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ASX CODE BLK

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# Matilda grows to > 5 million ounces

- New resource modelling completed on Moonlight Shear located 600m west of Bulletin
- Matilda Gold Project Resources now at 48Mt@3.3g/t for 5.1Moz (48% indicated)
- Open pit and underground mining studies underway for Adelaide, Moonlight, Lone Hand, Semaphore and Indigo Lodes with a view to extending the mine life beyond 8 years

Blackham Resources Ltd ('Blackham') (ASX Code: **BLK)** is pleased to report its maiden resource estimate for Moonlight Shear of **2.6Mt @ 4.6g/t for 381,000oz Au** (10% Indicated) and has commenced open pit and underground mining studies on the deposit. The Moonlight Shear deposit is located less than two kilometres from Blackham's 100% owned gold plant.

Blackham has recently completed a number of maiden resource estimates targeting mineralisation along the under-explored Moonlight Shear Zone. Only a resource of 55,000oz for a portion of Lonehand Lode had previously been reported.

Pre-1950 production at Moonlight was 770,000t @ 10.4g/t Au (257,464oz) primarily from stoping of sulphide ore but also includes oxide material from open pit mining. Recent (post 1986) open pit mining from Adelaide, Indigo, Moonlight and Lonehand produced 496,466t @ 3.14g/t Au (50,062oz).

Further mining and exploration studies will focus on identifying shallow oxide and transitional resources along strike of the existing open pits where the mineralisation continues along the shear zones. The open pit potential in this area has not been reviewed since mining ceased in the late 1980's. The initial resource has also identified significant resources that may be amenable to underground mining.

Blackham's Managing Director, Mr Bryan Dixon commented: "Blackham is delighted to have put together over 5Moz of resource all within a 20 kilometre radius of the Wiluna Gold Plant. Mining studies have commenced over the Moonlight resources. Our exploration team see significant potential along this 2km long underexplored shear."

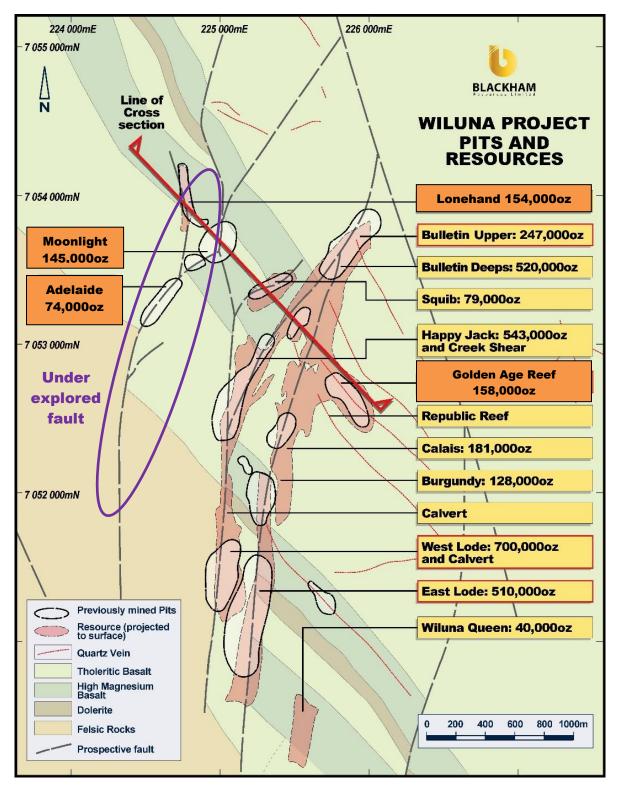


Figure 1. Wiluna Mine Plan with main faults, resources & the underexplored Moonlight fault

Blackham has defined an oxide + fresh (sulphide) resource by modelling existing assay results within multiple shear lodes over a strike length of 1.2km to a depth of 800m surrounding the historically mined areas. Shallower levels of the deposit are closely drilled with RC and diamond core on 20m and 25m spaced sections, with holes spaced 10-15m apart on each section. Modelling has yielded a resource of **2.6Mt at 4.6g/t for 381,000 Oz Au**.

