ASX ANNOUNCEMENT **14 June 2016**
ASX: BOE

MAIDEN RESOURCE OF 5.2MLB FOR JASON'S DEPOSIT AT HONEYMOON URANIUM PROJECT

HIGHLIGHTS

- **Jason's Deposit maiden Inferred Mineral Resource of 2.8Mt at 840ppm eU3O8 for 5.2Mlb U3O8 above a 250ppm eU3O8 lower cutoff**
- **Mineralisation intersected over large strike of approximately 14.5km long by 1.5km wide**
- **Potential for future increases through extensional and infill drilling planned for Q3 2016**
- **Hosted in prospective Yarramba Palaeochannel which also hosts the 27.6Mlb U3O8 Honeymoon Deposit Mineral Resource**
- **Third substantial resource upgrade for the Honeymoon Project since acquisition in December 2015**
- **Global Combined Honeymoon Project Mineral Resource now stands at 57.8Mlb U3O8 (40.1Mt at 654ppm eU3O8), 3.5 times larger than the original resource at acquisition**

Boss Resources Limited (ASX: BOE) ("**Boss**" or the "**Company**") is pleased to announce a maiden JORC 2012 Inferred Mineral Resource of 2.8Mt at 840ppm eU3O8 for 5.2Mlb U3O8 (above a 250ppm eU3O8) for the Jason's Deposit at the Company's Honeymoon Uranium Project, South Australia. The Jason's Deposit is located at the northern end of the Yarramba palaeochannel which also hosts the 27.6Mlb Honeymoon Deposit (Figure 1).

The Resource is based upon an extensive review of the historical drilling database of 165 drillholes that Boss acquired with the Honeymoon Project in December 2015 from Uranium One Australia Pty Ltd. The addition of this Mineral Resource has increased the Global Mineral Resource for the Honeymoon Project to 40.1Mt at 654ppm eU3O8 for 57.8Mlb U3O8 (Table 1).

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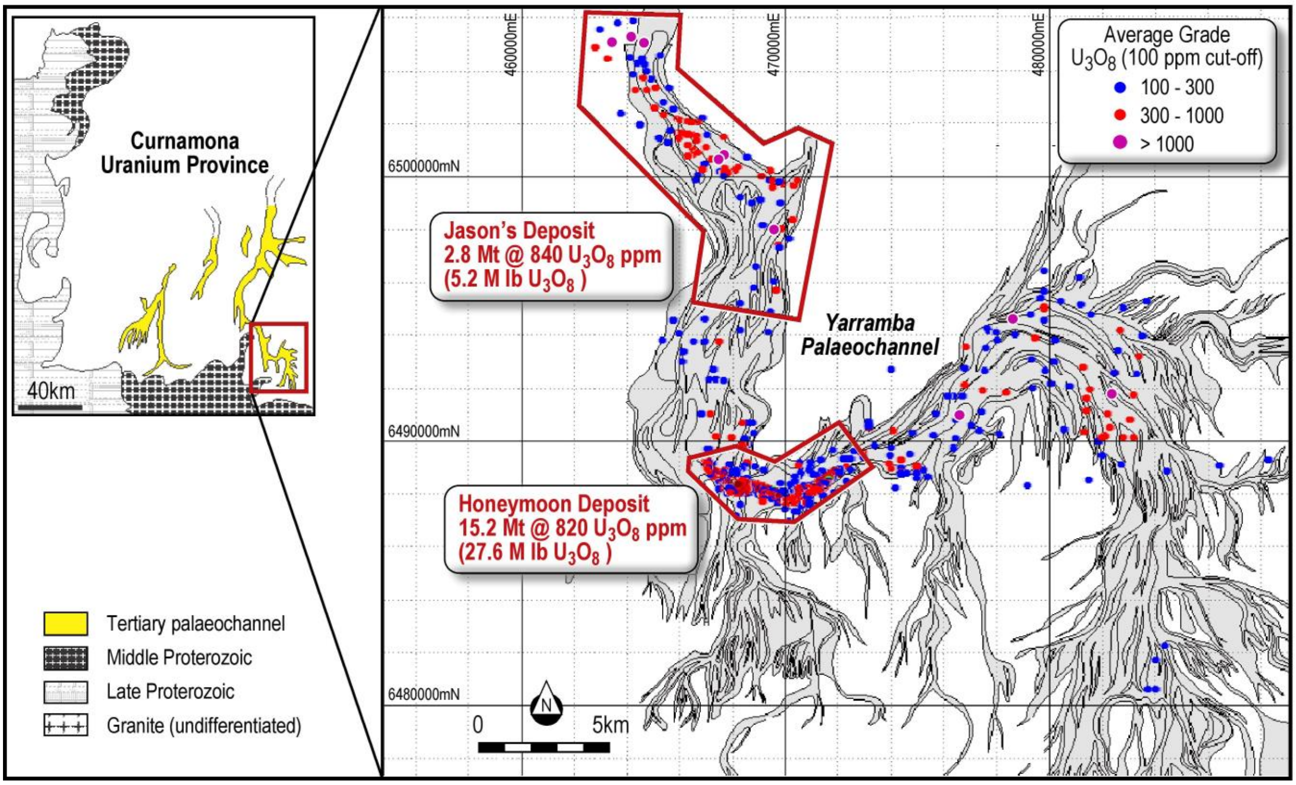

Figure 1: Location of the Jason's Deposit within the Yarramba palaeochannel. Coloured dots are the average grades of the drillhole intercepts estimated using 100 ppm U3O8 as a lower cut-off.

Additional Exploration Potential

Analysis of the drilling at the Jason's Deposit and revised geological interpretation indicates that the current resource estimate is conservative due to sparsity of data and lack of infill drilling. An Exploration Target has been estimated for the Jason's Deposit of 3Mt to 6Mt for 5 to 10Mlb of U3O8 with a grade range of 700ppm to 800ppm. This Exploration Target is conceptual in nature as there has been insufficient exploration to estimate a mineral resource and consequently it is uncertain if further exploration will result in the estimation of a mineral resource.

Boss will undertake a drilling program in quarter 3, 2016 focusing on extensional and infill drilling with the aim of upgrading the resource at the Jason's Deposit.

Boss Director of Geology, Dr Marat Abzalov, commented: "The maiden resource for the Jason's Deposit of 5.2Mlb has been estimated using 165 historic drillholes. We are confident that further infill drilling to be completed in quarter 3 will allow a further delineation of the uranium rollfronts and consequent increase in the resource for the Jason's Deposit."

Table 1. Honeymoon Project Global Mineral Resource Update at June 2016

Lower cut-off of 250 ppm U3O8

Classification	Million Tonnes	eU3O8 (ppm)	Contained U3O8 (Mkg)	Contained U3O8 (Mlb)
Jason's Deposit (June 2016)				
Inferred	2.8	840	2.4	5.2
TOTAL	**2.8**	**840**	**2.4**	**5.2**
Gould's Dam (April 2016)				
Indicated	4.4	650	2.9	6.3
Inferred	17.7	480	8.5	18.7
TOTAL	**22.1**	**510**	**11.3**	**25.0**
Honeymoon (January 2016)*				
Measured	1.7	1720	3.0	6.5
Indicated	1.5	1270	1.9	4.2
Inferred	12.0	640	7.6	16.8
TOTAL	**15.2**	**820**	**12.5**	**27.6**
Global Honeymoon Uranium Project (Western and Eastern Tenement Region)				
Measured	1.7	1720	2.95	6.5
Indicated	5.9	810	4.80	10.6
Inferred	32.5	569	18.5	40.7
TOTAL	**40.1**	**654**	**26.24**	**57.8**

* Quoted resources have been adjusted to exclude previous production of approximately 335t of U3O8

Geology and Exploration Model

The Jason's Deposit is located in the Curnamona Uranium Province, South Australia and is hosted by the Yarramba palaeochannel, also host to the 27.6Mlb Honeymoon Deposit and several smaller prospects (Figure 1). The Jason's Deposit has palaeochannel-hosted sandstone-type uranium mineralisation occurring as a series of ribbon shaped rolls elongated along the strike of the palaeochannel encompassing an area approximately 14 km long and 1.5 km wide. The palaeochannel is composed of fluvial sediments, mainly sandstones intercalated with clay beds, of the Tertiary-aged Eyre Formation.

