Lithium Australia NL

ACN: 126 129 413
ASX: LIT

Level 1
675 Murray St
West Perth WA 6005

PO Box 1088
West Perth WA 6872

Phone +61 (0) 8 6145 0288
Fax +61 (0) 8 9475 0847

info@lithium-au.com
lithium-au.com

4 November 2016

ASX ANNOUNCEMENT

STRONG LITHIUM ANOMALISM AT SEABROOK, WESTERN AUSTRALIA

Highlights

- High-density soil geochemistry completed using laser induced breakdown spectroscopy
- Lithium anomalism correlates with other geochemical techniques
- Results pave the way for real-time lithium analysis for drilling soon to commence at the Electra project in Mexico.

Summary

Lithium Australia NL (ASX: LIT) has accumulated significant experience in geochemical modelling of prospective lithium terrains and in particular the soils derived from pegmatites containing lithium micas. The Seabrook Rare Metals Venture (LIT 80%, and Tungsten Mining NL ASX: TGN, 20%) consists of six exploration licences, E77/1853, 1854, 1855, 2021, 2022, and 2035, located on the shores of Lake Seabrook, approximately 60km north-east of Southern Cross and 10km south-east of Koolyanobbing, Western Australia. Southern Cross is 350km east of Perth along the Great Eastern Highway (Figure 1). Tungsten mineralization within E77/1853 and 1854 is associated with extensive skarn mineralisation which exhibits strong alkali metal halos, which are similar to the halos around lithium pegmatites identified further south on E77/2279.

Hand-held laser induced breakdown spectroscopy (LIBS) was used to compare real-time lithium spectral data, with various geochemical signatures generated with field portable XRF equipment. The comparative results are shown in Figures 2 and 3. The lithium values shown in Figure 3 should not be considered absolute values, but rather comparative values that are referenced to a pre-loaded calibration curve installed in the SciAps Z500 machine used for the program.

The results show conclusively that pattern of lithium anomalism determined by hand-held LIBS reflects the areal extent, and shape to field-portable XRF alkali metal anomalism which in this area is a good pathfinder for lithium.

Advanced geochemical applications

The success of the LIBS lithium geochemical modelling has led to more extensive evaluation for immediate use on the Electra Project (LIT 25% and Alix Resources Corp, AIX-TSX: V, 75%). A SciAps Z300 machine has been calibrated using a wide grade range of lithium clays generated from recent sampling (ASX release 13 October 2016). Real-time data will be used to maximize the benefit of drilling, scheduled to commence in the near future.

