POSEIDONNICKEL

12 October 2016

LITHIUM TARGETS GENERATED AT LAKE JOHNSTON

Highlights

- **Excellent results returned from soil sampling over lithium bearing pegmatite zones**
- **Testing and development of the Bruker pXRF unit has been completed to produce a Lithium Index reading which has been calibrated to within 89% correlation with lithium laboratory results**
- **A Lithium Index calibrated Bruker pXRF unit has been purchased and setup within the Lake Johnston laboratory for rapid sample turnaround**
- **Eleven Lithium Targets have been generated to date and sampling has been extended**
- **The Atomic Absorption (AA) assay machine at Lake Johnston has been recommissioned with Lithium-Tantalum tubes and has achieved 99% correlation with commercial assay laboratory readings**
- **All soil samples and rock chip samples can now be analysed on site with a 1-2 day turnaround. QAQC samples will be sent to Perth labs for check assaying**

Poseidon Nickel Limited (ASX:POS or the Company) is pleased to update the market that eleven lithium targets have been generated from the completion of the soil sampling over the prospective northern pegmatite zone at Lake Johnston.

Poseidon contracted the geological services of Corad Pty Ltd to complete soil and rock chip sampling over an area of ~4km^2 in the northern portion of E63/1067 at the top end of the Lake Johnston tenement package (Figure 1). Historic and recent sampling has identified the area as hosting lithium bearing pegmatites with sampling to locate and define the most prospective zones for spodumene mineralisation now completed.

Corad collected 650 soil samples over several adjoining sampling areas and at varying sample spacings during the progression of the programme. Generally -1mm sieved samples were collected in the field and were brought back to the Lake Johnston laboratory for drying, sieving to -250 micron and analysing using a Bruker pXRF machine with propriety Lithium Index calibrations programmed into the machine. The initial 116 samples were analysed by Portable XRF Services under supervision of Geochemical Services in West Perth using the calibrated Bruker pXRF to produce a calculated Lithium Index. The samples were then sent to Intertek Laboratory for traditional multi-element analysis. Blind testing of the samples using the Bruker pXRF returned an 89% correlation with the laboratory results (Figures 2 and 3) which is an outstanding result as lithium is undetectable using XRF technology due to its low atomic weight.

