

## **ASX Announcement**

**ASX BGS** 

27 April 2018

# BIRIMIAN CAPITALISES ON OUTSTANDING EXPLORATION SUCCESS AS IT DOUBLES GOULAMINA RESOURCE

#### **HIGHLIGHTS**

- Goulamina total Indicated and Inferred Mineral Resource has doubled in size following recent exceptional exploration success.
- Revised Mineral Resource is 65Mt @ 1.43% Li<sub>2</sub>O for 931kt of Li<sub>2</sub>O.
  - Represents an increase of 32.1Mt @1.50% compared to the previously reported Mineral Resource.
  - Contained Li<sub>2</sub>O up from 451kt to 931kt.
  - New material added is generally higher grade, which has led to an increase in the average grade of the Mineral Resource.
- Revised Mineral Resource is from Main, West and Sangar deposits only.
- Yando, Danaya and Sabali pegmatites are yet to be included. There is a strong likelihood of further significant increases in the Mineral Resource for the Project.
- A further updated Mineral Resource estimate will be undertaken following completion of the current exploration program underway at Yando and Danaya.
- Results exceed Birimian's expectations and validate the strategy to aggressively explore Goulamina. Results bode well for the maiden Ore Reserve and suggest improved project economics in the upcoming revised PFS.

Birimian Limited (ASX:BGS; **Birimian** or the **Company**) is pleased to announce a revised and substantially upgraded Mineral Resource estimate for the Company's Goulamina Lithium Project (**Goulamina** or the **Project**) in southern Mali, following completion of the recent highly successful resource definition and extension exploration program.

Cube Consulting (**Cube**) was engaged to prepare the updated Mineral Resource estimate for the Company and has advised Birimian that the Mineral Resource at Goulamina now comprises **65Mt @ 1.43% Li<sub>2</sub>O**, with a **contained Li<sub>2</sub>O content of 931,000 tonnes** (Table 1). This increase doubles the previous Mineral Resource estimate and further confirms Goulamina as among the highest grade, hard rock lithium deposits of significant size globally today.

Tel +61 8 6382 2226 Email info@birimian.com Site www.birimian.com Suite 17, Spectrum Building, 100-104 Railway Rd, Subiaco, WA, 6008, Australia



The revised Mineral Resource estimate includes the deposits of Main I, West I & II and Sangar I & II, but excludes Yando and Danaya, where work is still ongoing. Main II has not been included at this stage due to the limited drilling of this deposit to-date.

The Mineral Resource at Goulamina now includes an Indicated Resource of 43.7Mt @ 1.48% Li<sub>2</sub>O (645,000t contained Li<sub>2</sub>O), compared with 25.3Mt @ 1.37% Li<sub>2</sub>O (347,000t contained Li<sub>2</sub>O) reported in June 2017 (*BGS*; 22 June 2017). Detailed information relating to data, quality control and estimation methodology is documented in Appendix 1 - JORC Table 1, Sections 1 to 3. The combined Mineral Resource, estimated to Indicated and Inferred confidence levels, is shown in Tables 1 and 2.

Table 1.

Goulamii	na Resource Apr	il 2018 – Split by	y Category a	t 0.0% Li₂O Cı	ut-off
Category	Domain Name	Tonnes	Li <sub>2</sub> O (%)	Li <sub>2</sub> O (t)	Fe <sub>2</sub> O <sub>3</sub>
INDICATED	Main	12,200,000	1.24	151,000	0.96
	West	11,500,000	1.54	177,000	1.07
	Sangar I	13,800,000	1.64	226,000	1.03
	Sangar II	6,200,000	1.47	91,000	1.05
	West II	-	0.00	-	0.00
INDICATED S	SUB-TOTAL	43,700,000	1.48	645,000	1.03
INFERRED	Main	3,300,000	0.91	30,000	1.05
	West	3,700,000	1.29	48,000	0.92
	Sangar I	10,100,000	1.53	155,000	1.00
	Sangar II	3,700,000	1.27	47,000	1.09
	West II	500,000	1.10	6,000	1.30
INFERRED S	UB-TOTAL	21,300,000	1.34	286,000	1.01
TOTAL RESC	DURCE	65,000,000	1.43	931,000	1.02

Table 2.

