

31 DECEMBER 2016 QUARTERLY REPORT

HIGHLIGHTS

- **Pre-Feasibility Study underway following successful Expansion Study results**
 - Milestones being achieved and on target for completion in Q2, 2017
- **Successful drill program commenced November 2016 at Jasons Prospect**
 - High grade mineralisation returned for first ~50 holes
 - Significant gamma and PFN intercepts encountered
 - High grade core developing in the southern Jasons Prospect with >900m in trend extent, open to south
- **Appointment of Mr Duncan Craib as CEO to lead development of Honeymoon Project**
- **\$6,800,000 capital raising completed**
 - Oversubscribed with placement made to sophisticated and institutional investors
 - Funds to be used to complete PFS, drill programs and for general working capital

HONEYMOON URANIUM PROJECT

During the quarter, Boss announced that final Native Title Mining Agreements have been signed with both the Adnyamathanha and Wilyakali Native Title Claimants with respect to the Honeymoon Uranium Project. In conjunction with existing determinations, these agreements allow for exploration activities to be undertaken on all five of Boss's Honeymoon Region Exploration Licences, covering 2,595 km² of prospective ground.

Pre-Feasibility Study

Based on the successful results of the Expansion Study, the Pre-feasibility Study (PFS) will consider opportunities for further optimisation of the process route and associated costs as well as including an in-fill drilling program to further delineate the Jasons Prospect (ASX: 26 October 2016). The information generated in the PFS will form the basis for the license and permit applications for the increased production at Honeymoon and the mining licence for Jasons Prospect.

The results of the Expansion Study confirmed Boss's initial assessment that the original plant production rate was too low for a sustainably profitable uranium mine and, as such, a larger processing plant facility based on the use of resin technology could achieve the lower operating costs required for Honeymoon to be highly economic (ASX: 28 September 2016). In addition, the PFS will develop the Elux flowsheet contemplated during the Expansion Study which provides more flexibility and 'robustness' to manage the issues previously experienced by Uranium One.

Boss has selected ANSTO, a world leader in uranium and ion exchange technology, to undertake all the metallurgical test work required to further define and optimise the selected flowsheet. GR Engineering Services has been appointed as the lead study consultant who will have the responsibility to undertake all engineering work and, in conjunction with the Boss team, to deliver the PFS.

The PFS remains on target for completion by the end of quarter 2 2017.

Jasons Prospect Drill Program

On 15 November 2016, Boss confirmed the commencement of drilling at the Jasons Prospect, which is approximately 12 km north of Boss's Honeymoon Uranium Mine Site. Boss is using experienced South Australian based drilling and geophysical contractors (Watsons Drilling and Borehole Wireline) who have extensive experience with the Honeymoon Uranium Project. Additionally, Boss is using its own Prompt Fission Neutron (PFN) tools to assist in the determination of radioactive disequilibrium in the area.

The mud-rotary program planned for the Jasons Prospect will enable further delineation and expected expansion of the current resource (currently at 2.8Mt at 840ppm eU₃O₈ for 5.2Mlb contained U₃O₈ above a 250ppm U₃O₈ lower cutoff). The Company has recommenced the drill program after the break and will also include sonic drill holes to confirm stratigraphy and tenor of mineralisation with laboratory assaying. Verified results will be released to the market when available.

Results support the general endowment seen by historical drilling, and show significantly good lateral continuity of mineralisation. Based upon logging of the drilling muds, the mineralisation encountered to date is from within sandy units of the Middle Eyre Formation and also along sand/clay interbeds and interfaces. Interpretation of geophysical logs is in progress to ensure correct interpretation of lithological units is applied.

