

**Broken Hill Prospecting Ltd**  
(ASX: BPL)

An Australian Exploration company  
focussed on the discovery & development  
of strategic technology mineral resources

**Commodity Exposure**

Heavy Mineral Sands  
Cobalt

**Directors & Management**

Creagh O'Connor  
*Non-Executive Chairman*

Geoff Hill  
*Non-Executive Director*

Matt Hill  
*Non-Executive Director*

Denis Geldard  
*Non-Executive Director*

Trangie Johnston  
*Chief Executive Officer*

Ian Morgan  
*Company Secretary*

**Capital Structure**

Ordinary Shares on Issue (10/8/17) **148M**

Options: Listed **47M**

Market Cap (undiluted at 3.6cps) **\$5.2M**

**Broken Hill Prospecting Ltd**

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## Highlights

**Large Maiden Resource Estimates for Murray Basin Heavy Mineral Sands**

- Combined Inferred Mineral Resource estimates for Broken Hill Prospecting Ltd's (ASX: BPL) Jaws and Gilligans deposits total 113 Mt at 1.8% heavy mineral (HM) at a cut-off grade of 1% including:
  - Jaws Inferred Mineral Resource estimate of 63 Mt at 1.9% HM and 5% clay containing 1.2 Mt of HM with an assemblage of 10% zircon, 29% rutile and 10% total ilmenite
  - Gilligans Inferred Mineral Resource estimate of 50 Mt at 1.6% HM and 2% clay containing 0.8 Mt of HM with an assemblage of 9% zircon, 23% rutile and 8% total ilmenite
- Priority follow-up work will target higher grade zones within the broader Mineral Resources. Assessment continues on a number of other advanced assets
- Pending tenement applications are supported by ongoing data compilation and prospectivity analysis
- Sustained titanium pigment price increases are boosting market and the value of BPL's exclusive Murray Basin HMS database - 37,200 drill holes for 1,280,000 metres of drilling at a replacement value of approximately \$50 M (drilling & assay) in today's terms
- BPL now holds the third largest tenement portfolio in the Murray Basin, NSW, after industry leaders Iluka Resources and Cristal Mining

**BPL's CEO Trangie Johnston commented:**

*"These Mineral Resource estimates are testimony to the Company's exploration strategy. They represent a total heavy mineral inventory of two million tonnes, with a combined rutile and zircon assemblage of 36%. Our Murray Basin HMS expansion strategy continues uninterrupted."*

Murray Basin Minerals Pty Ltd, a wholly owned BPL subsidiary, today announced Mineral Resource estimates for its Jaws and Gilligans heavy mineral (HM) deposits in the Murray Basin, New South Wales. The Inferred Mineral Resources comprise a total of 113 Mt at 1.8% HM and 3% clay containing 2 Mt of HM with an assemblage of 10% zircon, 26% rutile and 10% total ilmenite including:

**Table 1.** Mineral Resource estimates for the Jaws and Gilligans deposits as reported at a 1% HM cut-off grade.

Summary of Mineral Resources							HM Assemblage				
Mineral Resource Category	Deposit	Material (Mt)	In Situ HM (Mt)	HM (%)	Clay (%)	Oversize (%)	Ilmenite (%)	Zircon (%)	Rutile (%)	Magnetic Leucoxene (%)	Non-magnetic Leucoxene (%)
Inferred	Jaws	63	1.2	1.9	5	1	10	10	29	22	1
Inferred	Gilligans	50	0.8	1.6	2	2	8	9	23	20	2
<b>Total</b>		<b>113</b>	<b>2.0</b>	<b>1.8</b>	<b>3</b>	<b>1</b>	<b>10</b>	<b>10</b>	<b>26</b>	<b>21</b>	<b>2</b>

(1) Mineral Resources reported at a cut-off grade of 1% HM

(2) Mineral assemblage is reported as a percentage of in situ HM content

In addition, an Exploration Target estimate for Gilligans was prepared as an extension of the Mineral Resource block model comprising:

**Table 2.** Gilligans conceptual exploration target estimated through the extension of the Mineral Resource block model.

Summary of Exploration Target						HM Assemblage				
Deposit	Material (Mt)	In Situ HM (Mt)	HM (%)	Clay (%)	Oversize (%)	Ilmenite (%)	Zircon (%)	Rutile (%)	Magnetic Leucoxene (%)	Non-magnetic Leucoxene (%)
Gilligans	6 - 24	0.1 - 0.3	1 - 2	7 - 8	1	8	9	23	20	2

(1) Exploration Target ranges reported a cut-off grades of 0.7% and 1.3% HM

(2) Mineral assemblage is reported as a percentage of in situ HM content

*The potential quantity and grade of these targets is conceptual in nature. There has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in determination of a Mineral Resource.*

The Jaws and Gilligans deposits are located in south-western New South Wales approximately 50 km north of Mildura and lie approximately 20 km east of the Silver City Highway which links Mildura to Broken Hill.

At a 1% HM cut-off grade, the Gilligans deposit is approximately 23 km long and 250 m to 700 m wide on average. The Exploration Target within the deposit length is approximately 8 km long and 150 m to 300 m wide on average and comprises the south-east part of the deposit. Gilligans ranges in thickness from approximately 1 m to 18 m with an average thickness of 7.5 m and an average depth of 30 m.

The Mineral Resource for Jaws is approximately 16 km long and is split by the 400 m wide buffer of the Darling River into two areas, one to the north-west which is 5 km long and the other to the south-east which is 11 km long. Jaws is on average 150 m to 300 m wide, ranges in thickness from 1 m to 18 m with an average thickness of 8.5 m and an average depth of 30 m.

## Mineral Resource Estimate Overview

The Mineral Resource estimates were independently prepared by IHC Robbins using an inverse distance weighting method of estimation, suitable for the style of mineralisation. Mr Greg Jones, Consulting Geologist at IHC Robbins, was engaged to estimate the Mineral Resources as the independent Competent Person. The Mineral Resources have been estimated and reported in accordance with the guidelines of the 2012 edition of the Australasian Code for the Reporting of Exploration Results, Minerals Resources and Ore Reserves ('2012 JORC Code').

The Mineral Resource estimates reflect the results of extensive data compilation and prospectivity analysis undertaken in recent months by the Company's expanded exploration and management team. This analysis of publicly available data has equipped BPL with a unique proprietary database comprising approximately 37,200 drill holes and 1,280,000 metres of drilling. The database reflects a total exploration replacement value of approximately \$50 million (drilling and assay only) in today's terms.

## Geology & Geological Interpretation

The Murray Basin is a shallow, intra-cratonic Cainozoic basin covering a saucer-shaped area of 300,000 square kilometres extending across South Australia, south-western New South Wales and north-western Victoria.

Throughout the Murray Basin, longshore drift of heavy minerals and their concentration over time by elevated storm activity, formed deposits of coarse-grained HM within beach environments, or strandlines. Also formed were massive deposits of very fine-grained HM in shallow marine environments within areas along the southern ancient coastline (WIM-style deposits as defined by CRA Exploration).

EL8559 is located in the central to northern Murray Basin with stratigraphy defined through geophysical survey and interpretation through drilling of the palaeo beach and marine facies. The geology of the Jaws and Gilligans deposits is dominated by a thin layer of Blanchetown Clay - discontinuous lenses of silty clay and sandy clay averaging approximately 30 m thick - overlying the Loxton-Parilla Sand host unit. The contact between the Blanchetown Clay and the Loxton-Parilla Sand is discontinuous and variable.

## Sampling and sub-sampling Techniques

All exploration drilling and sampling at the Jaws and Gilligans deposits was carried out by Iluka Resources Ltd (previously Westralian Sands Ltd) in the period 1998 – 2005 with the information related to sampling and sub-sampling techniques extracted from relevant open-file company reports, including annual exploration reports submitted to the Geological Survey of NSW (now part of the NSW Department of Planning and Environment).

Iluka Resources Ltd used industry standard practice drilling and sampling techniques with sampling achieved by rotary split using a cyclone mounted on the drill rig. Sampling of the holes occurred at 1.0 – 1.5 m intervals with a 1 - 2 kg representative sub-sample produced. Sample preparation is consistent with industry best practice. Sub sampling techniques are further described in Appendix 1 - (Table 1: JORC Code, 2012) *Sample Analysis Method*.

## Drilling techniques

All drilling was conducted by Wallis Drilling Pty Ltd using conventional reverse circulation air core drill rigs. Rods used were BQ or NQ size giving 7 – 10 cm diameter holes. Sampling of the holes occurred at 1.0 – 1.5 m intervals with a 1 - 2 kg sample taken by rotary splitter off the drill rig cyclone.

## Mineral Resource Classification

The resource classification for the Jaws and Gilligans deposits was based on the following criteria: drill hole spacing, geological and grade continuity, variography of primary assay grades and the distribution of bulk samples. The classification of the Inferred Resources for both Jaws and Gilligans was supported by all of the supporting criteria as noted above.

Where drill hole spacing was not close enough to refine the change in depth and plunge along strike of the south-east area of Gilligans, this portion of the deposit was classified as an Exploration Target. This demarcation between Inferred Mineral Resource and Exploration Target is clearly identified in Figure 1.

## Sample Analysis Method

The samples were assayed at internal Iluka laboratories in locations including Pinkenba QLD, Mildura NSW and Hamilton VIC using the following methodology:

- Samples received into laboratory, sorted and dried for 24 hours at 105 degrees centigrade;
- Samples then riffle-split (to 50%), weighed, soaked in water and tetra sodium pyrophosphate (12 hours);
- Screened for 9.5 mm and then weakly attritioned;
- Screened at 53 µm with undersize discarded (CLAY);
- Screened at 2 mm (OS);
- Split to 100 g then screen at 710 µm (SANDC);
- Then LST float sink on +53 µm -710 µm fraction (SAND)
- LST sinks reported as HM

Bulk sample composites were prepared by Iluka and WSL in order to characterise the mineralogical break down of the Jaws and Gilligans deposits. These composites were generated by completing a geological and stratigraphic interpretation of the primary drill holes from down hole logging and assaying. Samples from domains with similar geological characteristics are grouped together.

A single mineral assemblage composite was taken for Gilligans and three samples were taken from Jaws (all on a single drill line). This does not allow for an assessment of the potential variability of the mineral assemblage along the strike length of each deposit and this contributes to the Inferred resource category for each of these deposits.

A summary of the minerals identified during the mineral assemblage composite process is described as:

- Each composite is passed through magnetic/non-magnetic separation using an induced roll magnetic separator set up so that monazite just reports to the magnetic fraction.
- The magnetic and non-magnetic fractions are then subjected to variable SG separation using Clerici Solution (TMF or

Thallium malonate/Thallium formate solution).

- The following Table 3 lists the SG fractions used and the minerals that can normally be expected to fall within the SG ranges.

