North	0	-90	0
RD016	RM	456367	6470323	151	39	Ram Dam	0	-90	0
RD145	RM	456960	6470104	154	15	Ram Dam	0	-90	0
RD98YM050	RM	472995	6488652	121	113	McLennon Dam North	0	-90	0
RD98YM052	RM	474982	6489638	116	142	Hunter Dam South	0	-90	0
RDD001	DD	455959	6471201	149	334	Ram Dam	0	-60	0
SEG023	DD	465498	6480974	139	303	McLennon Dam North	0	-75	0
SEG024	DD	465495	6480601	140	327.7	McLennon Dam North	0	-75	0
YAM057	DD	469196	6484999	129	249.1	McLennon Dam North	0	-70	0

APPENDIX 1 – Table 2: Historical Drill Assays – Base Metals

HOLE ID	Depth From (m)	Depth To (m)	Width (m)	Ag ppm	Au ppm	Cu ppm	Pb ppm	Zn ppm
AC98SE006	65	66	1.00	1	0.08	750	290	1400
AC98YM063	90	99	9.00	-	0.23	495	-	-
AC98YM064	69	90	21.00	-	0.53	650	-	-
AC98YM067	105	114	9.00	0.4	-	323	610	867
HD073	90	93	3.00	4	-	380	260	3550
HD075	100	102	2.00	3	-	290	1120	4050
HD076	100	102	2.00	1	0.03	950	500	2950
HD116	120	122	2.00	1	0.02	650	270	1160
HD117	124	128	4.00	7.5	0.04	260	5225	14600
HD119	118	120	2.00	4	0.07	300	1320	3550
HD119	122	124	2.00	3	0.02	270	820	3700
HD123	116	120	4.00	3.5	0.02	290	1560	7100
HD127	102	105	3.00	3	0.03	320	1180	8400
HD128	110	111	1.00	2	0.03	660	1200	3900
HD129	124	130	6.00	1.3	0.01	323	373	2060
HD129	132	134	2.00	2		360	1680	5000
HD131	100	104	4.00	2	-	375	325	1320
HD133	100	104	4.00	5.5	-	390	940	4275
HD134	106	110	4.00	5.5		650	325	2290
HD136	112	114	2.00	5	0.01	340	630	3100
HD147	124	126	2.00	7	-	530	720	3050
HD147	132	136	4.00	6.5	-	365	980	4675
HD155	120	122	2.00	15	-	910	1520	18200
HD155	124	126	2.00	18	-	660	3350	7800
HD155	128	134	6.00	9	-	493	2417	7400
HD156	128	130	2.00	4	-	260	410	4450
HD159	134	136	2.00	8	-	910	990	1300
HD159	142	146	4.00	5	-	650	555	5700
HD161	130	132	2.00	4	-	560	750	5200
HD163	142	151	9.00	2.5	-	343	625	5738
HD164	138	140	2.00	24	-	900	870	9500
HD176	112	118	6.00	1.7	-	360	1677	8400
HD177	122	124	2.00	3	-	430	250	3050
HD179	124	132	8.00	2	-	320	870	4250
HD204	108	113	5.00	4	0.03	550	1560	15800
HD211	102	104	2.00	7	0.03	370	2600	6400
HD216	106	114	8.00	7.3	0.02	348	1405	3638
HD216	120	122	2.00	7	0.04	820	880	36500
HD217	102	104	2.00	1	0.01	320	640	2350
HD219	116	118	2.00	1	0.01	260	550	1560
HD220	98	110	12.00	4.5	0.03	288	1460	5713
HD223	124	130	6.00	5.7	0.02	363	583	2433
HD227	108	109	1.00	3	0.02	270	610	3550
HD245	92	93	1.00	1		270	450	890