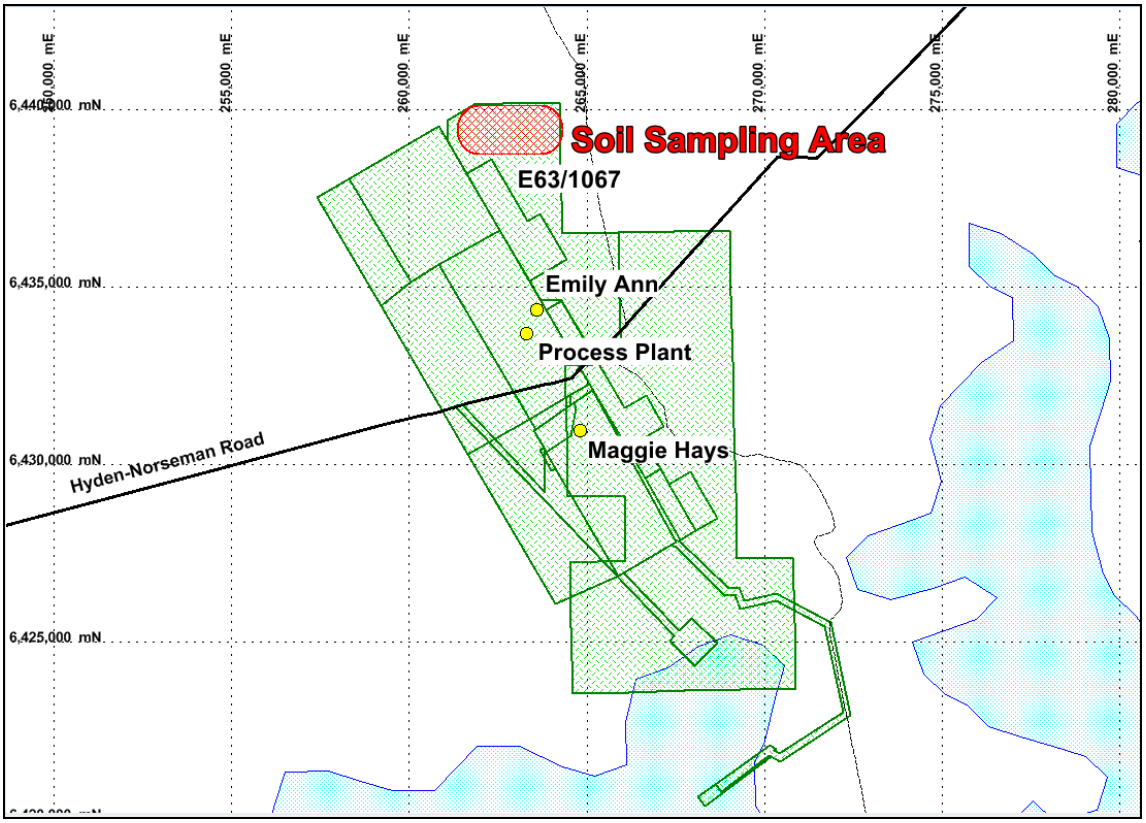

Figure 1: Lake Johnston tenure package showing the area of lithium soil sampling in the northern portion of E63/1067.

Geochemical Services created a propriety algorithm to estimate the lithium grade in samples using ratios of numerous pathfinder elements which include Cs, Ga, K, Nb, Rb and Ta. It has returned a 99% correlation with rock chip samples and an 89% correlation with soil samples compared to laboratory results which is outstanding given the time and cost savings this unit delivers. The results are more than adequate to highlight lithium anomalies and prospective pegmatite zones in preparation for follow-up field investigation, target prioritisation and drill testing.

Poseidon has subsequently purchased a Bruker S1 TITAN pXRF unit and the resultant soil sampling programme has generated at least eleven lithium pegmatite target zones (Figure 4). Poseidon is continuing to work with Geochemical Services to determine if the Bruker pXRF machine can be calibrated to differentiate spodumene mineralisation from lithium mica mineralisation so as to better utilise the unit in the field.

The Lake Johnston Atomic Absorption (AA) assay machine has also been recommissioned with Lithium-Tantalum tubes and has also achieved 99% correlation assaying rock samples using both commercial assay laboratory readings as well as the Bruker pXRF. Poseidon is now confident to use the equipment setup within the onsite laboratory for initial evaluation of Li-Ta bearing samples. All soil samples and rock chip samples can now be analysed cost effectively on site with a 1-2 day turnaround. QAQC samples will be sent to Perth labs for check assaying and continued monitoring of equipment accuracy. Drilling samples will be selected on site using these tools but as per standard practices, all anomalous samples will be sent for proper laboratory analysis to meet JORC and ASX reporting requirements.

