

12 October 2021

ASX Market Announcements  
Level 6, Exchange Centre  
20 Bridge Street  
Sydney NSW 2000

## OUTSTANDING ANDRADE COPPER PROJECT MINERALOGICAL ANALYSIS RESULTS

**Sydney, Australia**, - Aguia Resources Limited (ASX:AGR) ('**Aguia**' or the '**Company**') is pleased to announce to its shareholders the results of a recently completed mineralogical analysis undertaken on ore samples from the Andrade Copper Project ('**Andrade**'), located in the southernmost state of Brazil, Rio Grande do Sul (RS).

### Highlights

- **Quantitative automated mineralogical analysis was undertaken to determine the mineral abundances, copper department, and liberation characteristics on ore samples from Andrade.**
- **Results indicate that chalcocite (Cu<sub>2</sub>S) and digenite (Cu<sub>1.8</sub>S) are the main Cu-bearing minerals, confirming the expected mineralogy, and corroborating to previous understanding that the Andrade ore is amenable to conventional flotation as well as to acid leaching.**
- **Aguia's technical team is evaluating alternative solutions concerning the project operation and ore processing to pursue environmentally friendly and clever engineering solutions which could potentially reduce the impact of the project on the natural environment and achieve important cost savings and risk mitigation.**

### Management Commentary

**Managing Director Dr. Fernando Tallarico said:** *"We are very pleased with the results from the mineralogical analysis and are now planning to test several options to reduce the footprint of the processing unit, reduce the amount of tailings, reduce or potentially eliminate the use of acids as well as options for making use of green energy, water recycling and becoming a net zero carbon emission project.*

*"With our Três Estradas Phosphate Project we have been very successful in designing a project that is exceptionally friendly to the environment and will produce a natural phosphate fertilizer that we aim to have certified as an organic product. Aguia also sees copper as being a very good fit to our portfolio of green resources, as future demand is expected to be driven by the green energy sector including electric vehicles, wind turbines, and solar panels. We will endeavour all our talent to design the Andrade Copper Project to be as friendly towards the environment as possible."*

## **Introduction**

Quantitative automated mineralogical analysis was undertaken to determine the mineral abundances, copper department, and liberation characteristics of the copper minerals on a High-Grade ('**HG**') and a Low-Grade ('**LG**') sample from Andrade.

The analysis, undertaken by ALS Metallurgy Services at their laboratory in Perth, Western Australia, provides a much more precise quantification of the copper minerals, how they occur and to what other minerals they are associated to, and measures the liberation (the copper minerals surface exposure which is essential for its processing).

On 16 February 2021, Aguia reported very encouraging first results which demonstrated that 96% of the copper found in the ore body was capable of being extracted. The outcome of today's results allows Aguia to turn its attention to the processing techniques that can be used to optimise copper extraction at Andrade.

The results indicate that chalcocite ( $\text{Cu}_2\text{S}$ ) and digenite ( $\text{Cu}_{1.8}\text{S}$ ) are the main Cu-bearing minerals detected in both samples, confirming the expected mineralogy, and corroborating to previous understanding that the Andrade ore is amenable to conventional flotation as well as to acid leaching.

The results of this analysis are useful to improving the copper processing flowsheet of the ore and set the stage for further testing of options that if successful will allow Aguia to streamline the mine processing which will potentially result in lower CAPEX and OPEX for the Project.

These results are borne out by sophisticated mineralogy techniques using electro-microscopes that have ultimately provided us with a very good understanding of how much ore we need to initially crush and grind in order to efficiently expose the copper particles.

How will we improve the copper processing as a result of these mineralogy tests?

### **1. The separation of copper minerals from the gangue minerals earlier in the process:**

A process known as pre-concentration which reduces the amount of crushed ore that goes to leaching thus reducing the environmental footprint of the project. There will be a decrease in tailings and a reduction in processing material which will potentially result in both CAPEX and OPEX savings.

### **2. The replacement of acid leaching with bio-leaching:**

Aguia has already informed the market that the copper ore at Andrade is amenable to acid leaching. This is further confirmed by these results. However, we have been investigating an alternative leaching method known as bio-leaching. Bio-leaching is not a new technology and is, for example, being extensively used by BHP at their Escondida mine in Chile. It is also being used by Vale in Brazil. Bio-leaching uses bacteria instead of acid to extract the copper from the ore. The Company has already undertaken research into how bio-leaching process techniques will be applied at Andrade and will be in a position to provide an update to the market shortly.

In short, if future testing indicates that the pre-concentration technique described above, and the replacement acid leaching with bio-leaching are possible, Aguia is confident of being able to deliver a significantly more efficient copper mine with a greatly reduced environmental footprint.

## **Background**

The Andrade Copper Project is located 260km southwest of Porto Alegre, the capital of Rio Grande do Sul State in southernmost Brazil. The project consists of six granted exploration permits covering a total area of 5,158.70 hectares.

The current Mineral Resource Estimate ('MRE') is classified, in conformity with the JORC Code 2012, of an Indicated Resource of 18.03Mt at 0.41% Cu and 1.87g/t Ag, and an Inferred Resource of 3.98Mt at 0.53% Cu and 2.06 g/t Ag and was previously announced by the Company on 9 March 2021. There has been no material change in the resource between March 2021 and the current date.

Copper mineralisation at the Andrade Copper Project is almost entirely disseminated granular chalcocite ( $\text{Cu}_2\text{S}$ ) and digenite ( $\text{Cu}_{1.8}\text{S}$ ) with minor bornite ( $\text{Cu}_5\text{FeS}_4$ ), hosted in basic to intermediate meta-volcanic rocks. At the surface an oxidised portion with dominant malachite ( $\text{Cu}_2(\text{CO}_3)(\text{OH})_2$ ) occurs.

Previous metallurgical test works announced on 16 February 2021, including flotation and acid leaching, indicated that the Andrade ore is amenable to conventional flotation as well to acid leaching. The results from the rougher flotation circuit on HG and LG samples returned copper recoveries of 93.4% and 84.4%, respectively and copper extraction of 96.0% and 99.0% in a single sighter leach test on the HG and LG samples, respectively. (<https://aguiaresources.com.au/asx-announcements/outstanding-metallurgical-test-results-from-andrade-copper-project-deposit/>).

