

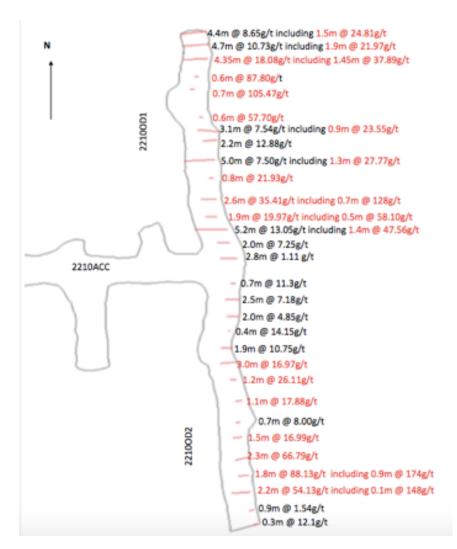
# **High Grades Continue Driving Nicolsons Production**

The board of Pacific Niugini Limited (PNR) is pleased to advise that operations at its 80% owned Nicolsons Gold Mine have progressed well through the initial mine development and plant commissioning phase. A total of 503 ounces of fine gold and 137 ounces of fine silver were shipped to the Perth Mint during September. A further 550 ounces of doré (approx. 75% gold & 20% silver) has been poured during the first week of October.



Ore development in the second (2210 mRL) level progressed well during the month with bonanza gold grades (up to 174 g/t Au over 0.9 m) consistently reporting in both the northern and southern faces.

The first (2220 mRL) level has now been re-established and additional ore development on the level will recommence in the coming weeks. The access point for the third level has now been reached, and the cross-cut will commence in the coming days. Decline ground conditions have also continued to improve with depth.



2210 level showing face by face uncut gold assay grade. Grades exceeding 15 g/t Au are highlighted in red.

Site geologists have now commenced planning for drilling programs from underground positions designed to extend both the resource and the mine life. Infill programs for the Wagtail and Rowdies deposits that currently hold an indicated and inferred resource of 318,000 tonnes @ 4.5 g/t Au for 46,000 ounces Au are currently being planned. The aim of the infill program will be to target a near term open pit development.

Deposit	Tonnes	Grade (g/t)	Gold ounces	
Wagtail/Wagtail North		,		
Indicated	236,000	4.6	35,000	
Inferred	17,000	3.4	2,000	
Total	253,000	4.5	37,000	
Rowdies				
Indicated	52,000	4.4	7,000	
Inferred	13,000	4.7	2,000	
Total	65,000	4.5	9,000	

*Table: Wagtail and Rowdies current resource.* 

Commenting on the results to date, Managing Director Paul Cmrlec said:

"The very high grades that are being encountered by development at Nicolsons are highly encouraging and in many cases have surpassed our expectations. The processing plant is continuing to operate well and revenue from the operation has started to flow. The team is constantly reviewing opportunities for additional ore feed, and we look forward to delivering for our shareholders in the coming months."

#### **Enquiries**

Paul Cmrlec, Managing Director, (08) 9215 6005

#### **Competent Persons Statements**

The information in this report that relates to exploration and mineral resources is based on information compiled by Mr. Ben Pollard (B.Sc. Mineral Exploration and Mining Geology)) MAuslMM who is a consultant to Pacific Niugini Limited. Mr. Pollard has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a competent person as described by the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr. Pollard consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to mineral reserves is based on information compiled by Mr. Paul Cmrlec (B. Eng (Mining) (Hons)), MAusIMM who is the Managing Director of Pacific Niugini Limited. Mr. Cmrlec has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a competent person as described by the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr. Cmrlec consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

## JORC 2012 – Table 1 – Halls Creek

## SECTION 1: SAMPLING TECHNIQUES AND DATA – HALLS CREEK

Criteria	JORC Code explanation	Commentary
Sampling techniques	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.	
	<ul> <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>	All assays in this release are from diamond drill core. Core was sampled in 1m
•		• For RC drilling, measures taken to ensure sample representivity include the presence of a geologist at the rig whilst drilling, cleaning of the splitter at the end of every 3 m drill string, confirmation that drill depths match the accompanying sample interval with the drilling crew and the use of duplicate and lab/blank standards in the drilling programme.
		<ul> <li>For diamond drilling, measures taken include regular survey of drill holes, cutting of core along the orientation line where possible, and half core is submitted to an accredited laboratory. Industry standard blanks and standards are also submitted and reported by the laboratory. Drilling is completed in HQ3.</li> </ul>
Drilling techniques •		• Historical holes - RC and aircore drilling was used to obtain 1 m samples from which 2 - 3 kg was crushed and sub-split to yield 250 for pulverisation and then a 40 g aliquot for fire assay. Upper portions of deeper holes were composited to 3m sample intervals and sub-split to 1 m intervals for further assay if an anomalous composite assay result was returned. For later drilling programmes all intervals were assayed.
		<ul> <li>Current Program – HQ3 core is logged and sampled according to geology, with only selected samples assayed. Core is halved, with one side assayed, and the other half retained in core trays on site for further analysis. Samples are a maximum of 1m, with shorter intervals utilised according to geology.</li> </ul>
	<ul> <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>	hammers with bit size of 140 – 146mm. Historical holes used a 130 mm bit
		HQ 3 Diamond drilling was conducted for geotechnical and assay data. Holes from the current program do not form part of the current resource estimate. Diamond holes were oriented using a Reflex orientation tool. Diamond holes were geologically and geotechnically logged.

