

Bauxite Hills Mine Resource Expands

Key Points

Mineral Resource model constructed to integrate Metro Mining and Gulf Alumina bauxite resources

- **144.8 million tonne Direct Shipping Ore (DSO) Global Resource at the Bauxite Hills Mine** (49.2% total Al₂O₃, 13.9% total SiO₂)
- **28.6 million tonne Mineral Resource at BH1 incorporating close-spaced 80mx80m drilling** (51.2% total Al₂O₃, 9.6% total SiO₂)
- **104.5 million tonne Mineral Resource at BH6 that combines the Gulf Alumina Skardon deposit** (48.6% total Al₂O₃, 14.8% total SiO₂)
- **BH2 Mineral Resource of 11.7 million tonnes¹ included in the Global Resource**

Metro / Gulf Integration

Metro Mining Ltd (Metro) finalised the acquisition of Gulf Alumina Ltd (Gulf) in January 2017.

Up until that time both Metro and Gulf were standalone projects with resources estimated using separate geological models.

Following acquisition Metro has moved quickly to integrate the separate geological models and create a single resource.

The integrated resource forms the basis for the development of an optimal mine schedule in the Bankable Feasibility Study.

1. The BH2 Mineral Resource estimate was announced to the ASX on 9/12/2015

Bauxite Hills Mine Summary

The Bauxite Hills Mine is situated 95km north of Weipa on Queensland's Cape York Peninsula and 5Kms south-east of the port at Skardon River.

Western Cape York is world-renowned for its deposits of high-quality, export-grade bauxite.

The Skardon River will be used to transport the DSO product on shallow draught barges which will tranship the product 5–10 nautical miles offshore for loading into Ultramax and Panamax vessels.

Transshipping provides a low environmental footprint, with minimal onshore buildings and stockpiles required.



Measured, Indicated & Inferred Resources for Bauxite Hills Mine

Bauxite Hills Mine – Total Resource

| Resource Type | Dry Tonnes (Mt) | Al ₂ O ₃ % | SiO ₂ % |
|---------------|-----------------|----------------------------------|--------------------|
| Measured | 54.7 | 50.0 | 11.9 |
| Indicated | 66.4 | 49.2 | 14.7 |
| Inferred | 23.7 | 47.4 | 16.0 |
| Total | 144.8 | 49.2 | 13.9 |

Comprising

BH1 Resource

| Resource Type | Dry Tonnes (Mt) | Al ₂ O ₃ % | SiO ₂ % |
|---------------|-----------------|----------------------------------|--------------------|
| Measured | 27.7 | 51.3 | 9.5 |
| Indicated | 0.5 | 47.5 | 10.9 |
| Inferred | 0.4 | 47.0 | 11.9 |
| Total | 28.6 | 51.2 | 9.6 |

Based on minimum thickness of 0.5m; ≥45% Al₂O₃; ≤15% SiO₂

BH6 Resource (defined as combined BH6 & Gulf Skardon River deposits)

| Resource Type | Dry Tonnes (Mt) | Al ₂ O ₃ % | SiO ₂ % |
|---------------|-----------------|----------------------------------|--------------------|
| Measured | 27.0 | 48.6 | 14.4 |
| Indicated | 54.2 | 49.2 | 14.5 |
| Inferred | 23.4 | 47.4 | 16.1 |
| Total | 104.5 | 48.6 | 14.8 |

Based on minimum thickness of 0.5m; ≥45% Al₂O₃; ≤20% SiO₂

BH2 Resource²

| Resource Type | Dry Tonnes (Mt) | Al ₂ O ₃ % | SiO ₂ % |
|---------------|-----------------|----------------------------------|--------------------|
| Indicated | 11.7 | 49.1 | 15.7 |
| Total | 11.7 | 49.1 | 15.7 |

