



6 April 2022

## **ALTECH – SIGNIFICANT INCREASE IN KAOLIN RESOURCE AT KERRIGAN**

### **Highlights**

- Recent drilling program yields fresh kaolin resource data at Kerrigan tenement
- Inferred Resource of 125 million tonnes of kaolin reported
- 47% increase in the kaolin tonnage compared to previous estimates

Altech Chemicals Limited (Altech/the Company) (ASX: ATC) (FRA: A3Y) is pleased to announce that a recent Geos Mining Mineral Resource Estimate (MRE), based on the Kerrigan kaolin, reported an Inferred Resource of 125 million tonnes at an ISO brightness of 85.2%. This is a significant increase (47%) on the previous Geos Mining 2011 estimate of 85 million tonnes at an ISO brightness of 85.1%. The updated resource estimate is based on latest drilling completed throughout the deposit in order to verify some of the earlier drilling and obtain samples for further test work and analysis.

The Kerrigan deposit is located 20 km south of the central wheatbelt town of Hyden, Western Australia and sits within exploration licence E70/4718-I, that covers an area of approximately 480 km<sup>2</sup>. The licence was granted in 2015 and is 100% owned by Altech.

Managing Director Iggy Tan stated “*Currently the kaolin feedstock required for the Johor high-purity alumina (HPA) is sufficiently supplied from our 100% owned **Meckering** deposit, which has a life of mine of more than 250 years. The Kerrigan kaolin project has been developed as a separate stand-alone kaolin project which the Company will be looking to divest should an attractive offer be forthcoming*”.





**Figure 1 – Location of the 2020 Aircore Drilling Campaign<sup>1</sup>**

<sup>1</sup> Refer to Altech ASX announcement 14 January 2020

Geos Mining completed a Mineral Resource Estimate (MRE) for the Kerrigan deposit in 2011 in accordance with the requirements of the JORC Code at that time. The previous Mineral Resource Estimate was based on drilling data from CRA Exploration (CRAE) and Graphite Holdings carried out between 1993 and 1994, and an Inferred Resource of 85 million tonnes at an ISO brightness of 85.1% was reported.

<sup>2</sup> Refer to Altech ASX announcement 6 September 2011

**Table 1 Previous Kerrigan Drilling Campaigns used in MRE Estimations**

Drillhole Series	Company	Drilling Type	Year
93PBA001-108	CRAE	Aircore	1993
PRC016-042	Graphite Holdings	Reverse Circulation	1993
PBD100530C, 120530A, 140490A, 140530A, 160470A-C, 180470A, 200490A-C, 220450A, 220510A-B, 220530A, 240450B	CRAE	Diamond Core	1994
94PBA109-185	CRAE	Aircore	1994

In 2020, Altech completed a program of 27 aircore drillholes collared throughout the deposit in order to verify some of the earlier drilling and obtain samples for further test work and analysis.

In accordance with the classification of Mineral Resource as specified in The JORC Code (2012), Geos Mining considers that the Kerrigan Resource can be classified as an Inferred Resource. The Mineral Resource Estimate of 125 million tonnes (Table 2), with estimated ISO brightness of 85% and average yield of 43.9% (as measured on the minus 10-micron fraction), was determined based on these recent aircore drilling results.

The current Mineral Resource Estimate (Table 2) reports an increase in kaolin tonnage of 47% when compared to the previous estimate determined by Geos Mining in 2011 which estimated 85 million tonnes of kaolin.

**Table 2 Kerrigan Resource Estimate from 2020 Aircore Drilling Campaign**

Brightness Range (%)	Volume (m <sup>3</sup> )	Bulk Density	Tonnes	Brightness (%)
80-85	35,140,113	1.6	56,224,180	83.3
85-90	43,281,263	1.6	69,250,020	86.8
		<b>TOTAL</b>	<b>125,474,200</b>	<b>85.23</b>

Geos Mining consider that the reasons for the increased tonnage are:

- Additional drilling data that has improved confidence in the previous results and has confirmed the overall global resource
- Some barren or low grade areas were able to be modified
- The revised geological interpretation indicates additional continuity of mineralisation

Authorised by: Iggy Tan (Managing Director)

– end –

For more information, please contact:

**Corporate**

**Iggy Tan**

Managing Director  
Altech Chemicals Limited  
Tel: +61 8 6168 1555  
Email: [info@altechchemicals.com](mailto:info@altechchemicals.com)

**Martin Stein**

CFO & Company Secretary  
Altech Chemicals Limited  
Tel: +61 8 6168 1555  
Email: [info@altechchemicals.com](mailto:info@altechchemicals.com)

**Shane Volk**

Company Secretary  
Altech Chemicals Limited  
Tel: +61 8 6168 1555  
Email: [info@altechchemicals.com](mailto:info@altechchemicals.com)



---

### **About Altech Chemicals Ltd (ASX:ATC) (FRA:A3Y)**

Altech Chemicals ("Altech" or "Company") is a specialty battery materials technology company that is developing a 10,000 tpa silicon graphite anode plant in the state of Saxony, Germany, using its proprietary high purity alumina coating technology. The Company is positioning itself to supply battery material products to the burgeoning European electric vehicle market.