Drilling in the northern portion of the Jasons prospect has encountered significant intercepts including:

- **1.5m @ 1427ppm eU₃O₈** (BMR008 from 90.25m)
- **0.7m @ 1478ppm eU₃O₈** (BMR007 from 94.25m)
- **1.25m @ 1488ppm eU₃O₈** (BMR014 from 101.75m)
- **1.25m @ 1436ppm eU₃O₈** (BMR025 from 88.25m)

Drilling in the southern portion of the Jasons Prospect is defining a high-tenor core to mineralisation along trend of the historical drillhole of 2.3m @ 3981ppm pU₃O₈ (PFN derived grade) (YAM040) with significant wide intercepts including:

- **4m @ 464ppm eU₃O₈** (from 100.65m in BMR038)
- **2.5m @ 1394ppm eU₃O₈** (from 105.45m in BMR043)
- **6.75m @ 524ppm eU₃O₈** (from 103.9m in BMR050)

Boss is pleased to note that the PFN results have been confirmed by an independent expert and in a number of cases increased the equivalent grades for the mineralisation encountered in the drill program. Significant intercepts now include:

- **2.5m @ 4005ppm pU₃O₈** (BMR043 from 105.45 - versus 1392ppm eU₃O₈)
- **6.75m @ 940ppm pU₃O₈** (BMR050 from 103.95 - versus 524ppm eU₃O₈)
- **1.5m @ 1556ppm pU₃O₈** (BMR008 from 90.25m - versus 1427ppm eU₃O₈)
- **1.25m @ 1662ppm pU₃O₈** (BMR018 from 93.55m - versus 1389ppm eU₃O₈)
- **1.5m @ 1389ppm pU₃O₈** (BMR042 from 103.95m - versus 605ppm eU₃O₈)
- **1.75m @ 1317ppm pU₃O₈** (BMR044 from 93.45m - versus 875ppm eU₃O₈)