HOLE ID	Depth From (m)	Depth To (m)	Width (m)	Ag ppm	Au ppm	Cu ppm	Pb ppm	Zn ppm
HDD001	174	176	2.00	5	0.03	280	1800	10800
HDD001	194	198	4.00	4.5	0.01	360	1695	23550
HDD001	260	262	2.00	4	0.02	630	1820	10000
HDD001	294	296	2.00	2	0.01	320	360	2350
HDD001	298	298.7	0.70	2	0.01	280	300	11500
HDD001	305.1	306	0.90	5	0.03	310	6400	13500
HDD002	290	290.8	0.80	-	0.05	680	1740	8800
HDD002	304.6	306	1.40	-		380	250	25500
HDD002	354.6	355	0.40	-	0.08	490	4050	16900
HDD002	356	358	2.00	-	0.01	300	940	1880
HDD002	384	385.4	1.40	-	-	250	940	4550
HDD002	392	394	2.00	-		390	1350	8100
HDD002	395.33	396	0.67	-	0.01	290	3700	6000
HDD002	416	418	2.00	-	-	340	540	4200
HDD002	426	428	2.00	-	0.02	570	650	7800
HDD002	436	440	4.00	3	0.01	340	1970	6050
HDD002	442	446	4.00	8	0.02	675	1640	13250
HDD002	447.85	448.9	1.05	18	0.15	4100	1550	37000
HDD003	362	364	2.00	5	-	440	560	2500
HDD003	450	452	2.00	2	-	260	360	3650
HDD068	149.95	150.35	0.40	-	-			3350
HDD068	157.2	158.1	0.90	16	0.02	340	3335	16830
HDD068	193.8	194.25	0.45	290	0.12	380	11600	66000
HDD068	215.5	217.5	2.00	4	0.03	420	740	6500
HDD068	236	238	2.00	4	0.07	300	1460	10600
MD077	56	60	4.00	2	-	275	765	3825
MD103	10	12	2.00	1	-	340		960
MN001	96	98	2.00	3	-	350	380	2500
MN004	92	94	2.00	8	-	940	1900	1840
MN004	112	113	1.00	8	-	250	570	1300
RD016	36	39	3.00	5	-	330	2700	1100
RD145	6	9	3.00	1	-	570	580	2500
RDD001	218	218.4	0.40	9	0.02	1050	2600	11700
RDD001	254.97	255.2	0.23	13	0.01	1340	4300	13900
RD98YM050	66	113	47.00	-	0.05	580	-	-
SEG023	225.1	226.1	1.00	6.5	0.04	420	2100	4600
SEG023	268.1	269.1	1.00	5.5	0.04	300	1300	3300
SEG024	204.5	205.5	1.00	2.1	0.02	600	320	2500
YAM057	209.2	210	0.80	3.2	0.02	550	600	2500

APPENDIX 2 – JORC TABLE 1, SECTIONS 1 – 2

Criteria of JORC Code 2012	Reference to the Current Report Comments / Findings
Sampling techniques	The area has been historically explored for base metal deposits, for the last 20 years, using the rotary mud, aircore and diamond drilling techniques, soil and rock chip sampling and geophysical surveying (Magnetics, EM & IP). - 1987-1990 Placer (PLC) drilled rotary mud and diamond core holes. - 1998 Rio Tinto (RTE) explored for base metal deposits in the Bimba Formation using rotary mud, aircore and diamond core drilling techniques. - 2004-2008 Southern Cross Resources (SXR) drilled rotary mud and diamond core drill holes Data is taken from Annual and Quarterly Technical reports submitted to the South Australian Mines and accessed via the SARIG website. Historical geophysical surveying reported in this announcement includes Induced Polarisation (IP) completed in 1999, and airborne EM (AEM) undertaken in 2002 and 2010. The IP survey was conducted by Rio Tinto Exploration Pty Ltd (RTE) within current Exploration Licence EL 6081, and utilised a Scintrex TSQ-4 (10kva / 20 amp / 3300v max output) Transmitter and a Scintrex IPR-12 Receiver. Data were collected using a 4-second time base, as strong EM coupling effects were anticipated due to the thickness of the overlying cover sediments. Further details of the survey can be found in **Open File Report No. 24176 (ENV09476)**, "***EL 2433, South Eagle, South Australia, Annual Report for the Period Ending 16 September 1999***". The airborne EM survey flown by Southern Cross Resources in 2002 was completed by Fugro Airborne Systems Pty Ltd (Fugro) using the TEMPEST Transient EM (TEM) system, for a total of 2,077 line km. Survey line spacings were a nominal 1000m, and traverse directions (survey line azimuths) varied between 90 and 270 degrees. Details of the survey can be found in **Open File Report No ADL0777 (ENV09891), "*EL 2433 South Eagle, South Australia, FINAL ANNUAL REPORT, For the Period Ending 16 September 2002*"**. The Frome AEM survey was flown by on behalf of Geoscience Australia by Fugro between May and November 2010. The survey was completed using the TEMPEST Transient EM (TEM) system at a nominal flight line spacing of 2.5km, opening to 5km line spacings in the Marree – Strzelecki Desert area, situated approximately 365km to the north of the Honeymoon Uranium Project. A total of 32,317 line kilometres was surveyed over a total area of 95,450km^2. For further details, readers are referred to the open file report "***Applying regional airborne electromagnetic (AEM) surveying to understand the architecture of sandstone-hosted uranium mineral systems in the Callabonna Sub-basin, Lake Frome region, South Australia***" by Roach, et.al, 2014. Passive seismic surveying was undertaken by Boss personnel during the 2019 field season. A total of 246.9 line kilometres (or 5,384 stations) were surveyed within the Eastern Region tenements (ML6109, EL5621 and EL6081), which includes the stations surveyed as part of the initial orientation survey. Specifications for the survey program are: - Independent consultancy (for hire of instrumentation and final data processing work): Resource Potentials Pty Ltd - Instrumentation: Tromino TE3 – 0133 and Tromino TE3 - 0158 - Station Spacing: nominal 100m (average) for orientation survey and nominal 200m (average) for regional surveys - Survey Duration: 10 minutes - Sample Rate: 128Hz - Components: NS, EW, Z
Drilling techniques	PLC drillholes were completed by Thompson Drilling using the rotary mud method and diamond core drilling by HA & JE Wilson of Cobar. The typical hole diameter was 14.5cm. RTE drillholes comprised rotary mud and aircore drilling completed by Thompson Drilling, and diamond core drilling by Silver City for NQ-sized core. SXR drilling was completed by Thompson Drilling using the rotary mud and diamond core drilling methods.
Drill sample recovery	Core recoveries were noted during geological and geotechnical logging, and were generally above 90%.