**Table 3.** Mineral species identified during FMA (Full Mineral Analysis) and their SG / magnetic classification.

Magnetics		Non-Magnetics	
SG	Mineral	SG	Mineral
<3.85	Magnetic Trash	<3.79	Non-magnetic Trash
3.85	Mag Leucoxene & Rock	3.79	Leucoxene
4.05	Secondary Ilmenite	4.05	Rutile
4.38	Primary Ilmenite	4.38	Zircon
4.9	Monazite		

Results of the FMA determination are returned with the actual separates for visual inspection by the geologist. The presence of trash and contaminant minerals in each fraction is noted. Samples considered appropriate are further submitted for XRF analysis of the +4.05 fractions to determine contaminant quantities and more accurate determinations of mineral assemblage.

**Table 4.** Mineral species identified during Full Mineral Assemblage and their abbreviations used for geological modelling and reporting.

Mineral Abbreviation	Full Name / Definition
ILM	ilmenite
ZIR	zircon
RUT	rutile
ML	magnetic leucoxene
NML	non-magnetic leucoxene
MON	monazite
MOTH	magnetic trash
NMOTH	non-magnetic trash

distance weighting and the preliminary estimates were compared with drill hole grades. An appropriate model cell size was selected based on the drill hole spacing. This cell size and the modelling parameters chosen resulted in an acceptable grade interpolation.

A bulk density (BD) was applied to the model using a standard linear formula originally described by Baxter (1977). This approach was refined in a practical application by the Competent Person using the following first principles calculations. The resultant graph and regression formula was then used to calculate the conversion of tonnes from each cell volume and from there the calculation of material, HM and CLAY tonnes. The formula used was:

$$\text{Bulk Density} = (0.0095 * \text{HM}) + 1.6812$$

## Cut-off Grade

Cut-off grades for HM and CLAY as well as hardness were used to prepare the reported resource estimates. These cut-off grades were defined by the Competent Person as being based soundly on experience, the percentage of VHM and the grade tonnage curves taken in consideration with the grade distribution along the length of the deposits.

## Modifying Factors

The Jaws deposit is bisected by the Darling River and as such a nominal 400 m buffer has been applied within which Mineral Resources have been omitted from results presented in this report. In consideration of the Inferred Mineral Resource classification, the adequacy of this buffer is yet to be determined.

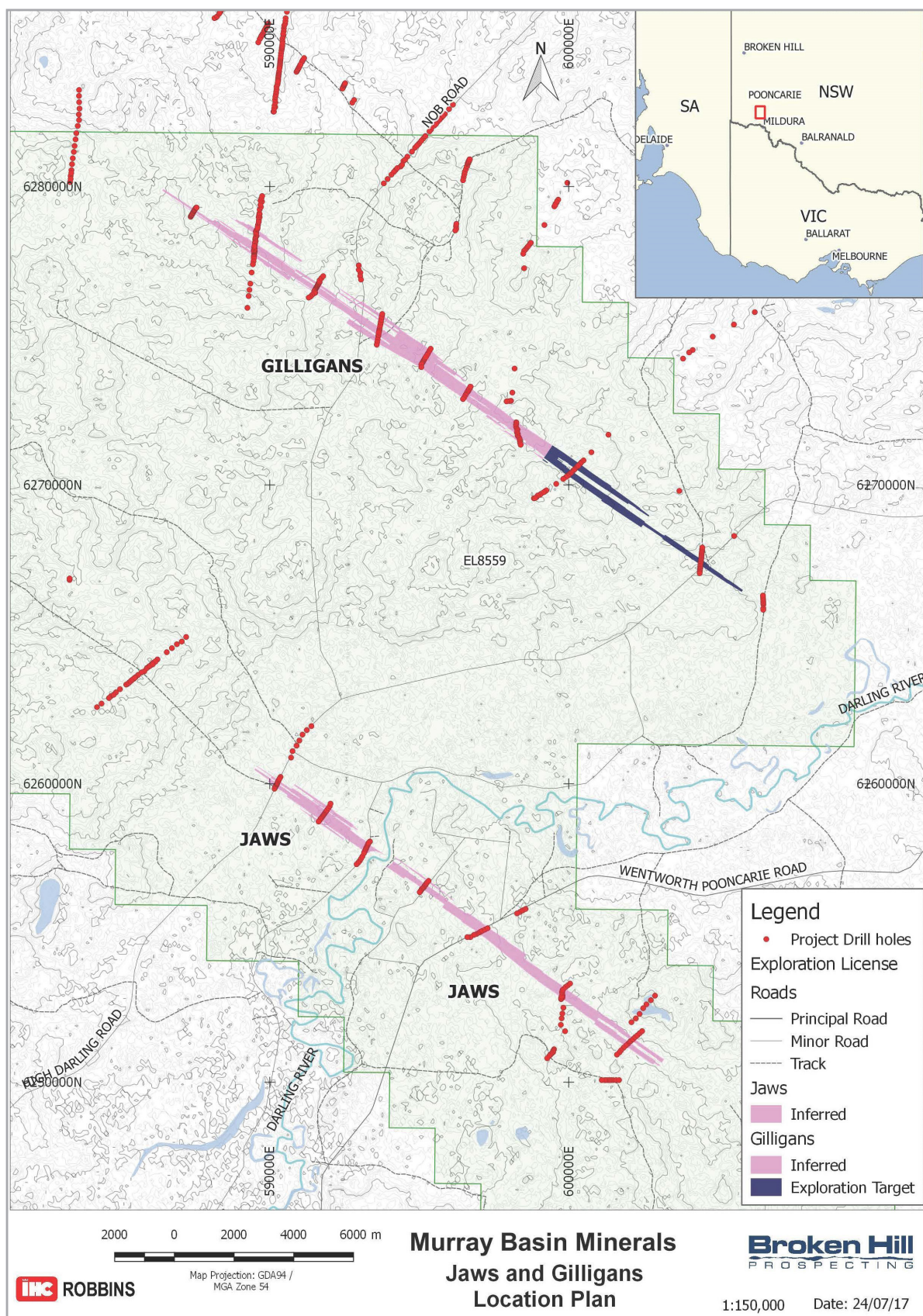
## Mineral Resource Estimation Methodology

Geological modelling was carried out using CAE Mining / Datamine Studio mining software to prepare a 3D block model and grade interpolation.

Preparation of the geological grade model was based on a combination of coding model cells in drill holes below open wireframe surfaces, including topography and basement and inside closed wireframes defined by the strandline domain.

A model was generated and interpolated using inverse





**Figure 1.** Jaws and Gilligans deposit plans. Note the distribution of Inferred Mineral Resources and additional Exploration Targets.



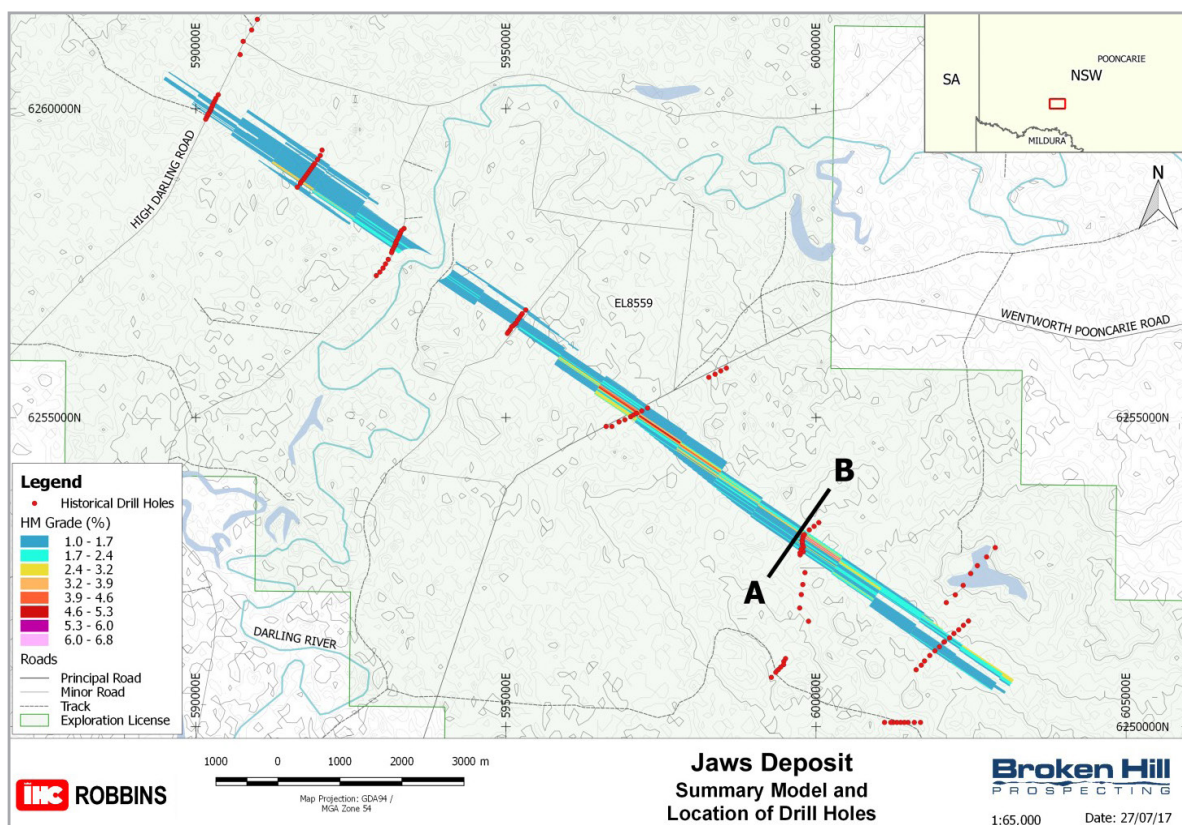


Figure 2. Summary Jaws block model showing average HM grade and type section location (A - B).