This Company recently announced its game changing technology of incorporating high-capacity silicon in lithium-ion batteries. Through in house R&D, the Company has cracked the "silicon code" and successfully achieved a 30% higher energy battery with improved cyclability or battery life. Higher density batteries result in smaller, lighter batteries and substantially less greenhouse gases, and is the future for the EV market. The Company's proprietary silicon graphite product is registered as Silumina Annodes™.

The Company is in the race to get their patented technology to market. The Company has commenced a preliminary feasibility study (PFS) for the construction of a 10,000 tpa Silumina Anode material plant at its 100% owned 14 hectare industrial site within the Schwarze Pumpe Industrial Park in Saxony, Germany. The European graphite and silicon feedstock supply partners for this plant will be SGL Carbon and Ferroglobe. Altech has also received green accreditation for this project from the independent Norwegian Centre of International Climate and Environmental Research (CICERO). To support the development, the Company will also be constructing a pilot plant next door to allow the qualification process for its Silumina Anodes™ product. The Company has NDAs with two German automakers as well as a European based battery company.

Silumina Anodes™

### **HPA Project**

Altech is also further aiming to become a supplier of 99.99% (4N) high purity alumina (Al<sub>2</sub>O<sub>3</sub>) through the construction and operation of a 4,500tpa high purity alumina (HPA) processing plant at Johor, Malaysia, and has finalised Stage 1 and Stage 2 construction of its HPA plant in Johor, Malaysia. Feedstock for the plant will be sourced from the Company's 100%-owned near surface kaolin deposit at Meckering, Western Australia and shipped to Malaysia. The HPA project is significantly de-risked with a bankable feasibility study completed, senior lender project finance from German government owned KfW IPEX-Bank approved, and a German EPC contractor appointed – with initial construction works at the site completed. In addition to the senior debt, conservative (bank case) cash flow modelling of the HPA plant shows a pre-tax net present value of USD 505.6million at a discount rate of 7.5%. The project generates annual average net free cash of ~USD76million at full production. Altech is in the final stages of project finance with a potential raising of US\$100m of secondary debt via the listed green bond market. In addition, US\$100m of project equity is being sought through potential project joint venture partners.

### **Competent Person's Statement**

The information in this announcement that relates to Mineral Resources at the Kerrigan Project is based on information reviewed by Ms Sue Border. Ms Border is the Principal Advisor of Geos Mining and is a Fellow of the Australasian Institute of Mining and Metallurgy. Ms Border has sufficient experience that is relevant to the style of mineralisation under consideration to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting on Exploration Results, Mineral Resources and Ore Reserves". Ms Border consents to the inclusion in this announcement of the matters based on the information in the form and context in which it appears.

### **Caution Regarding Forward Looking Statements**

This announcement contains forward looking statements that involve a number of risks and uncertainties. These forward-looking statements are expressed in good faith and believed to have a reasonable basis. These statements reflect current expectations, intentions or strategies regarding the future and assumptions based on currently available information. Should one or more risks or uncertainties materialise, or should underlying assumptions prove incorrect, actual results may vary from the expectations, intentions and strategies described in this announcement. The forward-looking statements are made as at the date of this announcement and the Company disclaims any intent or obligation to update publicly such forward looking statements, whether as the result of new information, future events or results or otherwise.

## JORC Code, 2012 Edition – Table 1

### Section 1 - Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<p><b>Historical Exploration</b> A total of 23 samples from the Graphite Holdings RC drillholes were chosen to be tested at Comalco's Weipa operations. Samples were collected over variable intervals from 1m to 6m. No details of sampling procedures were given.</p> <p>The CRA Exploration aircore drillholes were sampled at 1 metre intervals directly from a cyclone fitted with a PVC standpipe to avoid loss of fines. Cleaning of the cyclone was carried out regularly, especially after drilling through the lateritic/ pallid clay zone.</p> <p><b>Canning Coal</b> The Canning Coal aircore samples were collected at one-metre intervals down each drillhole in 900mm x 600mm and 350mm x 250mm green plastic bags laid out in rows at each drill site. Sample material was collected via a cyclone and nominal 75:25 cone splitter fitted to the drilling rig. The larger sample was collected for analysis and testwork while the smaller sample was collected as a retained representative sample of each metre drilled. Non-kaolin material collected in the larger bags was poured back down the drillhole or removed from site and taken to the local rubbish tip. In total, 325 samples were retained as kaolin samples for possible testwork and analysis. Chip tray samples were also collected for each metre drilled and photographed.</p>
Drilling techniques	<ul style="list-style-type: none"> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</li> </ul>	<p><b>Historical Exploration</b> Graphite Holdings drilled 47 aircore/ RC drillholes while CRAE completed 195 aircore drillholes in 1993-1994 followed up with 17 fully cored drillholes. CRA Exploration used PQ3 triple tube wireline barrels with tungsten set bits rather than diamond bits and used "air flushing because of the propensity of the kaolin to disperse readily in water" (Kristensen, 1994).</p>