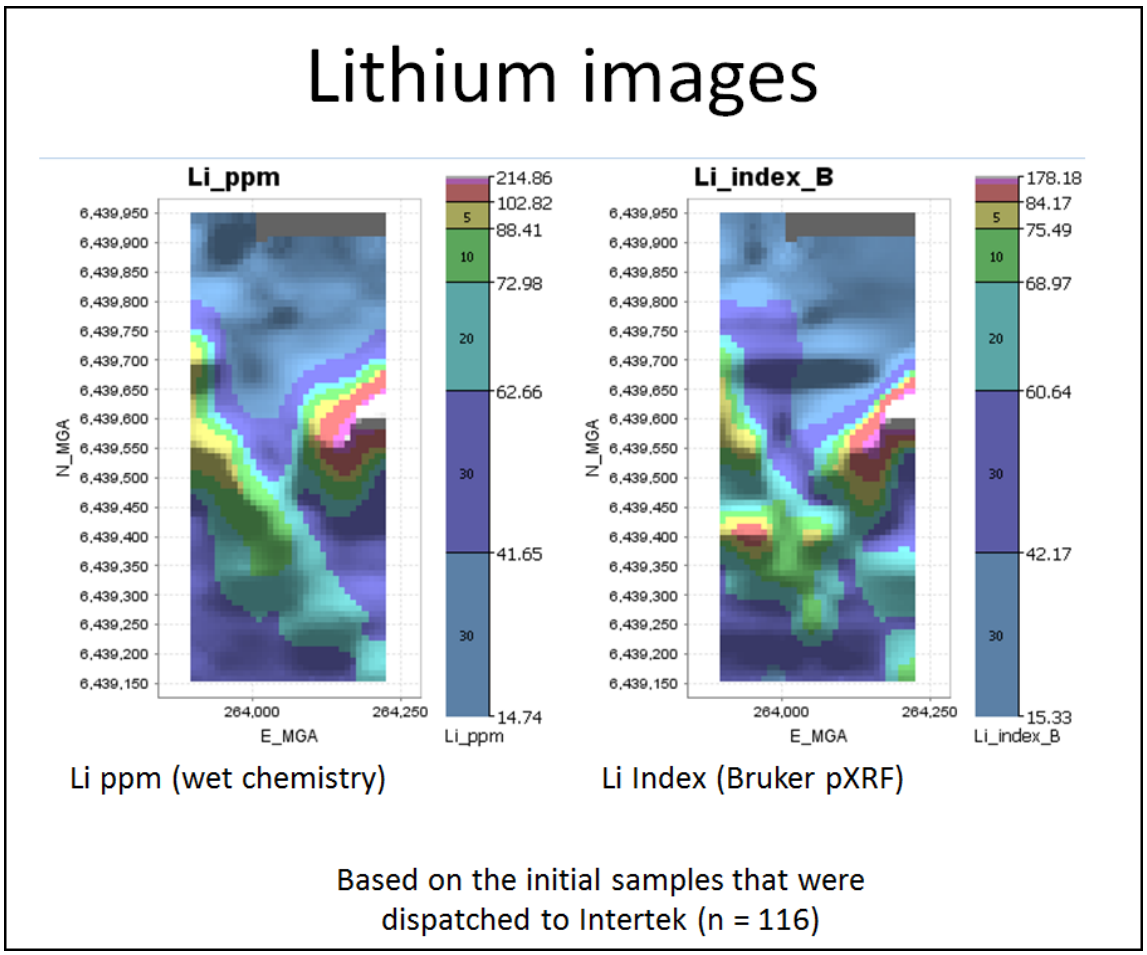

Figure 2: Soil sample results from the initial test area using traditional commercial laboratories methods versus a calibrated Bruker pXRF machine programmed to calculate lithium using propriety Lithium Index estimation. Results returned an 89% correlation.

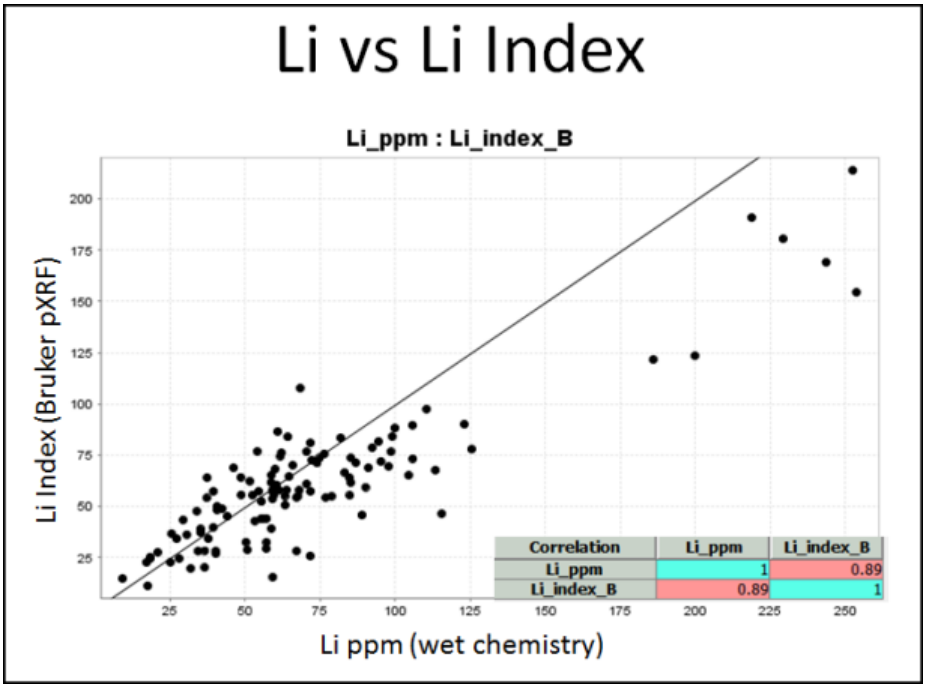

Figure 3: Correlation between the Bruker pXRF Lithium Index and traditional laboratory assays demonstrate a correlation of 89% which is more than adequate for generating reliable soil sample anomalies. It is also faster and cheaper than traditional assaying.