## **Mineralogy and Elemental Department**

Two composite samples were assembled from diamond drill core samples drilled by Aguia, in a way that represented the average composition of the HG and LG zones of the Andrade Deposit, as summarised in Table 01 below.

**Table 01 – Summary of assay reconciliation results for composite samples.**

Composite Sample ID	Al	Ca	Cu	Fe	Mn	S	Si
	(%)						
High-Grade (HG)	5.67	4.60	2.02	4.27	0.11	0.52	26.8
Low-Grade (LG)	5.66	5.05	0.67	6.05	0.10	0.36	25.8

The samples were riffle split to produce sub-samples of suitable size for making a QEMSCAN polished section. The sub-samples were mixed with size-graded, high purity graphite to ensure particle separation and discourage density segregation. The sample-graphite mixtures are set into moulds using a two-part epoxy resin, producing a representative sub-sample of randomly orientated particles. After curing, the resin blocks were cut back to expose a fresh surface and progressively ground and fine-polished. Passing

QA/QC checks, the sections were carbon coated for electron beam conductivity and presented to the QEMSCAN for analysis.

The 'side-mount' method was used for these samples. This involves an additional step where the cured mixture of sample, graphite and epoxy is cut in half. The two resulting halves are then set into a new mould (with the cut faces now facing down) allowing the cross-section of the original cured block to be analysed.

QEMSCAN Field Scan analysis was performed for each polished block at 6 µm pixel spacing. One sub-sample of each sample was analysed using X-ray diffraction to assist with mineral characterisation.

QEMSCAN is the name for an integrated automated mineralogy solution providing quantitative analysis of minerals. QEMSCAN stands for Quantitative Evaluation of Materials by Scanning Electron Microscopy. This technique is a very advanced and precise option for the quantifying of copper minerals and understanding how it liberates in different grain-size fractions after crushing and grinding. This information is key to optimising the flowsheet of the processing plant.

Results from the mineralogical analysis indicate a mineral association composed of silicate minerals, copper minerals, carbonates, Fe-oxides/oxyhydroxides and Ti minerals. The silicate minerals group, most abundant gangue minerals, identified in the HG and LG samples are mainly quartz, muscovite, biotite, feldspar, chlorite and kaolinite. Carbonate minerals are mainly calcite, ankerite and dolomite. Fe-oxides/oxyhydroxides and Ti minerals occur in minor abundance.

Chalcocite (Cu<sub>2</sub>S) and digenite (Cu<sub>1.8</sub>S) are the main Cu-bearing minerals detected in both samples. A minor amount of bornite (Cu<sub>5</sub>FeS<sub>4</sub>), especially in the LG sample, and trace chalcopyrite (CuFeS<sub>2</sub>), chrysocolla (Cu<sub>2</sub>H<sub>2</sub>Si<sub>2</sub>O<sub>5</sub>(OH)<sub>4</sub>) and malachite (Cu<sub>2</sub>(CO<sub>3</sub>)(OH)<sub>2</sub>) / azurite (Cu<sub>3</sub>(CO<sub>3</sub>)<sub>2</sub>(OH)<sub>2</sub>) / cuprite (Cu<sub>2</sub>O) were also detected.

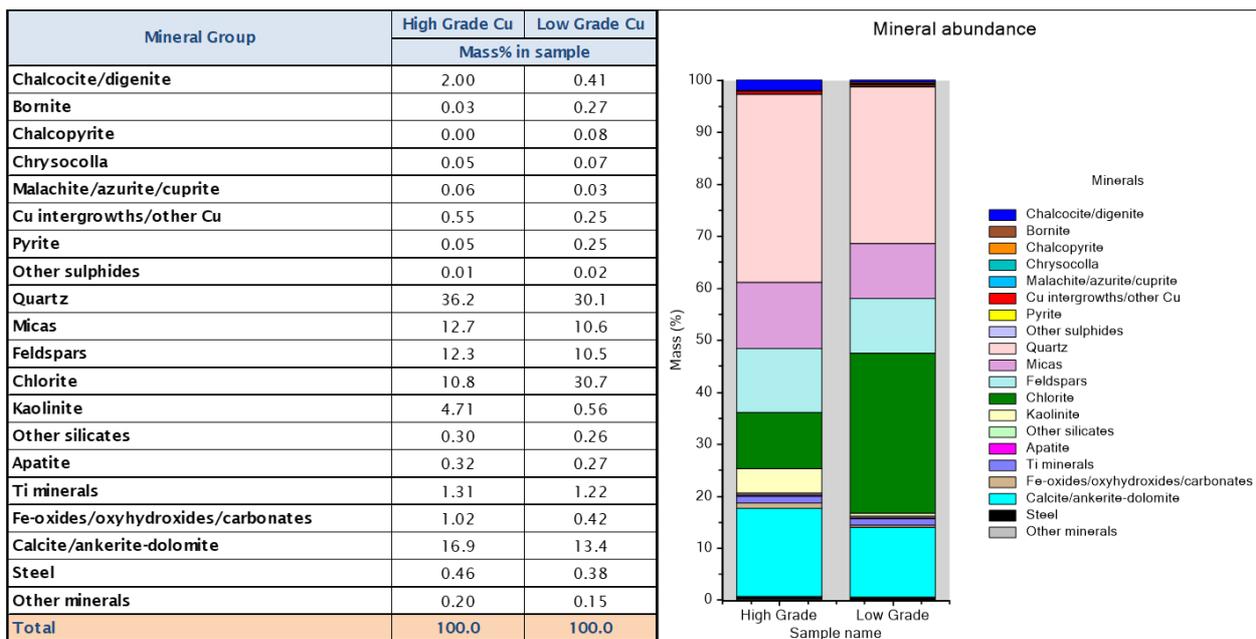


Figure 01 – Mineral Abundance for HG and LG samples.

The elemental department data, which quantifies the average distribution of specific elements among minerals, indicates that 84.1% of the copper mass in the HG sample is related to Chalcocite/Digenite. In the LG sample 43.9% of the copper mass is related to Chalcocite/Digenite and 28% is related to bornite.