Criteria	JORC Code explanation	Commentary
		<p><b>Canning Coal</b> A program of 27 aircore drillholes (82mm drillhole diameter) was completed in late 2019 by Canning Coal.</p>
Drill sample recovery	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<p><b>Historical Exploration</b> Recoveries not reported</p> <p><b>Canning Coal</b> All samples weighed, some evidence of caving</p>
Logging	<ul style="list-style-type: none"> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <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>	<p><b>Historical Exploration</b> Samples logged at 1m intervals with lithotype, colour, quartz content</p> <p><b>Canning Coal</b> Samples logged at 1m intervals with lithotype, colour, quartz content</p>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<p><b>Historical Exploration</b> No sub sampling completed for aircore drillholes. Three 1-metre sub-samples were collected from each of the 10 cored drillholes; one from the high white zone and one from above and below the off white/creamy kaolin</p> <p><b>Canning Coal</b> No sub sampling completed for aircore drillholes. Samples collected via cyclone, splitter then into green plastic bags</p>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument</li> </ul>	<p><b>Historical Exploration</b> Brightness tests carried out to standards acceptable at the time. Brightness was measured using an Elrepho 2000 reflectometer, using TAPPI procedure T6460m-86.</p>

Criteria	JORC Code explanation	Commentary
	<p><i>make and model, reading times, calibrations factors applied and their derivation, etc.</i></p> <ul style="list-style-type: none"> <li>• <i>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.</i></li> </ul>	<p><b>Canning Coal</b> A total of 331 samples with -300µm recovery &gt;15% were pulverised using ring mills to 80% passing -75 µm and chemically analysed by XRF (fusion) with lithium borate flux, except for B, U, Th where analyses were done by peroxide fusion and ICP. Loss on Ignition was analysed at 1000°C in a LECO furnace. Chemical analyses included Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>, Fe<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub>, MnO, P<sub>2</sub>O<sub>5</sub>, SO<sub>3</sub>, MgO, CaO, K<sub>2</sub>O, Na<sub>2</sub>O, V<sub>2</sub>O<sub>5</sub>, Cr<sub>2</sub>O<sub>3</sub>, CoO, NiO, CuO, ZnO, As<sub>2</sub>O<sub>3</sub>, PbO, BaO, SrO, ZrO<sub>2</sub>, Sb<sub>2</sub>O<sub>3</sub>, LOI<sub>1000</sub>, Li, B, La, Ce, Th, U, CeO<sub>2</sub>.</p>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>• <i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li>• <i>The use of twinned holes.</i></li> <li>• <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> <li>• <i>Discuss any adjustment to assay data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Canning Coal drilling attempted to 'twin' some earlier CRAE drillholes but was limited by access to farm tracks. Some drillholes recorded different thicknesses of kaolin from the related twin drillholes.</li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>Specification of the grid system used.</i></li> <li>• <i>Quality and adequacy of topographic control.</i></li> </ul>	<p><b>Historical Exploration</b> Drillhole collars located using GPS instrument</p> <p><b>Canning Coal</b> Drillhole collars located using handheld GPS instrument, later measured using a Differential GPS system</p>
Data spacing and distribution	<ul style="list-style-type: none"> <li>• <i>Data spacing for reporting of Exploration Results.</i></li> <li>• <i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i></li> <li>• <i>Whether sample compositing has been applied.</i></li> </ul>	<p><b>Historical Exploration</b> Typically, drillholes were spaced at 200m and 400m intervals on grid basis</p> <p><b>Canning Coal</b></p> <ul style="list-style-type: none"> <li>• Drillholes nominally spaced at 200m intervals along pre-existing tracks</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>• <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li>• <i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i></li> </ul>	<p>All drillholes drilled vertically at right angles to flat lying kaolin horizon</p>