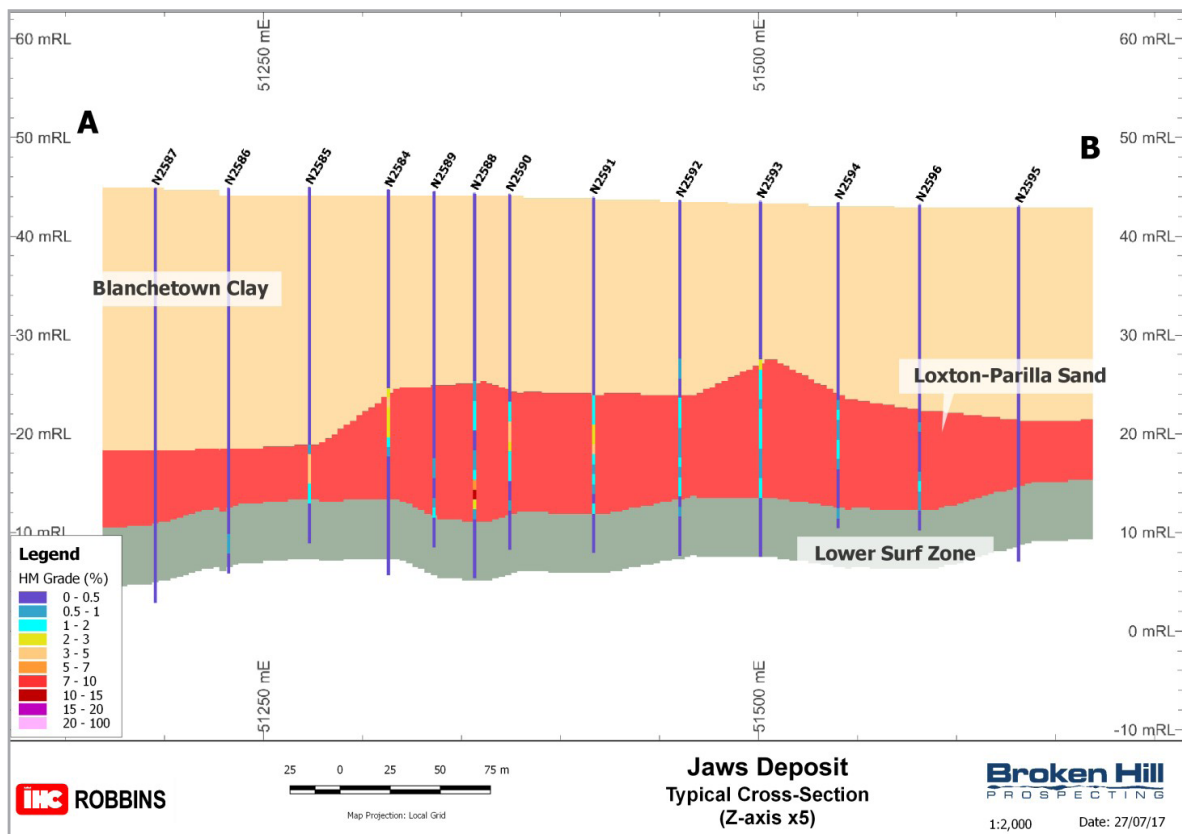


Figure 3. Type section for Jaws (A - B), showing HM on drill holes and model domains as illustrated relative to local grid<sup>1</sup>.

<sup>1</sup> Appendix 1 - (Table 1: JORC Code, 2012) Location of Data Points.

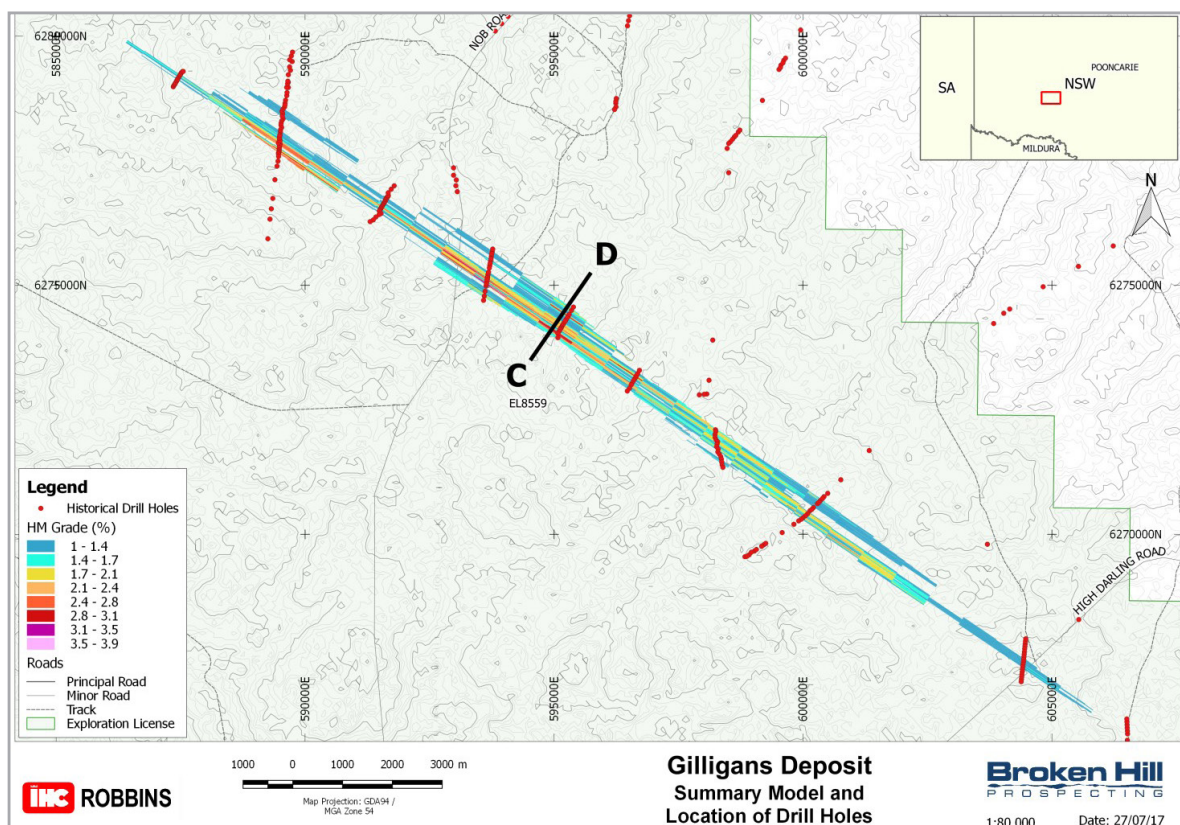


Figure 4. Summary Gilligans block model showing average HM grade and type section location (C - D).

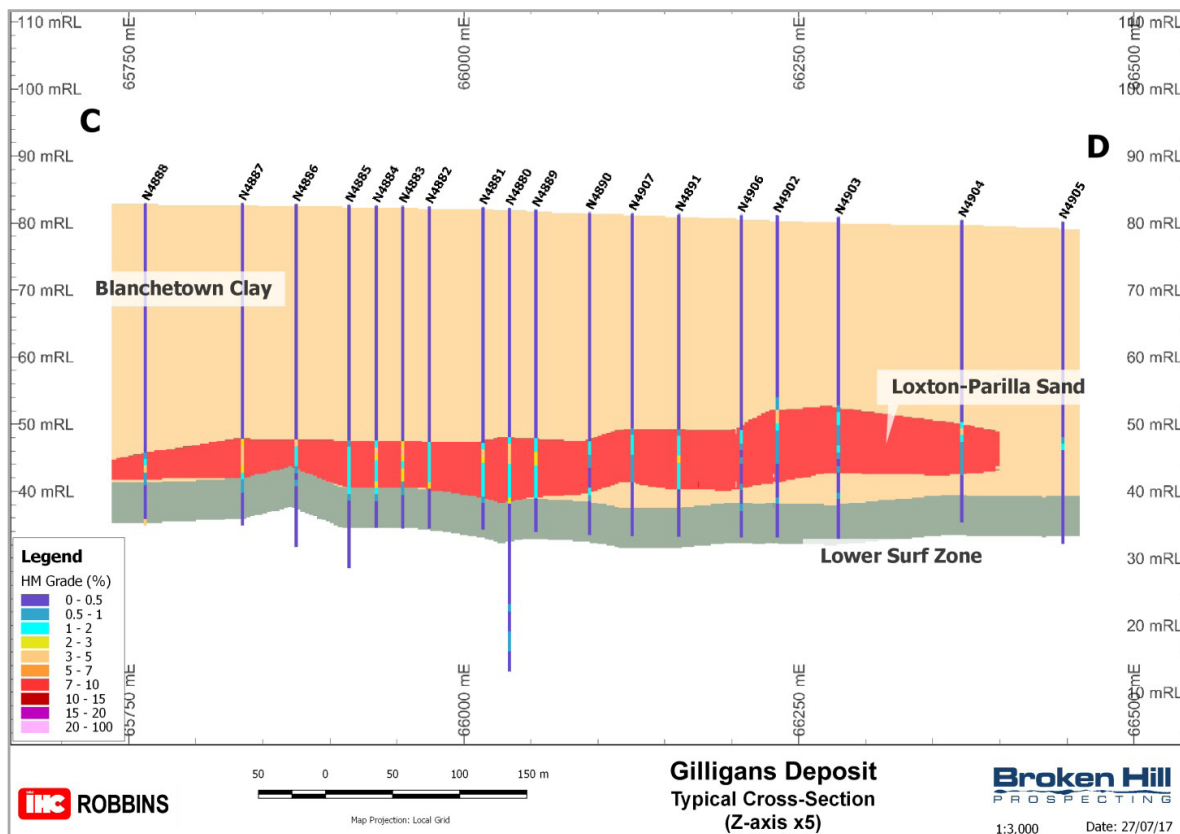


Figure 5. Type section for Gilligans (C - D), showing HM on drill holes and model domains as illustrated relative to local grid<sup>2</sup>.



Anthony (Trangie) Johnston  
*Chief Executive Officer*

**For further information,  
please contact**

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PROSPECTING

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### PREVIOUSLY RELEASED INFORMATION

This ASX announcement refers to information extracted from the following report, which is available for viewing on BPL's website <http://www.bhpl.biz>

- [28 June 2017 Dispute Settled and HMS Expansion Plans Accelerate](#)
- [13 June 2017 Murray Basin Heavy Mineral Sands Expansion Plans Confirmed](#)
- [18 April 2017 Murray Basin Heavy Mineral Sands Expansion Plans](#)

BPL confirms it is not aware of any new information or data that materially affects the information included in the original market announcement, and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. BPL confirms that the form and context in which the Competent Person's findings presented have not been materially modified from the original market announcement.

### COMPETENT PERSON'S STATEMENT

The information in this report that relates to Exploration Results is based on information compiled by Mr Anthony Johnston, BSc (Hons), who is a Member of the Australian Institute of Mining and Metallurgy and is a full time employee of the Company. Mr Johnston has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 & 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves.' Mr Johnston consents to the inclusion in the announcement of the matters based on his information in the form and context that the information appears.

The Information in this report that relates to Mineral Resources is based on information compiled by Mr. Greg Jones who is a Member of The Australasian Institute of Mining and Metallurgy. Mr. Jones is the Geological Services Manager for IHC Robbins and has been retained by Murray Basin Minerals Pty Ltd to conduct Mineral Resource estimation for the Jaws and Gilligans deposits. Mr. Jones has sufficient experience that is relevant to the style of mineralisation and type of deposits under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the JORC Code 2012. Mr. Jones consents to the inclusion in this ASX release of the matters based on his information in the form and context in which it appears.

### ABOUT BROKEN HILL PROSPECTING LIMITED

Broken Hill Prospecting Limited (BPL) is an Australian Exploration company focussed on the discovery and development of strategic mineral resources across two primary projects the Murray Basin Heavy Mineral Sands Project and the Thackaringa Cobalt Project.