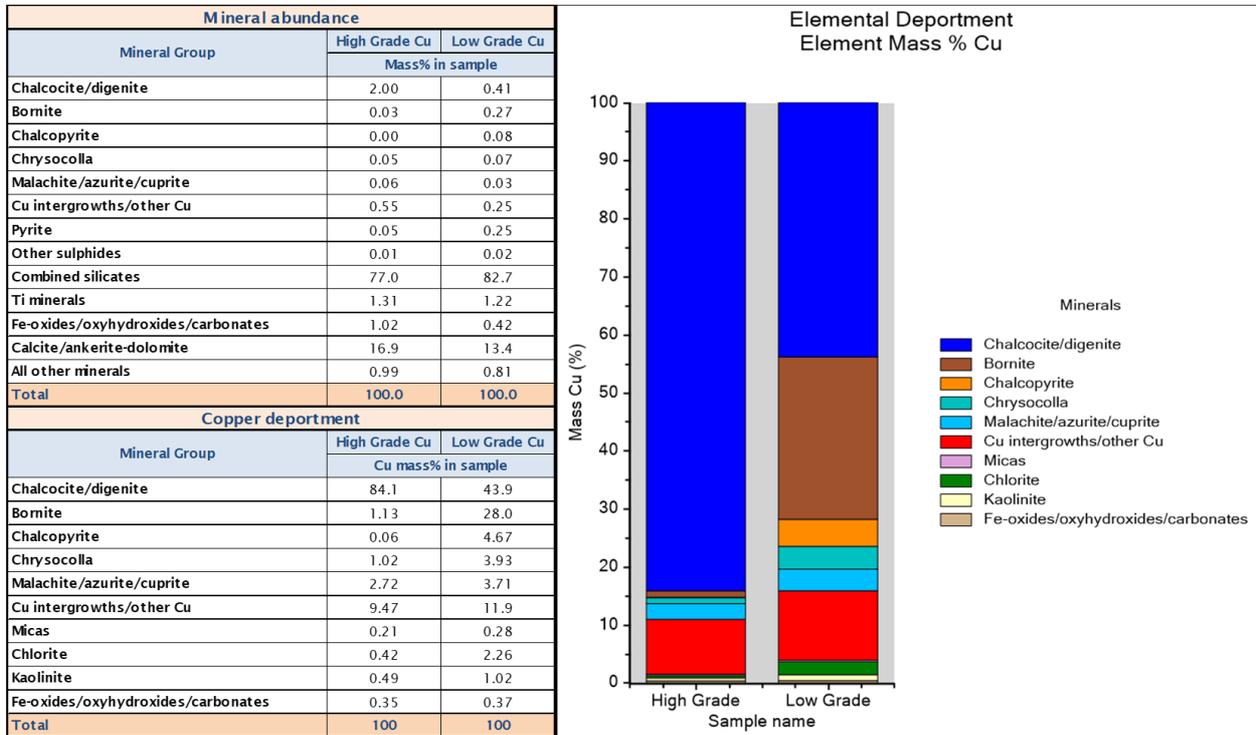


Figure 02 – Mineral Abundance and Copper department for HG and LG samples.

### Grain Size and Mineral Association

The grain size estimation, based on QEMSCAN image analysis, indicated that all the Cu-bearing minerals are typically fine-grained, in general less than 100 µm. The P80 value shows that 80% of the Combined Cu minerals mass for the HG and LG samples is composed of grains with sizes less than 67 µm and 44 µm, respectively. The P80 values for the head samples are 157 µm and 140 µm, and for the combined silicates the P80 reached 103 µm and 115 µm for the HG and LG samples, respectively, indicating that both samples and combined silicates are generally coarser than the Combined Cu minerals.

Particle/grain Size (µm)		High Grade Cu	Low Grade Cu	High Grade Cu	Low Grade Cu	High Grade Cu	Low Grade Cu	High Grade Cu	Low Grade Cu	High Grade Cu	Low Grade Cu
		Sample		Combined Cu minerals		Fe-oxides/oxyhydroxides/carbonates		Combined silicates		Calcite/ankerite-dolomite	
		Cumulative particle/mineral mass% in sample									
300 - 425	425	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
212 - 300	300	99.4	100.0	100.0	100.0	100.0	100.0	99.9	100.0	100.0	100.0
150 - 212	212	91.4	94.2	100.0	100.0	100.0	100.0	98.2	98.9	99.4	97.8
106 - 150	150	78.5	83.4	100.0	100.0	100.0	100.0	93.0	90.2	94.8	89.9
75 - 106	106	65.2	69.0	95.1	100.0	100.0	100.0	81.7	77.4	89.2	80.6
53 - 75	75	53.7	56.6	85.6	100.0	100.0	100.0	66.2	63.0	82.1	70.7
38 - 53	53	44.1	47.0	71.0	91.5	100.0	100.0	52.3	50.6	73.9	59.9
27 - 38	38	36.4	39.0	63.4	71.8	97.7	93.3	41.9	41.5	62.1	49.0
20 - 27	27	29.3	31.8	48.9	54.4	82.8	88.2	33.6	33.6	47.4	39.2
15 - 20	20	21.3	23.6	35.2	39.0	69.7	77.7	25.0	25.4	33.3	29.1
10 - 15	15	14.6	16.1	25.3	29.3	54.8	58.7	17.8	17.8	22.9	21.7
< 10	10	10.1	11.2	19.0	23.2	44.6	46.9	12.9	12.9	15.8	16.7
P <sub>80</sub>		157	140	67	44	25	22	103	115	69	104
P <sub>50</sub>		66	60	28	25	13	11	50	52	29	39
P <sub>20</sub>		19	18	11	< 10	< 10	< 10	17	16	13	13

Figure 03 – Particle/grain size distribution.

In general, the copper minerals are associated with silicates, and much less commonly with iron oxides and hydroxides and carbonate minerals such as calcite, ankerite and dolomite.