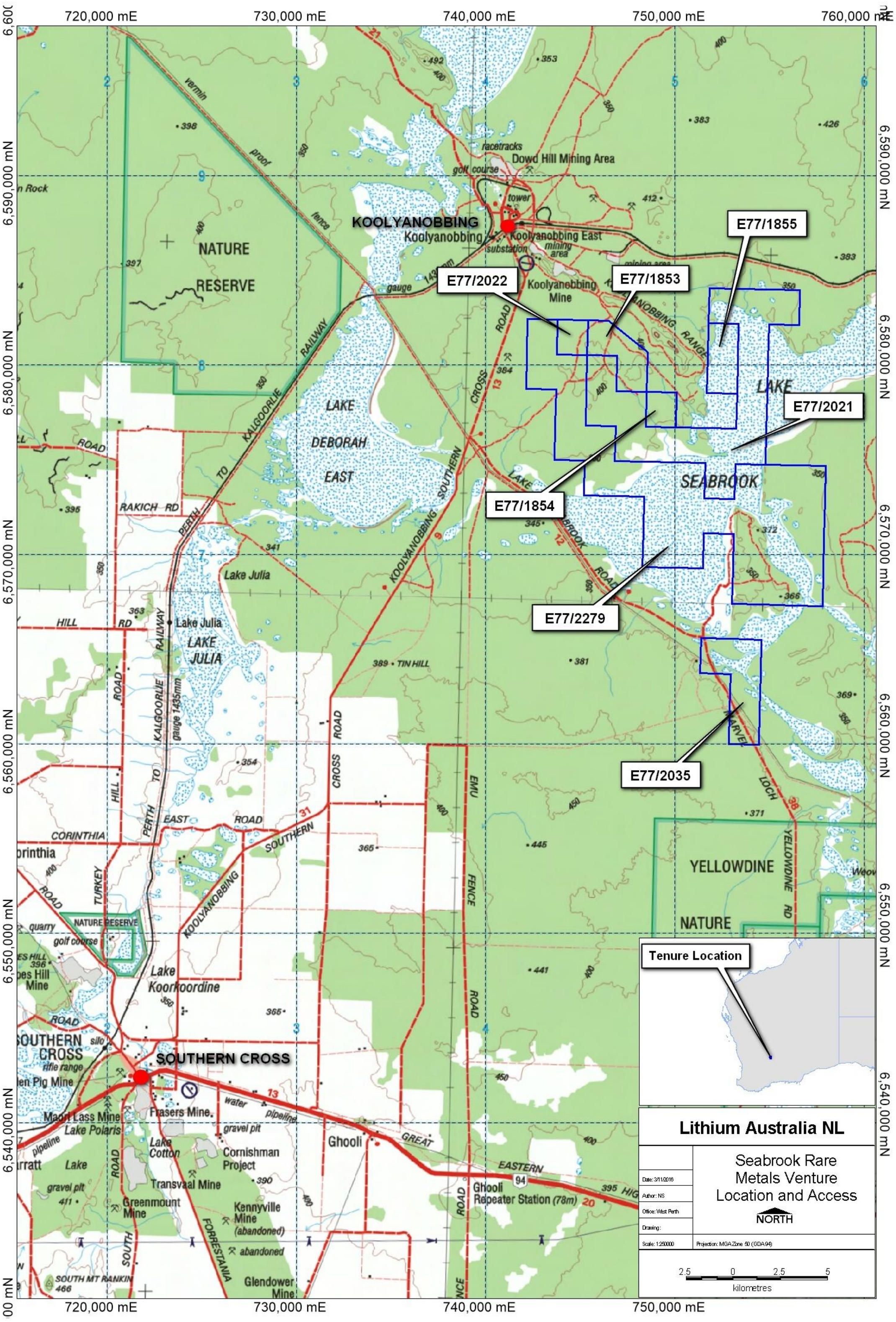

Figure 1 Location of tenure within the Seabrook Rare Metals Venture, Western Australia.