This type of mineralisation is formed by movement of oxidised, uranium-bearing fluid through a largely reduced aquifer, with mineralisation occurring at the redox front of the fluid. A geochemical zonation is associated with the roll front, including oxidation of the sands upstream (orange and yellow limonite) and an abundance of pyrite/marcasites and organic matter downstream. Mineralisation is associated with discrete accumulations of organic matter and pyrite within the palaeovalley sequence.

Distribution of the uranium accumulations within the palaeochannels is controlled by fluid pathways that have transported the dissolved uranium and distributed the organic matter which served as reductants causing precipitation of uranium. Interplay of these two main factors has created a stacked

geometry of the "uranium rolls" commonly distributed as elongated pods along the strike of the palaeovalley.

The resource at Jason's Deposit is estimated using gamma eU3O8 grades of the drillholes composited to 0.5m intervals. Distances between drillholes are approximately 400 x 80m therefore the resource was estimated largely by extrapolating the drillhole intersections to a distance of 100 x 40m. This approach is conservative as it constrains resources to available drillholes despite the interpretation that the rolls are continuous along the strike of the palaeochannel as a series of ribbon-shape mineralised bodies.

Data and Resource Estimation Methodology

The palaeochannel is mapped using an EM survey and a down-hole electrical survey allowing a detailed litho-stratigraphic interpretation of the sedimentary sequence infilling the palaeochannel.

The Resource estimate for the Jason's Deposit is based on 165 rotary-mud drillholes (for a total of 19,194.8m) which were surveyed utilising a gamma-probe for the eU3O8 grade.

Capturing of the digital data was made following the standard industry procedures for geophysical logging of the drillholes and recalculation of the geophysical logs to eU3O8 from the gamma-ray logs.

Data quality assurance has included a regular calibration of all the instruments which were made using calibration pits at the Honeymoon plant site and externally, at the certified calibration facilities at Glenside, Conyngham str., Adelaide. All tools were maintained by specialised electronic companies in Adelaide, including Geoscience Australia Pty Ltd. and CIRA Pty Ltd.

The Resource for the Jason's Deposit was estimated as a 3D block model. Prior to estimation, the shape of the palaeochannel was unfolded in order to facilitate the application of the geostatistical methods. Drillhole data and the block model was unfolded and all geostatistical studies were undertaken in unfolded 3D space. After completion of the estimates, the estimated blocks were returned (back-transformed) into the actual location.

Drill spacing is approximately 400 x 80m. As this is too broad for accurate delineation of the rolls, mineralised bodies were constrained by horizontally extrapolating the mineralised drillhole intersections to the distances of 180m x 60m x 0.5m.

The U3O8 grade was estimated into blocks of 10m x 10m x 0.5m using the Localised Uniform Conditioning (LUC) technique. LUC methodology requires initial estimation of the grades of the large panels which is then geostatistically transformed into the smaller blocks. In this study the grades of the 10 x 10 x 0.5m blocks were derived from the panels of 100 x 40 x 0.5m. The panels were estimated by selecting the composites at the 100 ppm U3O8 cut-off which were interpolated and extrapolated into the panels confined to the volumes constrained by an ellipsoid of 180 x 60 x 0.5m. Estimation of the panels was made at two steps:

- First pass estimation is made using ordinary kriging applied to the data contained in the ellipsoid of 100 x 40 x 2m containing at least 4 composites; and
- Second pass estimation is made using ordinary kriging applied to the data contained in the ellipsoid of 1000 x 250 x 2m containing 4 – 8 composites.

In order to prevent smearing of the high-grade samples, the U3O8 values of the 0.5m long composites were cut to 3500 ppm U3O8.

Experimentally obtained dry bulk density of the rocks is not available for the Jason's Deposit and therefore the Resource was estimated using the assumed density of 1.9 t/m^3. This value was obtained at the Honeymoon Deposit using downhole geophysical techniques. Given the similarities of the geological settings of the Jason's Deposit to the Honeymoon Deposit, which is located 6km distant within the same palaeochannel (Figure 1), extrapolation of the rock densities obtained at the Honeymoon Deposit to the Jason's Deposit seems warranted.

The estimated Resource is reported at a cut-off of 250 ppm U3O8 and includes only blocks located within a distance of 100m (along strike of palaeochannel) x 40m (across strike of palaeochannel) from the nearest drillhole intersecting uranium mineralisation. The extrapolation distance of 100 x 40m allows the classification of the estimated mineral endowment as an Inferred Resource as this is compliant with the resource definition grids used for classification of resources at the nearby Honeymoon Deposit:

Measured	**Indicated**	**Inferred**
40-20m x 20m	80-40m x 40-20m	120m x 40m

The choice of cut-off of 250 ppm is based on a comparative analysis of the cut-off grades at the ISL-uranium projects in Australia and world-wide. In general, it is comparable with industry practices. It is conservative in comparison with the uranium-ISL operations in Kazakhstan where the cut-off is generally 100 ppm U3O8.

Full details of the JORC Code 2012 reporting criteria and input parameters used to estimate the Resource are provided in Appendix 1.

About the Honeymoon Uranium Project

The Honeymoon Uranium Project (Figure 2) is located in South Australia, approximately 80km north-west from the town of Broken Hill near the SA / NSW border. The Project consists of 1 granted Mining Lease, 5 granted Exploration Licenses, 8 Retention Leases and 2 Miscellaneous Purposes Licenses.

There are 2 main exploration regions: the Eastern Region (ELs 5215 and 5621) which hosts the Honeymoon, Brooks Dam, East Kalkaroo and Jason's Resources; and the Western Region (ELs 5043, 5623 and 5622) which hosts the Gould's Dam and Billeroo deposits.

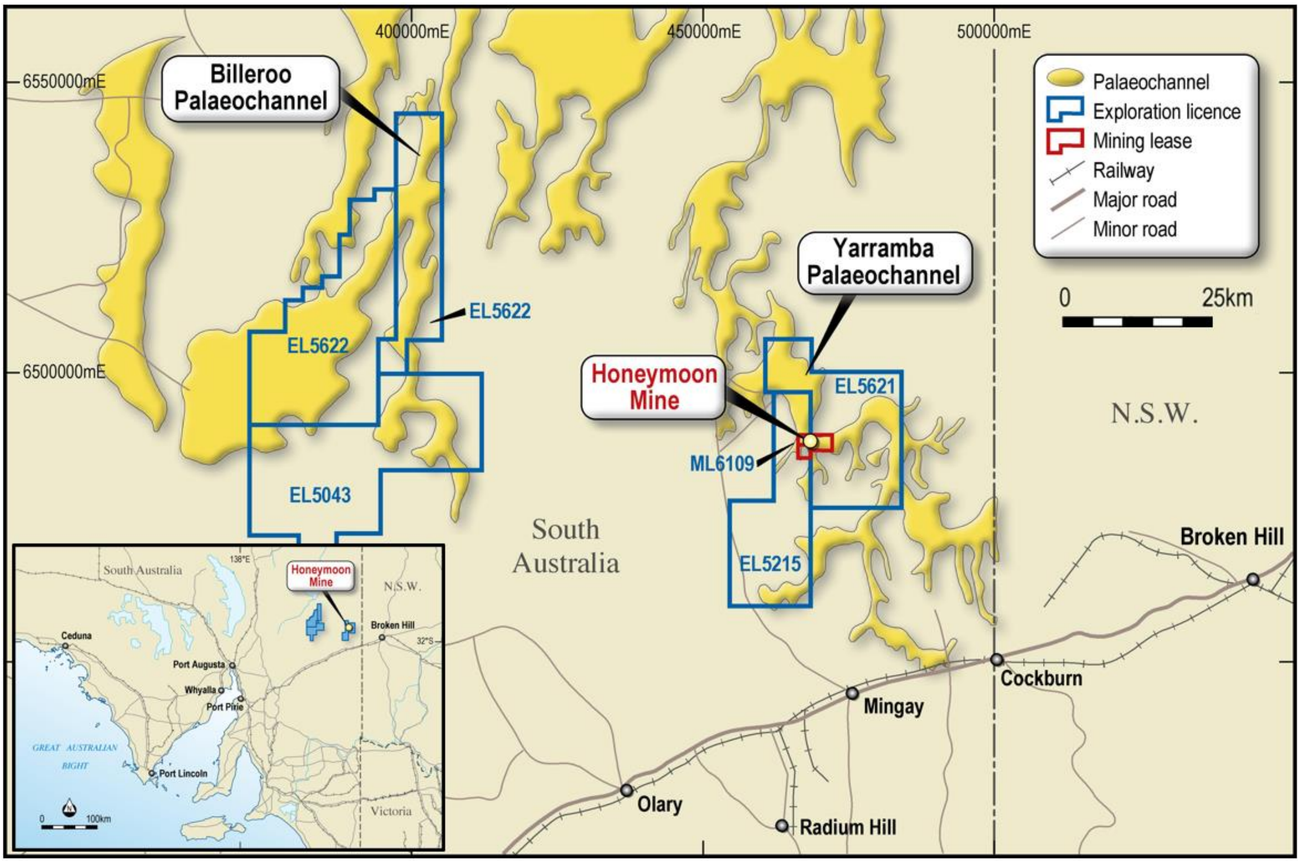

Figure 2: Honeymoon Uranium Project. The yellow shaded regions represent palaeodrainage channels which have potential to host uranium mineralisation and are the focus of exploration efforts.