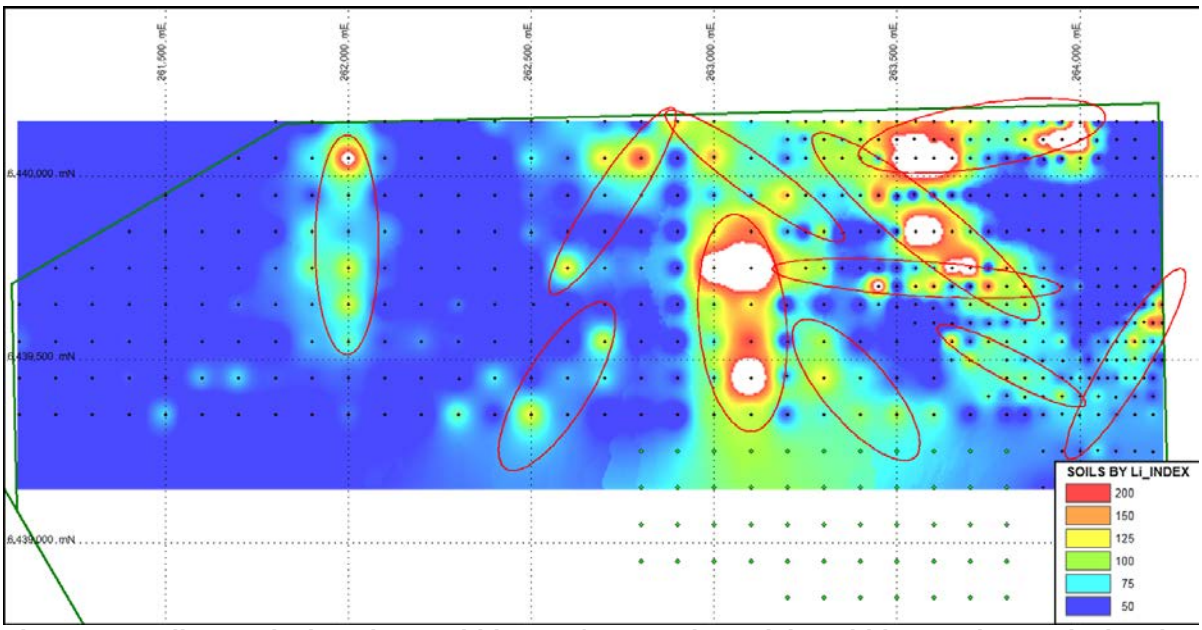

Figure 4: Soil sample locations within E36/1067 coloured by Lithium Index and showing interpreted pegmatite target zones that warrant further field investigation and drill testing.

Consulting botanist Paul Armstrong has been contracted to complete flora surveys over the planned drill targets and access lines as the Company has encountered several challenges in securing exploration permits due to a rare flora species "Casuarina Globulosa." Mr Armstrong has extensive botanical knowledge of the area having worked at Lake Johnston with the previous operators. He will work with DPaW and DMP to get the required regulatory POW approvals to explore within the area and reduce the impact of exploration activities now that drill targets have been selected.

It is apparent that there may be a delay in securing these permits so in the short term Poseidon will refocus on applying the Bruker S1 TITAN pXRF Lithium Index technology to identifying prospective core from both Emily Ann and Maggie Hays mine areas.

Notes

The information in this report that relates to Exploration Results is based on information compiled and reviewed by Mr N Hutchison, General Manager of Geology who is a full-time employee at Poseidon Nickel, and is a Member of The Australian Institute of Geoscientists. Mr Hutchison has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which he is undertaking 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' (the JORC Code 2012). Mr Hutchison has consented to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The Australian Securities Exchange has not reviewed and does not accept responsibility for the accuracy or adequacy of this release.

CORPORATE DIRECTORY

Director / Senior Management

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Geoff Brayshaw	Non-Executive Director
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Home Exchange

The Company's shares are listed on the Australian Securities Exchange and the home exchange is Perth
ASX code: POS

ATTACHMENT A
JORC (2012) Table 1

LAKE JOHNSTON PROJECT
E63/1067 LITHIUM SOIL SAMPLING

E63/1067 LITHIUM SOIL SAMPLING

SECTION 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections)

JORC Code explanation	Commentary
Sampling techniques	
Nature and quality of sampling (e.g. 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 (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.*	• Gridded soil geochemistry sampling • Duplicated samples collected approx. every 20th sample. Bruker runs internal QAQC checks daily and operator runs daily analysis checks using standard reference material. • 250g sample of -1mm sieved soil fraction taken from 20-40cm deep holes. • Samples dried overnight and sieved to -250 micron. • Samples analysed using Bruker S1 TITAN with a proprietary calibrated Lithium Index algorithm developed for LCT pegmatites.
Drilling techniques	
Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. 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.).	• No drilling involved
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.*	• Recovery not relevant
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.* *The total length and percentage of the relevant intersections logged.*	• Data was collected from each sample site and entered into Excel spreadsheet. Data collected including sieve mesh size, sample depth, soil type, grain size, moisture content, terrain type, slope direction, vegetation and geology comments