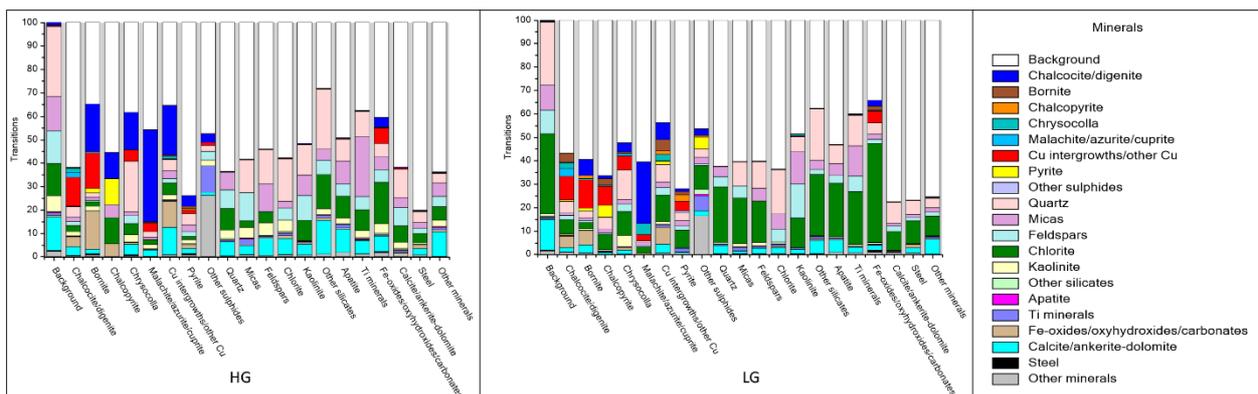


Figure 04 – Mineral association for HG and LG samples.

### Mineral Liberation

The mineral liberation of the copper minerals in the HG and LG samples, is based on the mineral composition on a particle-by-particle basis and indicated that approximately 22% and 28% of copper minerals are well liberated and high-grade middlings, respectively. Combined silicates reached the highest values of mineral liberation, with 67.4% HG and 83.5% LG classified as well liberated and 27.3% HG and 13.2% LG classified as high-grade middlings.

The particles that were classified as Locked, which are those where the surface area of the copper minerals corresponds to <10% of the particle size, in the HG and LG samples resulted in 11.3% and 16.3%, respectively.

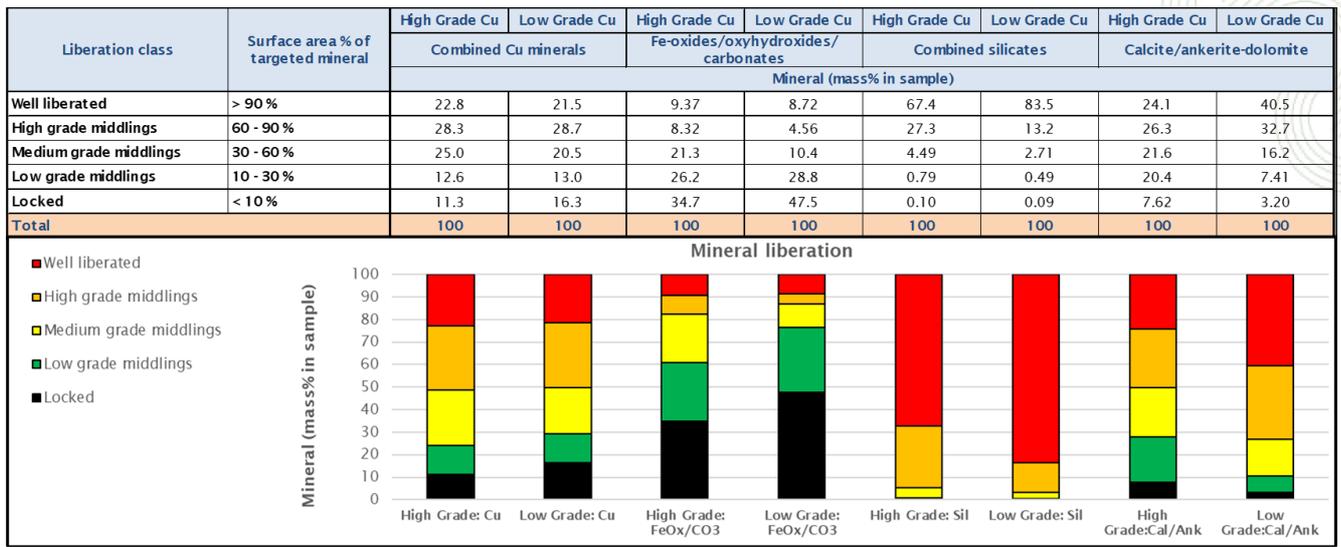


Figure 05 – Mineral liberation results for HG and LG samples.

### Next Steps

Agua's technical team is currently evaluating alternative solutions concerning the project operation and ore processing, aiming to pursue environmentally friendly and clever engineering solutions which could potentially reduce the impact of the project on the natural environment and achieve important cost savings and risk mitigation.

Solutions for project operation will focus on the reduction of energy consumption and consequently the reduction of greenhouse gas emissions. Alternative routes for ore processing will be tested and will include firstly pre-concentration of the copper minerals, which can be achieved using a variety of techniques for example: gravity separation, selective grinding and mineral sorting. These technologies are becoming more and more disseminated in copper processing plants across the world and the biggest benefit is that it allows a reduction of the mass of material that will feed the final stages of the process, e.g., flotation or acid leaching. As a result, the volume of tailings can be reduced dramatically which is an enormous benefit to the local environment.

On a separate front Agua will also test the efficiency of bioleaching as an alternative to conventional acid leaching of the copper material. If the upcoming test work proves that bioleaching is a viable option for the final stages of the copper processing, the benefits to the environment are extraordinary.

Agua is committed to identifying and adopting practical and sustainable solutions that will minimise the impact of future mining activities on the environment and the local community.

**AUTHORISED FOR ISSUE TO ASX BY FERNANDO TALLARICO, MANAGING DIRECTOR OF AGUA RESOURCES LIMITED**

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**About Agua:**

Agua Resources Limited, ("Agua") is an ASX listed multi-commodity company (AGR:ASX) with pre-production phosphate and metallic copper projects located in Rio Grande do Sul, the southernmost state of Brazil. Agua has an established and highly experienced in-country team based in Porto Alegre, the capital of Rio Grande do Sul. Agua is committed to advancing its existing projects into production whilst continuing to pursue other opportunities within the sector.