Exploration Team

Dr Marat Abzalov

Dr Abzalov graduated with High Distinction from the Kazan University in Russia in 1983 and obtained his PhD (Geology) in 1987 from St. Petersburg University, Russia, completing a thesis on magmatic nickel sulphide near the western Russian border with Finland. He has undertaken post-graduate studies in Applied Mathematics at Murdoch University, Perth, and Geostatistics at the Centre of Geostatistique, Fontainebleau, France.

With over 30 years of post-graduate experience in geology, Dr Abzalov's work experience includes the Russian Academy of Sciences, WMC Resources where his last role was Geology Manager – Projects, and Rio Tinto, where he held the roles of Manager – Geostatistical Consultant and Exploration Manager – New Opportunities (Eurasia) AND where he predominantly reviewed ISL uranium projects in Kazakhstan and the USA.

During his professional career, Dr Abzalov has worked on 12 uranium projects worldwide, notably:

- Rossing (Namibia) - resource model for a long term mine plan
- Olympic Dam (Australia) - pre-feasibility study
- Ranger (Australia) - optimisation resource definition drilling programme
- Khan (Jordan) – technical director responsible for all aspects from conceptual exploration model to resource definition drilling

- Budenovskoe (Kazakhstan) - identified acquisition opportunity for Rio Tinto
- Sweetwater (USA) - development of a new geochemical exploration approach

Mr Neil Inwood

Neil Inwood is a professional geologist with 20 years' multi-commodity project and consulting experience in Australia, Africa, USA, Europe, South America and Central Asia. Neil has a BSc in Geology from Curtin University, an MSc in Geology from the University of Western Australia and has studied geostatistics at Edith Cowen University.

Neil is also the Geology Manager for Cradle Resources and was a Principal Consultant with the international mining consultancy group, Coffey Mining, and was the Competent Person (ASX) / Qualified Person (TSX) for a variety of international uranium, gold, nickel, base metal and iron ore projects. Neil has consulted on uranium projects in Australia, Czech Republic, Columbia, Hungary, Namibia and the USA and was the lead resource consultant on the world-class Husab uranium deposit in Namibia. Other uranium projects include:

- Extract Resources - the Husab Uranium project in Namibia
- Bannerman Resources - Etango Uranium Project in Namibia
- Deep Yellow - Namibia and Australian Projects
- Energia - Nyang ISL Project in Western Australia
- Wildhorse Energy Ltd - Pecs Uranium project in Hungary
- U3O8 Corp - Argentine and Brazilian U Projects (Berlin Project)
- Atom Energy - Utah Projects

For further information, contact:

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Competent Person's Statement

The information in this report that relates to the Mineral Resources is based on information compiled by Dr M. Abzalov, who is a Competent Person according to the JORC 2012 Code. Dr M. Abzalov is a Fellow of the Australasian Institute of Mining and Metallurgy. He has sufficient experience in estimation of resources of uranium mineralisation, and has 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 employed as a director of Boss Resources Ltd. Dr M. Abzalov consent to the inclusion in the report of the matters based on their information in the form and context in which it appears. The information relating to previous mineral resources was initially reported to the ASX on 20 January 2016 and 8 April 2016 and has not materially changed.

Appendix 1.

Resource Statement and JORC Code Reporting Criteria Follows

Reporting criteria presented in the Section 1 of the JORC Table 1 (Sampling techniques and data)

<table>
<tr><th rowspan="2">Criteria of JORC Code 2012</th><th>Reference to the Current Report</th></tr>
<tr><th>Comments / Findings</th></tr>
<tr><td rowspan="3">(1.1.) Sampling techniques</td><td>Resources are estimated using eU3O8 data obtained using down-hole gamma logs.</td></tr>
<tr><td>All tools were maintained by specialised electronic companies in Adelaide, including Geoscience Australia Pty Ltd. and CIRA Pty Ltd.

Calibration was regularly undertaken using in-house equipment (calibration pits) available at the Honeymoon operation (plant) site and externally, at the certified calibration facilities at Glenside, Conyngham str., Adelaide.</td></tr>
<tr><td>Standard industry procedures were used for geophysical logging of the drill holes and recalculation the geophysical logs to eU_3O_8 (from the gamma-ray logs).</td></tr>
<tr><td>Drilling techniques (1.2.)</td><td>Resources of the studied deposit were developed mainly by using rotary mud drilling (100 mm to 228 mm in diameter) which were geophysically logged for determining the uranium grade. Most of the drilling was made in 1970s which was continued in 2002, 2004 and 2012 (Figure A1-1).

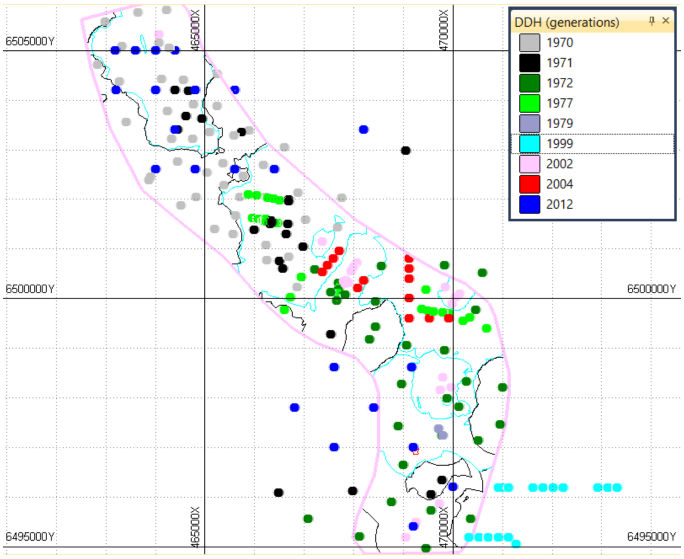
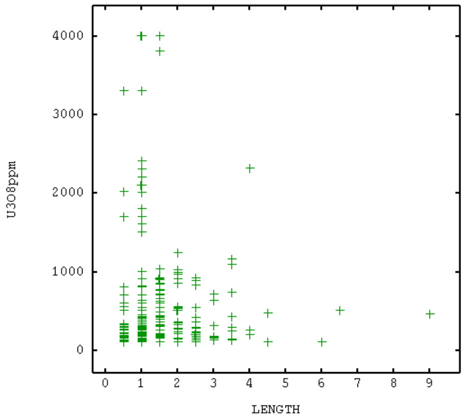
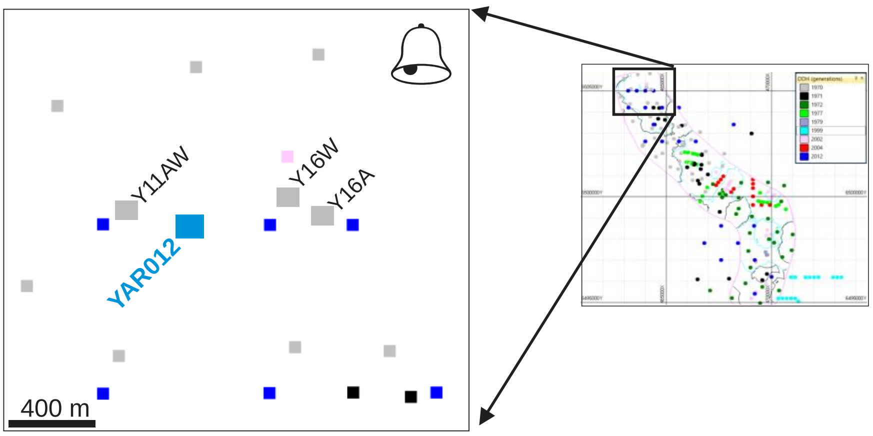


Fig. A1-1: distribution of the drillholes at the Jason’s Deposit by the drilling campaign</td></tr>
<tr><td rowspan="2">Drill sample recovery (1.3.)</td><td>This criterion is not directly applicable because the resources were estimated using the grade values deduced from the down-hole geophysical logs.