Goula	Goulamina Resource April 2018 – Split by Weathered/Fresh Ore				
Category	Domain Name	Tonnes	Li <sub>2</sub> O (%)	Li <sub>2</sub> O (t)	Fe <sub>2</sub> O <sub>3</sub>
WEATHERED	All	-	0.00	-	0.00
WEATHERED S	SUB-TOTAL	-	0.00	-	0.00
FRESH	Main	15,500,000	1.17	181,000	0.98
	West	15,200,000	1.48	225,000	1.03
	Sangar I	23,900,000	1.59	381,000	1.02
	Sangar II	9,900,000	1.40	138,000	1.06
	West II	500,000	1.10	6,000	1.30
FRESH SUB-TO	OTAL	65,000,000	1.43	931,000	1.02
TOTAL RESOL	IRCE	65,000,000	1.43	931,000	1.02

The Mineral Resource estimate excludes weathered pegmatite. The previous Mineral Resource estimate (June 2017) included some 1.4Mt of weathered material, which represented about 4% of the Mineral Resource estimate at that time. It was excluded from the original PFS announced in October 2017 (*BGS*, 04 Oct 2017) due to a lack of metallurgical information and its minor potential impact on the Project. Weathered material has been excluded in this Mineral Resource estimate, pending metallurgical testing at a future time, so it therefore remains as a potential upside for the Project.

Birimian provided the principal sources of information used in this Mineral Resource estimate including drilling databases, a topographic surface based on Worldview 2 satellite imagery and geological mapping information. An additional 119 holes have been included in the updated estimate, which augment the 142 holes which informed the previous resource model.

The Mineral Resources are defined by reverse circulation (RC) and diamond (DD) drilling. The majority of the new drilling included in the estimate is at 50m x 50m spacing. This spacing is adequate to establish the geological and grade continuity for reporting an Indicated and Inferred Resource.

The spodumene (lithium) pegmatite mineralisation drilled to-date at Goulamina occurs as several well-defined, broadly parallel and continuous dykes: Main I & II, West I & II and Sangar I & II. Mineralised domains for each pegmatite dyke were digitised in cross-section and then wireframed to generate a solid. In fresh rock, there is a very strong correlation between the mineralised portion of the pegmatite dykes and the total dyke mineralised intercept. Wireframe solids were used to populate the block model and interpolated Li<sub>2</sub>O grade by Localised Uniform Conditioning (LUC) methods.

#### Significant Potential for Further Increases to Resource

The revised Mineral Resource estimate includes the deposits of Main I, West I & II and Sangar I & II, but excludes Main II, Yando, Danaya and Sabali, where work is still ongoing. The deposits remain open at depth and along strike. Furthermore, regional exploration has identified several promising anomalies and drill targets, which Birimian will continue to aggressively advance.

Birimian is exceptionally pleased with the outcomes of the exploration drilling currently underway at Yando and Danaya and looks forward to the next phase of Mineral Resource estimation, which has potential to provide another very meaningful increase in Mineral Resource.

#### **CEO Comment**

Birimian's Executive Director and Chief Executive Officer, Mr Greg Walker, said: "The Company is delighted to be able to announce that it has doubled the Mineral Resource at Goulamina. The Board has been confident that the recently completed resource extension and definition program would be highly productive, but the results have exceeded our expectations. At 32.9Mt, Goulamina was impressive. At 65Mt, it is even more so and clearly one of the world's outstanding hard rock lithium deposits.

"Considering that our principal ore bodies are open at their extremities and at depth and that we still have Yando, Danaya and Sabali to delineate, in addition to exploration targets as yet untouched, I think it is apparent that the full extent of Goulamina very much remains to be determined. We certainly now have sufficient high-grade lithium-bearing pegmatite to justify a significant mining development. Birimian looks forward in anticipation to the announcement during May 2018 of its maiden Ore Reserve statement and revised PFS, which will clearly delineate the Company's strategy to take Goulamina into production by 2020," he said.