### MURRAY BASIN HEAVY MINERAL SANDS PROJECT

BPL has built a substantial portfolio of Heavy Mineral Sands (HMS; titanium & zircon) Projects within the world-class Murray Basin, NSW.

BPL's HMS portfolio is currently undergoing a re-structure with a recently announced cash deal with Relentless Resources ([28 June 2017](#)). Additional tenement applications and potential project acquisitions under review will continue to position the Company to take advantage of improving market conditions.



BPL is targeting the establishment of a sustainable pipeline of high grade, low tonnage deposits amenable to processing through mobile plant equipment that could be deployed across the broader project area.

### **THACKARINGA COBALT PROJECT**

The Thackaringa Cobalt Project is strategically located 25km south-west of Broken Hill, New South Wales, adjacent to the main transcontinental railway line. Mineralised outcrop extends for over 10km, with less than a quarter of this trend having been drill tested. The large, near-surface deposits at Thackaringa make the project suitable for large-scale, open cut mining methods.

Cobalt is a necessary metal for the production of the latest generation, high density Lithium-ion batteries. Due to its high run-time properties, the use of cobalt has risen dramatically as portable Li-ion battery usage accelerates and electric vehicles become a reality.

The Thackaringa Cobalt Project is under a Farm In and Royalty Agreement with Cobalt Blue Holdings Ltd (COB). COB can earn 100% of the project if it completes a 4 stage farm-in by committing \$9.5 million project expenditure by 30 June 2020, and pays BPL \$7.5 million in cash.

In addition, BPL will receive a 2% net smelter royalty on all cobalt produced from the Thackaringa tenements for the life of mine. BPL retains the base and precious metal exploration rights over the Thackaringa tenements, where it has previously actively explored for Broken Hill style mineralisation

## Appendix 1 – 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>	<ul style="list-style-type: none"> <li>All exploration drilling and sampling at the Jaws and Gilligans deposits was carried out by Iluka Resources Ltd (previously Westralian Sands Ltd) in the period 1998–2005</li> <li>The information provided in this table was extracted from relevant company reports, including annual exploration reports submitted to the Geological Survey of NSW (now part of the NSW Department of Planning and Environment)</li> <li>Iluka Resources Ltd used industry standard practice drilling and sampling techniques briefly described below</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</li> </ul>	<ul style="list-style-type: none"> <li>All drilling was conducted by Wallis Drilling Pty Ltd using conventional reverse circulation air core drill rigs. Rods used were BQ or NQ size giving 7–10 cm diameter holes. Sampling of the holes occurred at 1.0–1.5 m intervals with a 1 to 2 kg sample taken by rotary splitter off the drill rig cyclone</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul style="list-style-type: none"> <li>The methods of recording sample recoveries used by Iluka Resources Ltd are not documented but are assumed to be standard industry practice</li> <li>The measures taken to maximize sample recovery used by Iluka Resources Ltd are not documented but are assumed to be standard industry practice</li> <li>It is unknown whether a relationship exists between sample recovery and grade as recovery data has not been published for the drilling</li> </ul>
Logging	<ul style="list-style-type: none"> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>Logging was carried out at the drill site during drilling and observations of drill performance and planned estimates were captured using industry standard electronic logging equipment</li> <li>A small representative sample was retained in a plastic chip tray for future reference and logging checks. Logging of RCAC samples recorded estimated clay; ease of washing; colour; lithology; dominant grain size; coarsest grain size; sorting; induration type; hardness; estimated rock and estimated HM%</li> <li>All drill holes were logged in full</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>Sub-sampling techniques and sample preparation</i>	<ul style="list-style-type: none"> <li>• If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>• If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>• For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>• Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>• Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>• Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>• Historical drilling was rotary split using a cyclone mounted on the drill rig. Sampling of the holes occurred at 1.0–1.5m intervals with a 1 to 2 kg representative sub-sample produced. Sample preparation is consistent with industry best practice</li> <li>• The logging procedure involved wet panning to remove the clay fraction from the sample and then hydraulic separation to estimate the percentage of heavy mineral</li> <li>• The specific measures taken to ensure sample representivity are unknown</li> <li>• The water table depth was noted in geological logs if intersected</li> </ul>
<i>Quality of assay data and laboratory tests</i>	<ul style="list-style-type: none"> <li>• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>• For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>• Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have</li> </ul>	<ul style="list-style-type: none"> <li>• The samples were assayed at internal Iluka laboratories in locations including Pinkenba QLD, Mildura NSW and Hamilton VIC: <ul style="list-style-type: none"> <li>• Samples received into laboratory, sorted and dried for 24 hours @ 105 degrees centigrade;</li> <li>• Samples then riffle-split (to 50%), weighed, soaked in water and tetra sodium pyrophosphate (12 hours);</li> <li>• Screened for 9.5 mm and then weakly attritioned;</li> <li>• Screened at 53 µm with undersize discarded (CLAY);</li> <li>• Screened at 2 mm (OS);</li> <li>• Split to 100 g then screen at 710 µm (SANDC);</li> <li>• Then LST float sink on +53 µm -710 µm fraction (SAND)</li> <li>• LST sinks reported as HM</li> </ul> </li> <li>• Both internal and external checks were conducted on random samples for quality assurance purposes. After washing the original sample (~2kg), the sample was riffled three times from alternate sides to end up with 2 x 1kg samples. One of the samples was put aside for internal testing which undergoes the same procedure that is described above. The remaining sample is riffled down to obtain an approximate 100g sample. This fraction is bagged and sent for external testing. The results of Iluka's internal QA/QC procedures are not available</li> <li>• No handheld analysers were used</li> </ul>
<i>Verification of sampling and assaying</i>	<ul style="list-style-type: none"> <li>• The verification of significant intersections by either independent or alternative company personnel.</li> <li>• The use of twinned holes.</li> <li>• Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>• Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>• The data verification procedures used by Iluka Resources Ltd in 1998–2005 are not documented but is assumed to be standard industry practice</li> <li>• No twin holes were drilled</li> <li>• No adjustment was made to assay data</li> </ul>



Criteria	JORC Code explanation	Commentary
<i>Location of data points</i>	<ul style="list-style-type: none"> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>Collar locations were surveyed by handheld GPS or differential GPS</li> <li>Grid references were captured in AMG Zone 54 or MGA Zone 54. Historical AMG coordinates have been converted to the current MGA54 standard</li> <li>Collar elevations were taken from a DEM gridded from laser elevation data collected by the New South Wales Department of Primary Industries in 2005 as part of a regional airborne geophysical survey. These data are regarded as having acceptable accuracy in the flat to gently undulating topography of the Central Para district</li> <li>Down hole surveys for shallow vertical aircore holes are not required</li> <li>For the purpose of the geological modelling a local grid was set up along the long axis of the orebodies so that the majority of drill lines were east-west and model cells were aligned north-south along that long axis. This direction was 304 degrees or a rotation of 56° west of north. This transformation also included a truncation of the MGA northing and easting coordinates with 608,266 m subtracted from the easting coordinate and 6,191,757 m subtracted from the northing coordinate.</li> </ul>
<i>Data spacing and distribution</i>	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied</li> </ul>	<ul style="list-style-type: none"> <li>Aircore holes are drilled 20–50m apart on traverses spaced 1750–3250m at Jaws, and 1750–2000m at Gilligans. The more widely spaced traverses typically occur at the extremities of the known deposits</li> <li>The drill traverse spacing is deemed appropriate to define the width and thickness of strandline deposits which show considerable lateral continuity parallel to the palaeoshoreline</li> <li>The variation in drill hole spacing is taken into account in the classification of Mineral Resources</li> <li>No compositing has been applied to HM, slime and oversize assays</li> <li>Compositing of samples was only undertaken on HM concentrates for mineral assemblage determination</li> </ul>
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul style="list-style-type: none"> <li>The host strata to the mineralisation are sub-horizontal. Vertical drill holes on traverses perpendicular to the general strike of the known mineralisation are deemed appropriate to test the horizon and are not considered to have introduced a sampling bias</li> </ul>
<i>Sample security</i>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>The sample security measures used by Iluka Resources Ltd in 1998–2005 are not documented but can be assumed to be standard industry practice</li> </ul>
<i>Audits or reviews</i>	<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 detailed audit of Iluka's sampling techniques has been undertaken by MBM</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>The Jaws and Gilligans deposits are covered by EL8559 near the locality of Central Para, NSW. The Exploration lease is 100% owned by Murray Basin Minerals Pty Ltd and is due to expire on 11 May 2020</li> <li>There are no known material issues with third parties or security of tenure</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>The Jaws and Gilligans deposits were discovered and defined through exploration and infill drilling by Iluka Resources Ltd (previously Westralian Sands Ltd) between 1998 and 2005</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>The Jaws and Gilligans deposits comprise heavy minerals (including rutile, zircon, ilmenite) concentrated in NE–SW trending strandlines in the near-shore marine Loxton–Parilla Sand. The host unit was deposited during a Pliocene marine transgression in the Murray Basin, a shallow, intra-cratonic Cainozoic sedimentary basin covering an onshore area of approximately 300,000 km<sup>2</sup> in southeastern South Australia, southwestern New South Wales and northwestern Victoria</li> <li>A stacked marine sequence has been identified at Jaws where the stratigraphy contains two foreshore units, separated by a surf zone facies. Both foreshore units host mineralisation. The lower foreshore hosts a well-defined, but low grade strand</li> <li>The deposits typically display assemblages of rutile, zircon and ilmenite</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>hole 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>Collar locations of all drill holes used in the Mineral Resource estimates for the Jaws and Gilligans deposits are tabulated in Appendix 2.</li> <li>A total of 81 drill holes were used for the Jaws resource estimation, containing 2,886 sample intervals for a total of 3,423 m. A total of 1,662 samples were assayed from those 2,886 sample intervals.</li> <li>A total of 178 drill holes were used for the Gilligans resource estimation (including the estimate of the Exploration Target), containing 6,609 sample intervals for a total of 7,107 m. A total of 2,924 samples were assayed from those 6,609 sample intervals.</li> </ul>

Criteria	JORC Code explanation	Commentary
Data aggregation methods	<ul style="list-style-type: none"> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>Sample composites reported at a 1% THM cut-off used in the Mineral Resource estimates for the Jaws and Gilligans deposits are tabulated in Appendix 2.</li> <li>No metal equivalent calculations are used</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>As the host strata are generally sub-horizontal the drilled intercepts are considered to approximate the true thickness of the mineralisation</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 plans and cross sections have been provided in the body of the release.</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>Drill holes with and without significant mineralisation are reported in Appendix 2</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>	
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>Further work will focus on the delineation of higher grade zones within the broader mineralised unit</li> <li>MBM intend to investigate opportunities to test the exploration potential of the presented deposits and as illustrated in Figure 1.</li> </ul>



