

30 JUNE 2016 QUARTERLY REPORT HIGHLIGHTS

Honeymoon Uranium Project, South Australia

- Gould's Dam Maiden Mineral JORC Mineral Resource of 22.1MT at 510ppm eU₃O₈ for 25Mlb contained U₃O₈ above a 250ppm eU₃O₈ lower cutoff
 - Indicated Resources – 4.4 Mt at 650ppm eU₃O₈ for 6.3 Mlb contained U₃O₈
 - Inferred Resources – 17.7 Mt at 480ppm eU₃O₈ for 18.7 Mlb contained U₃O₈
- Current resource model indicates significant potential for future increases through extensional and infill drilling throughout the 15km strike length at Gould's Dam
- Resource grade excellent when compared to ASX listed peers and ISL uranium projects in Kazakhstan and USA where <500ppm is regularly mined
- Jason's Deposit Maiden Inferred Mineral Resource of 2.8Mt at 840ppm eU₃O₈ for 5.2Mlb U₃O₈ above a 250ppm eU₃O₈ lower cutoff
- Mineralisation at Jason's intersected over large strike of approximately 14.5km x 1.5km
- Potential for future increases through extensional and infill drilling planned for Q3 2016
- Global Combined Honeymoon Project Mineral Resource now stands at 57.8Mlbs of U₃O₈ (40.1Mt at 654ppm eU₃O₈)
 - 3.5 times larger than the original resource at acquisition in December 2015
- Technical review of study completed in 2013 identifies suitable resin technology for use at Honeymoon deposit that could significantly reduce OPEX costs at Honeymoon
- ANSTO, a world leader in uranium technology, recently appointed to undertake additional test work on usage of identified resin technology
- Expansion study underway aimed at reducing operating costs through larger volumes
- Resin technology to be potentially implemented for satellite expansion throughout entire 2600 km² uranium province
- Resin based metallurgical test work shows positive results for application of ion exchange processing at Honeymoon with the potential to significantly reduce operating costs
- Ion exchange processing is the most common method used in ISL uranium operations in Kazakhstan and the USA
- Expansion study design work to be undertaken by GR Engineering (ASX: GNG)

Corporate

- Appointment of experienced uranium executive, Mark Hohnen, as Chairman
- A\$1.25 million (before costs) raised via a Placement

HONEYMOON URANIUM PROJECT

During the quarter, Boss Resources (ASX: BOE) announced two increases in the Mineral Resources for the Honeymoon Uranium Project, South Australia, with the estimation of maiden Mineral Resources for the Gould's Dam and Jason's Deposits. Combined with the Mineral Resource for the Honeymoon Deposit announced in January 2016, the global Mineral Resource for the Honeymoon Project now stands at 57.8Mlbs of U₃O₈ for 40.1Mt at 654ppm eU₃O₈, which is 3.5 times the Resource at acquisition in December 2015 (Table 1) (ASX: 14 June 2016).

Table 1. Honeymoon Project Global Mineral Resource Update

Lower cut-off of 250 ppm U₃O₈

Classification	Million Tonnes	eU ₃ O ₈ (ppm)	Contained U ₃ O ₈ (Mkg)	Contained U ₃ O ₈ (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

Gould's Dam Resources

The Gould's Dam Resource upgrade encompasses the Gould's Dam, Gould's Dam North and Billeroo Prospects and is based upon an extensive review of the substantial historical drilling and exploration database that Boss acquired in December 2015 with 968 drillholes available for analysis. Boss now has significant resources established on both the eastern and western project regions. (Figure 1).

Table 1 contains the 2016 Mineral Resource estimate for the Gould's Dam Project which totals 22.1Mt @ 510ppm eU₃O₈ for 25.0 Mlb of contained U₃O₈ reported using a 250ppm eU₃O₈ lower cutoff.

The central Indicated Resource region (historically referred to as Gould's Dam) of 1.5km long by 540m wide is based upon a detailed 3D model of 7 litho-stratigraphic zones using a nominal 100ppm eU₃O₈

lower grade cutoff. The grade modelling of these zones was based upon gamma and PFN eU_3O_8 grade data as well as chemical analysis of two sonic core holes undertaken in 2014.