**Greg Walker** 

Executive Director and Chief Executive Officer

Birimian Limited

#### **ASX Additional Information - Material Assumptions**

The following is a summary of Material Information used to estimate the Mineral Resource as required by Listing Rule 5.8.1 and JORC 2012 Reporting Guidelines.

#### **Mineral Tenement and Land Tenure Status**

The deposit lies within the Torakoro Research Permit which is owned 100% by Timbuktu Ressources SARL, a member of the Birimian Limited group of companies. The mineral property is in good standing and there is no known impediment to obtaining a licence to operate.

#### Geology

The project area is located within the Bougouni region of southern Mali, where broadly north-south trending belts of Birimian-aged (Paleoproterozoic) metavolcanic and metasedimentary rocks are intruded by syn- and post-orogenic granitoids.

Within the Project area, outcrop is limited and basement geology is therefore poorly understood. Regolith typically comprises a surficial transported gravel horizon (locally termed cuirasse) overlying a thin lateritic weathering profile. Mapping indicates NE-striking metapelite and metagreywacke rocks in the north and eastern parts of the property. The southern portion of the project area is dominated by granodiorite.

All pegmatite bodies contain anomalous or significant amounts of the mineral spodumene (a lithium-bearing pyroxene), along with the other major minerals of quartz and feldspar (albite and microcline). Geological logging also identified accessory amounts of muscovite, tourmaline, apatite and biotite at the granite contacts.

#### **Drilling Techniques and Hole Spacing**

Holes were drilled in several near contiguous phases, from May 2016 to March 2018. In total, 261 holes inform the current resource estimate.

RC drilling was completed by Foraco Drilling, International Drilling Company (**IDC**) and AMCO Drilling, using nominally 5.5 inch diameter equipment, with a face sampling downhole hammer. The Foraco rig had an outboard compressor, with specifications of 1100CFM@350PSI. The IDC rig had an onboard compressor with specifications of 1150CFM@500PSI.

Core drilling was completed using equipment supplied and operated by Foraco Drilling, IDC and AMCO Drilling. All holes are standard HQ sized holes (core diameter 64mm). DD holes are a combination of some drilled from surface and some as diamond tails on RC holes.

#### Sampling

All samples collected from the RC rig by Foraco Drilling and IDC were collected at 1m downhole intervals and split into pre-numbered calico bags at the rig using a 3-stage riffle splitter yielding a sample of 3 to 5 kg for each interval. In addition to the 1m sample, duplicate samples were taken every 20m downhole. Blanks and standards were inserted into the sample stream at a minimum rate of 1:40 for Blanks and 1:40 for Standards.

For some of the deeper diamond holes, RC pre-collars were sampled using 4m composites, following similar sampling protocols.

All data is documented in a sampling ledger, including hole number, date drilled, sample identification, depths from and to, sample condition, sample type, percentage sample return and all certified standards blanks and duplicates.

Drill core was sawn in half along its long axis. One half of the drill core was taken for geochemical analysis. All samples were collected at 1m intervals down the hole. 100% core recoveries were typically achieved.

#### Sample Analysis

Sample preparation work was conducted in the ALS Laboratories in Bamako, Mali and for the 2016 drilling programs in Ouagadougou, Burkina Faso. Samples were weighed, dried and crushed to -2mm in a jaw crusher. A representative 1.0 kg split of the crushed sample was subsequently pulverised in a ring mill to achieve a nominal pulp particle size of 85% passing 75µm. Sample sizes and laboratory preparation techniques are considered to be appropriate.

Representative sub-samples of the pulverised pulps were sent to ALS Laboratory in Perth for assay. Analysis for lithium and a suite of other elements was undertaken by ICP-AES, after a sodium peroxide ( $Na_2O_2$ ) fusion – ALS Method ME-ICP89. Some of the multi-element analysis uses a MS finish – ALS Method ME-MS91. This fusion technique is considered to be a "total" dissolution technique for lithium-bearing silicate minerals. Detection limits for lithium are 0.01-10%.