Based on minimum thickness of 0.5m; ≥45% Al₂O₃; ≤8% reactive SiO₂ at 150°C

²The BH2 Mineral Resource estimate was announced to the ASX on 9/12/2015



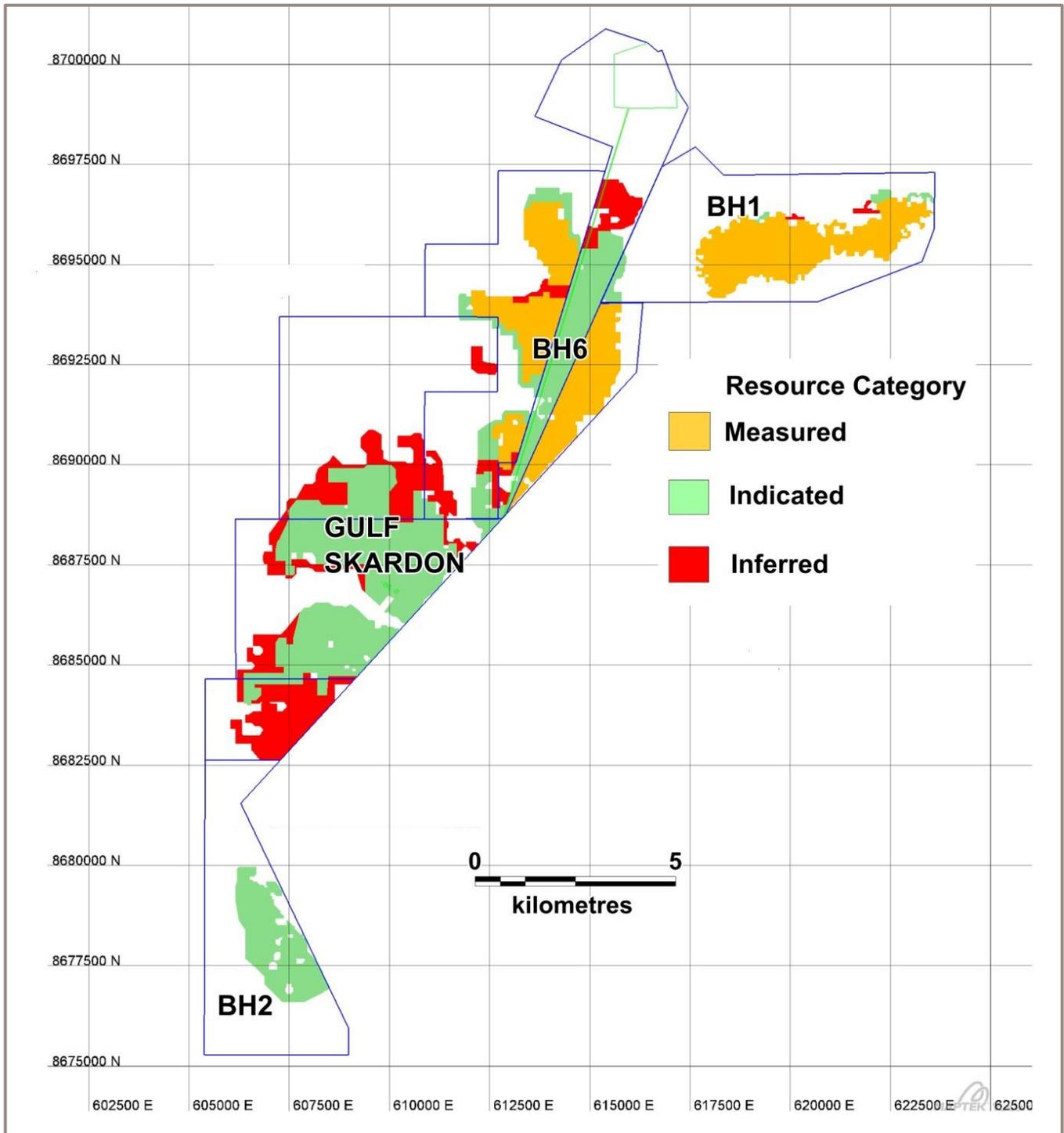


Figure 1. Pictorial of Bauxite Hills Mine resource



BACKGROUND INFORMATION

Mineral & Resource Details

The Mineral Resources being reported are the Measured, Indicated and Inferred Resources of Direct Shipping Ore (DSO) at the Bauxite Hills Mine. The Mineral Resource estimates presented here represent an update of the geological and resource models to produce a new model that combines the BH1, BH2 and BH6 resources of Metro Mining Limited and the Skardon River Project resources of Gulf Alumina Limited, a company that was acquired by Metro Mining in January 2017.

The area of the Mineral Resource estimate and its classifications is shown in Figure 1.

Geology and Geological Interpretation

The deposit type is lateritic bauxite derived from the weathering of aluminous sediments in a tropical to sub-tropical environment. The mineralisation within the Bauxite Hills Mine forms part of the Weipa Plateau, a widespread area of aluminous laterite on the west coast of Cape York Peninsula that includes Rio Tinto Alcan's Weipa, Andoom and Amrun bauxite deposits as well as Metro Mining's Bauxite Hills Mine.

The bauxite deposits in the Project area generally consist of a single flat-lying pisolitic bauxite layer, generally 0.5m - 3m thick that is underlain by a kaolin horizon. Within the area of the resources the average bauxite thickness is 1.6m. The bauxite deposits are overlain by lateritic overburden and topsoil. Under the bauxite deposits there is often a ferruginous cemented layer and a kaolin clay layer. Kaolin, sandy clays and minor quartz sand deposits occur beneath the bauxite layer and extend beyond the bauxite areas.

The geological model is grade-based using a cut-off of $\leq 15\%$ total SiO_2 and $\geq 45\%$ Al_2O_3 for the BH1 resource area, a cut-off of $\leq 8\%$ reactive SiO_2 (at 150°C) and $\geq 45\%$ Al_2O_3 for the BH2 area and a cut-off of $\leq 20\%$ total SiO_2 and $\geq 45\%$ Al_2O_3 for the combined BH6 and Gulf (Skardon) resource area.

Drilling Techniques

The principal drilling method employed was RC aircore in several drilling programs between 2005 and 2015. The sonic drilling method was used for a small number of holes in 2014 mainly to provide samples for density measurements but also samples for routine geochemical analyses.

Both methods used a HQ diameter bit to produce a ~90mm hole. The aircore method utilises low pressure air flow to force the sample up the inside of the drill rods and permits the penetration of the rods into the earth. The sonic method utilises high frequency vibration of the drill stem to effect penetration and no pressurised air is used ensuring samples are recovered in situ. All drill holes are vertical and intersect the mineralisation at 90 degrees.

Drill hole collar positions at BH1, BH2 and BH6 were initially surveyed by Fugro Spatial Solutions Pty Ltd using Trimble RTK GPS units. Three units were used; one base station and two rovers. Easting and Northing co-ordinates were quoted to three decimal places based on datum GDA94 using zone 54. Elevation was quoted to two decimal places using an adopted AHD from Ausgeoid'09. The hole collars drilled by Gulf Alumina were surveyed using a differential GPS which has horizontal accuracy of +/- 40cm. Vertical accuracy is much less at ~80cm. In late 2014 LiDAR data was acquired which provides more accurate elevation data. This data has been used in the resource modelling.

Sampling and Sub-sampling Techniques

The samples from Metro Mining's RC aircore drill holes were collected in plastic bags over 0.25m intervals through a cyclone. All the material within the interval was collected and all samples were geologically logged at the time of collection to determine the type of bauxite material, when to stop the hole, which samples to retain for analyses and which samples to composite over 0.5 m intervals. All drilled intervals were geologically logged at 0.25m intervals. The logging was done in a qualitative manner and focused on documenting the amount of pisolitic material, soil, clays and ironstone. In the field the bauxitic horizons were defined by the presence of pisolites and the absence of ferricrete.

The entire sample was collected to ensure, as much as possible, the representivity of the drilled material. Samples that contained pisolites in any volume were assumed to be bauxitic and were retained for analysis. The samples did not require drying prior to bagging.

Sampling and Sub-sampling Techniques (Cont'd)

Samples were composited over 0.5 m intervals at the time of collection where the geologically logged material was similar or collected as individual 0.25m samples where a change was observed. Sample weights ranged between 2 and 5kg depending on whether they were composited at the time of collection. No sub-sampling of material was undertaken at the time of sample collection.

For the purposes of the DSO bauxite Mineral Resource estimate, samples from the 320m x 320m spaced holes were originally composited over the entire bauxite interval in each hole as determined by earlier analyses of beneficiated samples over 0.25m and 0.5m intervals. This sub-sampling was undertaken at ALS's sample preparation laboratory in Brisbane. Subsequently, samples from infill holes (at 160m x 160m spacing at BH2 and BH6 and 80m x 80m spacing at BH1) have been assayed as mainly individual 0.25m samples although ~15% are composites (two samples maximum).

The sampling technique used by Gulf Alumina in the aircore method involved the collection of the entire sample at 0.25m intervals in clear plastic bags, tightly fitted to the cyclone outlet. Samples were geologically logged at 0.25m intervals in a similar fashion to Metro Mining and the airtight bags were sealed with cable ties to retain moisture.

With the Sonic drilling method sampling was carried out in 0.25m intervals. Samples were collected within a custom designed 'sausage' bag that is inserted into the barrel. The sample is retrieved after completing the drilling run which varies from 0.5m to 1.5m. The 'sausage' is laid out on a table then the length measured and compared to the actual down hole depth. The sample was then divided into equal lengths of 0.25m, immediately logged then placed into airtight clear plastic bags and sealed with cable ties to retain moisture.

Sample Analysis

The samples collected by Metro Mining from the BH1, BH2 and BH6 areas were assayed for a suite of elemental oxides and Loss on Ignition by ALS. Analyses are carried out by XRF Fusion (code ME-XRF13n). ALS includes laboratory standards and blanks in their standard operating procedures. Metro Mining provided ALS with Certified Reference Material samples from Geostats Pty Ltd to insert in each batch. Samples collected from holes spaced at 160m x 160m were also analysed for available alumina (method Al-LICP01 at 150°C) and reactive silica (method Si-LOCP01 at 150°C).