The broader Inferred Resource covers a region of 15km x 2.5km and was based upon grade modelling of greater than 100ppm eU_3O_8 0.5m grade intercepts. These regions were modelled with a 180-200m north-south extent and 60-80m east-west extent from drillhole intercepts, based upon a geological and geostatistical review of the mineralisation in this area. For full details of the reporting criteria and input parameters, see ASX announcement dated 8 April, 2016.

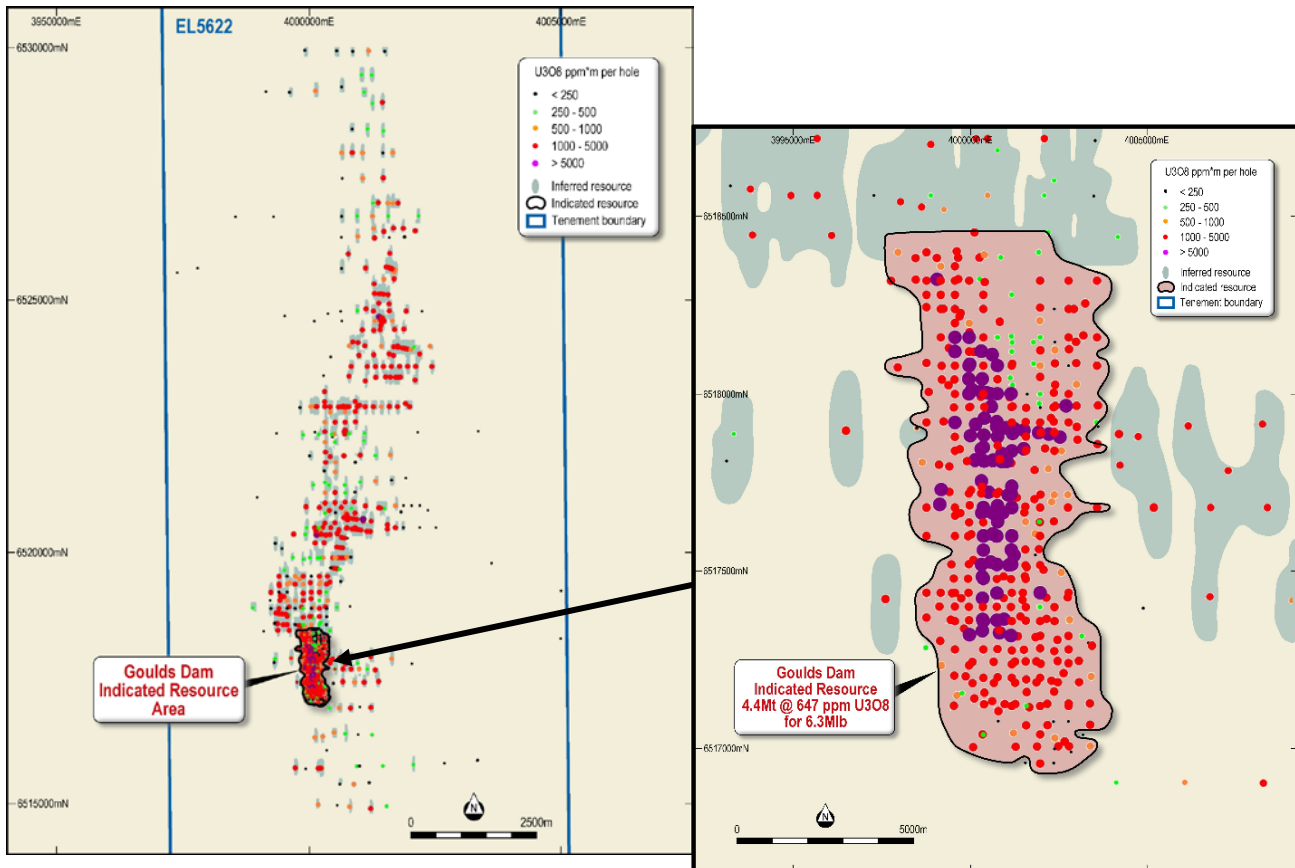


Figure 1: Location of the Gould's Dam Resource update > 250ppm U_3O_8 (left) and extents of the of the Indicated region (right). Coloured dots are accumulation of grade x thickness (ppm x m) of intercepts used in the resource.