**JORC Code Competent Person Statements:**

The information in this report that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Dr. Fernando Tallarico, who is a member of the Association of Professional Geoscientists of Ontario. Dr. Tallarico is a full-time employee of the company. Dr. Tallarico 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'. Dr. Tallarico consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

**Caution regarding forward-looking information:**

This press release contains "forward looking information" within the meaning of applicable Australian securities legislation. Forward looking information includes, without limitation, statements regarding the next steps for the project, timetable for development, production forecast, mineral resource estimate, exploration program, permit approvals, timetable and budget, property prospectivity, and the future financial or operating performance of the Company. Generally, forward looking information can be identified by the use of forward-looking terminology such as "plans", "expects" or "does not expect", "is expected", "budget", "scheduled", "estimates", "forecasts", "intends", "anticipates" or "does not anticipate", or "believes", or variations of such words and phrases or state that certain actions, events or results "may", "could", "would", "might" or "will be taken", "occur" or "be achieved". Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the actual results, level of activity, performance or achievements of the Company to be materially different from those expressed or implied by such forward-looking information, including, but not limited to: general business, economic, competitive, geopolitical and social uncertainties; the actual results of current exploration activities; other risks of the mining industry and the risks described in the Company's public disclosure. Although the Company has attempted to identify important factors that could cause actual results to differ materially from those contained in forward-looking information, there may be other factors that cause results not to be as anticipated, estimated or intended. There can be no assurance that such information will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, readers should not place undue reliance on forward looking information. The Company does not undertake to update any forward-looking information, except in accordance with applicable securities law.

## JORC Code, 2012 Edition – Table 1 report template

### Section 1 Sampling techniques and data (criteria in this group apply to all succeeding groups)

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> </ul>	<ul style="list-style-type: none"> <li>In the Andrade Project area procedures for diamond drilling samples were compliant with mineral industry standards.</li> <li>Material used in the metallurgical sampling of the Andrade deposit was collected from diamond drill core sampled drilled by Aguia and assembled to represent the average composition of the High-Grade (HG) and the Low-Grade (LG) zones. Material consisted of ¼ of core samples and the bulk samples comprises approximately 20 kilograms for each sample, HG and LG. These samples were also used to QEMSCAN analysis.</li> </ul>
	<ul style="list-style-type: none"> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such</li> </ul>	<ul style="list-style-type: none"> <li>Aguia has followed standard practices in their geochemical surveys and diamond drilling programs. They have followed a set of standard procedures in collecting cuttings and core samples, logging and data acquisition for the project. Their procedures are well documented and meet generally recognized industry standards and practices.</li> <li>All core logging is completed by Aguia geologists and directly entered into a comprehensive database program. Aguia's geologists are responsible for identifying and marking core intervals for sampling. Sample intervals range in length from 0.31m to 1.50m with 90% of all core samples falling within the range of 0.8m to 1.1m and honour the geological contacts. Digital and hard copies of all sampling and shipment documentation are stored in the project office at Caçapava do Sul. Documentation includes geological logs, core photographs, core recovery records, portable XRF readings and down-hole surveys.</li> <li>The quarter part of core sample material was used to produce the bulk samples for the metallurgical test work.</li> </ul>

Criteria	JORC Code Explanation	Commentary
	<p>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.</p>	
Drilling techniques	<ul style="list-style-type: none"> <li>• Drill type (eg. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka 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>• Aguia has completed five diamond drill holes on the Andrade area between 2019 and 2020, totaling 579.55m.</li> <li>• All core holes were drilled using wireline coring methods. HQ size (63.5mm diameter core) core tools were used for drilling through weathered material and NQ size (47.6mm diameter core) tools were used for drilling through fresh rock. Core recovery has exceeded 90% of all core holes.</li> <li>• The quarter part of core sample material was used to produce the bulk samples for the metallurgical test work.</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>• Whether core and chip sample recoveries have been properly recorded 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>• Digital and hard copies of all sampling and shipment documentation are stored in the project office at Caçapava do Sul. Documentation includes geological logs, core photographs and core recovery records.</li> <li>• Aguia has followed standard practices in their core drilling programs. They have followed a set of standard procedures in collecting cuttings and core samples, logging, and data acquisition for the project. Their procedures are well documented and meet generally recognized industry standards and practices.</li> <li>• There was no investigation about relationship between sample recovery and grade.</li> </ul>

Criteria	JORC Code Explanation	Commentary
Logging	<ul style="list-style-type: none"> <li>Whether core and chip samples have been 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>Digital and hard copies of all sampling and shipment documentation are stored in the project office at Caçapava do Sul. Documentation includes geological logs, core photographs, core recovery records, portable XRF readings and down-hole surveys. Detailed geological logs are completed for every core hole using an appropriate logging form. Sampling intervals in the mineralized zone are typically targeted for a 1.0m length but may fall within a range of 0.31m to 1.50m.</li> <li>The data is believed to be of an appropriate level of detail to support the metallurgical test work results.</li> </ul>
	<ul style="list-style-type: none"> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel etc.) photography.</li> </ul>	<ul style="list-style-type: none"> <li>The logging is qualitative in nature. A photographic record is maintained for all core boxes with each photograph recording three boxes.</li> </ul>
	<ul style="list-style-type: none"> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>100% diamond drillholes were logged.</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> </ul>	<ul style="list-style-type: none"> <li>Fresh core is split lengthwise using a core saw. Samples are systematically taken using the right half of the core, returning the left half of the core to the core box for archival storage.</li> <li>The half core samples, previously analysed, was machine sawn and quarter core taken for metallurgical purposes.</li> <li>Material used in the metallurgical sampling of the Andrade deposit was collected from from diamond drill core sampled drilled by Aguia and assembled to represent the average composition of the High-Grade (HG) and the Low-Grade (LG) zones. Material consisted of ¼ of core samples and the bulk samples comprises approximately 20 kilograms for each sample, HG and LG. These samples were also used to QEMSCAN analysis.</li> </ul>
	<ul style="list-style-type: none"> <li>If non-core, whether riffled, tube sampled, rotary split etc. and whether sampled wet or dry.</li> </ul>	<ul style="list-style-type: none"> <li>Trench samples are included in the resource database as drill holes. The influence of the trench samples for the purpose of estimating Mineral Resources was restricted to the oxidized zone of the deposit.</li> </ul>
	<ul style="list-style-type: none"> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> </ul>	<ul style="list-style-type: none"> <li>Sample preparation was completed at ALS's Belo Horizonte laboratory in Brazil using standard crushing and pulverization techniques. The sample preparation techniques meet industry standards and are considered appropriate for the mineralization being investigated.</li> <li>Sample preparation was completed using standard crushing and pulverization techniques PREP-31 (rock and drill samples). All samples were dried, crushed, and milled to 70% passing 2 mm, riffle split off 250 g, then the split pulverized to better than 85% passing 75 microns. Pulp</li> </ul>

