



# VOLT

## RESOURCES

### ASX ANNOUNCEMENT

By e-lodgement

31 May 2016

### NAMANGALE GRAPHITE TESTWORK PRODUCES EXCEPTIONAL QUALITY CONCENTRATE

#### HIGHLIGHTS

- Excellent metallurgical flotation results with concentrates up to 98.3% Total Graphitic Carbon (TGC) in the +300 and +500 micron flake categories
- Excellent purity achieved without the use of chemicals
- Potential Namangale processing route offers significant cost advantage compared to synthetic graphite
- Further optimisation of the flotation flow sheet is ongoing to further improve purity
- Volt is very well placed to meet unprecedented demand from the Lithium-ion battery markets and provide a premium graphite product to market
- Discussions with potential off take partners and end-user groups in the US, Europe and Asia are progressing well

#### INTRODUCTION

Volt Resources Limited (**ASX: VRC**, "Volt", "the Company") is pleased to announce that Namangale Pre-Feasibility Study (PFS) testwork has produced an exceptional graphite concentrate product for the Lithium-ion battery market. Excellent metallurgical results from both the Namangale 1 and 2 deposits that make up the majority of the JORC Resource at the Namangale Project have been received. The concentrates were produced from diamond core composite samples collected from the 2015 drilling program and were achieved through a conventional circuit of milling and flotation that was carried out at ALS in Perth. No industrial chemicals were used to achieve these results. The flotation flow sheet optimisation remains ongoing with the aim of further improving the purity and recovery of our graphite concentrate product offering.

#### RESULTS SUMMARY

The graphite concentrate produced from Namangale 2 returned concentrate grade of up to 98.3% TGC with +300 and +500 micron flake and the graphite concentrate from Namangale 1 returned concentrate grades of up to 97.7% with +300 micron flake. Further test work is continuing to improve purity of the final concentrate product. Numerous samples returned have now demonstrated that the Namangale deposit can consistently provide clean, high-grade

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TGC graphite suitable for commercial applications mainly within the Lithium-ion battery market.

Executive Chairman, Stephen Hunt commented, "*The results from this round of testwork are exceptionally good. We have been delighted with the repeatability of the results meaning these are not a once-off, and with more work from our very large resource, we are confident the results can even improve further. The quality of our product will be extremely attractive to potential off-take partners, and will also provide us with a high basket price. This is a tremendous outcome for the project - one which is rapidly shaping up to be world class on every level.*"

### **CLEAN GRAPHITE CONCENTRATE PRODUCED**

The Company has demonstrated that it can achieve excellent purity results without the use of chemicals. Volt Resources has been able to demonstrate substantial cost of processing advantage compared to synthetic graphite and other graphite containing trace elements. The Namangale graphite concentrate is separated through a straightforward crushing and flotation process and importantly without the use of industrial chemicals. Clearly this processing advantage provides an enormous benefit to the underlying capital and operating costs associated with mining graphite.