### Table 1. Moonlight Shear Resource

		Total: Oxide at 0.6g/t - Trans 1.0g/t - Fresh 3.0g/t								
	Ir	Indicated			Inferred			Total		
Area	Tonnes	Grade	Oz	Tonnes	Grade	Oz	Tonnes	Grade	Oz	
Adelaide	145,602	3.27	15,313	435,342	4.21	58,975	580,944	3.98	74,287	
Indigo	13,682	2.14	940	37,693	3.75	4,539	51,375	3.32	5,479	
Lonehand	75,441	5.31	12,886	795,679	5.52	141,239	871,120	5.50	154,125	
Moonlight	55,062	3.64	6,435	1,015,333	4.27	139,316	1,070,395	4.24	145,752	
Semaphore	21,207	1.82	1,244	744	1.07	26	21,951	1.80	1,269	
Total	310,994	3.68	36,818	2,284,791	4.68	344,094	2,595,785	4.56	380,912	

The major resource areas included in this estimate are described below and their location shown in Figure 2.

## Adelaide Resource

The Adelaide open pit has been mined over a strike length of 350m down to a vertical depth of 46m. Gold mineralisation is found in narrow, moderately dipping shear zones that cross cut the stratigraphy of high magnesian basalts and tholeiitic basalts with dolerite sills in the south-west. Mineralisation varies in width and is thickest at the intersection between the major north-east trending shear and several north trending structures in the area. These intersections are thought to represent zones of large scale brecciation and dilatancy in the footwall associated with the major shear's dextral movement.

The gold mineralisation is hosted in the hanging wall and footwall of the main fault structure with higher gold grades in the hanging wall. Gold mineralisation is currently defined over a strike length of ~375m towards the north-east striking ~045°. The down-dip extent of ~580m is based on the most complete drilling section dipping towards the north-west at ~55° with no apparent plunge component. Separate wireframes have been produced for hanging wall and footwall zones in addition to several minor lodes with limited lateral extent due to paucity of drilling.

## **Lonehand Resource**

The Lonehand open pit has been mined over a strike length of 395m down to a vertical depth of 39m. The gold mineralisation within at Lone Hand occurs within 2 major structures defining an interpreted hanging wall and footwall and 14 minor zones of mineralisation over a strike length of ~350m towards 035°. The dip near surface is steeply to the east, but between 150 to 200 vertical metres appears to undergo a dip reversal and dips steeply to the west. Deeper diamond drilling has defined down-dip extents up to 1000m.

Deep diamond drillhole WD000498 located at the southern end of the Lonehand Fault suggests that it intersects with the Adelaide-Moonlight Fault. A broad anomalous zone of mineralisation has been identified where the two faults are within close proximity (at approximately 830 vertical metres). On this section, it is likely that the two would intersect between 900 and 1000 vertical metres. With an interpreted northerly plunge for the intersection of the two faults, the intersection would be at shallower depths on sections to the south.

## **Moonlight Resource**

The Moonlight open pit has been mined over a strike length of 260m down to a vertical depth of 60m. The bulk of the mineralisation occurs within a structurally complex zone where the Adelaide-Moonlight fault intersects the north-south striking Barton Fault and high magnesian basalt in the hangingwall, which overlaps tholeiitic basalt in the footwall. The Barton fault has a steep easterly to near vertical dip and has a dextral displacement of 40 - 50 metres. Near surface (within the Moonlight Pit) there is a significant strike extent of the Adelaide-Moonlight Fault to the east of the Barton Fault but it terminates at the intersection of the north-south striking Creek Shear Fault.

Gold mineralisation is present in two zones within the Adelaide-Moonlight fault interpreted as hanging wall and footwall structures. Mineralisation is defined over ~280m strike towards the north-east and dips 65-70° north-west down to ~1000m. An additional three zones of mineralisation occur within the north-south Barton Fault over a strike length of 650m which dips vertically with sub-parallel structures at the southern end. Moonlight has also been mined underground historically to a depth of 350m below surface.

The Moonlight Shear resource has been reported with a 0.6g/t bottom cut for the oxide, a 1.0g/t bottom cut for the transitional and a 3.0g/t bottom cut fresh. The Company believes these are realistic approximate cut-offs for open pit and underground mining. The Moonlight Shear Resource estimate was completed by a full-time Blackham Resources employee using Ordinary Kriging. The search ellipses used were based on the ranges of continuity observed in the variograms along with a consideration of the drill hole spacing and lode geometry.