JORC Code explanation	Commentary
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.*	• Dried samples were sieved to -250 micron using a mechanical shaker sieve in the onsite lab. To ensure a consistent sample medium was achieved. • The oversize material was re bagged and retained. A 50g charge of the fine fraction was analyses, returned to the bulk sample for future reference. • Field duplicated were collected at an average of 1:20 and analysis compared. • The -250 micron fine fraction is considered the appropriate size fraction for mobile element analysis as was used consistently throughout the programme.
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 (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• The sample preparation was completed using an industry standard process and the assay method using a pXRF machine is considered fit for purpose. • Samples sent to commercial laboratory were assayed for multi-elements using 4 acid digest with ICP-MS finish. • All samples were analysed using Bruker S1 TITAN with a proprietary calibrated Lithium Index algorithm developed for LCT pegmatites. • Field duplicated were collected at an average of 1:20 and analysis compared. Acceptable levels of accuracy were returned from the duplicates.
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.*	• Sampling completed by Corad, supervised by Poseidon and assay data/data processing completed by Geochemical Services to ensure sound quality control and representation. • Data was collected from each sample site and entered into Excel spreadsheet on the site server.

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.*	• Location of samples were recorded using a Garmin 62s handheld GPS units with an accuracy of +/- 5m. • All data points were located using the Geocentric Datum of Australia 1994 and the Map Grid of Australia zone 51 projection. Topographic control using GPS is more than adequate for soil sampling.
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.*	• The initial test area was completed at 25x50m spacing. This was expanded to 50x50m spacing. As data quality was very good the spacing was expanded to 100x100m sampling.
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.*	• Sampling was completed using a square grid pattern as the pegmatites were found to strike in multiple directions which is apparent in the map produced (Figure 4).
Sample security	
The measures taken to ensure sample security.	• All samples were collected, prepared and stored on site in a secure environment.
Audits or reviews	
The results of any audits or reviews of sampling techniques and data.	• Sampling techniques and protocols were developed by Dr NW Brand of Geochemical Service, Perth. These were reviewed and adopted by Poseidon and Corad personnel.

E63/1067 LITHIUM SOIL SAMPLING

SECTION 2 Reporting of Exploration Results

(Criteria in this section apply to all succeeding sections)

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 reported soil samples are located within E63/1067 which is at the northern end of the Lake Johnston tenement package which is 100% owned by Poseidon Nickel. • The Maggie Hays and Emily Ann mines are situated on M63/163 & M63/283 respectively. The concentrator plant is also located on M63/283 which are located 190km SW of Kalgoorlie. • A long standing Native Title Agreement (since 1997) exists with the Ngadju People and will be continued by Poseidon Nickel. • The tenements are located within the buffer zone of the Bremer Range Priority Ecological Community and within the Proposed Nature Reserve 82. • Lake Johnston Plant commenced operation in 2001 and there are no known impediments to continue operating in this area. • There are no royalties or other interests held.
Exploration Done by Other Parties *Acknowledgment and appraisal of exploration by other parties.*	• AMAX Australia Ltd explored for tantalum within the Mt Day area in 1981. They mapped and rock chipped pegmatites which included Li analysis. • LionOre Australia and Norilsk Nickel Australia previously completed exploration, drilling and mining of the Lake Johnston project until Poseidon's acquisition in late 2014.
Geology *Deposit type, geological setting and style of mineralisation.*	• The Lake Johnston Project is located 80km ENE of Western Areas' Forrestania Project which contains their flagship Flying Fox Mine. Flying Fox and Maggie Hays are both intrusive style ultramafic bodies, not extrusive Kambalda style lava flows. They have undergone similar intrusive emplacement, nickel mineralisation, and structural overprinting histories. Late state felsic pegmatites intruded this rocks from late stage granitic activity.
Drill hole information	• Co-ordinates and other attributes of rock chip samples are included in the release.
Data aggregation methods	NA
Relationship between mineralisation widths and intercept lengths	NA
Diagrams	• Suitable summary plans have been included in the body of report
Balance reporting	• The reporting is factual & balanced
Other substantive exploration data	• All relevant material relating to the lithogeochemical sampling programme have been reported.
Further work	• The Lake Johnston tenements are unexplored for lithium bearing rocks so substantial grass roots exploration work is still required. Drill of the generated targets is currently being planned.