Drill cuttings of the rotary-mud drilling were collected to assists the lithological interpretation. They were collected at 2 m intervals, geologically logged and preserved as a physical record of the hole.</td></tr>
<tr><td>Accurately calibrated geophysical instruments are the industry standards. This approach was used for definition resources of the Jason’s Deposit.</td></tr>
<tr><td rowspan="2">Logging (1.4.)</td><td>Chip samples, collected at 2 m intervals, have been photographed and geologically logged. Documentation has included colour, grain size, texture, sorting, alteration and oxidation state.</td></tr>
<tr><td>Downhole electric logs (resistivity and conductivity) were systematically used through the palaeochannel.</td></tr>
</table>

	All mineralised intervals were geologically logged and the logging standards were compliant with the industry standards.
Sub-sampling techniques and sample preparation (1.5.)	Not applicable, because grade was deduced from down-hole geophysical logs.
	QAQC of the geophysical data has included systematic control of the depth logged and control of the recorded U_3O_8 grade values. At the Honeymoon deposit located in the same palaeochannel which was drilled at the same time when Jason's Deposit was drilled, the historic data were validated by the PFN logs.
	Geophysical tools estimate uranium content at the large volumes, approximately 25 to 40 cm radius. The volume is sufficiently large allowing accurate measurements of the grade to be obtained.
Quality of assay data and laboratory tests (1.6.)	Not applicable, because grade was deduced from down-hole geophysical logs.
	Geophysical tools used to collect data were as follows: • Auslog Gamma (with Guard) S422 • Induction (run with guard) S423 • Prompt Fission Neutron tool PFN#4 • Prompt Fission Neutron tool PFN#8 • Prompt Fission Neutron tool PFN#27 • Prompt Fission Neutron tool PFN#32 • Gamma combined with guard S058 • Auslog 3 arm calliper A326 Holes were logged in the direction down and up, which provided a good control of a logging consistency.
	All geophysical tools were regularly calibrated, using in-house facilities and the certified laboratories in Adelaide. QAQC of the geophysical data has included systematic control of the depth logged and control of the recorded U_3O_8 grade values. • Gamma tool calibrations were carried out both at a dedicated calibration pit installed at the Honeymoon Uranium Mine, and the Adelaide Model calibration facility in Glenside, South Australia. The calibration pit data was used to k-factor and dead time for equivalent uranium grade determination, with borehole size and fluid correction factors also applied where required. • The PFN tools were run at both the Honeymoon and Adelaide calibration pit facilities to determine the slope and offset calibration factors. A three pit method was used for the Adelaide models, with a four pit method utilized at the Honeymoon facility. During logging, correction factors for borehole size and formation moisture content are applied when required. • All historical gamma data was digitized and validated by Southern Cross Resources in 2002, along with all the relevant metadata (gamma tool serial number, operator and calibration factors) and compiled into a database. Holes were logged in both the down and up direction for depth check comparisons, with the up-run data used for final grade calculations. • Logging data is transferred from logging truck computers to the geological office as industry standard .LAS files. • Geological logs were both made on paper logs and later transferred to Excel spreadsheets, and directly into dedicated Excel geological logging templates.

	• Borehole logging was carried out by Southern Cross Resources/Uranium One Australia staff using purpose-built logging trucks between 2004-2010, while Borehole Wireline Pty Ltd was commissioned to carry out the borehole logging for the 2011-2012 drilling programs. • Company site geologists subsequently verify significant intersections from wireline logging during depth checking in WellCad software. • Copies of the primary LAS files, geological logs, chip tray photos and final interpretive WellCad logs are stored on the main server at the Honeymoon Mine site. The winches in the logging truck have their depth calibration checked periodically. This is made by running out approximately 100m of cable and measuring the rewinding cable against a tape measure. In addition, markers are placed on the cables which are checked on the computer at 50 and 100 metres. Since each individual tool run measures gamma, post logging depth matching is undertaken within WellCad® so each tool is adjusted as necessary to the reference. Precision of 10 cm applied to collar RLs and lithological boundary picks. A QAQC of PFN grades was undertaken by comparing PFN results with XRF assays of quarter core (Lawie, 2006). His report states that: "the volume of rock 'measured' by the PFN is 630 times that of ¼ core, which must improve the representivity of the sample, and hence lower the field sampling error."
Verification of sampling and assaying (1.7.)	• The site geologists supervising the drilling have routinely verified significant intersections from wireline logging during depth checking in WellCad software. • The high grade (>= 4000 pm eU_3O_8) intersections present at the Jason's Deposit. These results were obtained during the earliest drilling (in 1970) and validity of these data is questionable. The high grade intersections include (Figure A1-2): Y11AW (drilled in 1970) (92.6 – 94.1 m) 1.5m @ 4000 ppm U_3O_8 (104.6 – 106.1 m) 1.5m @ 4000 ppm U_3O_8 Y16A (drilled in 1970) (107.4 – 108.9 m) 1.5m @ 4000 ppm U_3O_8 Y16W (drilled in 1970) (79.4 – 80.9 m) 1.5m @ 4000 ppm U_3O_8 (85.4 – 86.4 m) 1.0m @ 4000 ppm U_3O_8 (92.3 – 93.3 m) 1.0m @ 4000 ppm U_3O_8 (103.8 – 104.8 m) 1.0m @ 4000 ppm U_3O_8 All high grade intersections are located in the northern part of the Deposit (Figure A1-3). Recent drilling in 2012 has confirmed presence of uranium rolls in this part of the palaeochannel which was intersected by the drillhole YAR012 drilled approximately 300m from the drillhole Y11AW (Figure A1-3). Although the grade of mineralisation intersected by the drillhole YAR012 was significantly lower than that of the holes drilled in 1970. high grade so far has not been confirmed. YAR012 (drilled in 2012) (83.0 – 84.0 m) 1.0m @ 404 ppm U_3O_8 (88.5 – 89.5 m) 1.0m @ 284 ppm U_3O_8 (92.0 – 94.0 m) 2.0m @ 525 ppm U_3O_8 (94.5 – 95.0 m) 1.0m @ 327 ppm U_3O_8 (97.0 – 98.0 m) 1.0m @ 374 ppm U_3O_8

	 Fig. A1-2: Scatter-diagram showing grade and thickness of the mineralised intersections  Fig. A1-2: Plan showing distribution of the drillholes intersecting high-grade uranium rolls
	Twin holes are not available at the Jason's Deposit. Their drilling will be made during the next drilling campaign with the main objective of verification of the high-grade intersections.
	In the more recent drilling the logging procedure was as follows: • The logging data were transferred from logging truck computers to servers in geological office as LAS files (an industry standard log file format) • Geological logs are entered on paper then transcribed on to excel spreadsheet. Logging was carried out by either in house U1A loggers or external logging contractors (Borehole Wireline Pty. Ltd. and Independent Logging services). Significant intersections were then checked and verified by U1A site geologists. • Primary data is recorded directly to computer hard disk in the logging truck and transferred to a server at the end of the days logging. Each log is reviewed by the logger and a copy of the raw data file and the prepared log were then handed over to the site geologist. The site geologist will make any depth corrections required and then use the log to interpret geology. • Copies of raw LAS files, geological logs of chip cuttings and final WellCad Logs are kept on the server • The site geologist make the depth corrections required and then use the log to interpret geology
Location of data points (1.8.)	Collars of the drill holes, drilled in 2002 and more recently, the collars positions were set out using a Garmin handheld GPS. After drilling, hole locations are picked up with a differential GPS system that is coupled to the Omnistar augmentation system to improve accuracy. Location of the earlier drilled holes is taken from the database.