The classification for this model was predominantly based on the estimation pass. With the first pass relating to an Indicated Resource where the drill spacing was predominantly less than 30m by 30m and in some areas included existing development, face mapping and previous mining. The Inferred Resource includes the down dip and across strike lode extension and is predominantly based on the second and third pass of the estimate where drilling is more sparse. The classification of the blocks was also visually checked and adjusted to remove any "spotted dog" effects. No measured resources were reported.

The Wiluna gold deposits are located within the Wiluna Goldfield, close to the town of Wiluna at latitude 26°38'S, longitude 120°15'E on the Wiluna (SG 51-9)1:250 000 scale map. Perth, the nearest capital city, lies 750km to the southeast. The closest regional centres are Kalgoorlie, 540km to the south and Meekatharra, 183km to the west.

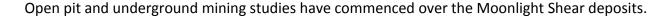
The gold deposits are categorised as orogenic gold deposits, with similarities to many other gold deposits in the Yilgarn region. The deposits are hosted within the Wiluna Domain of the Wiluna Greenstone Belt. Rocks in the Wiluna Domain have experienced greenschist-facies regional metamorphism and brittle deformation. The Wiluna Domain is comprised of a fairly monotonous sequence of foliated basalts and high-magnesian basalts, with intercalated felsic intrusions, lamprophyre dykes, metasediments, and dolerites.

Wiluna ores are typically oxide, refractory or free milling quartz mineralisation. The refractory ore has most gold occurring in either solid solution or as submicroscopic particles within fine-grained sulphides.

Blackham has access to a drill database which includes RAB, Aircore, RC and Diamond Drill holes. The database has been maintained by company employees and has been internally audited prior to estimation. The deposits have been largely defined by RC drilling with lesser Diamond holes and geologically logged to form the basis of the geological interpretation. Blackham has conducted no drilling at the Bulletin South Deposit as yet. The Company has audited QA/QC of previous drilling where available. Assaying has been conducted by numerous reputable laboratory consultants by industry-standard fire assay.

The interpretation of the mineralisation was carried out using a methodical approach to ensure continuity of the geology and estimated mineral resource using Surpac software. All available geological data was used in the interpretation including mapping, drilling, oxidation surfaces and interpretations of high grade ore shoots. Only diamond and reverse circulation drilling samples were used in the final estimate however all available grade control data was used in the geological assessment.

## **Moonlight Shear Mining Studies**



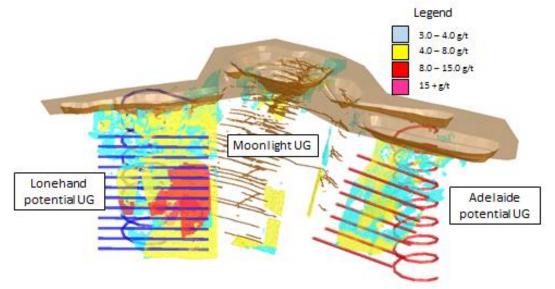


Figure 2. Long section looking East showing resource grade and conceptual UG mining access.

Blackham expects to commence mining very shortly at both its Matilda and Golden Age mines with first commercial gold production expected during the September 2016 quarter.

For further information on Blackham please contact:

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## Matilda Gold Resources

The Matilda Gold Project has an updated Mineral Resource of **48Mt @ 3.3g/t for 5.1Moz** of all within a 20 kilometres radius of Blackham's 100% owned Wiluna gold plant capable of processing up to 1.7Mtpa for over 100,000ozpa gold production. Measured and indicated resources now total **22Mt @ 3.4g/t for 2.4Moz**.

			Matilda	Gold Pr	oject Res	ource Su	mmary					
Mining Centre		Measure	d		Indicated			Inferred			Total 100	76
Mining Centre	Mt	g/t Au	Koz Au	Mt	g/t Au	Koz Au	Mt	g/t Au	Koz Au	Mt	g/t Au	Koz Au
Matilda Mine	0.2	2.1	13	7.8	1.8	447	5.1	1.6	261	13.1	1.7	721
Golden Age				0.4	4.5	51	0.9	3.7	107	1.3	3.8	158
Galaxy				0.4	3.1	42	0.4	2.2	25	0.8	2.7	68
Williamson Mine				3.3	1.6	170	3.8	1.6	190	7.1	1.6	360
Regent				0.7	2.7	61	3.1	2.1	210	3.8	2.2	271
Bulletin Upper				0.9	4.2	120	0.7	5.5	130	1.6	4.8	250
Henry 5 - Woodley - Bulletin Deeps				2.1	5.9	400	0.8	4.6	120	2.9	5.6	520
Happy Jack - Creek Shear Upper				0.1	2.2	7	0.4	3.2	46	0.5	3.0	53
Happy Jack - Creek Shear Lower				1.5	5.9	290	1.3	4.8	200	2.9	5.4	490
East Lode				1.0	5.2	170	2.3	4.7	340	3.3	4.8	510
West Lode				1.4	5.5	240	2.8	5.2	460	4.2	5.3	700
Burgundy - Calais				1.3	6.0	250	0.3	5.7	60	1.6	6.0	310
Moonlight Shear				0.3	3.6	36	2.3	4.7	345	2.6	4.6	381
Other Wiluna Deposits				1.1	4.4	152	1.4	3.5	153	2.5	3.9	305
Total	0.2	2.1	13	22	3.4	2,436	26	3.2	2,647	48	3.3	5,097