Samples from Gulf Alumina's holes were also analysed at ALS in an identical manner to Metro Mining except that the low temperature (148°C) available alumina and reactive silica analyses were undertaken at SGS Laboratories in Perth using a bomb digest (method ICP05).

Estimation Methodology

The volume and bauxite grade of the new BH1 and combined BH6/Gulf's Skardon River model were estimated using a block model that was constructed using Maptek's Vulcan mine planning software. Bauxite and bounding subgrade horizons were modelled as structural and quality grids then converted to a block model. The grades were estimated using a geostatistical methodology, based on the variography of the composite sample population.

The sample data, that now represents a nominal spaced drilling grid for each block modelled, was entered into a spreadsheet, along with logging and laboratory analysis. The BH1 area has been infilled to a nominal 80m x 80m drill spacing. The BH2 and BH6 blocks use drilling at a nominal 160m x 160m. The drilling in the Gulf Skardon River area varies from 200m x 200m spacing up to 400m x 400m spacing. Samples were then assigned to four horizons: overburden, the top bauxite sample, the bauxitic material and material below the base of the bauxite.

The top 0.25m was always assigned to the overburden. A threshold of $\geq 45\%$ total Al_2O_3 was applied to each sample interval below the initial overburden such that non bauxitic and subgrade bauxite material were also identified as overburden. The base of bauxite was determined by applying a total alumina and silica threshold of $\geq 45\%$ total Al_2O_3 , a total SiO_2 top cut appropriate to each block. In the case of BH1 this was $\leq 15\%$ total SiO_2 so that the overall grade for the bauxite composite was around the 9.5% total SiO_2 internal specification that Metro Mining have selected for the BH1 area. The newly modelled BH6 and combined Skardon River blocks used a $\leq 20\%$ total SiO_2 top cut to establish consistency across the combined resource.

Horizon control surfaces were built using the topography and the depth data of each horizon. The resource model was constructed and filled using geostatistical techniques employing a Kriging algorithm to estimate grades within each block.

Cut-off Grade

Mineralised zones within the combined BH6/Gulf Skardon River blocks are defined by cut-off grades of $\geq 45\%$ total Al_2O_3 and $\leq 20\%$ total SiO_2 which are based on the company's global production and market research and long-term monitoring of ongoing development of potential markets in China, India and the Middle East. A more selective $\leq 15\%$ total SiO_2 top cut was applied to BH1 to help reach a specification of around 9.5% total SiO_2 for the deposit.

Mining and Metallurgy

The resource model assumes open pit mining for the defined resource using loaders and trucks. No blasting is envisaged based on bauxite mining operations elsewhere in the Weipa area.

Classification

The classification of Mineral Resources was based on the density of drilling, availability of dry bulk density measurement and sample location within a geostatistically derived search distance. The bulk of the Mineral Resource in BH1 and BH6 has been classified as Measured where DSO samples are present within at least a 160m. Material that was over 800m from a sonic drill hole from which dry bulk density measurements were made was classified as Indicated Resource category. Where other factors such as increased distance between analytical data points lowered certainty, the blocks were assigned as Inferred Resource.

This classification appropriately reflects the Competent Person's confidence in the Mineral Resource estimates.

Bulk Density Data

Bulk density data specific to the deposits at Bauxite Hills has been determined from measurements undertaken on 325 samples collected from 34 sonic drill holes completed across the BH1 and BH6 deposits. Ten additional sonic holes were drilled as duplicates over the 27 sites hence the estimation has 44 composites available. An additional 348 samples in the Gulf Skardon River deposit enhanced the coverage of the Bulk Density data. In order to express localised Bulk Density levels, composites based on the bulk density of the sonic samples were used to generate a density grid. The resource-wide bauxite average relative density was 1.92, based on this grid within the classified blocks. The Bulk Density of each block varies based on the estimation which relies nearby samples.



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Competent Person Statement:

The information in this report that relates to Exploration Results is based on information compiled by Neil McLean who is a consultant to Metro Mining and a Fellow of the Australian Institute of Mining and Metallurgy (F.Ausimm). Mr McLean 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'. Mr McLean consents to the inclusion in the report of the matters based on information in the form and context in which it appears.

The information in this report that relates to Mineral Resources is based on information compiled by Ed Radley who is a consultant to Metro Mining and a Member of the Austral Institute of Mining and Metallurgy (MAusIMM). Mr Ed Radley has sufficient experience which is relevant to the style of mineralisation and type 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'. Mr Ed Radley has consented in writing for inclusion in this announcement the matters based on the information in the form and context it appears.

Forward Looking Statement: Statements and material contained in this ASX Release, particularly those regarding possible or assumed future performance, production levels or rates, commodity prices, resources or potential growth of Metro Mining Limited, industry growth or other trend projections are, or may be, forward looking statements. Such statements relate to future events and expectations and, as such, involve known and unknown risks and uncertainties. Graphs used in the presentation (including data used in the graphs) are sourced from third parties and Metro Mining has not independently verified the information. Metro Mining is at an early development stage and while it does not currently have an operating bauxite mine it is taking early and preliminary steps (such as but not limited to Prefeasibility studies etc.) that are intended to ultimately result in the building and construction of an operating mine at its project areas. Although reasonable care has been taken to ensure that the facts stated in this Presentation are accurate and that the opinions expressed are fair and reasonable, no reliance can be placed for any purpose whatsoever on the information contained in this document or on its completeness. Actual results and developments may differ materially from those expressed or implied by these forward looking statements depending on a variety of factors. Nothing in this Presentation should be construed as either an offer to sell or a solicitation of an offer to buy or sell shares in any jurisdiction.

APPENDIX 1 - JORC CODE 2012 EDITION - TABLE 1 REPORT

BAUXITE HILLS MINE – MINERAL RESOURCE ESTIMATES

SECTION 1 SAMPLING TECHNIQUES AND DATA (Criteria In This Section Apply To All Succeeding Sections.)