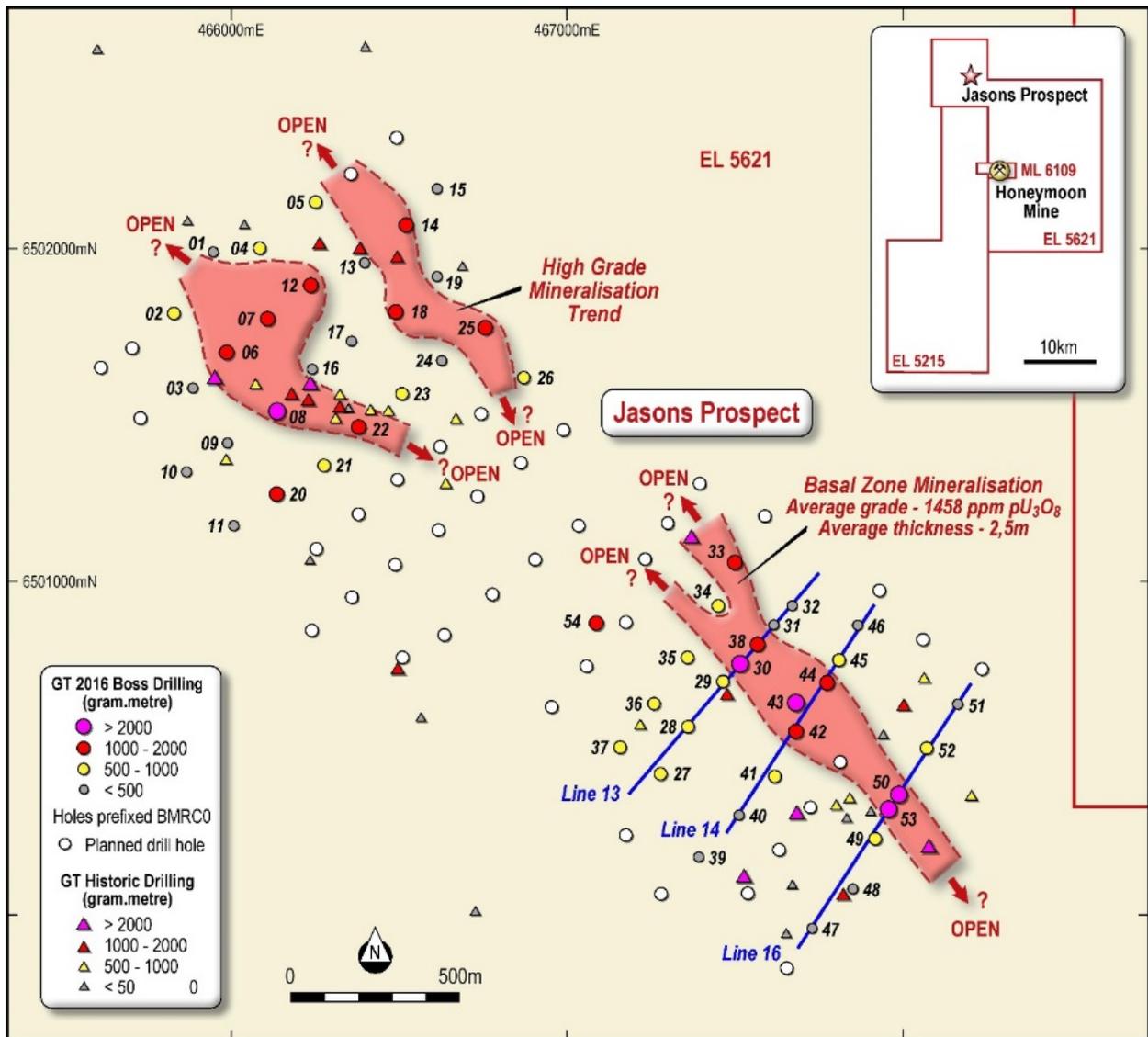


Figure 1: Location of drilling at the Jasons Prospect, approximately 15km north of the Honeymoon Mine site. Maximum grade times thickness (eU₃O₈ [in ppm] x m) shown to assist in illustrating high-grade trends.

Boss recognises that there is an approximately 50% average higher reading on the PFN tool when compared to the natural gamma eU₃O₈ grade data. The Company has designed a sonic core program which commenced in January 2017 to further confirm the PFN pU₃O₈ grade profile at the Jasons Prospect and to supply metallurgical samples. This is an important validation step prior to potentially using the PFN data in Resource estimates.

PFN tools are the preferred method for assessing uranium in younger sandstone hosted uranium deposits as they can avoid the effect of radioactive disequilibrium and can provide a more accurate reading of uranium grade and mineralisation. Natural gamma derived eU₃O₈ grade measures uranium content indirectly as a large portion of gamma rays are emitted by ²¹⁴Bi and ²¹⁴Pb, which are decay products from ²³⁸U. The PFN tool utilises pulsed neutrons to directly determine the presence of ²³⁵U and results in pU₃O₈ grade measurements.

For full details of all drill results, please see ASX announcements dated 6 December 2016, 8 December 2016 and 14 December 2016.