#### **Estimation Methodology**

Interpreted sections were wireframed using Surpac software to create 3D solids for each pegmatite domain within the resource area. The drillhole data was sliced on 25m spaced sections for modelling of the geology and the mineralised envelopes. Solids were constructed for several discrete pegmatite dykes, as well as for the near surface colluvium and lateritic material.

Mineralisation in the Main, West, Sangar I & II pegmatites was composited to 3m downhole intervals.

Surpac software was used for the modelling, with Isatis software used to conduct geostatistical analysis and estimation. The main pegmatite domains in the block model were estimated using Localised Uniform Conditioning, which was considered to be an acceptable method given the strong geological control, the internally diffuse spodumene distribution within the pegmatites, the drilling density and the need to generate a locally recoverable estimate for use in detailed mining studies to support a PFS.

A single block model was created by Cube with dimensions extended out to fully cover all of the mineralisation, plus surrounds that may be contained within pit optimisation shells. The parent block size used was 15mN x 10mE x 5mRL and sub-blocked to 5mN x 5mE x 5mRL.

#### **Resource Classification**

A range of criteria were considered by Cube when addressing the suitability of the classification boundaries. These criteria include:

- Geological continuity and volume;
- Drill spacing and drill data quality;
- · Modelling technique; and
- Estimation properties, including search strategy, number of informing composites, average distance of composites from blocks and kriging quality parameters.

Blocks have been classified as Indicated or Inferred, mostly based on drill data spacing in combination with other model estimate quality parameters.

#### **Cut-off Grade**

For the global resource estimation, a cut-off grade for reporting is  $0.0\% \text{ Li}_2\text{O}$  – a whole-of-ore approach – based on preliminary economic considerations, and the ability to make a saleable lithium concentrate from mining the entire pegmatite rather than defining internal lower grade components.

#### Mining and Metallurgy

Conceptual mining studies have been based on open cut mining methods using a contract mining fleet and conventional drill and blast mining methods. Limited inspection of core photography indicates that ground conditions are suitable for this mining method.

Reasonable prospects for eventual economic extraction have been determined with reference to the results of Whittle optimization studies, and the depth of the selected open pit shell (at a revenue factor of USD\$750/t for a nominal 6% Li<sub>2</sub>O concentrate) was used as an analogy to help limit the depth for reporting.

The criteria for assumptions and predictions regarding metallurgical amenability – required to determine reasonable prospects for eventual economic extraction – are based on:

- the bulk sampling and test program undertaken in 2008 by CSA Global (UK); and
- the 2017 study by ALS Metallurgy, which included comminution testwork, mineralogy using QEMSCAN, dense media separation and flotation tests.

#### Competent Person's Declaration

The information in this announcement that relates to Mineral Resources is based on information compiled by or under the supervision of Mr. Matt Bampton, who is a Member of The Australasian Institute of Mining and Metallurgy and a Member of the Australian Institute of Geoscientists. Mr. Bampton is a full-time employee of Cube Consulting Pty Ltd and has sufficient experience which is relevant to the styles of mineralisation and types of deposit 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')". Mr Bampton consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

#### **Previous Reported Results**

There is information in this announcement relating to previous Exploration Results at the Project. The Company confirms that it is not aware of any other new information or data that materially affects the information included in the original market announcement, and that all material assumptions and technical parameters 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.

#### Forward Looking Statements

Statements regarding plans with respect to the Company's mineral properties are forward looking statements. There can be no assurance that the Company's plans for development of its mineral properties will proceed as expected. There can be no assurance that the Company will be able to confirm the presence of mineral deposits, that any mineralisation will prove to be economic or that a mine will successfully be developed on any of the Company's mineral properties.