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	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 (1.9.)	Drill holes on the Jason's Deposit are spaced approximately 400 x 100 m (Figure A1-1).
	Physical compositing of the samples was not used. Uranium grade deduced from the down-hole gamma-logs were composited to 0.5 m composites.
Orientation of data in relation to geological structure (1.10.)	All holes are drilled vertically which provides an accurate intersection of the flat lying mineralised bodies
	Vertical drill holes were used due to the predominantly flat-lying ore bodies present throughout the Jason's Deposit, with drill hole intercepts considered to be an accurate reflection of true vertical width.
Sample security (1.11.)	Down-hole logging data and deduced uranium grades are saved in the company database which securely stored on the company's server. All data transfer between logging truck and the database was made by authorized company personnel.
Audits or reviews (1.12.)	PFN and Gamma-log data of the Honeymoon Project (which includes Jason's Deposit) have been audited several times by independent consultants. The most recent reports are as follows: • Lawie, D, 2006 (ioGlobal) • Bampton, 2006 (ORES) • Skidmore, 2006 (Uranium One) • Jankowski, 2006 (SRK) • Valliant and Bergen, 2012 (RPA) All consultants have confirmed that data are of a good quality and suitable for estimation mineral resources

Reporting criteria presented in the Section 2 of the JORC Table 1 (Reporting of Exploration Results)

<table>
<tr><th rowspan="2">Criteria of JORC Code 2012</th><th>Reference to the Current Report</th></tr>
<tr><th>Comments / Findings</th></tr>
<tr><td>Mineral tenement and land tenure status (2.1)</td><td>
The entire project of the BOSS Resources consists of 1 granted Mining Lease, 5 granted Exploration Licenses, 8 Retention Leases and 2 Miscellaneous Purposes Licenses (Fig. A2-1).

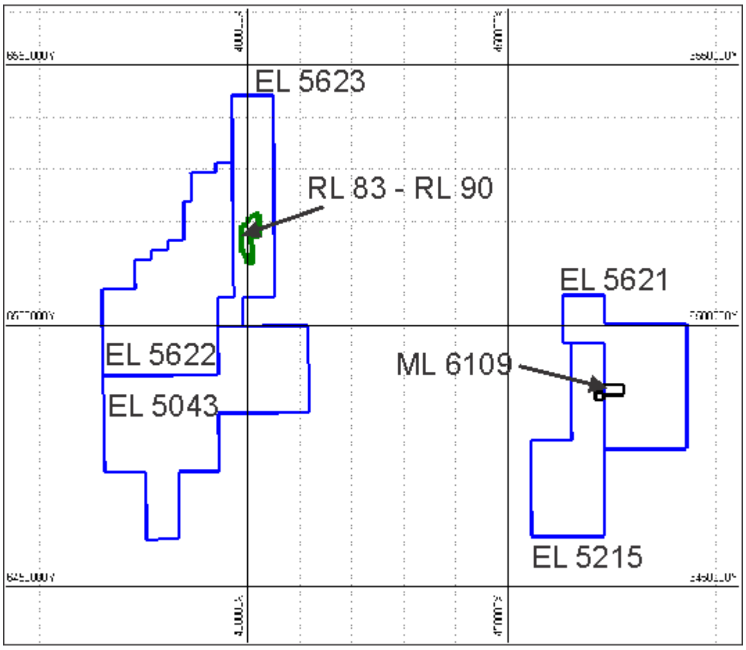


Fig. A2-1: Location of the leases hold by Boss Resources in the Callabonna uranium sub-basin

Resources of the Jason's Deposit that are estimated in the current study and reported here are covered by the Exploration Licenses EL5621 which expires in May, 2017 (Fig. A2-1).
</td></tr>
<tr><td>Exploration done by other parties (2.2)</td><td>
The northern part of the Yarramba palaeochannel which includes Jason's Deposit have been explored through the 1970s when most of the exploration drilling was undertaken (Figure A1-1). A detailed airborne electro-magnetic survey was conducted in 2002 which has allowed to accurately delineate palaeochannels in the project area. Additional drilling was undertaken in 2002, 2004 and 2012.

In total 165 drillholes were drilled into the part of palaeochannel which is referred here as Jason's Deposit. The resources of the project were not estimated.
</td></tr>
<tr><td>Geology (2.3)</td><td>
The Jason's Deposit is located approximately 6 km to the north of the Honeymoon Deposit and is confined to the Yarramba Palaeochannel which is composed by a Tertiary aged sequence of inter-bedded sand, silt and clay up.

The sequence was deposited as a result of a relative fall in the base level during the Early Eocene which was related to a global tectonic subsidence commencing in the late Palaeocene. The Frome Embayment (also called the Callabonna Sub-basin) forms the southern portion of the Lake Eyre Basin within South Australia. The generalised stratigraphy of the Lake Eyre Basin is subdivided into three units: the late Palaeocene to middle Eocene Eyre Formation, the late Oligocene to Miocene Namba Formation and Pliocene- Quaternary sediments.
</td></tr>
</table>

<table>
<tr><td></td><td>The exploration model applicable to the Deposit is palaeochannel-hosted sandstone-type uranium mineralisation, which is associated with typically discrete accumulations of organic material (and subsequent pyrite formation) within the early Tertiary Eyre Formation fluvial sediments.

Recent work by Uranium One Australia suggests the locations of these organic matter accumulations within the palaeochannel sequence appear to be closely associated with palaeotopographic basement features, such as basement “highs” or “ridges”, which helped create relatively complex flow environments during deposition of the lower Eyre Formation. The formation of bar deposits and areas of stagnation within these complex flow environments provided the opportunity for organic material to accumulate (and for the subsequent formation of pyrite), which in turn creates ideal redox conditions for uranium mineralisation.</td></tr>
<tr><td rowspan="5">Drill hole Information (2.4)</td><td>Resource database contains 165 drill holes and is too large for being included in this table</td></tr>
<tr><td>The Deposit is approximately 1.5 km wide and 13 km long and covers the area of approximately 33 km^2. It is hosted by meandering palaeochannel distributed within the area from approximately 6,494,840 mN to 6,506,000 mN and from 462,000mE to 472,000mE (Figure A1-1)</td></tr>
<tr><td>The area is flat with an average RL of 97m</td></tr>
<tr><td>All holes were drilled vertically</td></tr>
<tr><td>Thickness of the uranium rolls change in the range of 0.5 - 9.0 m with an average 1.4 m (Figs. A2-2). All rolls are hosted by the Eyre Formation at the depth of 70 to 110m below surface (Fig. A2-3)