Jason's Deposit Resource

During the quarter, Boss announced a maiden JORC 2012 Inferred Mineral Resource of 2.8Mt at 840ppm eU_3O_8 for 5.2Mlb U_3O_8 (above a 250ppm eU_3O_8) for the Jason's Deposit at the Honeymoon Uranium Project (Table 1). The Jason's Deposit is located at the northern end of the Yarramba palaeochannel, which also hosts the 27.6Mlb Honeymoon Deposit (Figure 2).

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. For full details of the reporting criteria and input parameters, see ASX announcement dated 14 June, 2016.

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 U_3O_8 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.

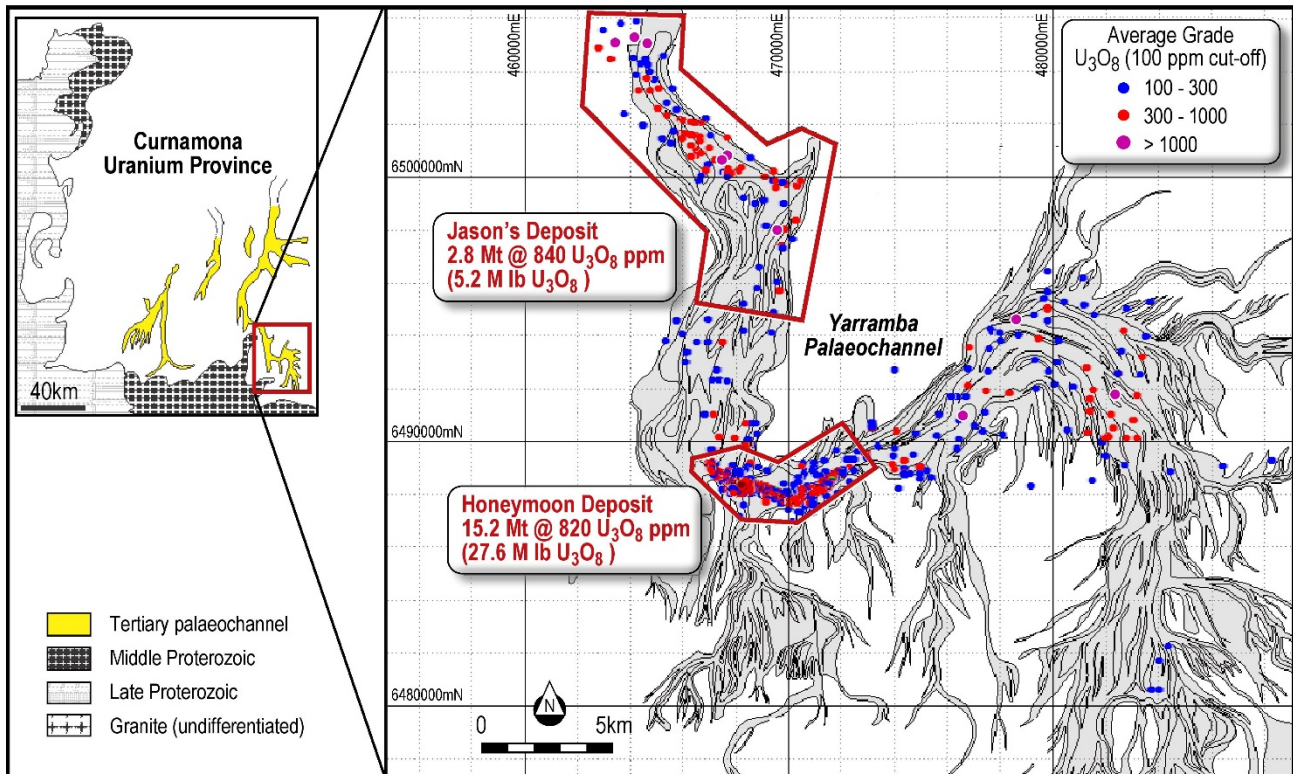


Figure 2: Location of the Jason's Deposit within the Yarramba palaeochannel. Coloured dots are the average grades of the drillhole intercepts estimated using 100 ppm U_3O_8 as a lower cut-off.