Mineral Resource estimates are not precise calculations, being dependent on the interpretation of limited information on the location shape and continuity of the occurrence and on the available sampling results. The figures in the above table are rounded to two significant figures to reflect the relative uncertainty of the estimate.

#### Competent Persons Statement

The information contained in the report that relates to Exploration Targets and Exploration Results at the Matilda Gold Project is based on information compiled or reviewed by Mr Cain Fogarty, who is a full-time employee of the Company. Mr Fogarty is a Member of the Australian Institute of Geoscientists and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which is 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 Fogarty has given consent to the inclusion in the report of the matters based on this information in the form and context in which it appears.

The information contained in the report that relates to all other Mineral Resources is based on information compiled or reviewed by Mr Marcus Osiejak, who is a full-time employee of the Company. Mr Osiejak, is a Member of the Australian Institute of Mining and Metallurgy and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which is 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 Osiejak has given consent to the inclusion in the report of the matters based on this information in the form and context in which it appears.

With regard to the Matilda Gold Project Mineral Resources, the Company is not aware of any new information or data that materially affects the information included in this report and that all material assumptions and parameters underpinning Mineral Resource Estimates as reported in the market announcements dated 14 March 2016, 17 June 2016 and 27 June 2016 continue to apply and have not materially changed.

#### Forward Looking Statements

This announcement includes certain statements that may be deemed 'forward-looking statements'. All statements that refer to any future production, resources or reserves, exploration results and events or production that Blackham Resources Ltd ('Blackham' or 'the Company') expects to occur are forward-looking statements. Although the Company believes that the expectations in those forward-looking statements are based upon reasonable assumptions, such statements are not a guarantee of future performance and actual results or developments may differ materially from the outcomes. This may be due to several factors, including market prices, exploration and exploitation success, and the continued availability of capital and financing, plus general economic, market or business conditions. Investors are cautioned that any such statements are not guarantees of future performance, and actual results or performance may differ materially from those projected in the forward-looking statements. The Company does not assume any obligation to update or revise its forward-looking statements, whether as a result of new information, future events or otherwise.

# JORC Code, 2012 Edition – Table 1 (Wiluna)

**Section 1 Sampling Techniques and Data** (Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (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> <li>This is a portion of a large drilling database compiled since the 1930's by various project owners. Only the drilling results contained in this document are considered in this table, as it is impractical to comment on the entire database. Golden Age has been mainly core drilled from underground, though some surface RAB and RC drilling has tested the shallow portions of the deposit. Drilling data contained in this report includes RC and diamond core data. Drilling data is more complete for holes drilled since the early 2000's. Sundry data on sampling quality is not available and not evaluated in earlier drilling. Blackham Resources has used reverse circulation drilling to obtain 1m samples from which ~3kg samples were collected using a cone splitter connected to the rig.</li> <li>For Blackham's RC drilling, the drill rig (and cone splitter) is always jacked up so that it is level with the earth to ensure even splitting of the sample. It is assumed that previous owners of the project had procedures in place in line with standard industry practice to ensure sampler representivity. NQ2 diamond holes were completed by BLK in Golden Age and half core sampled. The drilling was completed to industry standard using varying sample lengths (0.3m to 1.2m) based on geology intervals</li> <li>Historically, RC samples were composited in the field on 2m or 6m composites, with high-grade samples subsequently re-sampled on 1m intervals. Composited samples were spear-split, and / or reduced in size in the field using a riffle splitter to ensure sample representivity. For Blackham drilling, 4m composites were collected in the field, with 1m splits to be assayed where mineralisation is encountered. At the laboratory, samples &gt;3kg were 50:50 riffle split to become &lt;3kg. The &lt;3kg splits were pulverized to produce a 50g charge for fire assay.</li> <li>Gold analyses were obtained using industry standard methods; split samples were pulverized in an LMS bowl to produce a 50g charge for assay by Fire Assay or Aqua Regia with AAS</li></ul>