### 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>Drill hole, collar and assay data compiled by BPL was supplied in the form of a Microsoft Access database. This comprised historical drilling conducted by Iluka Resources Limited ("Iluka") and Westralian Sands ("WSL"). Other data not supplied in compiled database format included mineral assemblage information which was supplied in text files (recovered from open file data). Missing data was identified and a subsequent request for information to Iluka resulted in the supply of an Excel flat table file containing drill hole, assay, collar and logging information. Checks of data by visually inspecting on screen (to identify translation of samples), no duplicate sampling was available and limited twin drilling was available for checking the reproducibility of assays.</li> <li>Visual and statistical comparison was undertaken to check the validity of results.</li> <li>Comparison of results was also made against visual estimates</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>The drill assays were all of an historical nature and so observation of drilling techniques for the projects was not possible.</li> <li>The Competent Person has extensive experience with the previous explorer and also with the drilling, sampling and assaying methods undertaken.</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>The geological interpretation was undertaken by Greg Jones in conjunction with company geologists and data was used by Greg Jones and then validated using all logging and sampling data and observations.</li> <li>Current data spacing and quality is sufficient to infer grade continuity. The possibility of narrow washouts between drill lines exists but they are not considered likely given the depositional environment.</li> <li>Interpretation of modelling domains was restricted to the main mineralised envelopes utilising HM sinks, clay, trash mineralogy and geology logging.</li> <li>No other interpretations were considered as the Competent Person was satisfied that the logging and assaying which was used to define the mineralised horizon was effective in outlining the major geological domains.</li> <li>The Mineral Resource estimate was controlled to an extent by the geological envelope and basement surfaces</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>Dimensions</i>	<ul style="list-style-type: none"> <li><i>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</i></li> </ul>	<ul style="list-style-type: none"> <li>The Mineral Resource for Gilligans is approximately 16 km long and 250-700 m wide on average. The Exploration Target is approximately 8 km long and 150-300 m wide on average. Gilligans ranges in thickness from approximately 1 to 18 m with an average thickness of 7.5 m and an average depth of 30 m.</li> <li>The Mineral Resource for Jaws is approximately 16 km long and is split by the 400 m wide buffer of the Darling River into two areas, one 5 km long to the north-west and the other 11 km long to the south-east. Jaws is on average 150-300 m wide, ranges in thickness from 1 to 18 m with an average of 8.5 m and an average depth of 30 m.</li> </ul>
<i>Estimation and modelling techniques</i>	<ul style="list-style-type: none"> <li><i>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.</i></li> <li><i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i></li> <li><i>The assumptions made regarding recovery of by-products.</i></li> <li><i>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</i></li> <li><i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></li> <li><i>Any assumptions behind modelling of selective mining units.</i></li> <li><i>Any assumptions about correlation between variables.</i></li> <li><i>Description of how the geological interpretation was used to control the resource estimates.</i></li> <li><i>Discussion of basis for using or not using grade cutting or capping.</i></li> <li><i>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</i></li> </ul>	<ul style="list-style-type: none"> <li>The mineral resource estimates were carried out using CAE mining software (also known as Datamine Studio). Inverse distance weighting techniques were used to interpolate assay grades from drill hole samples into the block model and nearest neighbour techniques were used to interpolate index values and nonnumeric sample identification into the block model. The mostly regular dimensions of the drill grid and the anisotropy of the drilling and sampling grid allowed for the use of inverse distance methodologies as no de-clustering of samples was required. Appropriate and industry standard search ellipses were used to search for data for the interpolation and suitable limitations on the number of samples and the impact of those samples was maintained. An inverse distance weighting power of 3 was used so as not to over smooth the grade interpolations. Hard domain boundaries were used and these were defined by the geological wireframes that were interpreted.</li> <li>This Mineral Resource estimate compares well with the previous resource prepared by Iluka (for the same size area). No Mineral Resource has previously been reported for Gilligans nor has there previously been an Exploration Target estimated.</li> <li>No assumptions were made during the resource estimation as to the recovery of by-products.</li> <li>Clay and oversize contents are estimated at the same time as estimating the HM grade.</li> <li>Further detailed geochemistry is required to ascertain deleterious elements that may affect the marketability of the heavy mineral products.</li> <li>The average parent cell size used for the interpolation was approximately half the standard drill hole width and a half the standard drill hole section line spacing. The average drill hole spacing for Gilligans is 25 - 50 m east-west and 1800 - 2400 m north-south and the majority of samples spaced 1 m down hole. The average drill hole spacing for Jaws is 25 - 50 m east-west and 1800 - 3500 m north-south and the majority of samples spaced 1 m down hole.</li> </ul>

Criteria	JORC Code explanation	Commentary
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 the average sample spacing and the search employed.</li> <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>	<ul style="list-style-type: none"> <li>The parent cell size used for both Gilligans and Jaws was 12.5 x 800 x 1 m (where the Z or vertical direction of the cell was nominated as the same distance as the dominant sample length).</li> <li>No assumptions were made regarding the modelling of selective mining units.</li> <li>No assumptions were made about correlation between variables.</li> <li>The Mineral Resource estimates were controlled to an extent by the geological / mineralisation and basement surfaces.</li> <li>Grade cutting or capping was not used during the interpolation because of the regular nature of sample spacing and the absence of sample clustering meant that elevated samples would be highly unlikely to have a deleterious impact on the resource estimation.</li> <li>Sample distributions were reviewed and no extreme outliers were identified either high or low that necessitated any grade cutting or capping.</li> <li>The sample length of 1 m does result in a degree of grade smoothing also negating the requirement for grade cutting or capping.</li> <li>Validation of grade interpolations were done visually In CAE Studio (Datamine) software by loading model and drill hole files and annotating and colouring and using filtering to check for the appropriateness of interpolations.</li> <li>Statistical distributions were prepared for model zones from drill hole and model files to compare the effectiveness of the interpolation. Along strike distributions of section line averages (swath plots) for drill holes and models were also prepared for comparison purposes</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>Tonnages were estimated an assumed dry basis.</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>Cut-off grades for HM and CLAY as well as hardness were used to prepare the reported resource estimates. These cut-off grades were defined by the Competent Person as being based soundly on experience, the percentage of VHM and the grade tonnage curves taken in consideration with the grade distribution along the length of the deposits.</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>No specific mining method is assumed other than potentially the use of dry mining scrapers and excavators into trucks. This allows for quite a selective mining process while still maintaining bulk economies of scale as the dark HM at the base of the orebody allows for excellent visual acuity and therefore grade control. To this end no minimum thickness was assumed for the reporting of the mineral resource</li> </ul>



Criteria	JORC Code explanation	Commentary
<i>Metallurgical factors or assumptions</i>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>Metallurgical assumptions were used based on mineral assemblage composites which at this stage only allow for preliminary commentary with no final products being defined from the reported mineral species.</li> </ul>
<i>Environmental factors or assumptions</i>	<ul style="list-style-type: none"> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>No assumptions have been made regarding possible waste and process residue however disposal of by-products such as clay, sand and oversize are normally part of capture and disposal back into the mining void for eventual rehabilitation. This also applies to mineral products recovered and waste products recovered from metallurgical processing of heavy mineral.</li> <li>The Jaws deposit is bisected by the Darling River and as such a nominal 400 m buffer has been applied within which Mineral Resources have been omitted from results presented in this report. In consideration of the Inferred Mineral Resource classification, the adequacy of this buffer is yet to be determined</li> </ul>
<i>Bulk density</i>	<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>A bulk density conversion factor was prepared using first principles techniques coupled with industry experience that is exclusive to IHC Robbins. The bulk density formula is appropriate and fit for purpose at this level of confidence for the Mineral Resource estimate.</li> <li>It is recommended that bulk density testwork be undertaken if further work is undertaken to upgrade the confidence in the Mineral Resource estimate.</li> </ul>
<i>Classification</i>	<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 resource classification for the Jaws and Gilligans deposits was based on the following criteria: drill hole spacing, geological and grade continuity, variography of primary assay grades and the distribution of bulk samples.</li> <li>The classification of the Inferred Resources for both Jaws and Gilligans was supported by all of the supporting criteria as noted above.</li> <li>Where drill hole spacing was not close enough to refine the change in depth and plunge along strike of the south-east area of Gilligans, this portion of the deposit was classified as an Exploration Target. This demarcation between Inferred Mineral Resource and Exploration Target is clearly identified on Figure 1 (plan) and in Table 1 (Mineral Resource estimates) and Table 2 (Exploration Target).</li> <li>As a Competent Person, IHC Robbins Geological Services Manager Greg Jones considers that the result appropriately reflects a reasonable view of the deposit categorisation.</li> </ul>

Criteria	JORC Code explanation	Commentary
Discussion of relative accuracy/ confidence	<ul style="list-style-type: none"> <li>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</li> <li>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li> <li>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	<ul style="list-style-type: none"> <li>There was an evaluative geostatistical process undertaken (variography) during the resource estimation of the Jaws and Gilligans deposit.</li> <li>Validation of the model vs drill hole grades by observation, swathe plot and population distribution analysis was favourable</li> <li>The statement refers to global estimates for the entire known extent of the Jaws and Gilligans deposits.</li> <li>No production data is available for comparison with the Jaws and Gilligans deposits.</li> </ul>