| Criteria | JORC Code explanation - DSO (“Direct Shipping Ore”) |
|----------------------------|--|
| Sampling Techniques | <ul style="list-style-type: none">• <i>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.</i>• <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i>• <i>Aspects of the determination of mineralisation that are Material to the Public Report.</i>• <i>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.</i> |
| | <p>Commentary</p> <p>Metro Mining Limited. BH1, BH2 and BH6 Reverse Circulation aircore drill hole samples were collected in plastic bags over 0.25m intervals through a cyclone. All the material within the interval was collected. All samples were geologically logged at time of collection to determine 1) the type of bauxite material, 2) when to stop the hole, 3) which samples to retain for analyses and 4) which samples to composite over 0.5m intervals.</p> <p>Samples were composited, at the time of collection, over 0.5m intervals where the geologically logged material was similar or collected as individual 0.25m samples.</p> <p>The entire sample was collected to ensure, as much as possible, the representivity of the drilled material. Sample weights were between 2kg and 5kg depending on whether they were composited at the time of collection.</p> <p>Samples that contained pisolites, in any volume, were assumed to be bauxitic and were retained for analyses.</p> <p>Gulf Alumina Limited. Both sonic and aircore drilling methods were used in several drilling programs between 2005 and 2015.</p> <p>In the sampling technique used in the aircore method the entire sample was collected at 0.25m intervals via the hollow rods, connecting hose and then into a cyclone. Clear plastic bags, tightly fitted to the cyclone outlet, ensured collection of the entire sample. Samples were immediately logged then the airtight bags were sealed with cable ties to retain moisture. Sample depth accuracy is estimated to be +/- 5cm.</p> <p>With the Sonic drilling method sampling was carried out in 0.25m intervals. Samples were collected within a custom designed ‘sausage’ bag that is inserted into the barrel. The sample is retrieved after completing the drilling run which varies from 0.5m to 1.5m. The ‘sausage’ is laid out on a table then the length measured and compared to the actual down hole depth. The sample is then divided into equal lengths of 0.25m, immediately logged then placed into airtight clear plastic bags and sealed with cable ties to retain moisture. Sample depth accuracy is estimated to be +/- 5cm. Drill rods are 1.5m in length and used as a reference for the sampling.</p> <p>Bulk density determinations were carried out where there was no observable damage to the ‘sausage’ bags. The diameter of the ‘sausage’ was measured with a Vernier scale and once the sample was placed into airtight plastic bags it was weighed with allowance for the weight of the bag. Field measurements of wet bulk density were made but most samples were also weighed wet and dry in the laboratory to obtain more accurate dry bulk</p> |

| Criteria | JORC Code explanation - DSO (“Direct Shipping Ore”) |
|------------------------------|---|
| Drilling Techniques | <p>density values. Some samples were dried prior to wet weighing and in these cases, field measurements have been used</p> <ul style="list-style-type: none"> • <i>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).</i> <p>Commentary</p> <p>The resource evaluation drilling was carried out by Wallis Drilling Pty Ltd using a Mantis 100 Reverse Circulation aircore drill rig mounted on a light 4x4 truck. Shallow (4-6m) holes were drilled vertically using HQ rods with an aircore drill bit with a diameter of 96mm.</p> <p>Drilling to collect samples for bulk density and moisture determinations was undertaken by GeoSonic Drilling Pty Ltd using a small trailer-mounted sonic drill rig with an internal bit diameter of 65mm.</p> |
| Drill Sample Recovery | <ul style="list-style-type: none"> • <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i> • <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i> • <i>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.</i> <p>Commentary</p> <p>Reverse Circulation aircore drilling was used by both Metro Mining and Gulf Alumina because of its proven reliability in producing high sample recoveries and accurate interval depths. No formal method of measuring and recording recoveries was adopted.</p> <p>To ensure representivity of the material being drilled the entire sample was collected from the drill hole.</p> <p>The aircore drilling method was used to ensure collection of as representative a sample as possible.</p> <p>Sonic samples are collected at the rig through an inner plastic ‘sausage’ bag. The length of the recovered sample depends on the hardness of the material; very hard cemented material heats up the rod and bag and causes melting of the bag. In this case the sample is recovered almost intact but there is some expansion and internal contamination. All material is knocked out of the rod and the bit cleaned with a wire brush.</p> <p>The sonic drilling method was used to collect samples for bulk density determinations as it is a proven method of collecting continuous and intact samples that can be measured to determine volumes and weighed to determine densities.</p> |
| Logging | <ul style="list-style-type: none"> • <i>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.</i> • <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</i> • <i>The total length and percentage of the relevant intersections logged.</i> <p>Commentary</p> <p>All drilled intervals were geologically logged at 0.25m intervals. The logging was done in a qualitative manner and focused on documenting the amount of pisolitic material, soil, clays and ironstone. In the field the bauxitic horizons were defined by the presence of pisolites and the absence of ferricrete. Data was recorded on a field portable laptop.</p> |

Criteria JORC Code explanation - DSO (“Direct Shipping Ore”)

Sub-Sampling Techniques and Sample Preparation

- *If core, whether cut or sawn and whether quarter, half or all core taken.*
- *If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.*
- *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*
- *Quality control procedures adopted for all sub-sampling stages to maximize representivity of samples.*
- *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.*
- *Whether sample sizes are appropriate to the grain size of the material being sampled.*

Commentary

No sub-sampling of material was undertaken at the time of collection. The entire sample was collected over 0.25 m intervals directly from the cyclone on the drill rig. The samples did not require any drying prior to bagging.

For the analyses of DSO bauxite two sample preparation protocols were used as follows:

1. For samples from drill holes on a nominal 320m by 320m grid that were previously screened (+1.2mm) and analysed
 - Create a composite sample (or samples) over the bauxite interval in each hole to be analysed using all the material in sample splits retained from earlier analyses of screened (beneficiated) samples (undertaken either under the supervision of the company or at ALS's laboratory).
 - Report weight of received sample.
 - Riffle split each sample down to an acceptable size for pulverizing and return split to original bag for storage (undertaken by ALS's Virginia laboratory in Brisbane).
 - Pulverise the smaller portion of the split to a nominal 85% passing 75 microns (undertaken by ALS's Virginia laboratory in Brisbane).
2. For samples from in-fill drill holes on a nominal 160m by 160m grid that had not been previously prepared or analysed.
 - Report weight of received sample.
 - Riffle split each sample down to an acceptable size for pulverising and return split to original bag for storage (undertaken by ALS's Virginia laboratory in Brisbane)
 - Pulverise the smaller portion of the split to a nominal 85% passing 75 microns (undertaken by ALS's Virginia laboratory in Brisbane).
 - Approximately 15% of the samples are composite samples that have been prepared in the laboratory by riffle splitting and combining. The composites do not include more than two samples.

This preparation is regarded as being appropriate for bauxite analyses.

As the entire sample was collected in the field no duplicate sampling was possible or deemed to be required.

In the case of Gulf Alumina's sonic drilling samples was collected in full directly from the 'sausage' bag and varied from 0.9kg to 1.8kg in weight when collected. Duplicate samples were collected every 20 samples by cone and quarter method in the field at the time of drilling.

Criteria JORC Code explanation - DSO (“Direct Shipping Ore”)

Quality of Assay Data & Laboratory Tests

- The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.
- For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.
- Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.

Commentary

For both Metro Mining and Gulf Alumina sample analyses were undertaken by ALS at its Stafford laboratory in Brisbane.