Logging	Drill chip samples were collected every 2m and geologically logged. Diamond core was geologically and geotechnically logged, which included recording the core recovery rates. Documentation included colour, grain size, texture, grain sorting and alteration, as well as oxidation state of the sedimentary units. All mineralised intervals were geologically logged using logging standards compliant with industry standards at the respective times of data acquisition.
Sub-sampling techniques and sample preparation	Very limited information is available for historical drill sampling techniques, however documentation states that aircore drill samples from the 1998 and 1999 drilling campaigns (RTE) were taken from 3m composite samples collected from the cyclone on the drill rig, in bulk sample bags. A "spear" or hand trowel was then used to collect a 2kg sample which was inserted into a calico bag labelled with the appropriate sample number. Field duplicates and QAQC standards were inserted and the batch of samples dispatched to the lab for analytical work. Open file reports indicate that basement samples were collected as 2m composites from diamond core tails to the rotary mud drillholes as completed by SXR.
Quality of assay data and laboratory tests	PLC – samples were sent to Classic Laboratories Limited of 69 King William Street, Kent Town, South Australia. Samples were assayed for Cu, Pb, Zn and Ag by the AAS1 method. RTE – samples were sent to the AMDEL Laboratories, Adelaide for multi-element analysis by the following: A) Total acid digestion by mixed acids with ICP-OES finish B) Mixed acid digestion for higher concentration of base metals with ICP-OES finish C) Total acid digestion by mixed acids with ICP-MS finish D) Fire Assay fusion with Atomic Absorption Spectrum (AAS) carbon rod finish for determination of gold, and with ICP-MS finish for determination of gold and other precious metals E) Xray Fluorescence (XRF) determination on pressed powders and diluted samples for determination of barium and tungsten, Lower Detection Limits for the full assay suite of elements. SXR – samples were sent to AMDEL Laboratories, Adelaide, for multi-element analysis (Ag, Al, As, Au, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, P, Pb, Ti, U and Zn) by the ICP-OES / ICP-MS method. Additional fire assays were completed to analyse further for Au.
Verification of sampling and assaying	Not recorded.
Location of data points	The projection recorded for historical drilling and geophysical surveys was originally AMG84 and, later, MGA94 zone 54 with AHD elevations. All historical coordinates have since been reprojected to the current GDA94 datum. Passive seismic stations were surveyed in using handheld Garmin GPS units using the GDA94, zone 54 projection.
Data spacing and distribution	Historical drill spacings were variable but averaged 60m x 500m. There does not appear to be a nominal line spacing chosen for the 2001 IP survey, given that survey lines targeted specific areas and only 5 lines were completed. The 2002 AEM survey was flown using a nominal line spacing of 1000m. The 2010 Frome AEM survey was flown at a nominal line spacing of 2.5km over the Honeymoon Uranium Project tenements, but extended out to 5km in the Marree-Strzelecki Desert area, approximately 365km to the north of the Project. Passive seismic survey line spacings averaged 100m for the orientation survey conducted on Mining Licence ML6109. This line spacing was chosen in order to: a) Determine the effectiveness of close spaced survey lines over the known mineralised channel; b) Determine whether or not this spacing could be later increased without losing resolution on basement topography in other areas of the Yarramba Palaeovalley Line spacings for the regional survey varied between 400m and 800m apart, depending on the area and feature being targeted. These spacings variations were considered adequate for mapping the strike extensions of the respective narrower channel systems within the broader palaeovalley.
Orientation of data in relation to geological structure	Rotary mud holes were drilled vertically (dip of -90 degrees, azimuth of 000) which provides an accurate intersection of flat-lying mineralised bodies. Diamond core holes were drilled at dips varying between -60 and -87 degrees, with a southeasterly azimuth.