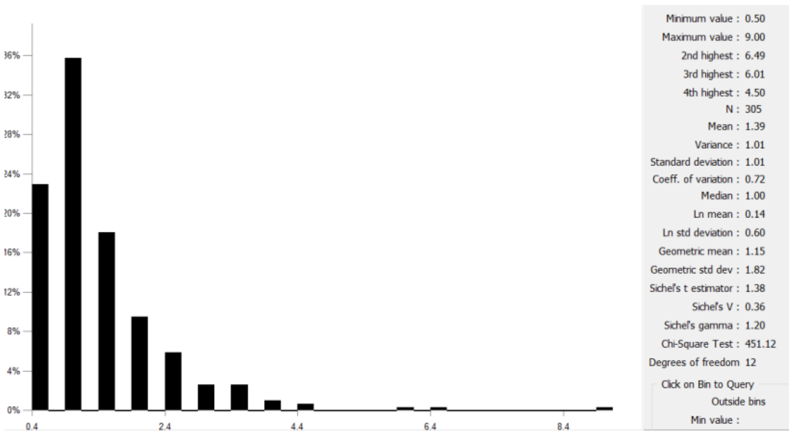


Fig. A2-2: Thicknesses of the rolls delineated using 100 ppm U_3O_8 cut-off

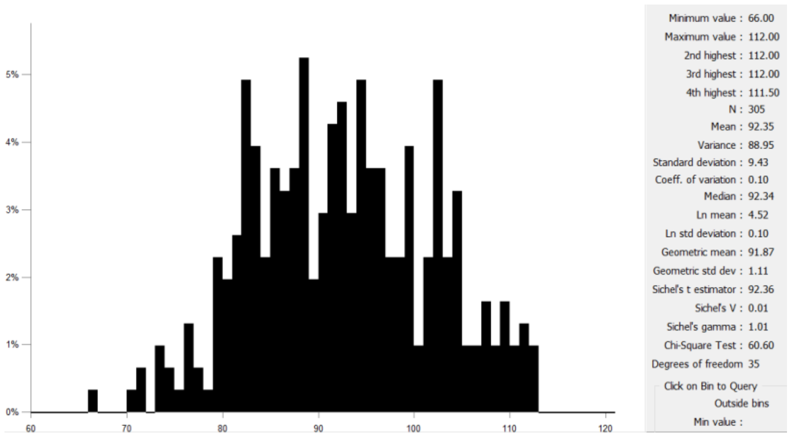
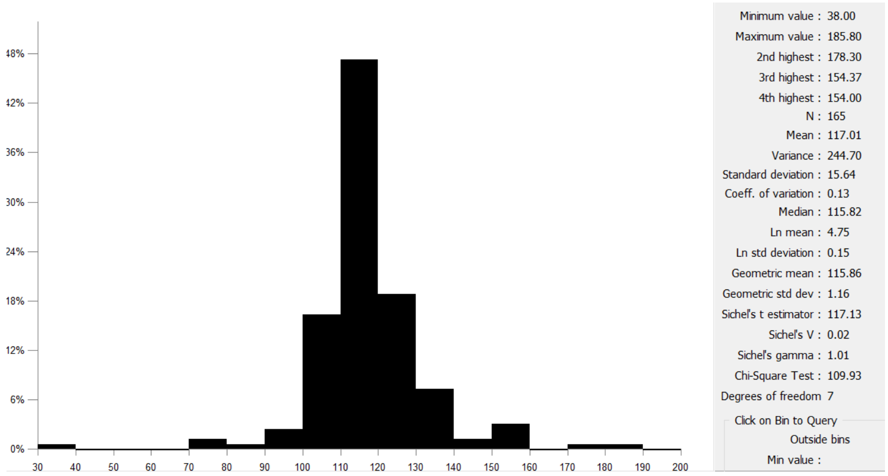
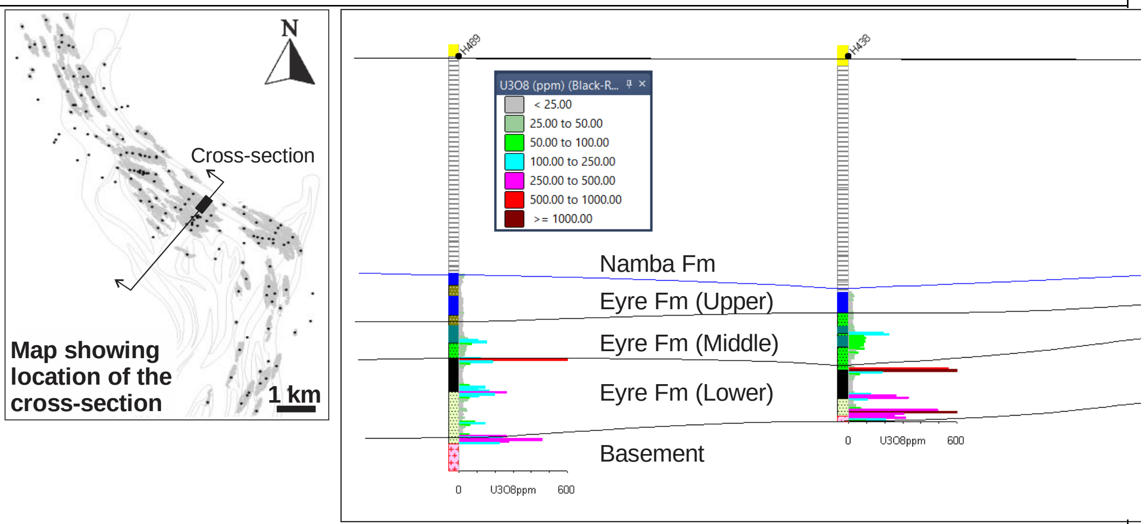
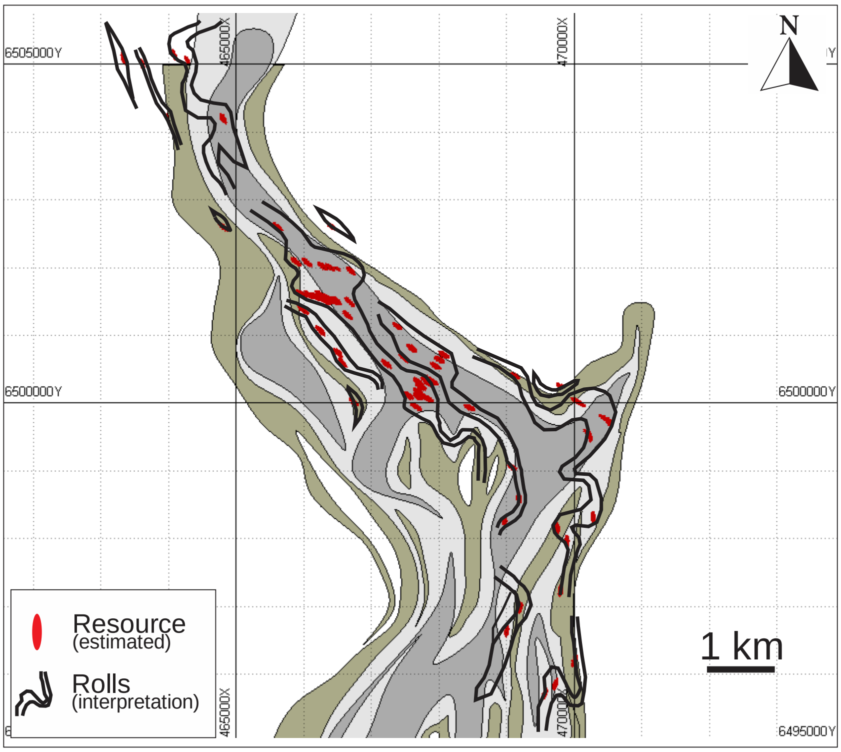


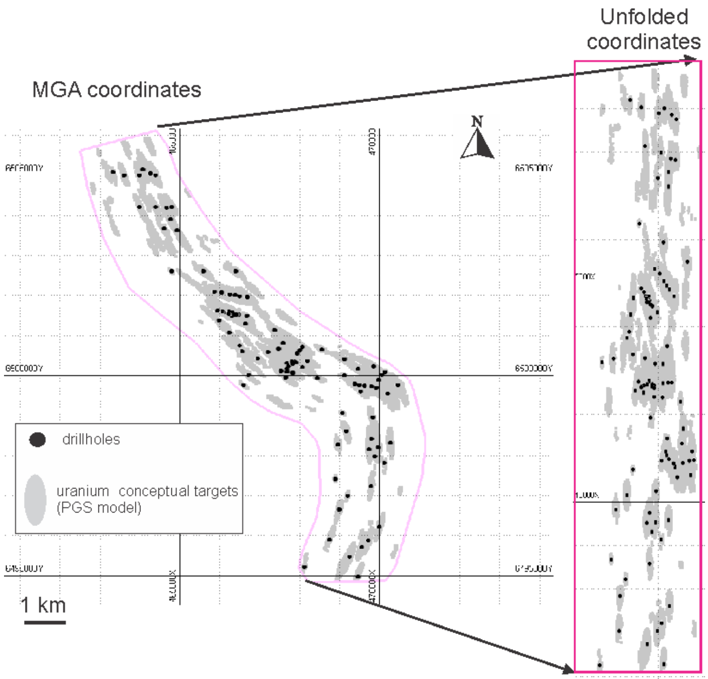
Fig. A2-3: Histogram of the depth below surface of the mineralised bodies intersected by the drillholes</td></tr>
</table>

	Average hole length is approximately 117 m (Figure A2-4).  Fig A2-4: Histogram of the drill hole lengths
Data aggregation methods (2.5)	Raw Gamma-log data were composited into 0.5m long composites
Relationship between mineralisation widths and intercept lengths (2.6)	Most of the drill traverses are oriented at right angle across the palaeochannel strike (Figure A1-1) Holes are drilled vertically down which is optimal for drilling horizontal lenses of uranium mineralisation
Diagrams (2.7)	 Fig. A2-5: Representative cross-section of the uranium mineralisation intersected by the exploration drill holes
Balanced reporting (2.8)	Not applicable