The analytical methods applied to the pulverised sample were as follows:

- Total oxides by XRF (ALS code ME-XRF13b). Al₂O₃, BaO, CaO, Cr₂O₃, Fe₂O₃, K₂O, MgO, Na₂O, P₂O₅, SiO₂, SO₃, SrO, TiO₂, V₂O₅, Zn, ZrO₂O.
- H₂O/LOI by TGA furnace (ALS code ME-GRA05)
- Available alumina in bauxite by ALS method AI-LICP01 (150°C) **(Metro Mining)**
- Reactive silica by ALS method Si-LOCP01 (150°C) **(Metro Mining)**
- Available alumina by SGS using method ICP05 (148°C) **(Gulf Alumina)**
- Reactive silica by SGS using method ICP05 (148°C) **(Gulf Alumina)**

Two standard reference samples for bauxite were obtained from Geostats Pty Ltd, renumbered, and provided to the laboratory to insert in each batch. One of each sample was inserted approximately every twenty (20) samples. This was regarded as a measure of the accuracy of the laboratory. The results were all within one standard deviation of the certified values indicating no significant bias between sample batches.

No field duplicate samples were collected as the total sample was submitted for analysis.

In the laboratory as a Quality Control measure, every 10th sample was completed in duplicate and four laboratory standards and one blank were run in conjunction with the samples and data reported to the company.

Verification of Sampling and Assaying

- The verification of significant intersections by either independent or alternative company personnel.
- The use of twinned holes.
- Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.
- Discuss any adjustment to assay data.

Commentary

In the laboratory every 10th sample was completed in duplicate as listed above.

Analyses from 21 twinned drill holes have been completed. Duplicate holes had very high correlation coefficients for the total silica, reactive silica, total alumina and available alumina grades that indicated no inherent problems in the sampling or laboratory protocol.

Criteria JORC Code explanation - DSO (“Direct Shipping Ore”)

Duplicate holes that were submitted in the BH6 and BH1 blocks during the field drilling programs that covered this BH2 resource showed excellent correlation. No actual duplicate holed from BH2 were submitted and hence the results of from these other nearby blocks are considered relevant.

Analytical data were provided by the laboratory in csv format and as pdf. The data have been compiled by the company into Excel spreadsheets and merged with drill hole location data and sample intervals.

The Gulf Skardon River Assayed data has been viewed by S. Border of Geos Mining and W. Zhang of Gulf Alumina. The 2014 drilling program included some close spaced drilling to determine local variations in bauxite thickness and cementation. Data was entered into one single database from which all estimation work is carried out. There is no duplication of tables. The database was then exported from access and merged with the cape alumina BH6 database.

Location of Data Points

- Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.
- Specification of the grid system used.
- Quality and adequacy of topographic control.

Commentary

Metro Mining Limited. Drill hole collar positions were surveyed by Fugro Spatial Solutions Pty Ltd using Trimble RTK GPS units. Three units were used; one base station and two rovers. Easting and Northing co-ordinates were quoted to three decimal places based on datum GDA94 using zone 54. Elevation was quoted to two decimal places using an adopted AHD from Ausgeoid’09.

Gulf Alumina Limited. Hole collars have been surveyed using a differential GPS which has horizontal accuracy of +/- 40cm. Vertical accuracy is much greater at ~80cm. Data is collected with reference to the GDA94 datum and recorded as Zone 54 metric coordinates.

In late 2014 LiDAR data was acquired by both companies which provide more accurate elevation data. This data has been used in the resource modelling.

Data Spacing & Distribution

- Data spacing for reporting of Exploration Results.
- Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.
- Whether sample compositing has been applied.

Commentary

In the BH1 area 1,482 holes were drilled on a nominal 80m x 80m north-south, east-west grid. In the BH2 area 142 holes were drilled on a nominal 160m x 160m north-south, east-west grid. In the BH6 area 505 holes were completed on a 160m x 160m grid. Gulf Alumina’s drill hole spacing was variable but was designed so that samples could be analysed from ~400m spaced holes.

Samples have been submitted for analyses from all drill holes either as individual samples or composites. Approximately 15% of the samples from Metro Mining’s 160m x 160m drilling were composites prepared in the laboratory by riffle splitting and combining a maximum of two samples. All other samples were the original 0.2 m or 0.5m samples.

In February 2015 the sonic drilling program established a series of holes through the area allowing the certainty to assign Measured Resource within 800m of the dry bulk density analysis.

| Criteria | JORC Code explanation - DSO (“Direct Shipping Ore”) |
|--|---|
| Orientation of Data in Relation to Geological Structure | <ul style="list-style-type: none"> • Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. • If the relationship between the drilling orientation and the orientation of key mineralized structures is considered to have introduced a sampling bias, this should be assessed and reported if material. <p>Commentary</p> <p>All drill holes are vertical and intersect the mineralisation at an approximate 90⁰ angle. The mineralisation is known to be near horizontal with a tabular attitude. This is typical of bauxite deposits in the Weipa area. There is therefore no sampling bias resulting from the orientation of the drilling and that of the mineralised body.</p> |
| Sample Security | <ul style="list-style-type: none"> • The measures taken to ensure sample security. <p>Commentary</p> <p>The samples were collected in large plastic sample bags on site which were secured with industrial quality duct tape and then placed, along with other samples from the drill hole, in large polyweave bags which were secured with cable ties.</p> <p>Due to the nature of bauxite mineralisation there is little opportunity to tamper with or otherwise modify the sample.</p> <p>The samples used in the DSO bauxite Mineral Resource estimates were stored in secure containers in a locked shed in a secured industrial estate in Raceview, Ipswich, Queensland.</p> |
| Audits or reviews | <ul style="list-style-type: none"> • The results of any audits or reviews of sampling techniques and data <p>Commentary</p> <p>No independent audits of the aircore drilling and sampling procedures have been undertaken. Geos Mining has reviewed the data and modelling methodology and provided recommendations to enable sign off as a Competent Person for the Mineral Resources at both BH1 and BH6 deposits. The BH2 drilling including rotary and sonic were carried out in the same manner as part of the same programs that gathered the BH1 and BH6 data.</p> <p>A review of the bulk density determinations derived from the sonic drilling program has been undertaken by Xstract Mining Consultants Pty Ltd. They supported the idea of applying an average Relative Density to a block based on the samples. In practice the Relative Density has been modelled to improve definition of the estimation.</p> <p>With regard the data generated by Gulf Alumina Geos Mining state that In house auditing of QC has shown no irregularities although it is noted that:</p> <ul style="list-style-type: none"> • There is a moderate variability in bauxite thickness (relating to silica abundance) • There is a marked variation in recoveries of samples from which assays are measured • There is a bias in the measurement of samples for bulk density where cemented material causes rupturing of the sample ‘sausage |

SECTION 2 REPORTING OF EXPLORATION RESULTS

(CRITERIA LISTED IN THE PRECEDING SECTION ALSO APPLY TO THIS SECTION.)