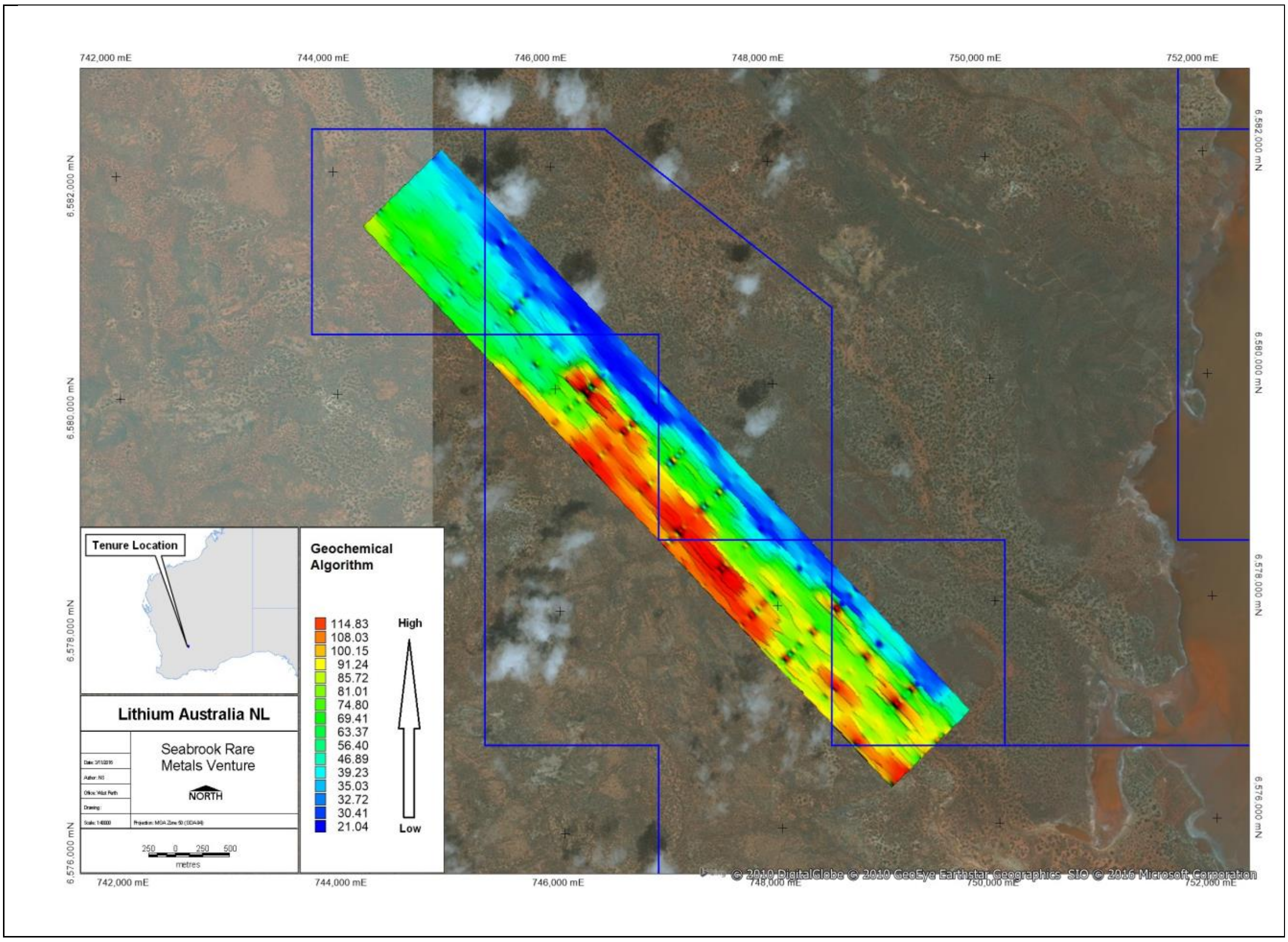

Figure 2: Geochemical alkali metal algorithm from XRF analyser data

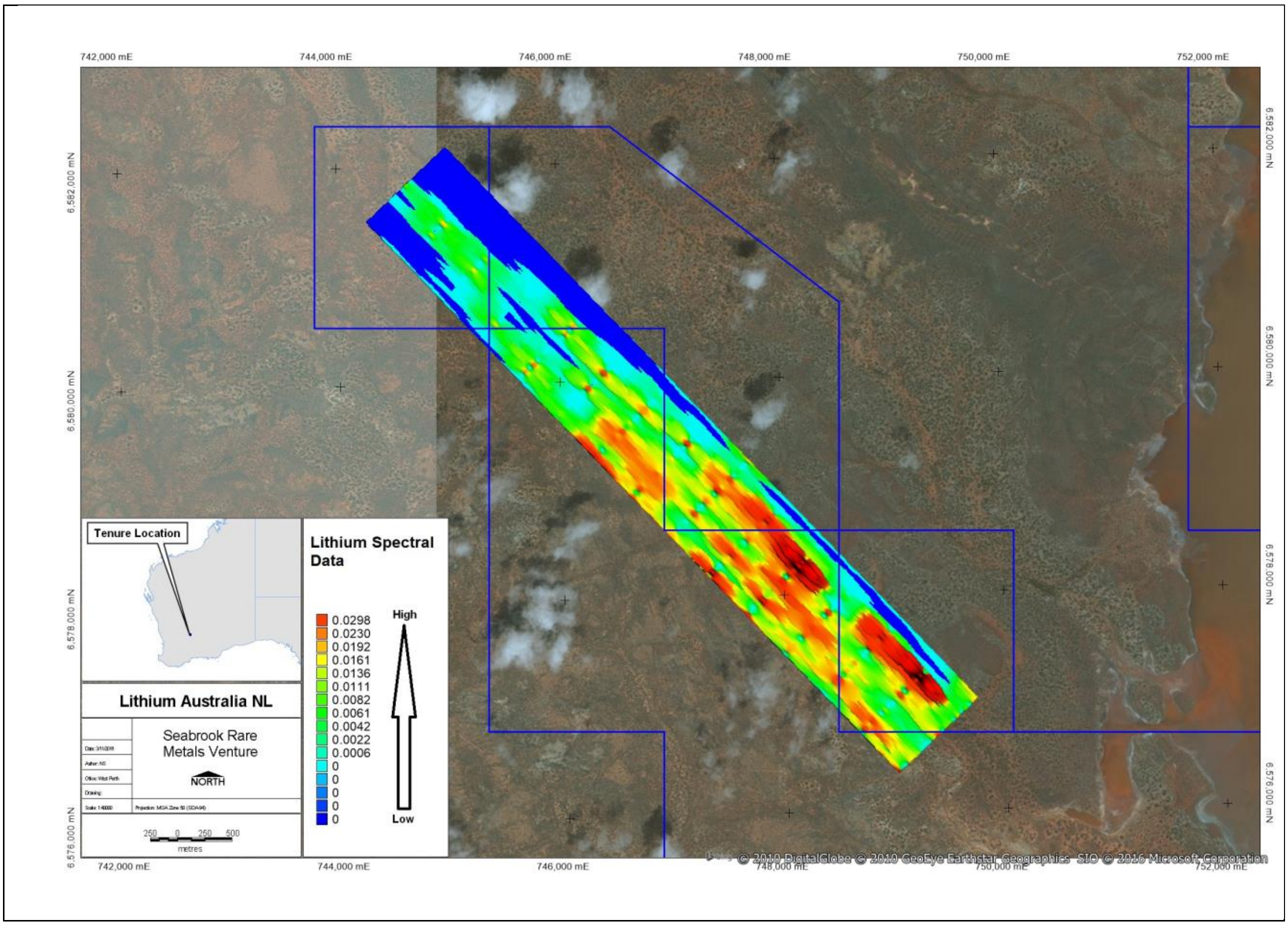

Figure 3: LIBs semi-quantitative Li% from soils analysed using the SciAps Z500 analyser (LIBZ laser technology)

Conclusions

LIBS technology provides a convenient means of rapid, real-time, assessment of lithium for reconnaissance geochemical surveys. Improved calibration will improve the application of this technique.
The success of LIBs for the real-time analysis of fine materials provides the opportunity to extend its use to other applications. LIT is working with SciAps to complete the calibration of a SciAps Z300 field-portable LIBS analyser for drilling control in lithium clays at its Electra Project in Mexico.

Comment from Adrian Griffin Managing Director

"Lithium Australia has worked with SciAps, for some time, to perfect the use of LIBS technology in geochemical applications. The extension of technique to the real-time control of drilling in lithium clays, is a breakthrough that should reap immediate financial benefits, by maximizing the effectiveness of our first round of drilling in Mexico."

Adrian Griffin
Managing Director
Mobile +61 (0) 418 927 658
Adrian.Griffin@lithium-au.com

About Lithium Australia
Lithium Australia NL is a dedicated developer of disruptive lithium extraction technologies, and 100% owner of the Sileach™ process for the recovery of lithium from silicates. LIT has strategic alliances with a number of companies, potentially providing access to a diversified lithium mineral inventory. LIT aspires to create the union between resources and the best available technology and to establish a global lithium processing business.

MEDIA CONTACT:
Adrian Griffin Lithium Australia NL 08 6145 0288 | 0418 927 658
Kevin Skinner Field Public Relations 08 8234 9555 | 0414 822 631

Competent Persons Statement:

The information contained in the report that relates to Exploration Results of projects owned by Lithium Australia NL and is based on information compiled or reviewed by Mr. Adrian Griffin, who is an employee of the Company and is a Member of the Australasian Institute of Mining and Metallurgy and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which is 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. Griffin has given consent to the inclusion in the report of the matters based on his information in the form and context in which it appears.

JORC Code, 2012 Edition – Table 1 report template

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• *Lithium Australia NL (LIT) has completed a 315-soil geochemistry sampling program over 15km of traverse lines.* • *Results being reported are for 315 samples over tenements E77/2021, E77/2022, E77/1853 and E77/1854.* • *LIT's geochemical survey covered 15 km of traverse lines with samples taken on a 50mx500m grid. At each sample site a 100-150mm deep pit was dug. A sieved sample was taken from the fresh surface of each pit, sealed in a calico bag, numbered and sent to Perth for analyses.* • *Samples were analysed in Perth using a Niton XL3t field-portable XRF and SciAps Z500 field-portable LIBS analyser.* • *The Niton XL3t field-portable XRF analysed for a suite of 33 elements. The SciAps Z500 field-portable LIBS analyser analysed for lithium (please take note that the Li should not be considered absolute values, but rather comparative values that are referenced to a pre-loaded calibration curve installed on the analyser).* • *Two reference type materials (standards) were used after every 20th sample in order to ensure quality control. Wavelength calibration for the Z500 analyser was also done after every 20th sample.*
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• *Not applicable*
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• *Not applicable*
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.*	• *Not applicable*