## JORC Code, 2012 Edition - Table 1

### **Section 1 Sampling Techniques and Data**

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <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 (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.</li> </ul>	<ul> <li>Reverse Circulation (RC) drill holes were routinely sampled at 1m intervals down the hole.</li> <li>Samples were collected at the drill rig by riffle or cone splitting drill spoils to collect a nominal 3 – 5 kg sub sample, with an additional 50% split for material &gt; 5 kg.</li> <li>Routine standard reference material, sample blanks, and sample duplicates were inserted or collected at every 10th sample in the sample sequence for RC drill holes.</li> <li>Diamond drillholes (DD) were routinely sampled at 1m intervals through zones of interest. Drill core was sawn in half length-wise and a half of core sent for analysis.</li> <li>All samples were submitted to ALS Bamako for preparation. Analysis was undertaken at ALS Perth by method ME-ICP89.</li> </ul>
Drilling techniques	Drill type (e.g. core, reverse circulation, openhole 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).	<ul> <li>Drill holes were completed by reverse circulation and diamond drilling techniques.</li> <li>RC hole diameter is nominally 5.5 inch. A face sampling down hole hammer was used at all times.</li> <li>Diamond drill hole are HQ-sized (64mm diameter core).</li> </ul>
Drill sample recovery	<ul> <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> <li>A qualitative estimate of sample recovery was done for each sample metre collected.</li> <li>Split samples were weighed to ensure consistency of sample size and to monitor sample recoveries.</li> <li>Drill sample recovery and quality is considered to be excellent.</li> </ul>
Logging	<ul> <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> <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> <li>All drill sample intervals were geologically logged by Company geologists.</li> <li>Where appropriate, geological logging recorded the abundance of specific minerals, rock types and weathering using a standardized logging system.</li> <li>A small sample of washed RC drill material was retained in chip trays for future reference and validation of geological logging.</li> <li>DD half core is retained in core trays at site.</li> </ul>

Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	<ul> <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> <li>RC 1m samples were riffle split or cone split at the drill rig. Approximately 10% of RC samples within the pegmatites were sampled wet.</li> <li>Routine field sample duplicates were taken to evaluate whether samples were representative.</li> <li>Additional sample preparation was undertaken by ALS at their Bamako laboratory.</li> <li>At the laboratory, samples were weighed, dried and crushed to -2mm in a jaw crusher. A 1.0kg split of the crushed sample was subsequently pulverised in a ring mill to achieve a nominal particle size of 85% passing 75µm.</li> <li>Sample sizes and laboratory preparation techniques are considered to be appropriate.</li> </ul>
Quality of assay data and laboratory tests	<ul> <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 (i.e. lack of bias) and precision have been established.</li> </ul>	<ul> <li>Analysis for lithium and a suite of other elements is undertaken at ALS Perth by ICP-AES after Sodium Peroxide Fusion. Detection limits for lithium are 0.01-10%.</li> <li>Sodium Peroxide fusion is considered a "total" assay technique for lithium</li> <li>No geophysical tools or other non-assay instrument types were used in the analyses reported.</li> <li>Review of routine standard reference material and sample blanks suggest there is a small positive analytical bias for assays &lt;0.3% Li<sub>2</sub>O in the reported analyses.</li> <li>Results of analyses for field sample duplicates are consistent with the style of mineralisation being evaluated and considered to be representative of the geological zones which were sampled.</li> <li>Internal laboratory QAQC checks are reported by the laboratory, including sizing analysis to monitor preparation.</li> <li>Review of the internal laboratory QAQC suggests the laboratory is performing within acceptable limits.</li> </ul>
Verification of sampling and assaying	<ul> <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> <li>Drill hole data is compiled and digitally captured by Company geologists in the field.</li> <li>The compiled digital data is verified and validated by the Company's database consultant before loading into the drill hole database.</li> <li>Twin holes were not utilized to verify results.</li> <li>Reported drill hole intercepts are compiled by the Company's</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul><li>Exploration Manager using Micromine software.</li><li>There were no adjustments to assay data.</li></ul>
Location of data points	<ul> <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> <li>Drill hole collars were set out in UTM grid Zone 29N and WGS84 datum.</li> <li>Drill hole collars were initially set out using hand held GPS.</li> <li>All drill holes are routinely surveyed for down hole deviation at approximately 50m spaced intervals down the hole.</li> <li>Worldview 2 elevation data was used to establish topographic control where appropriate.</li> <li>Locational accuracy at collar and down the drill hole is considered appropriate for this stage of exploration.</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>All holes were nominally drilled on 25m or 50m spaced east-west orientated drill sections.</li> <li>Hole spacing on section varies between 25m and 50m.</li> <li>The reported drilling has been used to estimate a mineral resource.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul> <li>Mineralisation at Goulamina outcrops at surface and the geometry of mineralisation is therefore well-defined.</li> <li>Drilling orientation has generally not biased the sampling.</li> </ul>
Sample security	The measures taken to ensure sample security.	<ul> <li>Samples are stored on site prior to road transport by Company personnel to the ALS laboratory in Bamako.</li> </ul>
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	<ul> <li>Cube Consulting undertook a site visit during drilling operations in May 2016 to review the sampling techniques discussed above. No major issues were reported.</li> </ul>