| Criteria | JORC Code explanation – DSO (“Direct Shipping Ore”) |
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| Mineral Tenement and Land Tenure Status | <ul style="list-style-type: none"> • <i>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</i> • <i>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.</i> <p>Commentary</p> <p>BH6 is located within EPM 16899 and BH1 within EPM 15376. The EPMs are held by Cape Alumina Limited a wholly owned subsidiary of Metro Mining Limited.</p> <p>The underlying tenements are in good standing.</p> <p>BH2 is located within EPM 15376. The EPMs are held by Cape Alumina Pty Ltd a wholly owned subsidiary of Metro Mining Limited. The tenements lie within the Old Mapoon DOGIT with whom the company has a Conduct and Compensation agreement.</p> <p>The underlying tenements are in good standing.</p> |
| Exploration Done by Other Parties | <ul style="list-style-type: none"> • <i>Acknowledgment and appraisal of exploration by other parties.</i> <p>Commentary</p> <p>An appraisal has been undertaken of previous exploration for bauxite. Although some widespread sampling existed there was no evidence of systematic, grid-based drilling. Early exploration of the area was undertaken by Comalco for bauxite. Other companies explored to the north of Skardon River (Pacminex for bauxite in the early 1970s) or to the south of Mapoon (Shell and Comalco explored the Pennefather area for kaolin in the 1980s and early 1990s). Probably due to the remoteness of the region, it appears there was no other exploration over the area of this EPM. The only recorded work carried out by Australian Kaolin Limited (AKL) and its predecessor Venture Kaolin outside the area of the Mining Leases was five percussion holes drilled in 1986. AKL went into receivership and the project was acquired by Queensland Kaolin Limited which subsequently changed its name to Australian China Clays Limited (ACC). ACC have carried out intermittent kaolin mining and processing operations since 2002. Infrastructure for the kaolin operation included two kaolin processing plants (now sold), an airstrip, a haul-road and pipeline linking the kaolin mine and wet processing plant with the dry plant and a barge wharf at the Skardon River landing. Additional infrastructure includes bulk water and fuel storage, diesel power generators and a staff camp, designed to accommodate 50 people.</p> |
| Geology | <ul style="list-style-type: none"> • <i>Deposit type, geological setting and style of mineralization</i> <p>Commentary</p> <p>The deposit type is lateritic bauxite derived from the weathering of aluminous sediments in a tropical to sub-tropical environment.</p> <p>The project area forms part of the Weipa Plateau and is underlain by rocks of the Carpentaria Basin. The oldest rocks intersected by drilling in the area</p> |

Criteria JORC Code explanation – DSO (“Direct Shipping Ore”)

are grey-black marine shales, which have been assigned to the Cretaceous Rolling Downs Group. This is up to 250m thick and is underlain by sandstones of the Helby Beds. These rocks are a source of artesian water. The bauxite deposits generally consist of a single bauxite layer, generally 0.5m – 3m thick that is underlain by a kaolin horizon. Within the Gulf SK resource area, the average bauxite thickness is 1.6m and within the BH6 tenement the average is 2.3m and at BH1 the bauxite profile averages 1.8m. The bauxite deposits are overlain by lateritic overburden and topsoil. Under the bauxite deposits there is often an ironstone cementation and a kaolin clay layer. Kaolin, sandy clays and minor quartz sand deposits occur beneath the bauxite layer and extend beyond the bauxite areas, beneath the Namaleta Creek flood plain.

Bauxite occurs over the majority of the plateau areas. It is pisolitic in form and is generally covered only by a thin layer of soil, but in the western parts of the project area bauxite is sometimes found beneath sand dunes at depths of up to 6m. The bauxite passes down into an iron rich horizon (ferricrete) and then into mottled, bleached Bulimba Formation sandy clays. Bauxite pisoliths generally form 55-80% of high quality bauxite, with the remainder being sand, silt and clay. The pisoliths are well rounded, and generally 5mm to 20mm in size, although larger pisoliths of up to 30 mm do occur in the bauxite horizon. Larger, irregular shaped pisoliths and concretions are typical of the underlying ironstone horizon and form a visual marker of the base of the bauxite.

Most of the bauxite is loose and free flowing although a proportion is cemented. The aircore drilling method used for exploration is efficient at drilling through thin layers of cemented bauxite, so from the exploration drilling alone it is impossible to make any accurate assessment of the proportion of cemented bauxite in this deposit. Mining experience in Weipa and Andoom has demonstrated that cemented bauxite is typically only a very small percentage of the total bauxite in this region.

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:
 - 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 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.

Commentary

All Metro Mining's drill hole information, including surveyed collars with easting, northing, elevation and depth, geological logs and analytical data are presented in Excel spreadsheets. These data were used in the estimation of the Mineral Resources. The data are stored within Metro Mining's server which is regularly backed-up.

Data sourced from Gulf Alumina were contained within a comprehensive database that has been validated.

Data Aggregation Methods

- 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.
- 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.

Criteria JORC Code explanation – DSO (“Direct Shipping Ore”)

- *The assumptions used for any reporting of metal equivalent values should be clearly stated.*

Commentary

For BH1 and BH6 the bauxite intervals are based on a cut-off of $\geq 45\%$ total Al_2O_3 and $\leq 15\%$ SiO_2 and a cut-off of $\geq 45\%$ total Al_2O_3 and $\leq 8\%$ reactive SiO_2 (at 150°C) respectively. For BH6 and the adjacent Gulf Alumina area the bauxite intervals are based on a cut-off of $\geq 45\%$ total Al_2O_3 and $\leq 20\%$ SiO_2 . A minimum thickness of 0.5m was applied and the top 0.25m was considered to be overburden and was not aggregated. Down-hole assays were weighted on the basis of both intercept thickness and intercept recovery (wt% +1.2mm material) to determine the weighted average assay for the bauxite zone in each drill intercept. No upper cut-off grades were applied.

Some DSO bauxite samples used in the Mineral Resource estimates were created by compositing the splits over the entire bauxite interval, as defined by the cut-offs described above, for each hole. The remainder (~80%) are non-composited 0.25m or 0.5m samples.

A number of analyses from the Gulf Alumina drill holes are from screened ($>1.2\text{mm}$) samples that have been converted to DSO analyses using correlation coefficients generated from samples that have both screened and DSO analyses.

Relationship between Mineralization Widths and Intercept Lengths

- *These relationships are particularly important in the reporting of Exploration Results.*
- *If the geometry of the mineralization with respect to the drill hole angle is known, its nature should be reported.*
- *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')*

Commentary

All drill holes are vertical and intersect the mineralisation at an approximate 90° angle. The mineralisation is known to be near horizontal with a tabular attitude. Intercept lengths are therefore approximately the same as the true widths of the mineralisation. This is typical of bauxite deposits in the Weipa area.

Diagrams

- *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.*

Commentary

Due to the high density of drilling it is difficult to display on a plan.

Balanced Reporting

- *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.*

Commentary

This is not deemed to be Material for the reporting of the Mineral Resources which considers all the analytical data. All resource estimation work is based on the entire database, except where areas such as environmentally sensitive areas and areas of no bauxite have been excluded.