Other substantive exploration data (2.9)	Adelaide Microscopy (University of Adelaide) has carried out Scanning Electron Microscope (SEM) analysis on sonic core samples from the sonic drillholes drilled at the Yarramba and Billeroo palaeochannels in 2011. The mineralogical study has shown that • Uranium mineralisation is commonly associated with pyrite, often forming either very fine (≤20µm) disseminated alteration "halos" around remnant pyrite grains or more pervasive alteration "patches" within the silty sand matrix. The extent of uranium "replacement" of pyrite ranges from partial to pervasive, and the uranium mineral species is likely to be either uraninite or coffinite. • In some cases, multiple generations of pyrite can be observed, ranging from early framboidal grains to subhedral, almost flaky looking grains. In the example discussed within this report, the early framboidal pyrite was subjected to uranium "alteration" while the latter pyrite was essentially unaltered. This suggests that some pyrite has formed after the main uranium mineralisation event and as a result is not directly associated with uranium. Very fine grained to "nodule" sized uranium is also found disseminated throughout organic-rich matrix silts. The extent of mineralisation can range from scattered to quite pervasive, and x-ray spectrum tests suggest the uranium species is either uraninite or coffinite.
Further work (2.10)	Current study was focused on estimation resources of the Jason's Deposit using the historic drillholes data. Estimated Inferred resources are currently constrained by the available drill holes and does not represent an actual termination of the uranium rolls. Thus, it is likely that mineralisation can be further extended by infilling the current drilling grid and also along the strike (Figure A2-6).  Figure A2-6: Map of the Jason's Deposit showing the estimated resources and the possible extents of the uranium rolls (exploration targets). Interpretation of the rolls was facilitated by construction of the Plurigaussian simulation model. Shaded areas denote conductive sedimentary packages.

Reporting criteria presented in the Section 3 of the JORC Table 1 (Estimation and Reporting of Mineral Resources)

Criteria of JORC Code 2012	Reference to the Current Report **Comments / Findings**
Database integrity (3.1)	• Historic logging was collected onto paper via analog chart. The analog charts were digitised during the late 1990's. The library of the analog charts was kept by U1A and has been sighted by the CP. • Geological logs were handwritten onto paper forms and later transcribed into digital form via input into spreadsheet, the original handwritten logs form part of the library. • Downhole Logging data for all recent drilling has been in digital format directly into industry standard LAS files stored on servers. • Geological logging was done on paper, then entered into Excel spreadsheets or entered directly into Excel. All downhole logging data was loaded into a Microsoft Access database and a series of checks undertaken where no serious transcription errors have been found.
	Queries have been run on the data set to check for missing intervals, extreme values (high-low), logging speed too high and any suspect data has been checked or removed if needed.
Site visits (3.2)	M. Abzalov has visited the site as part of the technical due diligence of the project carried by Boss Resources in 2015.
Geological interpretation (3.3)	Palaeochannel type uranium mineralisation is confidently interpreted from the available data. The density of the drilling is sufficient for accurate interpretation and constraining the uranium rolls
	The data includes geological and geophysical drill hole logs and EM survey of the area that has allowed to create an accurate map of the palaeochannel. The EM image of the palaeochannel was presented in the previous section (Fig. A2-6)
	The current interpretation of the geometry of the mineralisation estimated as Mineral Resource is largely empirical and is based on extraplation of the mineralised intersections (>=100 ppm U_3O_8) to a distance of 100m (along strike) and 40m (across strike). In order to prevent vertical smearing of the uranium grades a narrow extrapoltaion ellipse was usd with a vertical radius of 0.6 m. This approach is highly conservative because uranium rolls commonly are several hundred metres long. The estimation was limited to a distances of 100 x 40 m in order to minimise the risk of excessive smearing of the mineralised intersections.
	Uranium mineralisation at the Jason's Deposit is distributed within the Lower and Middle Members of the Eyre formation.
Dimensions (3.4)	This was presented in the previous section (Figs A2-2 and A2-6). Strike length of the Deposit measured along the palaeochannel is approximately 13,000 metres. Width of mineralisation measured across the strike is in the range of 1,000 - 2,000 m.
Estimation and modelling techniques (3.5)	Resources were estimated as 3D model constructed by the blocks of 10x10x0.5m. The distances between drillholes approximately 400 x 100m which are too broad for direct estimation grade of the 10x10x0.5m blocks. The estimation was made by using Localised Uniform Conditioning (LUC), which is a non-linear geostatistical method allowing to estimate grades into small blocks and honoring the volume-variance relationships of the studied variables. The procedure for estimating resources of the Jason's Deposit was as follows: • Composite the drill hole data into 0.5m composites

	• Create the empty block model infilling the 10x10x0.5 cells to the volume constrained by the upper and lower contacts of the Eyre formation (Figure A2-5). • Unfold the Jason's Deposit space by straigtening the shape of the palaeochennel (Fig. A3-1). The unfolding algorithm was aplied to the drillholes and the block model. All further geostatistical studies are carried in the unfolded space, by the domains. • Variography analysis of the U_3O_8 grades was undertaken in the unfolded space. In order to improve quality of the variograms Gaussian-transformation of the eU_3O_8 data was used. • Conceptual model of the uranium rolls was created using Plurigaussian simulation model (Fig. A3-1). This model was a basis for quantitative asssement of the exploraion targets.  Figure A3-1: Map of the Jason's Deposit in the MGA coordinates and the unfolded space. Grey coloured fields denote the conceptual exploration targets generated using PGS methodology • In order to estimate resources the conceptual model was trancated by removing all blocks located outside of the search ellipse of 180x60m from a drill hole intersection. This trancated block model was used as a prototype model (blank model) for estimation resources. Not all blocks from the the prototype model were included into resources. For reporting purpose the estimated model was further constrained using the search ellipsoid of 100 x 40 x 0.5m drawn around the mineralised intersections. Only blocks encompassed by this ellipsoid (100 x 40 x 0.5m) and having an estimated grade >=250 ppm U_3O_8 are reported as resource. • Application of the LUC method requires obtaining grade of the large panels and then non-linear geostatistical transformation of the panel grades into the smaller blocks using UC/LUC methodology. Panel size used in this study was 100 x 100 x 0.5m. ➢ The panels were estimated using Ordinary kriging. ➢ The panels were estimated by selecting the composites at the 100 ppm U_3O_8 cut-off which were interpolated and extrapolated into the panels confined to the volumes constrained by ellipsoid of 180x60x0.5m. Estimation of the panels were made at two steps: ➢ First pass, estimationis made using Ordinary kriging applied to the data contained in the ellipsoid of 100x40x2m containing at least 4 composites;

- Second pass, estimationis made using Ordinary kriging applied to the data contained in the ellipsoid of 1000x250x2m containing 4 – 8 composites.
- In order to prevent smearing of the high-grade samples they U_3O_8 values of the 0.5m long composites were cut to 3500 ppm U_3O_8.

- The panels have been partitioned onto the 10x10x0.5m blocks
- Uniform Conditioning (UC) of the panels. This has required additional tests, data transformations and geostatistical modelling:
  - verification of the diffusive grade distribution model and multi-Gaussianity property of the U_3O_8 variable
  - declustering of the data in order to obtain non-biased estimate of the data mean
  - modelling the distribution of the 10x10x0.5m blocks applying support correction to the punctual anamorphosis
  - modelling the variograms of the U_3O_8 values, which was made by transforming them to the Gaussian variable, constructing the Gaussian variograms and then back-transforming to the raw variable variograms
  - estimating dispersion variance for the panels grade estimates
  - undertake UC estimate of the panels.
- Estimate grade of the 10x10x0.5m blocks using Localised Uniform Conditioning algorithm. The blocks were ranked using Ordinary kriging.
- Transforming U_3O_8 grade of the 100x100x0.5m panels into the smal blocks of 10x10x0.5m in size. This is made using the LUC methodology
- Resources were reported by applying the block cut-off 250 pm U_3O_8 to the blocks faling within the volumes constraained by search ellipsoid 100 x 40 x 0.5m around the drill-hole intersections.