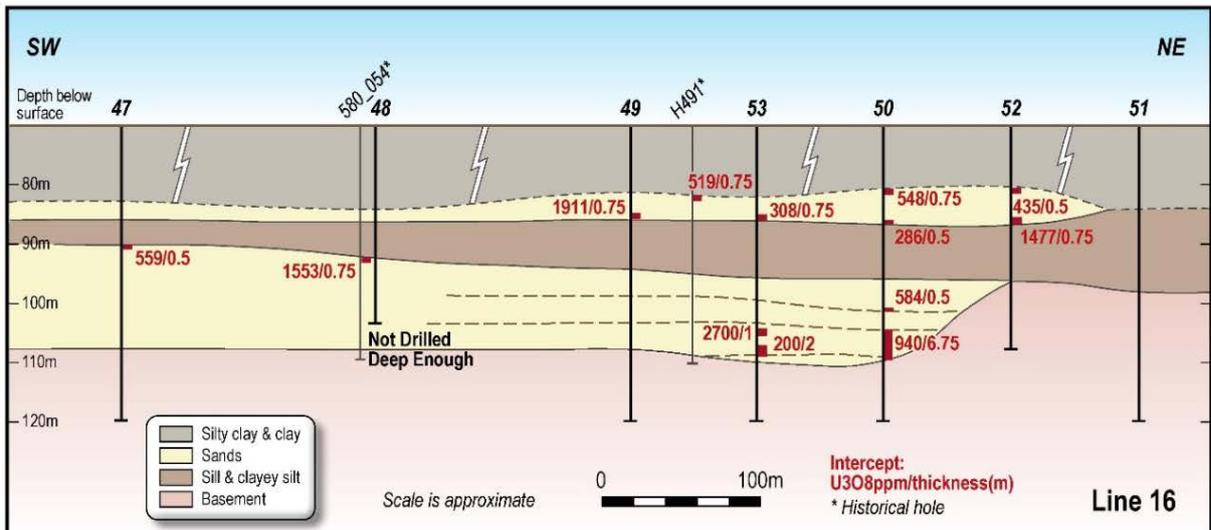
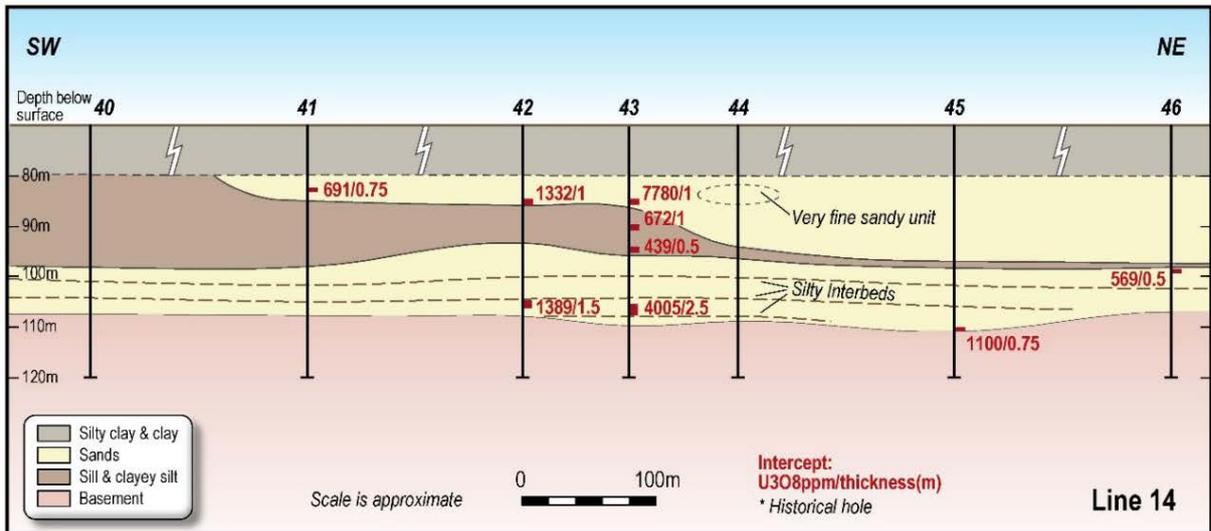
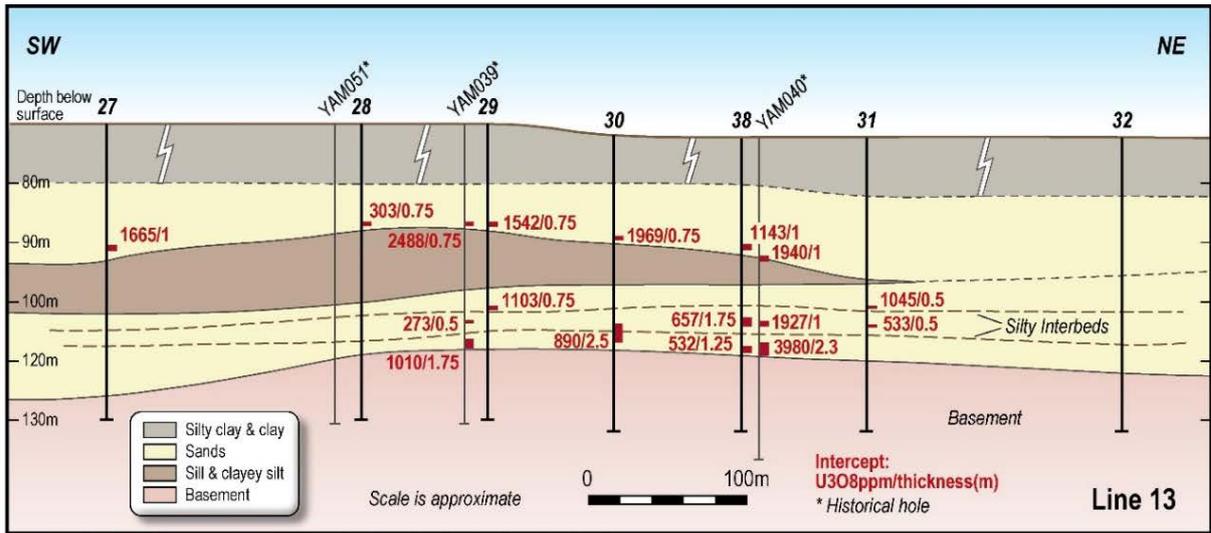