	3 of the IP survey lines were orientated north-south, and 2 orientated east-west, perpendicular to the targeted features of interest. The 2002 and 2010 Frome AEM survey lines were flown on a north-south orientation to enable maximum coverage of all target features, given the known meandering and variations in orientation of palaeochannel / palaeovalley systems. All passive seismic survey lines were orientated perpendicular to the strike of the Yarramba Palaeovalley, as interpreted from historical geophysical datasets, such as airborne electromagnetic (AEM) data. Strike orientations vary between north-south to east-west, depending on the survey area in question.
Sample security	Not recorded for historical drilling samples, or historical geophysical survey programs. All passive seismic field data was processed and interpreted in-house by the Boss Resources exploration department. Data was electronically transferred between the Honeymoon Uranium Mine (South Australia) and Boss Resources head office (Perth, W.A.) via a secure, password-controlled, Dropbox system. During the final processing phase of work by Resource Potentials Pty Ltd, secure data transfer was completed using a secure, password-controlled, cloud-based Dropbox system.
Audits or reviews	Not recorded for historical drilling or historical geophysical survey programs. All of the passive seismic data collected during the surveys has been reviewed by the Boss Resources Competent Person. Subsequent audits of the data were completed in December 2019 by independent geophysical consultant Resource Potentials Pty Ltd, based in Perth. All survey data were found to be of excellent quality, however suggested improvements involve using longer sample recording times to reduce the effect of constant wind vibrations on the Tromino units.

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, Retention Leases and 2 Miscellaneous Purpose Licenses. Mining Licence ML6109 expires in 2023, and Exploration Licenses EL5621, EL5622, and EL5623 are currently being renewed. Exploration Licences EL 6020 and EL 6081 have been renewed and now expire in 2022. All tenements are in good standing and are wholly owned by Boss Resources Ltd. A Native Title Agreement is currently in place with the Adnyamathanha, Ngadjuri and Wilyakali Traditional Owners. The Eastern Area of the Agreement provides 100% coverage over all tenements in the project area.
Exploration done by other parties	The Honeymoon deposit and surrounding areas of the Yarramba Palaeovalley have been intensely explored and systematically drilled by different companies since 1969. The Honeymoon Project has been evaluated several times to varying degrees of intensity, from scoping studies to the current Definitive Feasibility Study that was initiated in 2018. Mineral Resource and Exploration Target estimates have been conducted at various times between 1998 to 2019 (Last Exploration Target estimate was announced to the ASX on 25 March 2019).
Geology	Base metal mineralisation (Zn, Pb, Ag, Cu) is hosted by the metasedimentary units of the Bimba Formation, comprising graphitic pelites, psammites, psammopelites, and calc-silicates. Mineralisation consists of conformable bands of pyrrhotite and / or pyrite, with minor amounts of sphalerite/galena. Uranium mineralisation at Honeymoon is classified as palaeovalley-type, sandstone-hosted uranium in the form of tabular lenses, associated with the vertical and lateral movement of oxidised, uraniferous groundwaters within structurally-controlled, relatively narrow palaeochannel limbs. Mineralisation is hosted in the unconsolidated sediments of the Tertiary-aged Eyre Formation on what appear to be the shoulders, or shallow embankments, of narrower channel features within the palaeovalley. Channel fill consists of multiple upward-fining sequences of sand, silt and clay. Regional geophysics shows the coincidence between areas of known high-grade mineralisation and basement depressions that are strongly suggestive of palaeochannel limbs. The 2019 Exploration Target areas were defined based on similar associations between prospective mineral accumulations (drilling) and basement depression features, as interpreted from both airborne EM and magnetic data. In areas containing some drilling, data suggests that the mineralisation is also hosted within the same Eyre Formation sediments however, it is impossible to conclude that this is also the case for target areas that have not been previously drill tested.