Criteria	JORC Code Explanation	Commentary
		<p>splits are collected and retained in storage.</p> <ul style="list-style-type: none"> <li>The HG and LG samples were riffle split to produce sub-samples of suitable size for making a QEMSCAN polished sections. The sub-samples were mixed with size-graded, high purity graphite to ensure particle separation and discourage density segregation.</li> </ul>
	<ul style="list-style-type: none"> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> </ul>	<ul style="list-style-type: none"> <li>Lab management system is consistent with ISO 9001:2008 requirements for sampling preparation.</li> <li>Industry standard procedures were employed, including ensuring non-core samples are adequately homogenized before. Pulp splits are collected and retained in storage.</li> <li>ALS does introduce on routine basis certified reference material within every batch of samples, namely appropriate standards, duplicates and blanks. A QAQC report is sent together with the assay certificates.</li> </ul>
	<ul style="list-style-type: none"> <li>Measures taken to ensure that the sampling is representative of the in-situ material collected.</li> </ul>	<ul style="list-style-type: none"> <li>90% of all core samples falling within the range of 0.8m to 1.1m.</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>Whether sample sizes are appropriate to the grainsize of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>Sampling intervals in the mineralized zone are typically targeted for a 1.0m length but may fall within a range of 0.50m to 1.50m.</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> </ul>	<ul style="list-style-type: none"> <li>The ICP method used is industry standard and considered appropriate for the analysis of base metal hosted mineralisation.</li> <li>Sample preparation and analysis was completed at ALS’s Belo Horizonte laboratory in Brazil using standard crushing and pulverization techniques.</li> <li>Routine assays were conducted using a four acid ‘near total’ digestion with ICP-AES finish (ME-ICP61 process) to provide analysis for 33 elements (Ag, Al, As, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, K, La, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sc, Sr, Th, Ti, Tl, U, V, W, Zn). All Cu and Co determinations were re-assayed by four acid (HF-HNO<sub>3</sub>-HClO<sub>4</sub>) digestion, HCl leach and ICP finish to provide an improved level of accuracy on these values (method ME-OG62). The preparation and analytical procedures are appropriate for the type of mineralization sampled and are reliable to deliver the total content of the analysed compounds.</li> <li>Samples generated from the QEMSCAN were analysed by ALS Metallurgy Services in Perth, Australia. QEMSCAN Field Scan (FS) analysis was performed for each polished block at 6 µm pixel spacing. One sub-sample of each sample was analysed using X-Ray Diffraction (XRD) to assist with mineral characterization.</li> </ul>

Criteria	JORC Code Explanation	Commentary
	<ul style="list-style-type: none"> <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> </ul>	<ul style="list-style-type: none"> <li>A hand held XRF, Delta Analyser CS-4000 by Innov-X Systems, was employed to pre scan samples.</li> </ul>
	<ul style="list-style-type: none"> <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>For the core sampling, Aguia used certified reference materials (standard), supplied by the Instituto de Tecnologia Augusto Kekule (ITAK). ITAK-809 and ITAK-833 are low grade and high grade copper standard, respectively and ITAK-628 is a low grade gold standard. In addition, fine and coarse blank samples were prepared from barren quartz veins. Also pulp duplicates were inserted in the batches. The control is considered appropriate to the sampling type and grades.</li> </ul> <div data-bbox="954 711 1877 1145" data-label="Diagram"> </div> <ul style="list-style-type: none"> <li>Referential used eight CRMs (standards) sourced from Geostats Pty Ltd (Geostats) in Perth, Australia and AMIS from Isando in South Africa and 244 duplicate core samples (approximately 3%) were selected for assay according to the QA/QC sampling plan.</li> </ul>
<p>Verification of sampling and assaying</p>	<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> </ul>	<ul style="list-style-type: none"> <li>Two twin boreholes were completed by Aguia. The assay results and mineralized intervals present good correlation with the original drill holes.</li> <li>All core was logged by Referencial geologists and verified by Aguia geologists; data was entered digitally into a comprehensive database program. Electronic data was verified against paper logs</li> </ul>

Criteria	JORC Code Explanation	Commentary
	<ul style="list-style-type: none"> <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>and original assay certificates by RPA.</li> <li>Assay data did not need to be adjusted.</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> </ul>	<ul style="list-style-type: none"> <li>All drill collars are surveyed using a hand-held GPS both before and after drill hole completion. Andrade down hole surveys were completed on core holes using a Maxibore II down-hole survey tool. Readings are collected on three-meter intervals.</li> </ul>
	<ul style="list-style-type: none"> <li>Specification of the grid system used.</li> </ul>	<ul style="list-style-type: none"> <li>Coordinates are recorded in Universal Transverse Mercator (UTM) using the SAD69 Datum, Zone 22S.</li> </ul>
	<ul style="list-style-type: none"> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>No topographic survey was conducted at the Andrade by the Company yet.</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>Material used in the metallurgical sampling of the Andrade deposit was collected from diamond drill core sampled drilled by Aguia and assembled to represent the average composition of the High-Grade (HG) and the Low-Grade (LG) zones. Material consisted of ¼ of core samples and the bulk samples comprises approximately 20 kilograms for each sample, HG and LG.</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <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> </ul>	<ul style="list-style-type: none"> <li>The diamond drilling was completed on sections spaced 100 m apart with two to three drill holes per section. Drill hole spacing within each section was also approximately 100 m.</li> </ul>
	<ul style="list-style-type: none"> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>Assay data was composited to one-metre length prior to resource estimation.</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering</li> </ul>	<ul style="list-style-type: none"> <li>The sampling patterns used did not introduce an apparent sampling bias.</li> </ul>