	• The total length and percentage of the relevant intersections logged.	
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• *Not applicable. No drilling.* • *All samples dry.* • *At each sample site a 100-150mm deep pit was dug. A sieved sample was taken from the fresh surface of each pit, sealed in a calico bag, numbered and sent to Perth.* • *Samples were analysed in Perth using a Niton XL3t field-portable XRF and SciAps Z500 field-portable LIBS analyser directly on the surface of the sieved soils.* • *For the Niton based geochemical survey two reference type materials (standards) were used after every twentieth sample in order to ensure quality control.* • *Wavelength calibration for the Z500 analyser was done after every 20th sample.* • *Sampling sizes are considered appropriate*
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• *The quality of the data from samples analysed by using field-portable Niton XRF analyser is considered appropriate due to consistent and accurate results from reference materials.* • *The results from the SciAps Z500 LIBS analyser are referenced to a pre-loaded factory calibration model. These results should be seen as comparative to various geochemical signatures generated by the Niton pXRF and not absolute values. Sample preparation is integral to the analysis process as it ensures a representative sample is presented for assay. The preparation process includes sorting, drying, crushing, splitting and pulverising.* • *Each Niton XLR3t pXRF reading consisted of a 45 second interval reading on the soil-type setting. The 45 second interval consisted of a 15 second main range, 15 second low range and 15 second high range. The instrument was serviced 26th of August 2015 and a system check was done every time the instrument was switched on or after a battery change.* • *Each SciAps Z500 LIBS reading was taken in Geochem mode on a single location and took approximately 2 seconds.* • *The quality of the data from samples analysed by using Niton XL3t pXRF analyser and SciAps Z500 LIBS analyser is considered appropriate due*

		to consistent and accurate results from reference materials.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• *Spatial data was imported from the GPS and geochemical data from both Niton XL3t pXRF and SciAps Z500 LIBS analysers and stored into a single excel datasheet.* • *Data entry carried out by field personnel thus minimizing transcription or other errors. Careful field documentation procedures and rigorous database validation ensure that field and geochemical data are merged accurately.* • *Field standard locations were used to verify the locations of sample points. These locations were also verified through a GIS verification.* • *No adjustments are made to geochemical data.*
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• *Sample locations picked up with hand held Garmin GPSmap 62s Approximately 3-5m accuracy.* • *All locations recorded in GDA-94 Zone 50.* • *Topographic locations interpreted from GPS pickups (barometric altimeter) and field observations. Adequate for the purpose of the soil geochemical survey.*
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• *15 km of traverse lines with samples taken on a 50mx500m grid. 50m intervals SW-NE with a 500m line spacing NW-SE.* • *Sample compositing was not applied.*
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• *Geological strike is NW-SE along the Koolyanobbing Shear Zone (KSZ). The NW-SE line spacing is 500m and the SW-NE sample spacing is 50m adequately establishing geochemical continuity.*
Sample security	• *The measures taken to ensure sample security.*	• *Samples were securely packaged when transported to ensure safe arrival at assay facility.*
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• *The locations and XRF data have been reviewed by cross-verification of all the data in the digital excel data file against GIS locations, reference material and raw data.*

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• *The Seabrook Rare Metals Venture (LIT 80%, and Tungsten Mining NL ASX: TGN, 20%) holds six exploration licences, E77/1854, E77/1854, E77/1855, E77/2021, E77/2022, and E77/2035, located on the shores of Lake Seabrook, approximately 60km north-east of Southern Cross and 10km south-east of Koolyanobbing, Western Australia.* • *The tenements are in good standing and no known impediments exist.*
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• *Previous exploration in the area under the SRMV targeted iron ore, gold, base metals and tungsten. These were carried out by Barrier Exploration, Sons of Gwalia Ltd and more recently Tungsten Mining.* • *Work included mapping, geochemical sampling, auger drilling and costeaning.*
Geology	• *Deposit type, geological setting and style of mineralisation.*	• *The tenements are located in the Archaen Koolyanobbing Greenstone Belt (KGB), which sits in the Yilgarn Block. The KGB comprises a series of mafic volcanic rocks which has been intruded by ultramafic peridotitic sills. Pelitic black shales, cherty horizons and BIFs are intercalated within these mafic volcanics.* • *The KGB is truncated to the south west by the sinistral Koolyanobbing Shear Zone. The KSZ strikes NW-SE through the SRMV. Rocks of the KSZ are predominantly mylonitized granite along with associated quartz veins.* • *Tungsten mineralization is associated with skarn mineralization in the KSZ.*
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* ○ *easting and northing of the drill hole collar* ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole* ○ *down hole length and interception depth* ○ *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• *Not applicable*

Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• *Not applicable*
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• *Not applicable*
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• *See figure 2 and 3*
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• *Not applicable*
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• *All meaningful & material exploration data has been reported*
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• *In the short term, further geochemical sampling extending gridlines and infilling is planned.*