Drill hole Information	The topography in the Eastern Region of the Honeymoon Uranium Project is predominantly flat. Rotary mud holes were drilled vertically with an average hole depth of approximately 120m. Diamond core holes were drilled at inclinations between -60 and -87 degrees, with an average hole depth of approximately 390m. Historical IP survey lines were situated between eastings of 463100E and 471300E, and between northings of 6479400N and 6485002N. Average line length was 1.6km. Historical AEM survey lines covered the entire tenement package of the Honeymoon Uranium Project between eastings of 336511E and 500053E, and northings of 6457713N and 6546549N. Passive seismic survey lines were distributed throughout the Eastern Region tenements (EL5621 and EL6081) and covered each of the 7 Exploration Targets shown in Figure 1 of this report.
Data aggregation methods	Mineralised intervals from the historical drilling were chosen based on a nominal 0.5% Zn cut-off grade and minimum interval thickness of 1m. No information is available regarding the processing of the historical IP data collected in 1999. The historical AEM survey data were processed using various deconvolution and inversion procedures, alongside high-altitude calibration models to characterise the system response in the absence of any ground signatures. The 2010 Frome AEM data were processed according to line-by-line and sample-by-sample inversions using an assumed conductivity reference model to counteract the effects of the strong conductivity of hypersaline areas such as aquifers in the Frome Embayment. Final processing for the passive seismic data has now been completed by Resource Potentials. Processing involved additional and improved cleaning of the raw data by Resource Potentials, following the initial data cleaning completed in-house by Boss personnel. Velocity analysis was then undertaken by Resource Potentials using a combination of average shear wave velocity and density values for each overall layer (i.e. "cover" and "basement"). These values were utilised in the modelling to generate a synthetic shear wave velocity profile with depth, which was manually adjusted to achieve a best fit between the observed passive seismic data response (HVSR) and the synthetic shear wave model profile. The resulting velocity model then provides an average shear wave velocity that is used to estimate the basement depth, using the rearrangement of the following equation: **Vs = f * 4H** where: - **Vs** = shear wave velocity (either known and measured, or modelled using the above described method) - **f** = peak frequency acquired by the Tromino unit during the passive seismic survey - **H** = thickness of layer1, or depth to basement
Relationship between mineralisation widths and intercept lengths	Drill traverses for base metal aircore drilling were orientated perpendicular to the main strike of the targets. Rotary mud holes were drilled vertically and diamond core holes were drilled to be steeply dipping perpendicular to the strike of the target, to maximise intersection of any potential mineralisation. The IP, AEM and passive seismic survey methods all map various features within the targeted stratigraphy, such as: - massive sulphide accumulations (IP), - conductive features, structures and palaeochannel / palaeovalley systems (AEM) - topographic surface of basement bedrock, highlighting depressions likely to be palaeochannel limbs (passive seismic) **<u>These survey techniques, therefore, are indicative only and do not provide any direct correlation to potential mineralisation.</u>**
Diagrams	The appropriate and relevant diagrams have been included in the announcement.
Balanced reporting	Balanced reporting has been adhered to. Refer to the previous exploration announcements.
Other substantive exploration data	Existing exploration data over the Honeymoon Uranium Project is mostly historical and consists of airborne geophysical surveys and some drilling. Minor gravity surveys were completed in 2018 over parts of the Honeymoon Re-Start Area (Mineral Resource) and the Jason's Deposit (Mineral Resource), as orientation trial lines.

	Design work for both the gravity and recent passive seismic surveys involved acquisition of information from open file reports and governmental geophysical datasets (through the South Australian SARIG online portal (https://map.sarig.sa.gov.au/)
Further work	A working 3D structural model is underway utilising combined AEM, passive seismic and IP data alongside proven drilling information. The 2020 field program is currently planned to include geological mapping and rock chip sampling, for the purpose of surficial base metal exploration. The Company also intends to continue to use the passive seismic survey system over the designated Exploration Target areas in the Western Region tenements, since this could not be completed within the time remaining of the 2019 field season. Drill targets will be generated based on the culmination of the work described in this report with a view to initiating drill programs at some time in 2020, pending Heritage clearances and commodity prices.