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.*

| Criteria | JORC Code explanation – DSO (“Direct Shipping Ore”) |
|---------------------|--|
| | <p>Commentary</p> <p>Apart from the samples obtained from the Reverse Circulation aircore drilling a small number of bulk samples were collected over 1 m intervals from the aircore drilling for dispatch to potential customers.</p> <p>Aircore drilling has been the main exploration method used in the drilling programs, apart from very limited backhoe and hand sampling. Samples have been analysed mainly by ALS Laboratories in Brisbane.</p> |
| Further Work | <ul style="list-style-type: none"> • <i>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i> • <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i> <p>Commentary</p> <p>No further resource-focused drilling is planned for BH1. Close-spaced drilling, to an 80m x 80m grid, is planned for BH6, the adjacent Gulf Alumina areas and BH2.</p> |

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 – DSO (“Direct Shipping Ore”) |
|---------------------------|--|
| Database Integrity | <ul style="list-style-type: none"> • <i>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.</i> <p>Data validation procedures used.</p> <p>Commentary</p> <p>Analytical data was received from the laboratory in csv format and merged with drill hole locational and from-to data in Excel spreadsheets. Checks were run to look for and correct duplicated intervals, gaps and typing errors. Vulcan's database import and compositing routines generated validation log files that were all checked in detail. All issues identified were verified, checked and corrected.</p> <p>Gulf Alumina's survey data has been directly downloaded from the GPS instrument to the Access database. Elevation data has been compiled from recently flown LiDAR data. Sampling and logging data has similarly been copied directly from the field geologist's digital logs Assay data has been also downloaded directly from ALS csv files. Validation of all data has been undertaken through in-built functions of the modelling software (Micromine), together with visual checks by the resource geologist.</p> <p>Upon combining the model all data has also been validated by importing into Vulcan can generating composites. Any horizons out of sequence or over lapping intervals and gaps are reported by the software and then checked against source data and corrected.</p> |

Criteria JORC Code explanation – DSO (“Direct Shipping Ore”)

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.*

Commentary

The Competent Person for exploration results, Neil McLean, supervised the drilling program and was on site a number of times during the program. The Competent Person for the resource modelling, Ed Radley, was not working on the project during the exploration phase and as such could see little benefit in a field visit that has not been related in photographs and presentation from others.

In the case of the data derived from Gulf Alumina the Competent Person whom signed off on the previous resource (2014) visited the site on four occasions; three of which three of which involved the supervision of drilling programs. He viewed surveying methods, geological and sample collection procedures on all these occasions.

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.*

Commentary

The geological interpretations is grade-based using a threshold of $\geq 45\%$ total Al_2O_3 and $\leq 15\%$ total SiO_2 for BH1, a threshold of $\geq 45\%$ total Al_2O_3 and $\leq 8\%$ reactive SiO_2 (at 150°C) at BH2 and a threshold of $\geq 45\%$ total Al_2O_3 and $\leq 20\%$ total SiO_2 for BH6 and the Gulf Alumina area, to define economic bauxite. The continuity of the geological interpretation is confirmed with a reasonable degree of confidence. The data points are spaced at 80m in a nominal grid pattern for almost the entire BH1 deposit and at 160m in a nominal grid pattern over the BH2 and BH6 deposits. The data points for the Gulf Alumina area are more variable but generally less than 400m on a nominal grid. Information from other deposits in the Weipa area provides additional confidence in the geological model.

The regional geological setting has been well known since discovery of the Weipa deposits, 80km to the south. The considerable drilling already completed has given confidence in the local geological setting although it is noted that the definition of bauxite is essentially a chemical one, initially guided by lithological logging.

The deposit type is lateritic bauxite derived from the weathering of aluminous sediments in a tropical to sub-tropical environment. The mineralisation within the Bauxite Hills Mine Project forms part of the Weipa Plateau, a widespread area of aluminous laterite on the west coast of Cape York Peninsula that includes Rio Tinto Alcan's Weipa, Andoom and Amrun bauxite deposits.

The bauxite deposits generally consist of a single flat-lying pisolitic bauxite layer, 0.5m – 3m thick that is underlain by a kaolin horizon. Within the resource area the average bauxite thickness is 1.6m. The bauxite deposits are overlain by lateritic overburden and topsoil. Under the bauxite deposits there is often a ferruginous cemented layer and a kaolin clay layer. Kaolin, sandy clays and minor quartz sand deposits occur beneath the bauxite layer and extend beyond the bauxite areas.

| Criteria | JORC Code explanation – DSO (“Direct Shipping Ore”) |
|--|--|
| Dimensions | <ul style="list-style-type: none"> 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. <p>Commentary</p> <p>The mineralisation within the bauxite plateaus is flat lying and tabular in form. The Mineral Resource has the following surface area, average bauxite thickness and average overburden thicknesses.</p> <p>BH1: Area 6.8km². Bauxite thickness 1.7m. Overburden 0.6m</p> <p>BH2: Area 3.1km². Bauxite thickness 1.6m. Overburden 0.5m</p> <p>BH6/Gulf Alumina: Area 39km². Bauxite thickness 1.4m. Overburden 0.76m</p> |
| Estimation & Modelling Techniques | <ul style="list-style-type: none"> 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. <p>Commentary</p> <p>A block model was created by constructing a DTM and surface model of the soil, bauxite and transition zone. The block model was cut to tenement boundaries, environmentally sensitive areas and bauxitic plateaus then filled with assay and bulk density data using an Ordinary Kriging algorithm with variograms created for total silica/ alumina, available alumina, reactive silica and dry bulk density. LOI, Ti₂O₃ and Fe₂O₃ were also modelled.</p> <p>Estimation parameters used included:</p> <ul style="list-style-type: none"> Grid size 40m x 40m Omnidirectional search ellipse with maximum search distance of 800m Lag intervals 100, 200, 400, 800, 1200m. |

| Criteria | JORC Code explanation – DSO (“Direct Shipping Ore”) |
|---|---|
| | <ul style="list-style-type: none"> Nugget, major/ minor ranges determined by best fit variograms |
| Moisture | <ul style="list-style-type: none"> Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content. <p>Commentary</p> <p>The tonnes are quoted on a dry basis. The moisture contents were measured by ALS on the sonic drill samples. Following drying the samples were re-weighed to provide a weight to use in the bulk density calculations.</p> |
| Cut-off Parameters | <ul style="list-style-type: none"> The basis of the adopted cut-off grade(s) or quality parameters applied. <p>Commentary</p> <p>Mineralised zones in the BH1 portion of the model are defined by grades $\geq 45\%$ total Al_2O_3 and $\leq 15\%$ SiO_2.</p> <p>Mineralised zones in the BH2 portion of the model are defined by grades $\geq 45\%$ total Al_2O_3 and $\leq 8\%$ reactive SiO_2 (at $150^\circ C$).</p> <p>Within the combined BH6 and Gulf Alumina model mineralised zones are defined by grades $\geq 45\%$ total Al_2O_3 and $\leq 20\%$ total SiO_2.</p> <p>Silica cut-off grades have also been assigned on the basis of the maximum reactive silica acceptable to refineries. This is generally accepted as 8% which approximately equates to a total silica value of ~16-20%. However, where reactive silica assays are available these have been used to determine whether material is classified as bauxite or waste.</p> |
| Mining factors or Assumptions | <ul style="list-style-type: none"> 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. <p>Commentary</p> <p>The resource model assumes open pit mining for all defined resources using loaders and trucks. No blasting is envisaged based on bauxite mining operations elsewhere in the Weipa area.</p> <p>Grade control will be assisted by ground penetrating radar (GPR), laser levelling equipment fitted to mining equipment with face grade control measured by the use of portable XRF equipment and/or field laboratory.</p> <p>The mining method is influenced by the flat terrain, the tabular nature of the bauxite occurrence and its material characteristics. A conventional truck and excavator equipment will be used as proven by Rio Tinto Alcan in the neighbouring Weipa mine, handling a similar ore body. No blasting is required and scrapers will be used to remove topsoil and overburden which will be placed in mined out areas. Conventional open cut mining will be used with low stripping ratios (less than 1:1).</p> |
| Metallurgical Factors or Assumptions | <ul style="list-style-type: none"> 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. |