Expansion Study

In May 2016, the Company announced that a detailed technical review of the Honeymoon Uranium Project was underway. The review is designed to identify optimisation and cost reduction opportunities that will form the basis of the planned redesign and start-up of the processing plant.

Boss has initiated a new program of test work at the Australian Nuclear Science and Technology Organisation ("ANSTO"), a world leader in uranium and ion exchange technology, aimed at further investigating the use of two specific resins, and to provide further data for process design purposes.

Boss was recently made aware of development work undertaken by Honeymoon's previous owners (Uranium One Inc) including a preliminary test work program on ion exchange (resin) technology in 2013. The program was undertaken in conjunction with engineering firm AMEC Australia Pty Ltd and confirmed the benefits stemming from the use of resins and the concurrent lower operating costs that could be achieved as a result.

The initial assessment by Boss indicates that the plant production rate was too low for a sustainably profitable uranium mine at current depressed uranium prices and, due to the sizing of the operation (880,000 lbs per annum), the cost structure for Honeymoon was inefficient with a high proportion of fixed costs within the overall cash cost for the mine.

Boss has identified that a larger processing plant facility, as well as the possible usage of resin technologies, could significantly reduce the cost of production.

Since acquisition of the project in December 2015, Boss has more than tripled the Global Honeymoon Resource, with an important part of the resource increase coming from satellite deposits located up to 50km away from the main processing plant. It is also believed these satellite deposits could be effectively treated with the use of satellite ion exchange processing units.

Furthermore, resin technology has improved significantly since the initial Honeymoon development and resins capable of operating within the Honeymoon conditions have been developed and tested successfully.

Boss has initiated an option study focussing on expansion scenarios as well as processing design. At a high level, the three main processes being considered in the option study are:

- Optimise and expand the current solvent extraction plant in the near term, with an expansion to include satellite resin plants in the future when the remote satellite deposits come on line.
- Implement a combined ion exchange (resin) and solvent exchange process, with the resins upgrading the solutions prior to solvent extraction purification. Expansion will be based on satellite resin plants.
- Implement an ion exchange only process. Expansion will again be based on satellite resin plants.

Boss has selected GR Engineering Services to support the delivery of an expansion trade-off study. Using information generated during this study, Boss will be able to define the appropriate levels of input data required for the next stage of engineering development, and develop the scope for this study that will provide the necessary level of information to obtain regulatory approvals for any expansion.

The ongoing test work program associated with the expansion study for the Honeymoon Uranium Project has shown positive results for the application of an ion exchange flowsheet at the Project (ASX: 21 June 2016). Following testing on 2 resins, Boss is pleased that the tests to date have confirmed the selectivity and high loading capacity of the weak based anion (WBA) resins in the presence of high chloride levels and significant iron concentrations. Resin loading and elution tests, along with modelling of the proposed circuits have been completed and these results are being used as inputs for the expansion study. Based on this, we are expecting good results from the continuous loading and eluting test work that has commenced and is expected to confirm the robustness of the processes.

The elution profiles for the two resins tested are shown below in Figure 3. Both resins elute easily, with the WBA resin showing a high concentration eluate can be produced for downstream processing.

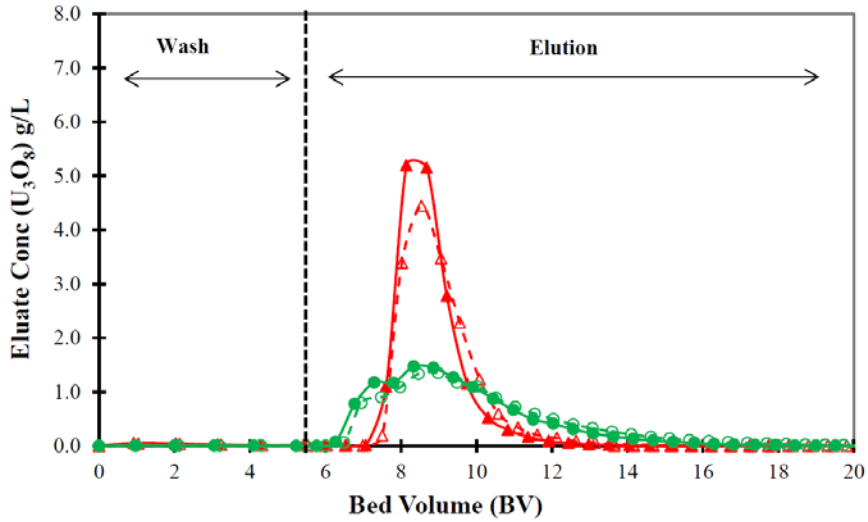


Figure 3: Uranium Elution Profile (Red - WBA resin, Green – Chelating resin)