## **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	<ul> <li>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.</li> <li>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.</li> </ul>	<ul> <li>The reported results are from an area within the Torakoro Permit, which is held 100% by Timbuktu Resources SARL, a member of the Birimian Limited group of companies.</li> <li>Tenure is in good standing.</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>The area which is presently covered by the Torakoro Permit was explored intermittently by government agencies in the period 1990 to 2008. Exploration consisted of soil sampling and mapping for gold.</li> <li>In 2007-08 an evaluation of the commercial potential for lithium at Goulamina was undertaken by CSA Global as part of the SYSMIN 7 economic development program.</li> <li>CSA undertook mapping and bulk sampling of the Goulamina outcrop, but did not undertake drilling. Bulk sampling and preliminary processing testwork confirmed the viability of the pegmatite at Goulamina to produce a chemical grade lithium concentrate.</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>Pegmatite Hosted Lithium Deposits are the target for exploration. This style of mineralisation typically forms as dykes and sills intruding or in proximity to granite host rocks.</li> <li>Surficial geology within the project area typically consists of indurated gravels forming plateau, and broad depositional plains consisting of colluvium and alluvial to approximately 5m vertical depth.</li> <li>Lateritic weathering is common away from the Goulamina deposit and in the broader project area.</li> </ul>
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:  a 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	<ul> <li>The drill holes which are the basis for this mineral resource announcement have the following parameters applied. All drill holes completed, including holes with no significant lithium intersections, are reported.</li> <li>Grid co-ordinates are UTM WGS84_29N</li> <li>Collar elevation is defined as height above sea level in metres (RL)</li> <li>Dip is the inclination of the hole from the horizontal. Azimuth is reported in WGS 84_29N degrees as the direction toward which the hole is drilled.</li> <li>Down hole length of the hole is the distance</li> </ul>

Criteria	JORC Code explanation	Commentary
	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.	from the surface to the end of the hole, as measured along the drill trace.  Intersection depth is the distance down the hole as measured along the drill trace.  Intersection width is the down hole distance of an intersection as measured along the drill trace.  Hole length is the distance from the surface to the end of the hole, as measured along the drill trace.  No results from previous exploration are the subject of this Announcement.
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul> <li>All drill hole intercepts are reported from 1m down hole samples.</li> <li>Intercepts are reported within the mineralised wireframes developed for the resource estimate.</li> <li>No grade top cut off has been applied.</li> <li>No metal equivalent reporting is used or applied.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</li> </ul>	<ul> <li>See discussion in Section 1</li> <li>Results are reported as down hole length.</li> </ul>
Diagrams	<ul> <li>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.</li> </ul>	<ul> <li>No new drillhole information is reported in this press release; all historical drilling information, including maps and sections, has been previously reported in multiple ASX releases during 2017 and 2018.</li> </ul>
Balanced reporting	<ul> <li>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.</li> </ul>	<ul> <li>Results have been comprehensively reported in this announcement.</li> <li>Drill holes completed, including holes with no significant intersections, are reported.</li> </ul>
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.	There is no other exploration data which is considered material to the results reported in this announcement.

Criteria	JORC Code explanation	Commentary
Further work	<ul> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	RC drilling is ongoing.