Drilling techniques	• 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).	<ul> <li>Historical drilling data contained in this report includes RC and DD core samples. RC sampling utilized a face-sampling hammer of 4.5" or 5.5" diameter, and DD sampling utilized NQ2 half core samples. It is unknown if core was orientated, though it is not material to this report. All Blackham drilling is RC with a face-sampling bit or NQ2 diamond.</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul> <li>For Blackham drilling, chip sample recovery is visually estimated by volume for each 1m bulk sample bag, and recorded digitally in the sample database. For historical drilling, recovery data for drill holes contained in this report has not been located or assessed, owing to incomplete data records. Database compilation is ongoing.</li> <li>For Blackham drilling, sample recovery is maximized by pulling back the drill hammer and blowing the entire sample through the rod string at the end of each metre. Where composite samples are taken, the sample spear is inserted diagonally through the sample bag from top to bottom to ensure a full cross-section of the sample is collected. To minimize contamination and ensure an even split, the cone splitter is cleaned with compressed air at the end of each rod, and the cyclone is cleaned every 50m and at the end of hole, and more often when wet samples are encountered. Historical practices are not known, though it is assumed similar industry-standard procedures were used to ensure sample recovery, though it is assumed that industry-standard protocols were used to ensure sample recovery, though it is noted these were collected in polyweave bags to allow excess water to escape; this is standard practice though can lead to biased loss of sample material into the suspended fine sample fraction.</li> <li>Diamond Drill core is logged and divided into sample intervals that have a minimum sample length of 0.3m and a maximum sample length of 1.2m. Geological boundaries are typically used to determine intervals. Some intervals logged as 'stope' were assayed, presumably this is back-fill material and would be excluded from detailed investigation of these prospects. The presence of these intervals does not materially affect assessment of the prospects at this stage.</li> <li>For Blackham drilling, no such relationship was evaluated as sample recoveries were generally very good. For historical drilling no relationship was investigated as recovery data is not available.</li> </ul>
Logging	• 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	<ul> <li>Samples have been routinely logged for geology, including lithology, colour, oxidation, veining and mineralisation content. This level of detail is considered appropriate for exploration drilling.</li> <li>Logging of geology and colour for example are interpretative and qualitative, whereas logging of mineral percentages is quantitative.</li> </ul>

	<ul> <li>metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>Holes were logged entirely. Geology data has not yet been located for some holes, database compilation is on-going.</li> <li>Core photography was taken for BLK diamond drilling.</li> </ul>
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>For core samples, it is assumed that sawn half-core was routinely sampled. Holes have been selectively sampled (visibly barren zones not sampled, though some quartz vein intervals have been left un-sampled), with a minimum sample width of 0.3m and maximum of 1.2m, though typically 1m intervals were selected.</li> <li>Historically, RC and RAB samples were riffle split for dry samples; wet samples were collected in polyweave bags and speared. RC and RAB samples were initially composited on 2m, 4m or 6m intervals. Composites grading &gt;0.1g/t were subsequently assayed on 1m intervals. For Blackham drilling, 1m samples were split using a cone splitter. 4m composite samples were collected with a spear tube where mineralisation was not anticipated. Most samples were dry; the moisture content data was logged and digitally captured. Where it proved impossible to maintain dry samples, at most three consecutive wet samples were obtained before drilling was abandoned, as per procedure.</li> <li>Riffle splitting and half-core splitting are industry-standard techniques and considered to be appropriate. Note comments above about samples through 'stope' intervals; these samples don't represent the pre-mined grade in localized areas.</li> <li>For historical drilling, field duplicates, blank samples and certified reference standards were collected and inserted from at least the early 2000's. Investigation revealed sufficient quality control performance. No field duplicate data has been located or evaluated in earlier drilling. Field duplicates were collected every 20m down hole for Blackham holes. Analysis of results indicated good correlation between primary and duplicate samples.</li> <li>Sample sizes are considered appropriate for these rock types and style of mineralisation, and are in line with standard industry practice.</li> </ul>
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model,</li> </ul>	<ul> <li>Fire assay is considered a total digestion technique, whereas aqua regia is a partial digestion. Both techniques are considered appropriate for analysis of exploration samples.</li> <li>No geophysical tools were used to obtain analyses.</li> <li>Field duplicates, blank samples and certified reference standards were collected and inserted from at least the early 2000's. Results generally fall within acceptable levels. However, for holes drilled prior to this no QAQC data has been located or evaluated. Some intervals logged as 'stope' were also assayed, presumably this is back-fill material and would be excluded from detailed investigation of these prospects. The presence of these intervals does not materially affect assessment of the</li> </ul>