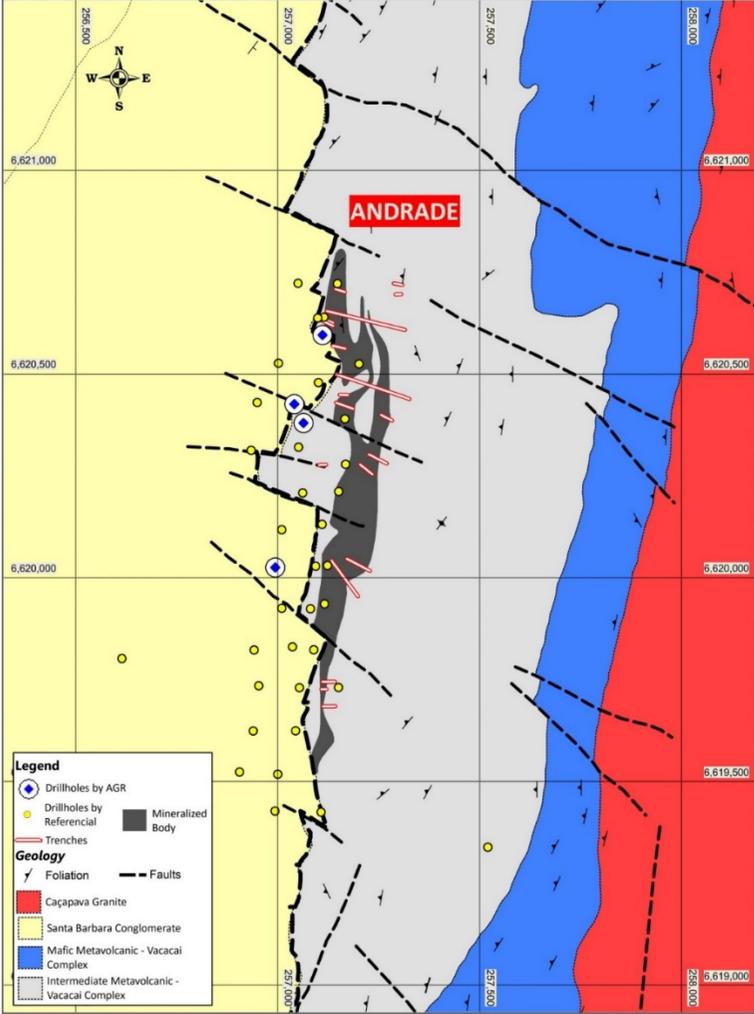
Criteria	JORC Code Explanation	Commentary
	the deposit type	
	<ul style="list-style-type: none"> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul style="list-style-type: none"> <li>The sampling patterns used did not introduce an apparent sampling bias.</li> </ul>
Sample Security	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Chain of custody of all sample material was maintained by Aguia. Samples were stored in a secured facility in Caçapava do Sul until dispatch to the preparation laboratory by commercial carrier.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>Aguia has engaged its own independent technical consultant, RPA Inc. a Toronto based consulting firm, to complete a JORC/NI 43-101 mineral resource estimate for the Andrade deposit, as part of its due diligence.. Audits and reviews of sampling techniques were performed in these works.</li> <li>RPA reviewed the sample collection techniques, quality control procedures, sample storage facility, and data integrity as part of a site visit carried out from the January 21 to 24, 2019. RPA is of the opinion that all relevant data has been collected and stored in accordance with industry best practice standards and is suitable to support the estimation of a Mineral Resource.</li> </ul>

## Section 2 Reporting of Exploration Results

(criteria listed in the preceding group apply also to this group)

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>• The Andrade deposit as currently modelled is situated over three separate exploration tenements.</li> <li>• The majority of the deposit is situated in proceedings 810.636/2007 and 810.808/2008. These are currently held by Referencial. Aguia has signed an option agreement with Referencial to acquire these tenements (as disclosed in a press release dated 27/02/2019). Upon the conclusion of this acquisition, these tenements will be subject to a 1% net smelter return royalty to be paid to Referencial.</li> <li>• The remainder of the deposit and the potential along strike extensions of the deposit are located in proceeding 810.187/2018. This claim is held by Aguia Fertilizantes S.A., a subsidiary company of Aguia.</li> <li>• Independent legal advice prepared for Aguia by William Freire Advogados Associados indicates that:</li> <li>• Aguia satisfies the requirements for operating a mine within 150 km of the territorial borders of Brazil (the 'Border zone').</li> <li>• The tenements in question do not fall within conservation units or indigenous lands.</li> <li>• Those tenements that are currently under application or awaiting a response from the relevant department are unlikely to be denied.</li> <li>• There are no known impediments to obtaining a licence to operate in this area.</li> </ul>
Exploration done by other parties	<ul style="list-style-type: none"> <li>• Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>• Copper occurrences at Andrade were first reported in the late 19th century in government surveys. The first drilling program was undertaken by Vale in the early 1970s where the scout program revealed the first mineral intercepts. Between 2009 and 2010, Mining Ventures, a private Swiss exploration company, conducted an extensive exploration program which included mapping, soil geochemistry, trenching, IP and 10,300 metres of diamond drilling (38 holes) at Andrade:</li> <li>• 1900-08 Artisanal Mining: Trenches, pits, shafts and drifts at Andrade and Primavera</li> <li>• 1942 DNPM: (8 holes) Resource 462 kt at 0.8% Cu at Andrade</li> <li>• 1942 DNPM: Resource 91 kt at 1.00% Cu and 29 kt at 1.74% Cu at Primavera</li> <li>• 1959 DNPM: (25 holes) Resource 560 kt at 0.7% Cu 100 kt at 1% Cu at Andrade and Primavera</li> <li>• 1975 CRM: (13 holes) 3.3 Mt at 0.43% Cu at Andrade</li> <li>• 1985 CBC: (8 holes) 502 kt at 0.55% Cu at Andrade</li> <li>• 2009-10 Referencial: drilling completed (38 holes) at Andrade</li> <li>• 2009 Referencial: drilling completed (11 holes) at Primavera</li> <li>• 2012-13 Referencial: Deeper IP (TITAN) 4 sections completed at Andrade and Primavera</li> </ul>