---

Criteria	JORC Code explanation	Commentary
Sample security	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<p><b>Historical Exploration</b> Sample integrity and security not reported</p> <p><b>Canning Coal</b></p> <ul style="list-style-type: none"> <li>Samples stored on landowner property in shed</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>No independent audits have been carried out on drilling procedures</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 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>WA government website checked for tenure status, details of reserves or other exploration constraints. Title searches of land ownership have been completed</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>Historical exploration reports have been downloaded and reviewed.</li> </ul>
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>Regional setting and mineralisation have been reviewed from public sources and confirmed during site visit.</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> <li>down hole length and interception depth</li> <li>total drillhole length.</li> </ul> </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>	<ul style="list-style-type: none"> <li>All drilling data has been reviewed from original sources and validated as a database using Micromine software. Collar information is not available on site as all drillholes have been totally rehabilitated and ground has been cropped for many years.</li> </ul>
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> <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>No data aggregation has been carried out.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</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> <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 (eg 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>Mineralisation is orthogonal to drilling attitude</li> </ul>
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>Appropriate diagrams have been created using GIS software.</li> </ul>
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>Representative reporting has been carried out</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>All relevant exploration data has been reported</li> </ul>
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>Additional procedures have been recommended and scope for further development of kaolin investigated.</li> </ul>

## 1.1 Section 3 - Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	<ul style="list-style-type: none"> <li>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.</li> <li>Data validation procedures used.</li> </ul>	<ul style="list-style-type: none"> <li>All drilling data has been validated to ensure correct representation in GIS and modelling software. Checks of data from original sources has been carried out</li> </ul>
Site visits	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>Jeff Randell has visited site on two occasions and supervised one drilling program</li> </ul>
Geological interpretation	<ul style="list-style-type: none"> <li>Confidence in (or conversely, the uncertainty of ) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul style="list-style-type: none"> <li>Geological logging has been relied upon in many cases to determine the limit of the kaolin deposit down hole. A visual assessment of brightness has been used extensively.</li> </ul>
Dimensions	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The boundary of the kaolin resource has been visually interpreted from a detailed section-by-section review of drilling and results.</li> </ul>
Estimation and modelling techniques	<ul style="list-style-type: none"> <li>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.</li> <li>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> <li>The assumptions made regarding recovery of by-products.</li> <li>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</li> <li>In the case of block model interpolation, the block size in relation to</li> </ul>	<ul style="list-style-type: none"> <li>The IDW squared algorithm has been used to interpolate brightness within the block model. This is considered appropriate given the lack of any spatial correlation evident between brightness values in adjacent drillholes.</li> <li>A 2011 resource assessment identified similar brightness results from the kaolin deposit and classified the resource as Inferred.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>the average sample spacing and the search employed.</i></p> <ul style="list-style-type: none"> <li>• Any assumptions behind modelling of selective mining units.</li> <li>• Any assumptions about correlation between variables.</li> <li>• Description of how the geological interpretation was used to control the resource estimates.</li> <li>• Discussion of basis for using or not using grade cutting or capping.</li> <li>• The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> </ul>	
Moisture	<ul style="list-style-type: none"> <li>• Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
Cut-off parameters	<ul style="list-style-type: none"> <li>• The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<ul style="list-style-type: none"> <li>• A brightness cut-off of 80% has been used where testwork has been carried out</li> </ul>
Mining factors or assumptions	<ul style="list-style-type: none"> <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>	<ul style="list-style-type: none"> <li>• The kaolin deposit is located within 30m of surface and is expected to be mined by open cut methods only</li> </ul>
Metallurgical factors or assumptions	<ul style="list-style-type: none"> <li>• The basis for assumptions or predictions 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 Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>• The MRE is reported on the basis of testwork on -75micron material. Raw kaolin would be dry or wet screened on or off site</li> </ul>
Environmental factors or assumptions	<ul style="list-style-type: none"> <li>• 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,</li> </ul>	<ul style="list-style-type: none"> <li>• Quartz rich waste will be returned to the pit. Process waste will be water borne with little or no chemical contaminants</li> </ul>



Criteria	JORC Code explanation	Commentary
	<p><i>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.</i></p>	
Bulk density	<ul style="list-style-type: none"> <li>• <i>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</i></li> <li>• <i>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.</i></li> <li>• <i>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Bulk density values have been assumed based on typical kaolin deposits elsewhere in the region. Calculations from aircore drilling were very variable as a result of drillhole caving and have not been relied upon.</li> </ul>
Classification	<ul style="list-style-type: none"> <li>• <i>The basis for the classification of the Mineral Resources into varying confidence categories.</i></li> <li>• <i>Whether appropriate account has been taken of all relevant factors (ie 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).</i></li> <li>• <i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The kaolin deposit has been classified as Inferred on the basis of insufficient brightness and assay results, assumed bulk density, variability of kaolin thicknesses in adjacent drillholes and broad drillhole spacing</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>• <i>The results of any audits or reviews of Mineral Resource estimates.</i></li> </ul>	<ul style="list-style-type: none"> <li>• A previous MRE in 2011 returned similar brightness global value although tonnage was less than the current estimate</li> </ul>
Discussion of relative accuracy/ confidence	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The classification of the MRE as Inferred is considered appropriate for the quality of data available</li> </ul>

---

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"><li><i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></li></ul>	