Verification of sampling and assaying	<ul> <li>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 been established.</li> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>prospects at this stage, although if anything prospectivity is enhanced as pre-mining metal tenor was greater than the drilling results indicate in stoped areas. For Blackham drilling certified reference material and blanks were submitted at 1:40 and 1:40 ratios for various campaigns and duplicate splits were submitted at 1:40 ratio with each batch of samples. Check samples are routinely submitted to an umpire lab at 1:40 ratio. Analysis of results confirms the accuracy and precision of the assay data.</li> <li>Blackham's significant intersections have been verified by several company personnel. For historical results, significant intersections can't be independently verified. However, database validation and cleaning has been done to ensure the latest assay set appears i.e. where intervals have been sub-split the newest assays are given priority.</li> <li>The use of twin holes is not noted, as this is not routinely required. However, drilling at various orientations at a single prospect is common, and this helps to correctly model the mineralisation orientation.</li> <li>Data is stored in Datashed SQL database. Internal Datashed validations and validations upon impacting into Micromize user completed as user checks on data location.</li> </ul>
		<ul> <li>importing into Micromine were completed, as were checks on data location, logging and assay data completeness and down-hole survey information. QAQC and data validation protocols are contained within Blackham's manual "Blackham Exploration Geological Manual 2015". Historical procedures have not been sighted.</li> <li>Conversion of lab non-numeric code to numeric for estimation.</li> </ul>
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>All historical holes appear to have been accurately surveyed to centimeter accuracy. Blackham holes reported herein have not yet been DGPS surveyed, though collar positions have been GPS located to within several metres accuracy.</li> <li>Grid systems used in this report are Wil10 local mine grid and GDA 94 Zone 51 S. Drilling collars were originally surveyed in either Mine Grid Wiluna 10 or AMG, and converted in Datashed to MGA grid.</li> <li>An accurate topographical model covering the mine site has been obtained, drill collar surveys are closely aligned with this. Away from the mine infrastructure, drill hole collar surveys provide adequate topographical control.</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> </ul>	<ul> <li>Each of the prospects mentioned in this report has received sufficient historical drilling to allow structural orientation and lode thicknesses to be confidently interpreted. Drill spacing is general 50m x 25m or better, with holes oriented perpendicular to the strike of quartz reefs. Mineral resources and reserves are not the subject of this report.</li> <li>For core samples, typically 1m intervals were sampled though 3m composites are noted in some barren zones. Historical RC and RAB samples were initially composited on 2m, 4m or 6m intervals. Composites grading &gt;0.1g/t were subsequently assayed on 1m intervals. For Blackham drilling,</li> </ul>

	• Whether sample compositing has been applied.	samples have been composited, the 1m samples will be submitted for analysis and these results were prioritized over the 4m composite values.
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	• In the historical data, no such bias is noted or believed to be a material factor. Potentially diamond half-core samples may show such bias to a minor degree; holes are orientated perpendicular to strike to mitigate any such bias. For Blackham drilling, the RC technique utilizes the entire 1m sample so significant bias is unlikely.
Sample security	• The measures taken to ensure sample security.	• It is not known what measures were taken historically. For Blackham drilling, samples are delivered to Toll Ipec freight yard in Wiluna by Blackham personnel, where they are stored in a gated locked yard (after hours) until transported by truck to the laboratory in Perth. In Perth the samples are likewise held in a secure compound.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• For Blackham drilling, data has been validated in Datashed and upon import into Micromine. QAQC data has been evaluated and found to be satisfactory. Historical assay techniques and data have not been reviewed in detail owing to the preliminary stage of exploration work.