Figure 4 shows the results from the process modelling work. The results indicate that high recoveries can be achieved at high resin loadings, assuming an increased number of operating resin columns. Preliminary work is positive as it indicates that to achieve >95% recovery @ ~8g/l loading a minimum of seven columns would be required.

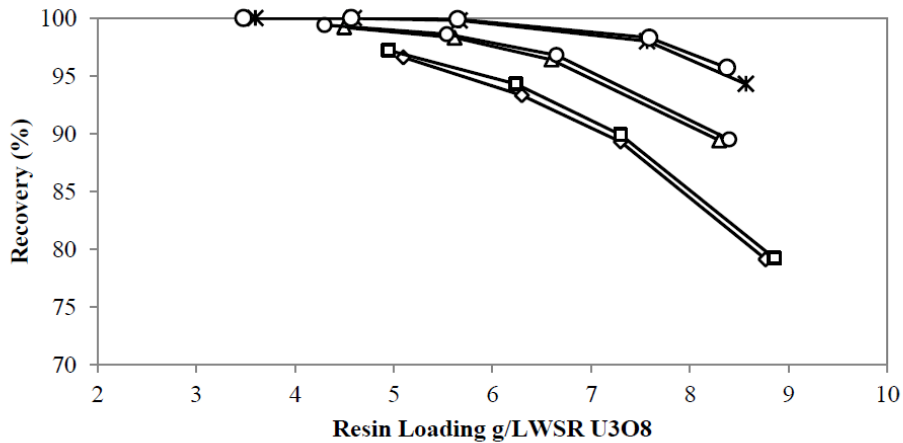


Figure 4: Resin Loading vs Recovery for 3 Different Column Configurations (5, 6 & 7 Columns)

BURKINA FASO GOLD ASSETS

In March 2014, Boss and Gryphon Minerals Ltd (ASX: GRY) signed a binding heads of agreement to establish a joint venture over Boss’ Golden Hill and Gourma Gold Projects located in Burkina Faso (ASX: 4 July 2014 for full terms of the agreement).

At Gourma recent work included auger testing beneath a number of soil anomalies. The best results were returned from the Djinta Prospect, where a peak auger assay of 25.7 g/t gold was returned from weathered bedrock as part of an 80m wide zone of anomalous saprolite at greater than 0.5 g/t gold. As the nearest auger line is 600m away the significance of these results is unknown and awaits further auger follow-up along strike with this work to take place next field season.



Limited field work was undertaken during the quarter with work focused on refining the geological interpretation and understanding through field mapping, data reviews as well as a small amount of geochemical sampling.

At Golden Hill results from a small auger program comprising 89 holes completed south of the C-Zone Prospect and along strike at the of A-Zone at the Pourey prospects returned results to 7.92g/t Au from residual clay. A ground magnetics and array of IP was undertaken across this area with the purpose of identifying the probable strike extensions of the bedrock mineralisation ahead of a maiden drill program next field season.

For full details of work undertaken during the quarter by Gryphon Minerals, please see ASX: GRY.

FENNOSCANDIAN NI-CU PROJECTS

Due to the Company's focus on the Honeymoon Project during the quarter, no material work was undertaken on the Company's assets in Sweden and Norway.

CORPORATE

During the quarter, the Company was pleased to announce the appointment of experienced uranium executive, Mark Hohnen, as Chairman of the Board. With the appointment of Executive Director, Grant Davey, in January 2016, the Board is now comprised of a strong team with the expertise and previous experience that will be invaluable to the Company as it works to develop the Honeymoon Uranium Project in South Australia.