Figure 2: Example cross sections through Lines 13, 14 and 16. Results are shown as grade (ppm U_3O_8 or P_3O_5 / thickness in metres where available). Note: sections only show the bottom ~60m of each section.



BURKINA FASO GOLD ASSETS

On October 13, 2016 Teranga Gold Corporation (TSX/ASX: TGZ) completed the acquisition of Gryphon Minerals Limited (ASX:GRY) and assumed Gryphon's 51% interest in the Golden Hill and Gourma Gold Projects located in Burkina Faso (ASX: 4 July 2014 for full terms of the agreement).

During the quarter, Teranga undertook a short field exploration campaign at Golden Hill, commencing in November and concluding in mid-December 2016 (ASX: TGZ 30 January 2017). The purpose of the program was to rotary air blast (RAB) drill two prospects, Nahiri and Pourey-Peksou, and to commence geologic and detailed structural mapping at the Ma and Ma Breccia prospects in preparation for drilling evaluations to begin early in 2017. In total, 99 RAB holes were completed consisting of 1,320 metres of drilling at both Pourey-Peksou and Nahiri. The results of the mapping program identified favourable structural trends hosting gold mineralisation and will be utilised in designing the upcoming drilling program at Ma and Ma West scheduled to begin in late January 2017.

Field activities in 2017 are expected to be directed at many of high priority prospects throughout Golden Hill including Ma, Ma Breccia, Ma East, Nahiri, Pourey-Peksou, Zones A-B-C, Jackhammer Hill and Didro. Field activities are expected to include detailed soil sampling, detailed geologic and structural mapping, induced polarisation geophysics, auger drilling, RAB drilling, reverse circulation drilling and diamond core drilling.

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.

POST QUARTER SIGNIFICANT EVENTS

Appointment of Mr Duncan Craib

Subsequent to the quarter end, the Company was pleased to announce the appointment of Mr Duncan Craib to the position of Chief Executive Officer to lead the next stage of development of the Honeymoon Uranium Project, South Australia (ASX: 9 January 2017).