| Criteria | JORC Code explanation – DSO (“Direct Shipping Ore”) |
|--|---|
| | <p>Commentary</p> <p>THA (trihydrate alumina) and RxSi (reactive silica at 150°C) analyses have been undertaken on a routine basis throughout the deposits. A small number of TAA (total available alumina) and RxSi (reactive silica at 250°C) analyses have also been generated. CSIRO has undertaken detail bauxite characterisation analyses on a small number of samples that have been composited from a number of holes within the BH1 and BH6 deposits. The results of this work indicate that the characteristics of the bauxite are geographically variable and could be suitable for both low and high temperature Bayer processing.</p> <p>A direct shipping product (DSO) will be supplied without the need for any beneficiation (i.e. wet screening to remove fines).</p> |
| <p>Environmental Factors or Assumptions</p> | <ul style="list-style-type: none"> <i>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.</i> <p>Commentary</p> <p>An EIS has been submitted over the Bauxite Hills Mine Project and is currently in the assessment process. Small-scale mining of kaolin has been undertaken at the Skardon Mine located to the north of the BH2 deposit indicating that the district is not necessary regarded as 'greenfields'.</p> <p>There are several environmentally sensitive areas surrounding the bauxite deposit but their location is accurately known; no bauxite resources have been included within these areas.</p> <p>At present there are no communities on the mining leases. Good relations have been established with the Aboriginal Traditional Owners and relevant Queensland Government authorities.</p> |
| <p>Bulk Density</p> | <ul style="list-style-type: none"> <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> <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> <i>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</i> <p>Commentary</p> <p>Bulk density data specific to BH1, BH2 and BH6 have been determined from measurements undertaken on 325 samples collected from 34 sonic drill holes.</p> <p>The Metro Mining methods of sample collection, measurement and determination, as well as the results, have been independently reviewed by Xstract Mining Consultants Pty Ltd. The dry bulk density analysis was used to build a model using an inverse distance method to generate a surface fit to the composite derived from the samples density values. The sonic drilling method was used to collect core samples for bulk density determinations as it is a proven method of collecting continuous and intact samples that can be measured to determine volumes and weighed to determine densities</p> <p>With regard to Gulf Alumina the 2014 drilling program enabled the measurement of 144 bulk density values from bauxitic material and this data was</p> |

| Criteria | JORC Code explanation – DSO (“Direct Shipping Ore”) |
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| | <p>used in the 2017 resource estimate. An average default value of 1.8 was used (compared to previous conservative estimates of 1.6). The inclusion of an additional 204 measurements from field data has increased the default bulk density to 1.93.</p> <p>Composites based on the bulk density of the BH6 and Gulf Alumina sonic samples were used to generate a density grid which produced a resource-wide bauxite average relative density of 1.92 based on the zones within the classified blocks.</p> |
| <p>Classification</p> | <ul style="list-style-type: none"> • <i>The basis for the classification of the Mineral Resources into varying confidence categories.</i> • <i>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).</i> • <i>Whether the result appropriately reflects the Competent Person’s view of the deposit.</i> <p>Commentary</p> <p>The Mineral Resource has been classified as Measured, Indicated and Inferred. This reflects the density of drill hole sampling that varies from 80m to 160m to ~400m centres, the availability of bulk density data and the modelling method utilised. LiDAR survey covers the entire deposit and adds confidence to the definition of the plateaus and hence helps justify the classification categories. Measured resource required a bulk density composite value within 800m and both Indicated and Measures categories required a DSO analysis within 220 m of the point being classified. Simulated DSO grades were applied to all composite samples that had beneficiated analyses (screened at >1.2mm) using a correlation coefficient generated from paired DSO and beneficiated analyses. The correlation in simulating these grades was considered strong within the bauxite horizon and as such the zone of influence was relaxed from a 200m radius used previously to the 220m radius reflecting more confidence in the data.</p> <p>In accordance with the classification as Measured Resources, the Competent Person considers that there is moderate confidence in the bulk density of each block represented in the model based on analytical data. Measured resources were limited to portions of the model within 800m of sonic drill holes with bulk density data. Significant variability has been noted within the deposits dry bulk density analyses.</p> <p>In accordance with the classification as Indicated Resources, the Competent Person considers that there is moderate confidence that the total silica and alumina grades in each block are as estimated. This confidence is underpinned by the close spaced (160 m) drill holes, some of which have been assayed, and results of the variography that suggest spatial continuity over distances of up to 3km. There is however a moderately high nugget that suggests significant local variability in grade that must be considered in further upgrades of resource classification.</p> |
| <p>Audits or Reviews</p> | <ul style="list-style-type: none"> • <i>The results of any audits or reviews of Mineral Resource estimates.</i> <p>Commentary</p> <p>Geos Mining has carried out an independent review of the Mineral Resource data and techniques used to estimate the BH1 and BH6 resources. The techniques used to estimate the BH2 and Gulf Alumina resources are identical in that the same method and systems were used.</p> <p>With regard the Gulf Alumina resource Geos Mining has carried out resource estimations since 2008. In 2012 a consultant was commissioned by an international aluminium producer to review the resource. No adverse comments were received.</p> |
| <p>Discussion of Relative Accuracy/ Confidence</p> | <ul style="list-style-type: none"> • <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> |

Criteria**JORC Code explanation – DSO (“Direct Shipping Ore”)**

- *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.*
- *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*

Commentary

In accordance with the classification as Indicated Resources, the Competent Person considers that there is moderate confidence in the bulk density of each block represented in the model based on analytical data. Indicated Resources were also limited to portions of the model within 800 m of sonic drill holes with bulk density data.

In accordance with the classification as Indicated Resources, the Competent Person considers that there is moderate confidence that the total silica and alumina grades in each block are as estimated. This confidence is underpinned by the close spaced (160 m) drill holes, most of which have been assayed, and results of the variography that suggest spatial continuity over distances of up to 3km. There is however a moderately high nugget that suggests significant local variability in grade that must be considered in further upgrades of resource classification.

With regard the Gulf Alumina data confidence in the global resource is considered high given the extensive drilling completed and assay data available. Limitations on the categorised resource relate to the lack of raw, unscreened, sample assays in certain areas of the deposit.