**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> <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> <li>The Wiluna dataset has been validated in Datashed and Surpac using internal validation macros and checks. Holes have been checked and corrected where necessary for:</li> <li>Intervals beyond EOH depth</li> </ul>

		Holes missing assays
Site visits	<ul> <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> <li>Holes missing geology</li> <li>A site visit has been undertaken and no concerns or issues were discovered.</li> </ul>
Geological interpretation	-	<ul> <li>The interpretation of the mineralisation was carried out using a methodical approach to ensure continuity of the geology and estimated mineral resource using Surpac software. The confidence in the geology and the associated mineralisation is high.</li> <li>All available geological data was used in the interpretation including mapping, drilling, oxidation surfaces and interpretations of high grade ore shoots. Only diamond and reverse circulation drilling samples were used in the final estimate however all available grade control data was used in the geological assessment.</li> <li>No alternate interpretations have been completed. The current interpretation follows similar methodology to that used historically.</li> <li>Drill logging has been used to constrain the 3D wireframes.</li> <li>Gold mineralisation is predominantly associated with second to third order north and northeast trending brittle to brittle-ductile dextral strike-slip faults, localised at dilational bends or jogs along faults, at fault intersections, horsetail splays and in subsidiary overstepping faults.</li> </ul>
Dimensions	• The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	<ul> <li>Strike length = ~ 1200 m</li> <li>Width (total of combined parallel lodes) = ~ 800 m</li> <li>Depth (from surface) = ~ 0 to 1000 m</li> </ul>
Estimation and modelling techniques	• The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values,	<ul> <li>The sample domains were flagged into an Access database from a validated wireframe.</li> <li>A composites string-file was then created in Surpac with a 1.0 m composite length and a minimum percentage of sample to include at 30%.</li> <li>Only Reverse Circulation (RC) and Diamond Drilling were used in the estimate.</li> </ul>

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 (eg 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.

- Resource estimation for the Wiluna mineralisation was completed using Ordinary Kriging for Gold (Au) Blockmodel field coding was used to constrain the estimate.
- Soft boundaries were utilised between the oxidation surfaces. Only samples contained within each individual ore wireframe were used for the estimate of that lode.
- A number of previous resource estimates and studies have been undertaken and were reviewed to assist in the development of this resource estimate.
- The modelled wireframes were used to create a blockmodel with a user block size of 2mE by 5mN by 5mRL. The model used variable sub-blocking to 0.5mE by 1.25mN by 1.25mRL.
- The block size corresponds to around half of the nominal drillhole spacing for all the main lodes.
- The search ellipses used were based on the ranges of continuity observed in the variograms along with considerations of the drillhole spacing and lode geometry. The search ellipse was rotated to best reflect the lode geometry and the geology as seen in the drilling and as described in the logging. This geometry was checked to ensure that it was also supported by the variogram analysis.
- Ordinary kriging parameters were also checked against those used in previous resource estimates and variography studies. No significant differences were discovered.
- Three search passes were used to populate blocks using search ellipse distances based on ranges observed in the variograms. Typically the first pass was no more than 30 m and a second pass no more than 60 m. Each pass incorporated a different set of sample selection criteria to ensure blocks were filled with an appropriate level of statistical confidence.
- For the first two passes at least 3 individual drillholes were required to complete the estimate.
- Topcuts were determined from statistical analysis. A number of factors were taken into consideration when determining the top-cuts including:
  - $\circ$  The disintegration point of the data on the probability plots;
  - Having a coefficient of variance (CV) under 2.0; and
  - Reviewing the model (block) grades against the composites.
- The estimate was validated using a number of techniques including but not limited to:
  - o A visual comparison of block grade estimates and the drill hole data;
  - $\circ$   $\,$  A comparison of the composite and estimated block grades;
  - $\circ$  A comparison of the estimated block grades for the ordinary kriged model against an