Over the past 4 years Mr Craib served as Finance Director to Swakop Uranium (Pty) Ltd and was heavily involved in the US\$2.5 billion development and construction of its world class Husab uranium mine in Namibia. Its principal shareholder, China General Nuclear Power Corporation (CGN), is the largest nuclear power operator in China and largest nuclear power constructor world-wide. Husab is currently being commissioned and once in production will be one of the largest mining and processing uranium projects in the world, mining 150 Mt on an annual basis and generating 15 Mt of ore to produce 15 Mlbs of uranium oxide.

During his time in Namibia Mr Craib also chaired a Namibian Uranium Association committee to address key power and water risks affecting all uranium mines and exploration projects operating in the Erongo region, including Rio Tinto's and Paladin's regional uranium mines.

Prior to 2012, Mr Craib served in London as CFO to Kalahari Minerals Plc under the Chairmanship of Mr Mark Hohnen. The company's key investment was a 42.74% shareholding in Extract Resources Ltd and its subsidiary Swakop Uranium (Pty) Ltd, which was ultimately the subject of a corporate transaction in 2012 valued at US\$2.2 billion.

In addition to joining Boss as CEO, Mr Craib will invest \$100,000 into Boss via a share subscription at \$0.04 per share for a total of 2,500,000 shares.



Capital Raising

On 20 January 2017, the Company announced an oversubscribed placement of approximately 104.6 million new ordinary shares (**Shares**) to raise \$6.8m (before issue costs) (**Placement**) which completed on 30 January, 2017.

The Shares were issued at \$0.065 per share, representing a discount of:

- 7.7% to BOE's 5 trading day VWAP of \$0.070 per share as at 17 January 2017
- 13.3% to BOE's closing price of \$0.075 per share on 17 January 2017

The Placement was made to new and existing domestic and international institutional and sophisticated investors, and within the Company's existing 15% placement capacity pursuant to ASX Listing Rule 7.1.

Funds raised from the Placement will be applied to costs associated with the Pre-Feasibility Study of the Company's Honeymoon Uranium Project in South Australia, and to general working capital.

Euroz Securities Limited and Patersons Securities Limited served as Joint Lead Managers to the Placement.

For further information please contact:

Duncan Craib Chief Executive Officer: +61 (8) 6143 6730

Appendix 1

The following information is provided pursuant to Listing Rule 5.3.3 for the quarter ended 31 December 2016.

SCHEDULE OF MINING TENEMENTS

Tenement Name	Location	Licence Number	Interest
Boutouanou	Burkina Faso	2011/11/410	49% (TGZ farming in)
Diabatou	Burkina Faso	2011/11/409	49% (TGZ farming in)
Tyara	Burkina Faso	2011/11-159	49% (TGZ farming in)
Foutouri	Burkina Faso	2011/11-160	49% (TGZ farming in)
Baniri	Burkina Faso	2009/09-060	49% (TGZ farming in)
Intiedougou	Burkina Faso	2009/09-061	49% (TGZ farming in)
Mougue	Burkina Faso	2009/09-062	49% (TGZ farming in)
Kankandi	Burkina Faso	10/142/MCE	49% (TGZ farming in)
Tyabo	Burkina Faso	10/144/MCE	49% (TGZ 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%
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 information in this document that relates to the Exploration Data is based on information provided by Mr. Neil Inwood, who is a Fellow of the AUSIMM. 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 and confirms that the form and context in which the Competent Person's findings are presented have not materially changed since initial release to the market on 6 December 2016, 8 December 2016 and 14 December 2016. An entity associated with Mr Inwood has shares in Boss Resources.

The information in this report that relates to the Mineral Resources is based on information compiled by Dr Marat Abzalov, who is a Competent Person according to the JORC 2012 Code. Dr 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 Abzalov is employed as a director of Boss Resources and is also working as independent consultant and Director of MASSA Geoservices (Australia). Dr Abzalov has consented to the inclusion of this information in this document in the form and context in which it appears and confirms that the form and context in which the Competent Person's findings are presented have not materially changed since initial release to the market on 14 June 2016.