Table A3-1: Resources of the Jason's Deposit

Classification	Million tonnes	eU3O8 ppm	Contained metal (U_3O_8, K t)	Contained metal (U_3O_8, M lb)
Inferred	2.8	840	2.4	5.2

Recovery by-products not envisaged

Potential deleterious components are

- Carbonates (not reported)
- Sulphides
- Organic carbon
- Clay

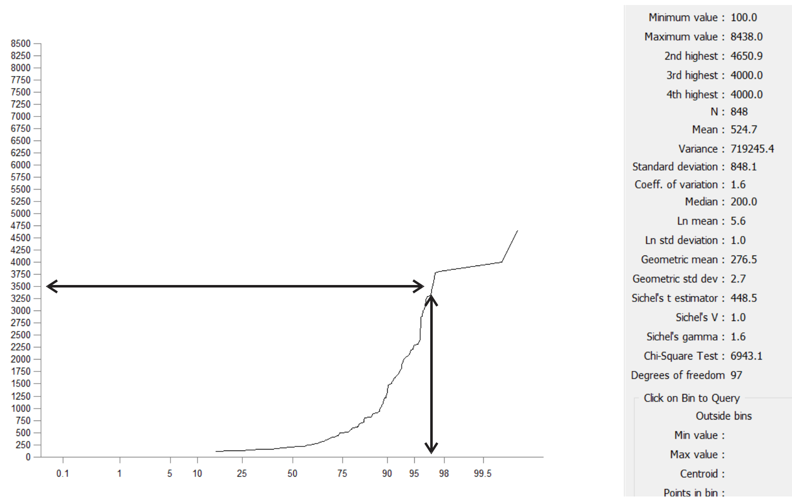
The impact of the deleterious components was not adequately studied in the past and represents one of the main objectives for future studies by the BOSS Resources.

Selectivity of the ISL is approximately

50 x 50 x 5m which corresponds to a size of a single leach cell.

The model uses significantly smaller blocks, which are needed to create an optimal wellfield pattern.

The current study is focused on estimating of a single variable, U_3O_8, therefore correlation between variables was not studied

	For guiding the resource estimation, the wireframe of the palaeochannel's top and base were generated and also wireframes of the stratigraphic contacts with the palaeochannel. Drill holes were lithologically logged and stratigraphic units interpreted. This was used for interpretation of the mineralised intersections on the cross-sections and delineating the mineralised bodies.
	The top cut of 3,500 ppm U_3O_8 was applied to the drill hole composites. The chosen value of 3500 ppm corresponds to approximately 97 percentile of the data  Figure A3-2: U_3O_8 probability diagram constructed using the drill hole composites
	Estimated block grades have been compared with the drill hole (data) grades, using a spider-diagram' which has shown good correspondence between the estimated grades and the drill holes (Fig. A3-1) Fig. A3-3. Scater-diagrams comparing grade of the estimated blocks with the drill hole grades: (a) the data are grouped into 250m wide vertical panels drawn across the strike of the Deposit in the West-East direction; (b) the data are grouped into 0.5m thick horizontal benches drawn across the entire Deposit
Moisture (3.6)	Dry bulk density, 1.9 t/m^3 was used as a tonnage factor
Cut-off parameters (3.7)	Based on a comparative analysis of the cut-off grades used at the ISL-uranium projects in Australia and in the world a cut-off 250 ppm U_3O_8 was chosen for reporting resources

Mining factors or assumptions (3.8)	Uranium mineralisation at the Yarramba palaeochannel is amenable for exploitation using in-situ leach (ISL) technologies. It was extensively tested at the nearby located Honeymoon deposit including the pilot production. Findings made at the Honeymoon deposit are fully applicable to Jason's Deposit. Mineralisation at the Yarramba palaeochannel is located within the aquifer where it is hosted by highly permeable sands. The estimated porosity of the Lower Eyre Sands, that host uranium mineralisation, is approximately 30%. A moderate depth of mineralisation, and good spatial continuity coupled with the tabular shapes of the rolls are favourable characteristics for exploitation using ISL technologies. This assumption was confirmed by numerous tests including the field leach tests which have confirmed the amenability of mineralisation to ISL extraction. In particular, in-situ leach push-pull tests undertaken in 1979 using sulphuric acid and the range of oxidants including hydrogen peroxide, Caro's acid, and ferric sulphate, has shown that mineralization is amenable for acid leaching and viable pregnant liquor values were obtained.
Metallurgical factors or assumptions (3.9)	Several tests have been undertaken at the Honeymoon deposit. The tests are described in details in the feasibility study report (Valliant and Bergen, 2012) and briefly summarised here. The tests have confirmed that uranium mineralisation distributed in the Honeymoon Domain is amenable for extraction using ISL technologies but has also revealed that the optimal processing conditions are not found and more testings are needed. This results are applicable to the Jason's Deposit which is located in the aquifer and hosted by the Yarramba palaeochannel which also hosts Honeymoon deposit. (See comments to the point 3.8)
Environmental factors or assumptions (3.10)	Mining license at the Honeymoon Deposit includes all environmental, social and legal permissions allowing to mine the uranium from the reported area using ISL technology. Beverly mine operates in the same area extracting uranium using ISL technique. Therefore, it is highly likely that all permissions will be obtained for the Jason's Deposit.
Bulk density (3.11)	Dry bulk density, 1.9 t/m^3 was determined by the down-hole geophysical techniques and used as a tonnage factor. This is based on 30% average porosity measured by neutron activation techniques applied to the mineralised sands. implying 2.67 (SG of quartz) x 70% =1.87 (Bampton, 2006). Allowing for some pyritic cementing, this is rounded up to 1.9 (Bampton 2006).
	Down-hole geophysical logging of the porosity is a standard industry procedure used for the measuring density of the non-consolidated sediments.
	The density estimated by measuring porosity and estimating the bulk density of the rocks implying that it composed of quartz, which 2.67 SG equal to 2.67 g/cm^3. Thus DBD of the sands is 2.67 x 70% =1.87 t/m^3. Allowing for some pyritic cementing, this is rounded up to 1.9 (Bampton 2006).
Classification (3.12)	Resource classification for Jason's Deposit was adopted from the studies made at the Honeymoon deposit where it was based on the uncertainty of the estimated grade. These were estimated for the different grids of interest using SGS technique of conditional simulation methodology. Based on that study the folowing drilling grids for suggested for classification resources of snadstone-type mineralsation distributed in the Yarramba (and possibly Billeroo) palaeochannel (Table A3-2): Table A3-2: Drilling grids recommended for classification Mineral Resources at the Honeymoon and Gould's Dam deposits

<table>
<tr><td></td><td><table><tr><th>Measured</th><th>Indicated</th><th>Inferred</th></tr><tr><td>40-20 x 20</td><td>80-40 x 40-20</td><td>120 x 40</td></tr></table>
Thus, constraining the estiated blocks by search ellisoid of 100 x 40 x 0.5m is in a good accordamnce with the classification principles summarised in the Table A3-2 and allows to report the constrained mineralisatin as Inferred resource.</td></tr>
<tr><td></td><td>Mineralisation, located outside of this area is classified as Exploration Target.

M. Abzalov undertake the data analysis, geological interpretation and geostatistical estimates. Obtained results appropriately reflects his view as the projects CP on the deposit and resources.</td></tr>
<tr><td>Audits or reviews (3.13)</td><td>The database was independently reviewed and corrected, where it was found appropriate to do, by N. Inwood. No material issues were found.</td></tr>
<tr><td>Discussion of relative accuracy/ confidence (3.14)</td><td>Classification approach and parameters developed and applied to the Honeymoon project were as follows:

• Measured resource includes blocks of mineralisation equal to quarterly production which are estimated with an average error of +/-15% (at 0.95 confidence limit);

• Indicated resource incudes blocks of mineralisation equal to annual production which are estimated with an average error of +/- 15% (at 0.95 confidence limit);

• Inferred resources include all material outside of the Measured and Indicated resource. This should be estimated with an error of +/- 15% (at 0.95 confidence limit).

This classification approach and the parameters are commonly used in the industry and currently becomes a preferred classification approach. This approach was applied to all sites included into the Honeymoon project and as followed in the last estimation of the Jason's Deposit resources.</td></tr>
<tr><td></td><td>Resources are estimated as small blocks of 10 x 10 x 0.5 m. The size of the blocks and estimation methodology provide the good estimate of the local tonnages and grades with the level of details sufficient for creating the production plan including a detailed plan of the ISL wellfields.

Next step is to undertake infill drilling at the Jason's Deposit infilling the gaps between historic drillholes.

The drilling is planned to commence in Q3 of 2016 and the main objective of it is to accurately delineate the rolls for increasing the resources of the Deposit.</td></tr>
<tr><td></td><td>Production data not available</td></tr>
</table>