## Appendix 2 - Summary Drill Hole Information

### Gilligans Deposit >1% HM

HOLE ID	EASTING	NORTHING	RL	AZI	DIP	FROM	TO	LENGTH	DEPTH	HM	CLAY	OS
	GDA94 / MGA ZONE 54		(m)		(m)	(m)	(m)	(m)	(%)	(%)	(%)	
MB0720	598243.4	6272097.5	53.6	0	90	16	20	4	42	1.8	1.1	-
MB0721	598248.4	6272062.5	52.5	0	90	15	23	8	33	2.3	2.0	-
MB0722	598233.4	6272003.5	55.9	0	90	14	17	3	30	1.7	2.6	-
MB0722	598233.4	6272003.5	52.9	0	90	18	19	1	30	1.2	2.1	-
MB0723	598235.4	6271943.5	50.3	0	90	17	24	7	30	1.7	2.0	-
MB0724	598256.4	6271894.5	46.9	0	90	21	26	5	36	2.5	2.8	-
MB0725	598286.4	6271857.5	47.5	0	90	20	26	6	33	2.3	4.2	-
MB0726	598275.4	6271812.5	45.8	0	90	23	26	3	33	1.8	3.1	-
MB0727	598266.4	6271757.5	48.3	0	90	18	25	7	33	1.9	2.4	-
MB0728	598297.4	6271711.5	46.3	0	90	22	25	3	30	1.9	4.1	-
MB0731	598348.9	6271558.5	50.1	0	90	18	19	1	30	1.2	2.5	-
MB0733	598369.0	6271450.5	43.7	0	90	23	24	1	33	2.5	2.8	-
MB0735	598392.7	6271342.5	47.6	0	90	19	21	2	36	1.2	2.5	-
MB0908	593759.4	6275675.5	48.3	0	90	23	24	1	35	1.1	4.8	-
MB0910	593724.4	6275480.5	45.9	0	90	27	29	2	45	1.9	2.6	-
MB0910	593724.4	6275480.5	41.4	0	90	32	33	1	45	1.0	1.8	-
MB0912	593672.4	6275214.5	40.4	0	90	33	38	5	43	1.9	1.7	-
MB1145	589548.4	6278443.5	54.0	0	90	9	15	6	30	1.4	1.4	-
MB1146	589533.4	6278489.5	56.0	0	90	9	11	2	27	1.2	2.9	-
MB1146	589533.4	6278489.5	53.5	0	90	12	13	1	27	1.2	1.9	-
MB1146	589533.4	6278489.5	50.5	0	90	15	16	1	27	1.1	6.9	-
MB1147	589556.4	6278534.5	57.3	0	90	7	9	2	24	1.3	3.6	-
MB1148	589585.4	6278575.5	55.2	0	90	9	10	1	24	1.1	2.2	-
MB1150	589540.4	6278393.5	56.7	0	90	9	10	1	27	1.2	2.6	-
MB1150	589540.4	6278393.5	53.2	0	90	12	14	2	27	1.4	1.2	-
MB1156	589504.4	6278079.5	48.4	0	90	15	17	2	27	1.3	1.9	-
MB1157	589494.4	6278019.5	48.0	0	90	15	17	2	30	1.8	2.2	-
MB1159	589485.4	6277878.5	47.1	0	90	13	16	3	30	3.2	2.6	-
MB1159	589485.4	6277878.5	42.6	0	90	18	20	2	30	1.7	1.1	-
MB1160	589487.4	6277934.5	49.1	0	90	13	14	1	30	1.2	2.2	-
MB1160	589487.4	6277934.5	47.1	0	90	15	16	1	30	1.2	2.3	-
MB1160	589487.4	6277934.5	42.6	0	90	19	21	2	30	1.5	1.6	-
MB1161	589484.4	6277977.5	48.3	0	90	13	17	4	30	2.1	1.6	-
MB1162	589499.4	6277835.5	45.5	0	90	12	19	7	28	3.1	1.7	-
MB1164	589485.4	6277808.5	45.4	0	90	13	17	4	30	3.2	2.7	-
MB1165	589460.4	6277853.5	45.7	0	90	13	18	5	27	2.5	2.4	-
MB1166	589495.4	6277903.5	47.1	0	90	13	17	4	27	2.1	2.4	-
MB1167	589483.4	6277955.5	48.0	0	90	14	16	2	27	1.2	2.1	-
MB1167	589483.4	6277955.5	44.5	0	90	17	20	3	27	2.7	2.0	-
MB1168	589489.4	6277997.5	48.6	0	90	14	16	2	27	1.6	1.6	-
MB1168	589489.4	6277997.5	44.1	0	90	19	20	1	27	1.6	3.5	-
MB1169	589479.4	6277736.5	44.3	0	90	13	17	4	24	1.8	2.7	-
MB1170	589480.4	6277758.5	42.1	0	90	17	18	1	24	1.2	1.7	-
MB1171	589478.4	6277714.5	42.4	0	90	15	18	3	27	1.8	3.1	-
MB1172	589477.4	6277694.5	43.2	0	90	15	16	1	30	6.6	2.9	-
MB1172	589477.4	6277694.5	41.2	0	90	17	18	1	30	1.3	2.0	-
MB1173	589475.4	6277674.5	41.9	0	90	15	18	3	27	2.6	2.7	-



HOLE ID	EASTING	NORTHING	RL	AZI	DIP	FROM	TO	LENGTH	DEPTH	HM	CLAY	OS
	GDA94 / MGA ZONE 54		(m)		(m)	(m)	(m)	(m)	(%)	(%)	(%)	
MB1223	593651.4	6275077.5	39.4	0	90	36	39	3	57	1.4	1.5	-
MB1223	593651.4	6275077.5	36.4	0	90	40	41	1	57	1.8	1.4	-
MB1223	593651.4	6275077.5	34.4	0	90	42	43	1	57	1.1	1.3	-
MB1224	593666.4	6275170.5	38.7	0	90	35	40	5	51	2.1	1.3	-
MB1225	593684.4	6275261.5	43.3	0	90	32	33	1	48	1.2	1.1	-
MB1225	593684.4	6275261.5	41.3	0	90	34	35	1	48	1.5	1.7	-
MB1225	593684.4	6275261.5	37.3	0	90	38	39	1	48	1.3	2.1	-
MB1226	593700.4	6275344.5	43.8	0	90	31	32	1	51	1.1	1.8	-
MB1228	593733.4	6275530.5	42.9	0	90	30	31	1	46	1.0	1.5	-
MB1229	593748.4	6275629.5	46.9	0	90	24	27	3	48	1.4	2.3	-
MB1229	593748.4	6275629.5	39.9	0	90	32	33	1	48	1.2	3.5	-
MB1232	593615.4	6274877.5	38.6	0	90	37	40	3	54	1.5	1.2	-
MB1233	593599.4	6274780.5	39.4	0	90	36	38	2	48	2.2	1.3	-
MB1233	593599.4	6274780.5	36.9	0	90	39	40	1	48	1.2	1.3	-
MB1235	593641.4	6275028.5	39.6	0	90	36	39	3	48	3.3	1.1	-
MB1236	593658.4	6275127.5	38.6	0	90	35	41	6	48	2.3	1.1	-
MB1237	593662.4	6275146.5	39.5	0	90	35	39	4	48	2.2	1.0	-
MB1237	593662.4	6275146.5	36.0	0	90	40	41	1	48	1.0	1.0	-
MB1238	593652.4	6275107.5	39.3	0	90	34	41	7	48	3.4	1.0	-
N0277	589435.4	6277389.5	24.8	0	90	30	34.5	4.5	60	1.8	13.3	0.4
N4833	587511.0	6279261.0	35.5	0	90	29	30	1	66	1.3	1.7	-
N4833	587511.0	6279261.0	33.5	0	90	31	32	1	66	1.4	1.5	-
N4833	587511.0	6279261.0	10.5	0	90	53	56	3	66	1.1	3.7	-
N4833	587511.0	6279261.0	4.0	0	90	59	63	4	66	3.1	6.0	1.3
N4834	587411.0	6279087.0	0.0	0	90	61	67	6	69	2.9	6.6	0.1
N4835	587351.0	6278984.0	20.2	0	90	43	44	1	60	1.1	6.3	-
N4837	587371.0	6279019.0	34.3	0	90	29	30	1	54	1.2	2.3	2.2
N4842	587431.0	6279123.0	12.6	0	90	51	52	1	57	1.0	7.7	-
N4843	587451.0	6279157.0	35.8	0	90	28	29	1	45	1.0	0.7	-
N4844	587440.0	6279139.0	35.2	0	90	28	30	2	39	1.8	1.5	-
N4845	587461.0	6279175.0	38.9	0	90	25	26	1	60	1.3	1.5	0.5
N4845	587461.0	6279175.0	36.9	0	90	27	28	1	60	1.0	0.7	-
N4845	587461.0	6279175.0	4.9	0	90	59	60	1	60	1.0	7.7	0.1
N4846	587471.0	6279192.0	38.9	0	90	25	26	1	36	1.0	1.1	-
N4846	587471.0	6279192.0	36.9	0	90	27	28	1	36	2.9	1.1	-
N4846	587471.0	6279192.0	34.9	0	90	29	30	1	36	2.1	1.2	-
N4847	587480.0	6279208.0	38.0	0	90	24	29	5	39	2.4	1.2	1.1
N4848	587491.0	6279226.0	40.2	0	90	24	25	1	39	1.4	1.9	0.2
N4849	587501.0	6279244.0	36.3	0	90	28	29	1	39	1.0	1.5	-
N4850	587521.0	6279273.0	37.7	0	90	26	29	3	39	1.1	1.0	-
N4851	587536.0	6279290.0	39.0	0	90	26	27	1	36	1.3	1.2	-
N4853	591500.0	6276506.0	39.1	0	90	27	28	1	60	1.2	3.1	-
N4853	591500.0	6276506.0	7.1	0	90	59	60	1	60	1.0	3.7	0.3
N4854	591510.0	6276523.0	41.8	0	90	24	26	2	45	1.1	1.1	0.5
N4854	591510.0	6276523.0	38.8	0	90	27	29	2	45	2.0	0.9	-
N4855	591521.0	6276541.0	41.1	0	90	24	28	4	39	1.5	2.1	-
N4856	591531.0	6276559.0	42.4	0	90	22	28	6	39	2.6	1.1	-
N4857	591540.0	6276576.0	43.2	0	90	21	28	7	39	2.5	0.9	0.8
N4857	591540.0	6276576.0	38.2	0	90	29	30	1	39	1.0	0.5	-
N4858	591550.0	6276592.0	44.9	0	90	21	25	4	39	1.2	1.6	5.8
N4858	591550.0	6276592.0	40.9	0	90	26	28	2	39	1.8	1.0	-
N4859	591561.0	6276610.0	45.2	0	90	21	25	4	39	1.4	1.0	2.4