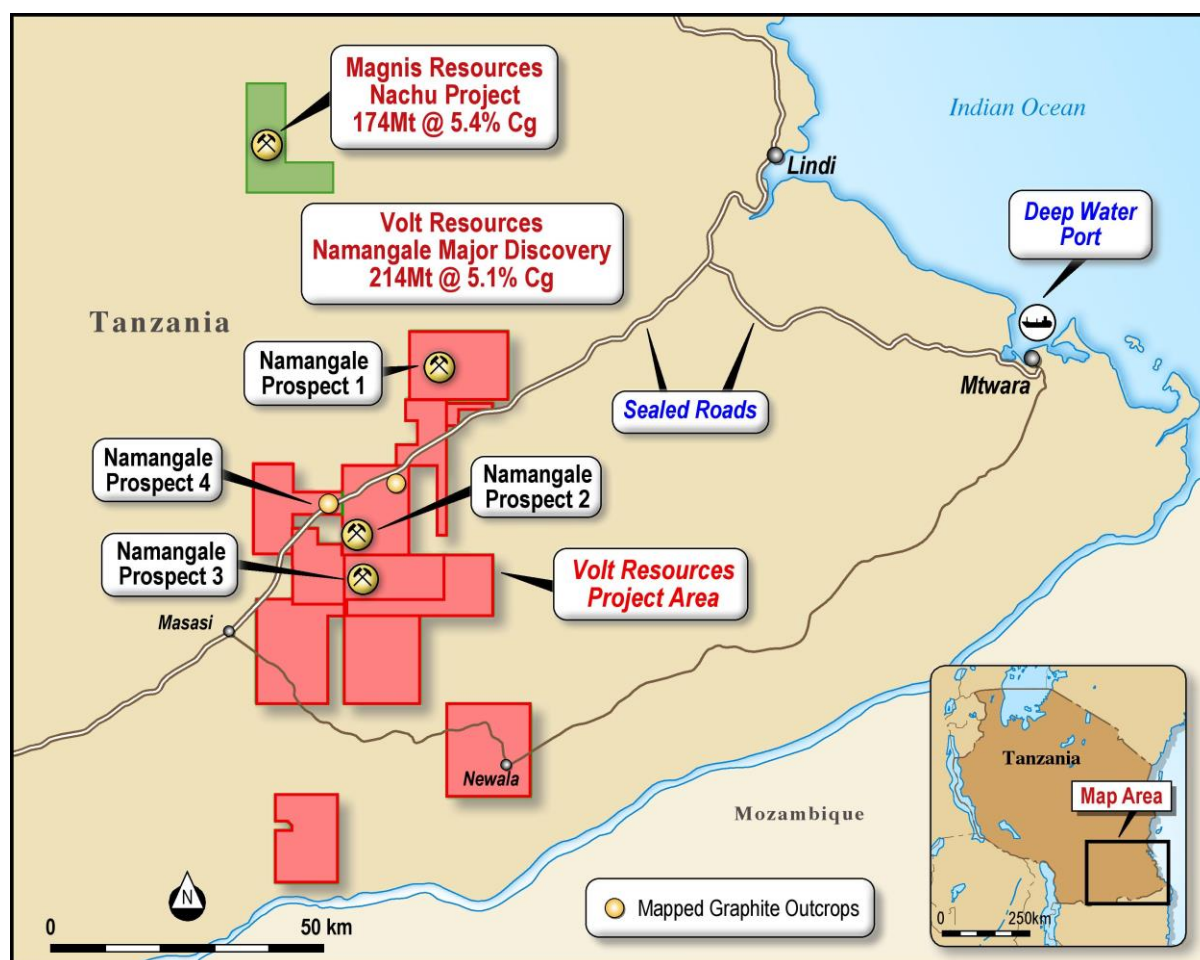


### **RESULTS EXCEED STAGE 1 PFS MODELLING ESTIMATES**

Metallurgical results received post stage 1 of the PFS has exceeded estimates, which were used in the earlier BatteryLimits models. Commenting on the results to date Phil Hearse from BatteryLimits, who are managing the metallurgy and the PFS for Volt said, "*Achieving these high grade coarse concentrates for Namangale is very encouraging given that there is still a lot of opportunity for further optimisation of the test work program. BatteryLimits looks forward to working closely with Volt to develop these quality ore bodies*".

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**Figure 1** below shows the location of the Namangale Project tenements and the main graphite prospects that have been identified to date. These lay within the 2,000km<sup>2</sup> of the Company's tenement package. Volt has continued to build on its dominant tenement position in this extremely well located, high quality graphite area of Tanzania.



**Figure 1** Location of the Nachingwea Project tenements

## JUMBO FLAKE GRAPHITE DEMAND FORECAST TO INCREASE

Most independent forecasts confirm that demand for coarse flake graphite will increase in coming years driven by consumer and business demand from the Lithium-ion battery market, the emergence of the expandable graphite market and other high-tech industries.

**Benchmark Mineral Intelligence** forecasts estimate demand for graphite (carbon) used as anode material in lithium ion batteries is set to increase by over 200% in the next four years as global cell production surges on the back of maturing pure electric vehicle demand and the inception of the utility storage market. New price data from Benchmark has started to show rising prices for uncoated spherical graphite, 99.95% C, 15 micron in size, FOB China. Price ranges in the market have risen from \$2,500 to \$3,000/tonne in Q4 2015, to \$2,800 to \$3,200/tonne in Q2 2016.

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## **CORPORATE UPDATE**

Discussions with potential off-take partners and end-user groups in the US, Europe and Asia is progressing well. Volt's Executive Chairman Stephen Hunt is overseeing these discussions/negotiations and is currently reviewing numerous approaches received from potential off-take partners and end user groups.

## **CONCLUSION**

The Board of Volt Resources considers the results to date continue to indicate that the Namangale Prospect is rapidly emerging as a world-class graphite deposit. The drilling program for the 2016 year has now commenced with the objective of upgrading a significant portion of the Inferred Resource into Indicated and Measured categories. Volt is committed to fast tracking current PFS towards a bankable Feasibility Study, followed by an investment decision towards production and capturing a meaningful portion of the unprecedented market demand for Super Jumbo and Jumbo flake graphite.