Moisture	<ul> <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> <li>Whether the tonnages are estimated on a dry basis or with natural</li> </ul>	<ul> <li>inverse distance model.</li> <li>A comparison of the estimated block grades for ordinary kriged models using different cut-off grades for the composites.</li> <li>A comparison of the estimated block grades against the composite grades along northings.</li> <li>Tonnages are estimated on a dry basis.</li> </ul>
	moisture, and the method of determination of the moisture content.	
Cut-off parameters	<ul> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<ul> <li>The nominal cut-off grade of applied for the individual resource areas appears to be a natural cut-off between mineralised veins and host rock as determined from analysis of log probability plots of all samples at each prospect. Mineralisation boundaries are typically sharp in that there is generally a significant order of magnitude (2 to 4 fold) increase in gold values between ore and waste zones.</li> <li>A cut-off of 0.6g/t was applied in the in the oxide, 1.0g/t was applied in transitional and in fresh rock a 3.0g/t cut-off was applied.</li> </ul>
Mining factors or assumptions	<ul> <li>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of</li> </ul>	<ul> <li>No mining factors or assumptions have been applied although it is envisaged that the resource has been created on the basis of an underground mining and open pit method.</li> </ul>

		the mining assumptions made.	
Metallurgical		• The basis for assumptions or	• Wiluna ores are typically extremely refractory, with most gold occurring in either solid
factors	or	predictions regarding metallurgical	solution or as submicroscopic particles within fine-grained sulphides.
assumptions		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.	
Environmental		Assumptions made regarding	• No environmental, permitting, legal, taxation, socio-economic, marketing or other relevant
factors	or	possible waste and process residue	issues are known, that may affect the estimate.
assumptions		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	

<ul> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> <li>Classification</li> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (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).</li> <li>A range of criteria were considered when addressing the suitability of the classification boundaries to the resource estimate.</li> <li>Geological continuity and volume models;</li> <li>Drill spacing and available mining information;</li> <li>Modelling technique</li> <li>Estimation properties including search strategy, number of informing composites average distance of composites from blocks, number of drillholes used and kriging quality parameters.</li> <li>The classification for this model was predominantly based on the estimation pass. With the first pass relating to an indicated resource and the second pass being inferred.</li> </ul>	Bulk density	<ul> <li>aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</li> <li>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.</li> <li>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.</li> </ul>	<ul> <li>Bulk densities were assigned as 1.80 t/m<sup>3</sup> for oxide, 2.40 t/m<sup>3</sup> for transitional and 2.80 t/m<sup>3</sup></li> <li>A total of 16,206 bulk density determinations have been collected by extensive sampling of diamond drill core in Calais – Henry 5, East Lode North and Calvert areas throughout the orebody and in wallrock adjacent to the mineralisation. All sections of the underground resource are in primary rock, and Bulk Density values are relatively uniform throughout.</li> <li>Bulk Density determinations were completed by Apex staff for every assayed interval since the commencement of Apex's involvement with the project to the end of 2008. In addition, in areas where Apex bulk density determinations are considered too sparse, pre-Apex diamond core has been used for determinations.</li> </ul>
<ul> <li>Mineral Resources into varying confidence categories.</li> <li>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).</li> <li>Mineral Resources into varying boundaries to the resource estimate.</li> <li>Geological continuity and volume models;</li> <li>Drill spacing and available mining information;</li> <li>Modelling technique</li> <li>Estimation properties including search strategy, number of informing composites average distance of composites from blocks, number of drillholes used and kriging quality parameters.</li> <li>The classification for this model was predominantly based on the estimation pass. With the first pass relating to an indicated resource and the second pass being inferred.</li> </ul>		estimates used in the evaluation	
Whether the result appropriately • The classification of the blocks was also visually checked and adjusted to remove any	Classification	<ul> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (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).</li> </ul>	<ul> <li>Geological continuity and volume models;</li> <li>Drill spacing and available mining information;</li> <li>Modelling technique</li> <li>Estimation properties including search strategy, number of informing composites, average distance of composites from blocks, number of drillholes used and kriging quality parameters.</li> <li>The classification for this model was predominantly based on the estimation pass. With the first pass relating to an indicated resource and the second pass being inferred.</li> </ul>

	reflects the Competent Person's view of the deposit.	"spotted dog" effects. No measured resources were calculated.
Audits or reviews	• The results of any audits or reviews of Mineral Resource estimates.	<ul> <li>Audits have been undertaken on the resource estimates completed by Apex Minerals in 2012. No major issues were discovered and recommendations made from those audits have been assessed and included where required in subsequent estimates.</li> <li>No specific review or audit has been under on the updated Golden Age Resource estimate.</li> </ul>
Discussion of relative accuracy/ confidence	<ul> <li>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</li> <li>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li> <li>These statements of relative accuracy and confidence dures where available.</li> </ul>	• This resource estimate is intended an underground and open pit mining assessment and reports global estimates.