HOLE ID	EASTING	NORTHING	RL	AZI	DIP	FROM	TO	LENGTH	DEPTH	HM	CLAY	OS
	GDA94 / MGA ZONE 54		(m)		(m)	(m)	(m)	(m)	(%)	(%)	(%)	
N4860	591570.0	6276627.0	45.9	0	90	21	24	3	39	1.6	0.9	1.1
N4860	591570.0	6276627.0	40.9	0	90	27	28	1	39	2.9	0.8	-
N4861	591581.0	6276645.0	44.1	0	90	23	26	3	36	1.3	0.7	-
N4862	591589.0	6276659.0	47.2	0	90	21	22	1	36	1.7	1.2	-
N4862	591589.0	6276659.0	45.2	0	90	23	24	1	36	1.3	0.6	-
N4863	591603.0	6276680.0	47.3	0	90	21	22	1	36	1.0	0.8	-
N4864	591612.0	6276693.0	47.9	0	90	20	22	2	36	1.5	0.8	-
N4864	591612.0	6276693.0	45.4	0	90	23	24	1	36	2.5	0.8	0.7
N4865	591616.0	6276717.0	42.1	0	90	26	28	2	36	1.7	1.1	-
N4866	591630.0	6276730.0	48.6	0	90	20	21	1	36	1.0	1.3	0.4
N4866	591630.0	6276730.0	46.1	0	90	22	24	2	36	1.3	0.8	-
N4866	591630.0	6276730.0	41.1	0	90	27	29	2	36	1.2	1.0	-
N4867	591633.0	6276756.0	46.8	0	90	21	24	3	36	1.1	1.1	-
N4867	591633.0	6276756.0	43.8	0	90	25	26	1	36	1.0	1.0	-
N4868	591654.0	6276768.0	43.7	0	90	25	26	1	36	1.0	1.0	0.3
N4872	591729.0	6276927.0	47.6	0	90	21	24	3	36	1.1	1.6	0.5
N4873	591789.0	6276995.0	45.6	0	90	24	25	1	39	1.0	1.0	1.6
N4874	591490.0	6276489.0	38.0	0	90	28	29	1	42	1.1	1.0	-
N4875	591524.0	6276438.0	37.6	0	90	28	29	1	39	1.8	1.2	0.4
N4876	591487.0	6276419.0	40.3	0	90	25	26	1	42	1.1	1.0	-
N4877	591420.0	6276368.0	39.4	0	90	26	27	1	39	1.1	1.5	-
N4877	591420.0	6276368.0	29.9	0	90	35	37	2	39	1.0	0.8	1.5
N4879	591306.0	6276276.0	24.4	0	90	40	41	1	42	2.0	0.9	5.0
N4880	595177.0	6274206.0	43.1	0	90	34	44	10	69	2.2	1.7	1.2
N4881	595167.0	6274189.0	43.2	0	90	35	43	8	48	1.7	1.6	0.4
N4882	595147.0	6274154.0	43.9	0	90	35	42	7	48	1.7	1.1	0.7
N4883	595137.0	6274137.0	44.4	0	90	35	41	6	48	2.6	1.9	3.2
N4884	595127.0	6274120.0	43.5	0	90	35	43	8	48	2.0	1.2	2.7
N4885	595117.0	6274102.0	43.1	0	90	36	43	7	54	1.1	1.4	1.6
N4886	595097.0	6274068.0	45.7	0	90	35	39	4	51	2.2	1.7	0.8
N4887	595077.0	6274033.0	44.8	0	90	35	41	6	48	3.0	2.2	2.5
N4888	595077.0	6273946.0	43.8	0	90	38	40	2	48	2.3	1.5	-
N4888	595077.0	6273946.0	35.3	0	90	47	48	1	48	3.5	1.7	2.1
N4889	595187.0	6274223.0	43.4	0	90	34	43	9	48	1.6	1.0	2.7
N4890	595207.0	6274258.0	46.5	0	90	34	36	2	48	1.3	0.6	0.2
N4890	595207.0	6274258.0	40.0	0	90	41	42	1	48	1.0	0.6	-
N4891	595243.0	6274314.0	44.2	0	90	33	41	8	48	1.5	1.3	0.9
N4892	596620.0	6273122.0	46.7	0	90	17	20	3	39	1.8	0.6	1.1
N4893	596643.0	6273151.0	45.9	0	90	16	23	7	30	2.3	1.3	0.6
N4894	596660.0	6273191.0	47.5	0	90	16	20	4	30	1.8	1.8	1.0
N4895	596681.0	6273226.0	49.3	0	90	16	17	1	30	1.5	1.6	-
N4895	596681.0	6273226.0	46.3	0	90	19	20	1	30	1.2	1.3	0.3
N4897	596600.0	6273088.0	46.8	0	90	18	19	1	30	1.0	0.9	-
N4898	596570.0	6273036.0	44.9	0	90	18	23	5	36	1.5	0.9	0.6
N4899	596550.0	6273001.0	46.9	0	90	18	19	1	33	1.1	0.6	-
N4899	596550.0	6273001.0	42.4	0	90	20	26	6	33	2.7	0.8	2.1
N4900	596516.0	6272931.0	44.4	0	90	19	23	4	30	1.8	0.4	0.2
N4902	595282.0	6274376.0	50.5	0	90	29	32	3	48	3.3	3.9	8.0
N4903	595305.0	6274416.0	50.7	0	90	29	31	2	48	1.5	8.1	2.9
N4903	595305.0	6274416.0	46.2	0	90	34	35	1	48	1.1	1.6	1.0
N4904	595351.0	6274496.0	48.9	0	90	30	33	3	45	1.9	2.4	11.8
N4905	595389.0	6274561.0	46.6	0	90	33	34	1	48	1.1	1.9	4.8

HOLE ID	EASTING	NORTHING	RL	AZI	DIP	FROM	TO	LENGTH	DEPTH	HM	CLAY	OS
	GDA94 / MGA ZONE 54		(m)		(m)	(m)	(m)	(m)	(%)	(%)	(%)	
N4906	595270.0	6274352.0	48.1	0	90	32	34	2	48	1.4	1.9	3.5
N4907	595227.0	6274283.0	46.8	0	90	33	36	3	48	1.2	1.4	0.3
N5229	600095.4	6270412.5	17.8	0	90	42	46.5	4.5	57	2.2	3.4	-
N5229	600095.4	6270412.5	13.3	0	90	48	49.5	1.5	57	1.0	2.7	-
N5230	600047.4	6270367.5	32.6	0	90	28.5	30	1.5	57	1.1	30.5	2.2
N5230	600047.4	6270367.5	11.6	0	90	48	52.5	4.5	57	1.4	2.8	2.5
N5231	599997.4	6270326.5	15.0	0	90	43.5	49.5	6	57	3.5	5.4	0.1
N5235	600292.4	6270614.5	18.6	0	90	42	48	6	54	1.1	7.8	-
N5236	600351.4	6270676.5	29.7	0	90	33	36	3	54	2.2	34.5	-
N5236	600351.4	6270676.5	23.0	0	90	40.5	42	1.5	54	1.6	8.4	-
N5237	600423.4	6270754.5	22.2	0	90	42	43.5	1.5	54	1.0	11.0	-
N5240	600323.4	6270640.5	19.7	0	90	42	46.5	4.5	48	1.3	7.6	-
WW2114	604445.4	6267589.5	28.7	0	90	24	25.5	1.5	39	1.1	11.2	-
WW2116	604435.4	6267489.5	31.5	0	90	21	22.5	1.5	39	1.4	14.4	-
WW2117	604430.4	6267439.5	29.1	0	90	22.5	25.5	3	39	1.5	11.0	-
WW2119	604415.4	6267339.5	29.2	0	90	21	25.5	4.5	39	1.4	3.9	-

**Jaws Deposit >1% HM**

HOLE ID	EASTING	NORTHING	RL	AZI	DIP	FROM	TO	LENGTH	DEPTH	HM	CLAY	OS
	GDA94 / MGA ZONE 54		(m)		(m)	(m)	(m)	(m)	(%)	(%)	(%)	
N0364	599795.3	6253088.5	29.3	0	90	24	25.5	1.5	57	2.0	7.6	-
N0364	599795.3	6253088.5	25.5	0	90	27	30	3	57	1.5	5.5	-
N0364	599795.3	6253088.5	10.5	0	90	40.5	46.5	6	57	9.0	4.2	0.4
N0365	599776.3	6253013.5	31.5	0	90	21	24	3	54	2.7	16.0	4.2
N0365	599776.3	6253013.5	10.5	0	90	42	45	3	54	3.8	5.2	3.7
N0367	599784.3	6252946.5	30.8	0	90	21	25.5	4.5	54	3.1	13.6	6.0
N0367	599784.3	6252946.5	11.3	0	90	40.5	45	4.5	54	3.5	5.2	0.1
N0368	599797.3	6252903.5	18.2	0	90	34.5	37.5	3	54	1.7	5.7	-
N0368	599797.3	6252903.5	13.0	0	90	40.5	42	1.5	54	2.0	4.4	-
N0368	599797.3	6252903.5	10.0	0	90	43.5	45	1.5	54	1.6	3.7	-
N0369	599796.3	6252827.5	13.2	0	90	40.5	43.5	3	57	2.1	4.9	0.1
N0372	599760.3	6252870.5	14.7	0	90	37.5	42	4.5	54	2.9	5.0	-
N0372	599760.3	6252870.5	10.2	0	90	43.5	45	1.5	54	1.2	2.9	-
N0373	599782.3	6252993.5	9.0	0	90	43.5	46.5	3	54	2.7	2.0	0.1
N0374	599790.3	6253057.5	30.8	0	90	22.5	24	1.5	57	1.5	4.1	1.4
N0374	599790.3	6253057.5	17.3	0	90	34.5	39	4.5	57	1.3	4.5	-
N0374	599790.3	6253057.5	6.8	0	90	46.5	48	1.5	57	1.2	2.4	2.6
N0375	599813.3	6253105.5	33.0	0	90	19.5	22.5	3	57	1.1	9.9	8.8
N0375	599813.3	6253105.5	25.5	0	90	27	30	3	57	1.4	8.8	-
N0375	599813.3	6253105.5	12.8	0	90	36	46.5	10.5	57	2.5	3.0	0.2
N1057	597011.7	6255014.0	24.7	0	90	21	27	6	39	1.8	9.3	-
N1057	597011.7	6255014.0	17.2	0	90	30	33	3	39	6.2	5.1	-
N1058	597057.7	6255042.0	18.1	0	90	28.5	33	4.5	36	5.8	4.4	1.9
N1059	597104.7	6255067.0	37.0	0	90	10.5	13.5	3	39	2.6	17.5	7.7
N1059	597104.7	6255067.0	32.5	0	90	15	18	3	39	1.4	14.1	-
N1059	597104.7	6255067.0	23.5	0	90	22.5	28.5	6	39	4.3	7.7	1.1
N1059	597104.7	6255067.0	16.0	0	90	30	36	6	39	1.8	4.8	1.9
N1060	597191.7	6255109.0	20.2	0	90	27	31.5	4.5	39	1.3	4.4	-
N1060	597191.7	6255109.0	14.9	0	90	33	36	3	39	3.0	4.2	2.3
N1064	601991.7	6251289.0	19.8	0	90	30	37.5	7.5	45	1.5	6.4	0.1
N1067	601918.7	6251225.0	16.2	0	90	37.5	39	1.5	48	1.2	5.5	-