Criteria	JORC Code Explanation	Commentary
Geology	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The Andrade deposit is located at the western flank of the Caçapava Granite.</li> <li>The local geological mapping reveals the presence of three large geologic domains from the east to the west: 1) granitoids of the Caçapava do Sul Granitic Suite, which is in tectonic contact with the 2) basic meta-volcano-sedimentary unit (amphibolites) of the Vacacaí Metamorphic Complex, which grades to the intermediate to acid meta-volcano-sedimentary package (feldspar chlorite schists and quartz chlorite schists), which is both in tectonic and erosive contact with the 3) conglomeratic sediments of the Santa Bárbara Formation.</li> <li>The same units described with respect to the Andrade deposit are also found in the Primavera target, since the latter is an extension to the south of the former. However, meta-sediments, meta-tuffs, and meta-rhyodacites belonging to the Vacacaí Metamorphic Complex, as well as intrusions of basic volcanic rocks, are also seen.</li> <li>Mineralization at Andrade sits along the contact between volcanic rocks at the footwall and sediments at the hanging wall. Strong chlorite alteration associated with carbonate alteration and potassic alteration are the hosts to the copper mineralization that includes mostly chalcocite and minor bornite and chalcopyrite.</li> </ul>
Drill Hole Information	<ul style="list-style-type: none"> <li>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: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Andrade project have 43 drillholes, including 38 diamond drillholes drilled by Referencial Geologia and another 5 diamond drillholes drilled by Aguia.</li> <li>Drilling utilized for the resource estimate consists of 38 diamond drill holes drilled by Referencial from the 2009/2010 campaigns (8,406.34 m) and 19 historical trenches re-sampled by Referencial in 2009/2010 (1,088.46 m).</li> <li>3 diamond core boreholes drilled by Aguia in 2019 (382.40 m) were not used in this estimate as assays were not available at the estimation date. These holes were used only to guide the interpretation of wireframes. These holes are documented in a previous media release, dated February 27, 2019.</li> <li>In 2020, Aguia conducted a short diamond drilling program objecting to test the continuity of the high-grade zones along the plunge. The program consisted in two drillholes (AND-20-004 and AND-20-005), totalling 197.15 meters of drilling and the results were reported on March-05<sup>th</sup>, 2020 at ASX.</li> </ul>

Criteria	JORC Code Explanation	Commentary
	<ul style="list-style-type: none"> <li>• down hole length and interception depth</li> <li>• hole length.</li> <li>• 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.</li> </ul>	 <p>The map displays the Andrade Copper Project area with a grid of UTM coordinates. The grid ranges from 256,500 to 257,500 Easting and 6,619,000 to 6,621,000 Northing. A red box labeled 'ANDRADE' is centered on the map. The map shows various geological features: Caçapava Granite (red), Santa Barbara Conglomerate (yellow), Mafic Metavolcanic - Vacacai Complex (blue), and Intermediate Metavolcanic - Vacacai Complex (grey). Drillholes by AGR are marked with blue circles, and drillholes by Referencial are marked with yellow circles. Trenches are shown as red lines with arrows. Faults are indicated by dashed black lines, and foliation is shown as small black arrows. A legend in the bottom left corner provides details for these symbols and colors.</p>

Criteria	JORC Code Explanation	Commentary
Data aggregation methods	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>No exploration data were altered</li> </ul>
Data aggregation methods	<ul style="list-style-type: none"> <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> </ul>	<ul style="list-style-type: none"> <li>Intercepts above 0.2% Cu are considered significant.</li> </ul>
	<ul style="list-style-type: none"> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>Metal equivalents were not reported.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>Core drilling was designed to intersect the full width of the copper mineralization at a high angle.</li> </ul>
	<ul style="list-style-type: none"> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> </ul>	<ul style="list-style-type: none"> <li>Drill holes do not typically intercept the mineralisation perpendicularly, hence down hole widths are greater than true widths. For boreholes drilled with a dip of 60°, true mineralization widths were generally in the order of 80% to 90% of down hole intersection lengths.</li> </ul>

Criteria	JORC Code Explanation	Commentary
	<ul style="list-style-type: none"> <li>If it is not known and only the down-hole lengths are reported, there should be a clear statement to this effect (eg. 'downhole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>Down hole lengths were reported. Relationships between true lengths and true thickness are shown in cross sections below.</li> </ul>

Criteria	JORC Code Explanation	Commentary
Diagrams	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>Metallurgical test work results are being reported</li> </ul>

Criteria	JORC Code Explanation	Commentary
Balanced reporting	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>The drilling databases are highly organized with drilling Intercepts and it's grade x length reports are properly stored and readily available within on the drillhole database.</li> <li>Mineral Resource Estimate Report was previously announced by the Company on 9 March 2021.</li> </ul>
Other substantive exploration data	<ul style="list-style-type: none"> <li>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</li> </ul>	<ul style="list-style-type: none"> <li>Aguia made use of an airborne magnetic geophysical survey completed by CPRM to aid in exploration targeting and an extensive geological mapping program developed by Referencial.</li> <li>Ground Geophysics Double-Dipole Induced Polarization/Resistivity method by AFC Geofisica.</li> <li>A preliminary metallurgical study undertaken at the mineral processing laboratory at the Federal University of Rio Grande do Sul (UFRGS) in 2010. A Bond Ball Mill Work Index test was also carried out in 2010 at the Federal University of Rio de Janeiro (UFRJ).</li> <li>Two samples, representative of different aspects of sulphide ore, were obtained from diamond drill core. The first, EM-001, was selected as representative of mainly disseminated mineralization predominant in the deposit. The second, EM-002, was selected as representative of mainly vein/replacement style mineralization seen to exist within the main body. A third sample, EM-003, was collected from trenches to represent oxidized material containing mainly malachite and chrysocolla.</li> <li>The selected samples were used for a preliminary and non-conclusive work index, flotation, and leaching tests.</li> <li>Material used in the metallurgical sampling of the Andrade deposit was collected from diamond drill core sampled drilled by Aguia and assembled to represent the average composition of the High-Grade (HG) and the Low-Grade (LG) zones. Material consisted of ¼ of core samples and the bulk samples comprises approximately 20 kilograms for each sample, HG and LG. Samples generated from the metallurgical test work were assayed by ALS. QEMSCAN Field Scan (FS) analysis was performed for each polished block at 6 µm pixel spacing. One sub-sample of each sample was analysed using X-Ray Diffraction (XRD) to assist with mineral characterization. The results including mineral groupings, mineral abundance, particle images for Cu-bearing particles, mineral association, mineral liberation and grain size distribution.</li> </ul>

Criteria	JORC Code Explanation	Commentary
Further work	<ul style="list-style-type: none"> <li>• The nature and scale of planned further work (eg. 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>	<ul style="list-style-type: none"> <li>• Alternatives routes for ore processing will be tested: selective grinding and mineral sorting for pre-concentration tests and bioleaching as an alternative method to conventional acid leaching;</li> </ul>