For and on behalf of Volt Resources Limited



**Stephen Hunt**  
**Volt Resources Limited**  
Executive Chairman

### **Competent Person**

The information in this report that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Mr Matt Bull, a Competent Person who is a member of Australian Institute of Geoscientists. Mr Bull is a Director of Volt Resources. Mr Bull has sufficient experience that is relevant to the style 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'. Matt Bull consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

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# JORC Code, 2012 Edition – Table 1 – Namangale Main Deposit

## Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Sampling was carried out by selecting composites of diamond core from representative samples of mineralization from the Namangale 1 and Namangale 2 deposits. Intervals were selected based on the results of twin RC holes which were drilled adjacent to the diamond holes.</li> <li>All samples were geologically logged by a suitably qualified geologist and selected intervals were sent to ALS in Perth for Metallurgical test work to be carried out.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>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).</li> </ul>	<ul style="list-style-type: none"> <li>RC Drilling is being conducted by JCIL Drill. Bit diameter was 4.5 inches (114mm) face sampling bit.</li> <li>Diamond Drilling was conducted by JCIL drill using HQ core diameter triple tube (63mm).</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Diamond drill recovery was excellent (&gt;90%) and is therefore not expected to influence grade.</li> </ul>
Logging	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Logging was carried out on each of the samples including lithology, amount of weathering by a suitably qualified geologist.</li> <li>Data is initially conducted on paper logging sheets and is then transferred to Excel logging sheets.</li> </ul>

	<ul style="list-style-type: none"> <li>• Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>• The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>• Logging is semi-quantitative based on visual estimation.</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>• If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>• If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>• For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>• Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>• 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.</li> <li>• Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>• Once intervals were selected core was cut into quarters and bagged in 1m intervals. Compositing occurred at the ALS laboratory in Perth.</li> <li>• All sampling was carefully supervised with ticket books containing pre-numbered tickets placed in the sample bag and double checked against the ticket stubs and field sample sheets to guard against mix ups.</li> </ul>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>• 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.</li> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• The samples were sent to ALS in Perth Australia as quarter core for sample preparation</li> <li>• Analysis for Total Graphitic Carbon (TGC) using the Loss on Ignition by thermogravimetric Analysis at 425 degrees C and 1000 degrees C.</li> <li>• The TGC analysis has been carried out by an industry accepted and recognized laboratory – ALS</li> <li>• This is considered the most appropriate method to analysis high grade concentrates</li> <li>• ALS inserted its own standards and blanks.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>• The verification of significant intersections by either independent or alternative company personnel.</li> <li>• The use of twinned holes.</li> <li>• Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>• Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>• Data was recorded by the sampling geologist and stored in the company's master spreadsheet.</li> <li>• All diamond holes twinned RC holes and ¼ of the core was assayed and compared to the results of the adjacent RC hole which were found to be excellent.</li> <li>• No adjustments were required</li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Specification of the grid system used.</li> <li>• Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>• A hand-held GPS was used to identify the position of all samples (X and Y horizontal error of 5 metres) and reported using ARC 1960 grid and UTM datum Zone 37 south. During December 2015 a DGPS survey was conducted which considerably improved the accuracy of the collar locations, especially the Height Datum of the drillhole ground collar. Positional accuracy is given as &lt;1.5m error in X and Y.</li> </ul>



<p><i>Data spacing and distribution</i></p>	<ul style="list-style-type: none"> <li>• <i>Data spacing for reporting of Exploration Results.</i></li> <li>• <i>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.</i></li> <li>• <i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Samples were selected from diamond core where the positions were selected to get a good representation the material types intersected in the RC drilling</li> <li>• Compositing was used to get sufficient volume of material to carry out the test work</li> </ul>
<p><i>Orientation of data in relation to geological structure</i></p>	<ul style="list-style-type: none"> <li>• <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Surface mapping and interpretation of ground EM data was used to orient the drill lines to get the most unbiased sampling of the mineralisation.</li> <li>• Drilling was planned to intersect the mineralization as close as possible to right angles. Results indicate the drill holes intersect the mineralisation at between 70-90 degrees.</li> </ul>
<p><i>Sample security</i></p>	<ul style="list-style-type: none"> <li>• <i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Transportation is carried out by company staff driving the samples Dar es Salaam before transport was carried out by a commercial courier company to Perth.</li> </ul>
<p><i>Audits or reviews</i></p>	<ul style="list-style-type: none"> <li>• <i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No audits or reviews have yet been under taken</li> </ul>

## Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<ul style="list-style-type: none"> <li><i>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.</i></li> <li><i>The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.</i></li> </ul>	<ul style="list-style-type: none"> <li>The prospecting license PL10644 containing the Namangale 2 deposit was granted on the 9th of July 2015 for a period of four years for the exploration of Graphite. The area covered by the prospecting licenses is 198.02km<sup>2</sup>. PL10644 License is situated in the Ruangwa and Masasi districts. The PL's straddle the boundary of the Lindi and Mtwara regions of south-east Tanzania. The prospecting license PL10718 containing the Namangale 1 Prospect was granted on the 18th of July 2015 for a period of four years for the exploration of Graphite. The area covered by the prospecting license is 239.17km<sup>2</sup>. The License is situated in the Ruangwa District. The License is located within the Lindi region of south-east Tanzania.</li> <li>The PL's are held by Nachi Resources Ltd, which in turn is 100% owned by Mozambi Resources. The surface area is administered by the Government as native title. The area is rural, with wilderness areas and subsistence farming occurring on the PL's. The Tenements are subject to a 3% royalty on production to the previous owners of Nachi Resources, which can be reduced to 1.5% under an agreement with the previous owner. There are no other known issues that may affect the tenure.</li> </ul>
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> <li><i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <li>There is no written record of previous exploration available for this area that is known to Volt Resources. The location of some graphite outcrops on the PL's was known by the previous owners.</li> </ul>
<i>Geology</i>	<ul style="list-style-type: none"> <li><i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>The exploration targets occur in Archean basement rocks of the Mozambique belt system which principally comprise metamorphic rocks ranging from schist to gneisses including marbles, amphibolite, graphitic schist, mica and kyanite schist, acid gneisses, hornblende, biotite and garnet gneisses, quartzite, granulite, and pegmatite veins. Initial exploration has focused on areas where there no or minimal overlying younger sedimentary sequences remaining (mostly Cretaceous sandstones and conglomerates).</li> </ul>
<i>Drill hole Information</i>	<ul style="list-style-type: none"> <li><i>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:</i></li> </ul>	<ul style="list-style-type: none"> <li>A summary of this information including; eastings and northings of drill hole collars, RL, dip/azimuth, down hole length and hole length are provided in Tables and Appendices of the CP Report and have</li> </ul>



	<ul style="list-style-type: none"> <li>○ <i>easting and northing of the drill hole collar</i></li> <li>○ <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li>○ <i>dip and azimuth of the hole</i></li> <li>○ <i>down hole length and interception depth</i></li> <li>○ <i>hole length.</i></li> <li>● <i>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.</i></li> </ul>	<p>been made publically available through various ASX releases from September to December 2015. Maps for each of the deposits are shown in Figures 3, 4 and 5 which show the location of all of the diamond drill holes drilled in the project to date</p>
<i>Data aggregation methods</i>	<ul style="list-style-type: none"> <li>● <i>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.</i></li> <li>● <i>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.</i></li> <li>● <i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	<ul style="list-style-type: none"> <li>● No weighted averages were used</li> <li>● No metal equivalent values were used</li> </ul>
<i>Relationship between mineralisation widths and intercept lengths</i>	<ul style="list-style-type: none"> <li>● <i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li>● <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></li> <li>● <i>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').</i></li> </ul>	<ul style="list-style-type: none"> <li>● Drill lines are planned to be as close as possible to right angles to the mapped mineralization.</li> <li>● The width of mineralization ranges from close to 100% of the intercepts to approximately 85% of the interval as the mineralization is gently folded. Closer spaced drilling is required to find the exact relationship.</li> </ul>
<i>Diagrams</i>	<ul style="list-style-type: none"> <li>● <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>● Results are from composites of diamond core from the existing deposit at Namangale 1 and 2 where all drill hole data has been reported as part of the Resource estimate</li> </ul>
<i>Balanced reporting</i>	<ul style="list-style-type: none"> <li>● <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>● Samples were taken from representative core samples from the diamond holes drilled at the Namangale 1 and 2 deposits.</li> </ul>
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> <li>● <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>● Previous results from Namangale 1 and 2 include Ground EM surveys, mapping, trenching, rock chip sampling all of the results of this work were previously reported. Recent ASX announcements also include a simplified geological map of all of the areas showing all significant intercepts.</li> </ul>

<i>Further work</i>	<ul style="list-style-type: none"><li>• <i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li><li>• <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li></ul>	<ul style="list-style-type: none"><li>• A drilling program on the three existing deposits is planned to upgrade parts of the deposit to the Indicated Resource category</li><li>• An expanded program of diamond drill holes is also planned to increase the amount of material that can be used for metallurgical test work as well as to confirm the consistency of mineralisation in the known deposits.</li></ul>
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