**Section 3 - Estimation and Reporting of Mineral Resources** 

Criteria		JORC Code explanation		Commentary
Database integrity	•	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. Data validation procedures used.	•	Drilling database is maintained by Birimian's database consultant (Rock Solid Data Consultancy) in Datashed software; look-up tables and fixed formatting are used for entering logging, spatial and sampling data for the deposit databases. Sample numbers are uniquely coded and pre-numbered bags used. Data transfer for downhole survey and assaying information is electronic via email. These and other workflow methods minimise the potential of errors.  Cube Consulting received data directly exported from Datashed in MS Access format, then completed validation checks on the database comparing maximum hole depths checks on all data, duplicate numbering, missing data, and interval error checks using validation rules generated in MS Excel, before importing records into a new MS Access database. Cube then verified the data using visual inspection of the drillholes in Surpac v6.8.1 in 3D, to identify any inconsistencies.
Site visits	•	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.  If no site visits have been undertaken indicate why this is the case.	•	Matt Bampton (Principal Consultant – Cube Consulting) who is the Competent Person, conducted a site visit in May 2016, during which time he inspected the Project area including RC drilling, sampling and sample despatch for the receiving laboratory. Notes and photographs were taken along with discussions with site personnel regarding geology and mineralisation of the deposits, procedures, sampling and database procedures, and Quality Control procedures. Minor recommendations were made for changes to process for future drilling programs. No other major issues were encountered.
Geological interpretation	•	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.  Nature of the data used and of any assumptions made.  The effect, if any, of alternative interpretations on Mineral Resource estimation.  The use of geology in guiding and controlling Mineral Resource estimation.  The factors affecting continuity both of grade and geology.		The confidence in the geological interpretation of the Main and West Pegmatites at Goulamina is very good, as a result of the consistency of intercepts in RC and diamond core drilling programs and their correlation to the surface outcrops and sub-crops of spodumene-rich pegmatites.  The confidence in the geological interpretation of the two Sangar Pegmatites is broadly similar, as the style and orientation of these pegmatites are consistent with the Main and West Pegmatites. It may be more complex than has currently been interpreted, due to their relative proximity and the current drilling density. This confidence is reflected in the resource classification.  There is a very strong correlation between the mineralised portion of the pegmatite dykes and the total dyke intercept. In unweathered rock, very little pegmatite material is not significantly elevated in lithium content; thus the mineralisation boundaries for this resource match the lithological boundaries of the dykes. Portions of the weathered zones of the dykes exhibit partial depletion of spodumene, resulting in a lower level of lithium content.
Dimensions	•	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	•	The Goulamina Mineral Resource area has dimensions of 1.2km (strike length) in six main dykes up to 100m (true width) and 250m (below surface). The maximum depth known to date for the deepest mineralisation is 220m below the surface.

Criteria		JORC Code explanation		Commentary
Estimation and modelling techniques	•	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.  The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.  The assumptions made regarding recovery of by-products.  Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).  In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.  Any assumptions behind modelling of selective mining units.  Any assumptions about correlation between variables.  Description of how the geological interpretation was used to control the resource estimates.  Discussion of basis for using or not using grade cutting or capping.  The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.		The block model was constructed using interpolation of lithium grade (as lithia - Li <sub>2</sub> O) via Localised Uniform Conditioning (LUC), with Ordinary Kriging and Inverse Distance estimation methods used as internal checks. A local recoverable model was considered to be appropriate for the intended level of mining studies. High grade values were reviewed, but it was considered that application of top-cuts was not required. Mineralised domains for 5 separate pegmatite dykes were digitised in cross-section using 3D strings and then wireframed to generate solids. These were a subset of a lithological interpretation of a total of 10 pegmatite dykes through the deposit area.  Drillhole sample data was flagged using domain codes generated from three-dimensional mineralisation domains and oxidation surfaces. Sample data was composited to three metre downhole lengths using a best fit-method. Interpolation parameters were set to a minimum number of 10 composites and a maximum number of between 22 and 30 composites in different domains for the estimate. A maximum search ellipse of 300m was used for estimation runs in the reportable resource.  Computer software used for the geostatistical and variographic analysis, modelling and estimation was a combination of lastis and Surpac v6.8.1.  No by-product recoveries were considered; Fe <sub>2</sub> O <sub>3</sub> was estimated by Ordinary Kriging, as an element of potential interest in terms of a future spodumene concentrate.  The parent block size used is 15mN x 10mE x 5mRL, and sub-blocked to 5mN x 5mE x 5mRL. The drilling density is generally a combination of a surface pattern of 25m x 25m, 50m x 25m and 50m x 50m.  No assumptions of selective mining units were made.  The mineralised domains acted as a hard boundary to control the Mineral Resource estimate.  Block model validation was conducted by the following means:  Visual inspection of block model estimation in relation to raw drill data on a section by section basis;  Volumetric comparison of the wireframe/solid volume to that of the block mode
Moisture	•	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	•	The tonnages are estimated on a dry basis.