HOLE ID	EASTING	NORTHING	RL	AZI	DIP	FROM	TO	LENGTH	DEPTH	HM	CLAY	OS
	GDA94 / MGA ZONE 54		(m)		(m)	(m)	(m)	(m)	(%)	(%)	(%)	
N1067	601918.7	6251225.0	12.4	0	90	40.5	43.5	3	48	3.2	3.0	-
N1072	602154.7	6251433.0	13.9	0	90	31.5	42	10.5	51	3.0	3.5	0.1
N1085	597284.7	6255155.0	21.3	0	90	27	30	3	36	1.7	10.8	-
N2569	590224.3	6259951.5	31.3	0	90	14	15	1	42	2.1	10.2	0.3
N2569	590224.3	6259951.5	18.8	0	90	26	28	2	42	1.5	5.2	-
N2569	590224.3	6259951.5	12.3	0	90	33	34	1	42	1.0	3.5	-
N2570	590216.3	6259934.5	22.8	0	90	22	24	2	42	1.2	7.5	-
N2570	590216.3	6259934.5	15.8	0	90	29	31	2	42	1.4	2.6	-
N2571	590193.3	6259897.5	17.2	0	90	28	29	1	42	2.2	6.2	-
N2573	590184.3	6259879.5	13.2	0	90	32	33	1	39	1.5	2.8	-
N2575	590199.3	6259916.5	14.7	0	90	30	32	2	42	1.3	2.3	-
N2576	590232.3	6259968.5	22.3	0	90	23	24	1	39	1.1	15.5	-
N2576	590232.3	6259968.5	15.8	0	90	29	31	2	39	2.0	3.5	-
N2577	590241.3	6259983.5	29.4	0	90	16	17	1	39	1.3	14.3	-
N2577	590241.3	6259983.5	17.9	0	90	27	29	2	39	3.3	5.2	-
N2578	590248.3	6260002.5	18.9	0	90	26	28	2	39	2.0	7.6	-
N2579	590255.3	6260021.5	29.4	0	90	16	17	1	39	1.3	12.4	0.1
N2579	590255.3	6260021.5	21.9	0	90	23	25	2	39	1.3	8.9	-
N2580	590268.3	6260057.5	28.2	0	90	16	19	3	36	1.3	17.6	0.5
N2580	590268.3	6260057.5	14.2	0	90	31	32	1	36	1.6	4.7	-
N2581	590288.3	6260094.5	27.7	0	90	17	19	2	36	1.6	20.5	-
N2581	590288.3	6260094.5	25.2	0	90	20	21	1	36	1.2	21.2	-
N2581	590288.3	6260094.5	17.7	0	90	27	29	2	36	1.4	6.6	-
N2581	590288.3	6260094.5	11.2	0	90	34	35	1	36	1.0	3.5	0.3
N2582	590307.3	6260130.5	23.2	0	90	22	23	1	36	1.3	14.4	-
N2584	593206.3	6257778.5	21.6	0	90	20	26	6	39	2.4	4.6	-
N2585	593188.3	6257742.5	15.4	0	90	27	32	5	36	3.0	2.3	-
N2588	593226.3	6257817.5	21.8	0	90	21	24	3	39	1.5	6.8	-
N2588	593226.3	6257817.5	14.3	0	90	28	32	4	39	5.5	3.2	0.4
N2589	593215.3	6257800.5	11.9	0	90	32	33	1	36	1.7	2.3	-
N2590	593225.3	6257839.5	19.2	0	90	21	29	8	36	2.2	3.7	-
N2591	593246.3	6257876.5	20.4	0	90	20	27	7	36	2.2	4.5	-
N2591	593246.3	6257876.5	15.4	0	90	28	29	1	36	1.0	2.3	-
N2591	593246.3	6257876.5	12.4	0	90	31	32	1	36	1.2	2.0	-
N2592	593266.3	6257915.5	22.1	0	90	20	23	3	36	1.2	7.6	-
N2592	593266.3	6257915.5	17.1	0	90	26	27	1	36	1.1	2.5	-
N2592	593266.3	6257915.5	14.6	0	90	28	30	2	36	1.3	2.4	-
N2593	593284.3	6257952.5	25.5	0	90	16	20	4	36	1.4	8.8	-
N2593	593284.3	6257952.5	20.5	0	90	21	25	4	36	1.4	5.4	-
N2593	593284.3	6257952.5	14.5	0	90	28	30	2	36	1.4	3.1	-
N2594	593298.3	6257990.5	21.9	0	90	21	22	1	33	1.0	6.8	-
N2594	593298.3	6257990.5	18.4	0	90	24	26	2	33	1.2	4.6	-
N2596	593318.3	6258026.5	14.6	0	90	28	29	1	33	1.2	3.6	-
N4908	591825.0	6258983.0	23.0	0	90	21	23	2	57	1.2	4.4	-
N4908	591825.0	6258983.0	13.0	0	90	29	35	6	57	1.7	1.6	0.7
N4908	591825.0	6258983.0	1.5	0	90	43	44	1	57	1.3	3.0	-
N4908	591825.0	6258983.0	-1.0	0	90	45	47	2	57	1.3	2.8	-
N4908	591825.0	6258983.0	-6.0	0	90	48	54	6	57	1.4	8.1	0.2
N4908	591825.0	6258983.0	-11.0	0	90	55	57	2	57	2.0	7.9	0.4
N4909	591848.0	6259015.0	26.5	0	90	16	21	5	51	1.7	8.8	-
N4909	591848.0	6259015.0	18.5	0	90	25	28	3	51	1.7	2.7	-
N4909	591848.0	6259015.0	13.0	0	90	29	35	6	51	1.7	1.9	0.3



HOLE ID	EASTING	NORTHING	RL	AZI	DIP	FROM	TO	LENGTH	DEPTH	HM	CLAY	OS
	GDA94 / MGA ZONE 54		(m)		(m)	(m)	(m)	(m)	(%)	(%)	(%)	
N4909	591848.0	6259015.0	-5.5	0	90	50	51	1	51	3.2	11.0	-
N4910	591871.0	6259047.0	29.5	0	90	15	16	1	42	1.0	10.1	-
N4910	591871.0	6259047.0	23.5	0	90	18	25	7	42	1.7	6.0	1.8
N4911	591895.0	6259080.0	30.5	0	90	14	15	1	39	2.4	13.4	-
N4911	591895.0	6259080.0	26.5	0	90	17	20	3	39	1.2	5.8	-
N4912	591918.0	6259112.0	16.5	0	90	27	30	3	39	1.4	1.2	-
N4913	591802.0	6258950.0	28.4	0	90	16	17	1	39	1.5	14.5	-
N4913	591802.0	6258950.0	21.4	0	90	22	25	3	39	1.4	4.2	-
N4913	591802.0	6258950.0	10.9	0	90	32	36	4	39	1.7	1.3	-
N4914	591778.0	6258918.0	32.0	0	90	12	13	1	39	1.1	6.3	4.1
N4914	591778.0	6258918.0	30.0	0	90	14	15	1	39	1.3	17.2	-
N4914	591778.0	6258918.0	22.5	0	90	20	24	4	39	1.8	3.6	-
N4914	591778.0	6258918.0	17.0	0	90	25	30	5	39	1.5	1.9	-
N4915	591755.0	6258886.0	18.0	0	90	22	30	8	42	2.2	2.9	-
N4915	591755.0	6258886.0	10.0	0	90	31	37	6	42	2.7	1.4	0.3
N4951	595155.0	6256525.0	19.5	0	90	19	30	11	48	2.7	2.6	0.1
N4951	595155.0	6256525.0	0.5	0	90	40	47	7	48	2.4	4.4	0.1
N4952	595162.0	6256525.0	26.5	0	90	17	18	1	48	1.2	3.8	-
N4952	595162.0	6256525.0	20.0	0	90	23	25	2	48	1.0	2.5	-
N4952	595162.0	6256525.0	15.5	0	90	27	30	3	48	1.1	2.1	-
N4952	595162.0	6256525.0	0.5	0	90	41	46	5	48	1.7	4.6	-
N4953	595189.0	6256577.0	22.4	0	90	21	23	2	51	1.1	4.7	-
N4953	595189.0	6256577.0	16.9	0	90	26	29	3	51	1.5	2.6	-
N4953	595189.0	6256577.0	-1.6	0	90	45	47	2	51	1.7	7.8	-
N4954	595218.0	6256611.0	22.8	0	90	19	24	5	48	1.6	5.4	-
N4954	595218.0	6256611.0	4.8	0	90	39	40	1	48	1.0	3.5	-
N4957	595320.0	6256742.0	35.7	0	90	5	12	7	33	1.6	35.9	-
N4957	595320.0	6256742.0	28.7	0	90	13	18	5	33	1.9	8.8	1.3
N4957	595320.0	6256742.0	24.7	0	90	19	20	1	33	1.0	4.7	-
N4957	595320.0	6256742.0	17.7	0	90	25	28	3	33	1.2	1.7	0.1
N4957	595320.0	6256742.0	13.2	0	90	29	33	4	33	3.6	2.5	0.2
N4958	595119.0	6256487.0	21.0	0	90	22	24	2	51	1.3	3.7	-
N4958	595119.0	6256487.0	17.5	0	90	26	27	1	51	1.0	2.5	-
N4958	595119.0	6256487.0	12.0	0	90	31	33	2	51	1.3	1.5	0.6
N4958	595119.0	6256487.0	9.5	0	90	34	35	1	51	2.0	1.2	2.5
N4958	595119.0	6256487.0	-3.0	0	90	43	51	8	51	2.3	7.5	0.1
N4959	595092.0	6256471.0	43.1	0	90	0	2	2	50	2.9	-	-
N4959	595092.0	6256471.0	29.6	0	90	13	16	3	50	7.8	6.5	-
N4960	595068.0	6256422.0	30.0	0	90	13	15	2	36	1.3	6.2	-
N4961	595044.0	6256390.0	28.5	0	90	13	18	5	39	1.9	-	-
N4961	595044.0	6256390.0	9.5	0	90	31	38	7	39	1.3	1.6	0.7
N4962	595024.0	6256362.0	15.5	0	90	28	29	1	39	1.0	2.4	-
N4963	591732.0	6258853.0	35.3	0	90	8	9	1	39	1.1	-	-
N4963	591732.0	6258853.0	11.8	0	90	31	33	2	39	1.3	2.2	0.3
N4964	591701.0	6258821.0	15.0	0	90	27	30	3	40	7.8	4.8	-
N4965	591685.0	6258789.0	5.3	0	90	37	39	2	39	1.3	1.7	0.6
N4966	591636.0	6258728.0	6.5	0	90	34	39	5	39	1.9	2.6	1.2
N4967	591963.0	6259177.0	27.8	0	90	13	20	7	36	1.3	15.9	0.2
N4968	592007.0	6259242.0	30.5	0	90	13	14	1	33	1.0	40.0	-
N4968	592007.0	6259242.0	11.5	0	90	32	33	1	33	1.1	1.0	-
N4969	592035.0	6259329.0	21.9	0	90	22	24	2	30	1.3	2.6	-

## Appendix 3 - Summary Mineralogical Data

### Gilligans

MACNUM	ILM	ILM_A	RUT	ZIR	MLX	NMLX	MON	MOTH	NMOTH
N1066-01	2.3	5.8	22.7	8.9	19.9	1.9	0.4	30.5	7.6

### Jaws

MACNUM	ILM	ILM_A	RUT	ZIR	MLX	NMLX	MON	MOTH	NMOTH
N1166-01	3.6	7.6	31.3	9.7	23.5	1.3	0.5	18.0	4.5
N1166-02	3.9	6.2	27.6	10.4	21.7	1.4	0.6	22.8	5.4
N1166-03	0.7	1.0	34.1	11.2	3.1	2.6	0.4	39.3	7.5