The Company undertook a share placement to raise A\$1.25 million (before costs) via a placement of 31,250,000 ordinary shares at an issue price of \$0.04 each. 18.75 million shares were placed to professional and sophisticated investors pursuant to s708 of the Corporations Act, with the placees undertaking not to dispose of the shares (other than to related parties of the placees) within 12 months from the issue date. The remaining 12.5 million shares were placed with a "long only" institutional fund.

The funds will be used to progress work programs at the Honeymoon Uranium Project, including the upcoming drill program, and for general working capital.

For further information please contact:

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Appendix 1

The following information is provided pursuant to Listing Rule 5.3.3 for the quarter ended 30 June 2016:

SCHEDULE OF MINING TENEMENTS

Tenement Name	Location	Licence Number	Interest
Boutouanou	Burkina Faso	2011/11/410	49% (GRY farming in)
Diabatou	Burkina Faso	2011/11/409	49% (GRY farming in)
Tyara	Burkina Faso	2011/11-159	49% (GRY farming in)
Foutouri	Burkina Faso	2011/11-160	49% (GRY farming in)
Baniri	Burkina Faso	2009/09-060	49% (GRY farming in)
Intiedougou	Burkina Faso	2009/09-061	49% (GRY farming in)
Mougue	Burkina Faso	2009/09-062	49% (GRY farming in)
Kankandi	Burkina Faso	10/142/MCE	49% (GRY farming in)
Tyabo	Burkina Faso	10/144/MCE	49% (GRY farming in)
Skogtrask Project	Sweden	Skogtrask nr.3	100%
		Palange nr.1	100%
Nottrask Project	Sweden	Norrtrask nr.9	100%
Lilltrask Project	Sweden	Lilltrask nr1, 2 and 3	100%
Linn Project	Norway	Linn 1 - 12	100%
Yarramba	South Australia	ELA2014/00228	80% (Right to acquire 100%)
South Eagle	South Australia	EL5215	80% (Right to acquire 100%)
Goulds Dam	South Australia	ELA2014/00240	80% (Right to acquire 100%)
Katchiwilleroo	South Australia	ELA2014/00239	80% (Right to acquire 100%)
Ethiudna	South Australia	EL5043	80% (Right to acquire 100%)
Goulds Dam	South Australia	RL83-90	80% (Right to acquire 100%)
Honeymoon Mine	South Australia	ML6109	80% (Right to acquire 100%)

There were no acquisitions or disposals during the quarter.

Competent Person's Statements

The Mineral Resource estimates for the Honeymoon Project were previously announced on 20 January, 8 April and 14 June 2016 and the Exploration target for the Honeymoon Project was discussed in the announcement on 8 December 2015. The relevant reports are available to view on www.bossresources.com.au. 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, in the case of estimates of Mineral Resources, Exploration Target or Ore Reserves that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

The 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 Australasian Institute of Mining and Metallurgy. He has sufficient experience in estimation Resources of uranium mineralisation, and have a strong expertise in the all aspects of the data collection, interpretation and geostatistical analysis to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves'. Dr. M. Abzalov is employed as a director of BOSS Resources and also working as independent consultant and Director of 'MASSA Geoservices (Australia). 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 in this document that relates to the Honeymoon Mine Project Exploration Target and associated Exploration Data is based on information provided by Mr. Neil Inwood, who is a Fellow of the AUSIMM. Consent is granted only for the purposes of outlining an Exploration Target, no warranty is made on the use of the exploration information and data for other purposes. Mr Inwood is a consulting geologist and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity undertaken to qualify as Competent Persons as defined in the 2012 edition of the "Australasian Code for Reporting of Mineral Resources and Ore Reserves". Mr. Inwood has consented to the inclusion of this information in this document in the form and context in which it appears. An entity associated with Mr Inwood has shares in Boss Resources.

The information in this report that relates to the Exploration Results at the Company's Burkina Faso gold assets is based on and fairly represents information which has been compiled by Mr Sam Brooks who is a member of the Australian Institute of Geoscientists. Mr Brooks has sufficient experience relevant to the styles of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Brooks is a full time employee of Gryphon Minerals Ltd and has consented to the inclusion of the matters in this report based on his information in the form and context in which it appears. The information was initially reported to the ASX on 29 July 2016 and has not materially changed.