Criteria	JORC Code explanation	Commentary
Cut-off parameters	The basis of the adopted cut-off • grade(s) or quality parameters applied.	Cut-off grade for reporting is 0.0% Li₂O – a whole-of-ore approach – based on preliminary economic considerations and the ability to make a saleable lithium concentrate from mining the entire pegmatite rather than define internal lower grade components.
Mining factors or assumptions	<ul> <li>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</li> </ul>	The preliminary mining studies are based on open cut mining methods using a contract mining fleet and conventional drill and blast mining methods. These studies have been used to generate an open pit shell which has assisted in a process to limit the material in the block model to that component which is considered to have reasonable prospects for eventual economic extraction.
Metallurgical factors or assumptions	regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting	In a 2017 study by ALS Metallurgy, a range of processing testwork on drillcore from two drillholes, one from Main Zone and the other from West Zone, was undertaken, including comminution testwork, mineralogy using QEMSCAN, dense media separation and flotation tests. The results of this study indicated good lithium recoveries (up to 82.6%), to produce a high quality 'chemical grade' spodumene concentrate (~6.0% Li <sub>2</sub> O).  Further testwork in 2018 is ongoing, with a metallurgical sampling program by ALS Metallurgy and NAGROM consisting of over 10t of whole HQ diamond core from the pegmatites, focussed on areas within 40m of surface. The work includes comminution test work, mineralogy using QEMSCAN, reflux classification, heavy liquid separation, flotation and concentrate dressing tests. Results to date have indicated that there is a reasonable expectation that commercial exploitation of the pegmatites is able to be achieved by the proposed process flowsheet.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	Environmental consultant Digby Wells has been engaged to undertake a formal environmental and social impact assessment of the Project.  The Environmental and Social Impact Assessment Terms of Reference were presented to relevant governmental agencies on 13 April 2017.  Digby Wells completed biodiversity, wetlands, soils and heritage field work in early June 2017. In a preliminary report, Digby Wells advised the Company that they found no areas of significant concern that would warrant the relocation of Project infrastructure as it currently stands.  The Environmental and Social Impact Assessment (ESIA) process is continuing, with formal community consultation proposed to be held during June 2018.
Bulk density	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used,	Bulk density determination for unweathered material is derived from an analysis of dry density measurements of drill core from 14 diamond holes.

Criteria	JORC Code explanation	Commentary
	whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.  The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.  Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	<ul> <li>waxed. The risk of not using a method which adequately accounts for potential void spaces is considered to be low in both the pegmatites and granitic rocks.</li> <li>In weathered material (including minor transported colluvium and <i>in-situ</i> laterite), bulk density was assumed, based on data from other equivalent granite-hosted deposits.</li> </ul>
Classification	<ul> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	<ul> <li>based on a combination of data spacing, interpolation metadata (number of composites used, conditional bias slope, kriging variance) and geological understanding.</li> <li>Indicated Mineral Resources are defined nominally on 50m x 50m to 25m x 25m spaced drilling within the Main, West, Sangar I and Sangar II pegmatites.</li> </ul>
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	<ul> <li>Whilst Mr. Bampton (Competent Person) is considered to be independent of Birimian, no third- party reviews have as yet been completed on the June 2017 Mineral Resource or previous reported Mineral Resources from 2016 or 2017.</li> </ul>
Discussion of relative accuracy/ confidence	<ul> <li>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</li> <li>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li> <li>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	estimate is reflected in the reporting of the Mineral Resource in accordance with the guidelines of the 2012 JORC Code.