Criteria	JORC Code explanation	Commentary
Drill sample recovery  • Method of recording and assessing core and chip sample recoveries and results assessed.	quality were visually observed and recorded. Recovery for older (pre 2011) holes	
	<ul> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> </ul>	• All drilling was completed within rig capabilities. Rigs used auxiliary air boosters
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse	arilling could not provide stillicient benefization an RC grilling set-tip was used
	material.	<ul> <li>There is no known relationship between recovery and grade. Diamond drilling of oxide and transitional material in previous campaigns noted high core loss in mineralised zones. No core loss was noted in fresh material. Good core recovery has generally been achieved in all sample types in the current drilling program.</li> </ul>
Logging	<ul> <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> </ul>	weathering, oxidation, lithology, texture, colour, alteration style, alteration intensity, alteration mineralogy, sulphide content and composition, quartz
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel,	
	<ul> <li>etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>Geotechnical logging of diamond holes included the recording of recovery, RQD, structure type, dip, dip direction, alpha and beta angles, shape, roughness and fill material of fractures</li> </ul>
		All drill chips were logged on 1 m increments, the minimum sample size. A subset of all chip samples is kept on site for reference.
		• Diamond drilling was logged to geological boundaries and is considered quantitative. Core was photographed.
		All drilling has been logged apart from diamond drill pre-collars.

Criteria	JORG	C Code explanation	Co	mmentary
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</li> </ul>	•	Core samples were saw in half with one half used for assaying and the other half retained in core trays on site for future analysis.	
		wet or dry.  For all sample types, the nature, quality and appropriateness of the sample preparation technique.	•	RC drill chip samples were collected with either a three-tier, rotary or stationary cone splitter depending on the drill rig used. Aircore drill samples were subset using a 3 tier riffle splitter. Most (> 95%) of samples are recorded as being dry.
	•	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	•	All RC and aircore sample splitting was to $12.5\%$ of original sample size or $2-3$ kg, typical of standard industry practice. Samples greater than 3 kg were split on site before submission to the laboratory.
		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.	•	For core samples, core was separated into sample intervals and separately bagged for analysis at the certified laboratory.
		Whether sample sizes are appropriate to the grain size of the material being sampled.	•	The cyclone and splitter were cleaned every rod string and more frequently when requested by the geologist. In the case of spear sampling for re-splitting purposes, several spears through the entirety of the drill spoil bag were taken in a systematic manner to minimise bias.
			•	Core was cut under the supervision of an experienced geologist, was routinely cut on the orientation line.
			•	Duplicate samples were taken every 20 m from a second cut of the splitter in the case of a cone splitter, or from a reject split in the case of a riffle splitter. Certified standards were inserted into the sample batch at a rate of 1 in 20 throughout all drilling programmes.
			•	Gold at Hall's Creek is fine- to medium-grained and a sample size of 2 – 3 kg is considered appropriate.
			•	Half core is considered appropriate for diamond drill samples.
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</li> </ul>	•	The Bureau Veritas lab in Perth has ISO-9001 and ISO14001 certification. Gold assays are determined using fire assay with 40g charge and AAS finish. Other elements were assayed using acid digest with ICP-MS finish. The methods used approach total mineral consumption and are typical of industry standard practice.	
	model, reading times, calibrations factors applied and their derivation, etc.  Nature of quality control procedures adopted (eg standards, blanks, duplicates,	•	No geophysical logging of drilling was performed. This is not relevant to the style of mineralisation under exploration.	
		external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	•	Lab standards, blanks and repeats are included as part of the QAQC system. In addition the laboratory had its own internal QAQC comprising standards, blanks and duplicates. Sample preparation checks of pulverising at the laboratory include tests to check that the standards of 90% passing 75 micron is being achieved. Follow-up re-assaying is performed by the laboratory upon company request following review of assay data. Acceptable bias and precision is noted in results given the nature of the deposit and the level of classification. Early drilling shows a pronounced negative bias with several of the external certified standards.

Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> </ul>	by company personnel. Some significant intersections have been resampled and assayed to validate results. Diamond drilling confirms the width of the mineralised intersections.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	The current drill program includes holes testing the current resource and twinning existing RC holes as shown on announcement sections.
	Discuss any adjustment to assay data.	<ul> <li>All primary data is logged on paper and later entered into the database. Data is visually checked for errors before being sent to an external database manager for further validation and uploaded into an offsite database. Hard copies of original drill logs are kept both onsite and in the Perth office.</li> </ul>
		No adjustments have been made to assay data.
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> </ul>	conducted during drilling using single shot cameras at 10 m then every 30 m thereafter. Later drilling was downhole surveyed using a Reflex survey tool.
	Specification of the grid system used.  Outlity and adaptive system assemble southers.	Mine workings (open pits) were surveyed by external surveyors using RTK survey equipment. A subset of historical holes was surveyed to validate collar coordinates.
	Quality and adequacy of topographic control.	
		The project lies in MGA 94, zone 52. Local coordinates are derived by conversion:
		GDA94_EAST =NIC_EAST * 0.9983364 + NIC_NORTH * 0.05607807 + 315269.176
		GDA94_NORTH = NIC_EAST * (-0.05607807) + NIC_NORTH * 0.9983364 + 7944798.421
		GDA94_RL =NIC-RL + 101.799
		Topographic control uses DGPS collar pickups and external survey RTK data and is considered adequate for use.
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>	
	Whether sample compositing has been applied.	The Competent Person is of the view that the drill spacing, geological interpretation and grade continuity of the data supports the resource categories assigned.
		Sample compositing to 3m occurred in holes above predicted mineralised zones.     Composite samples were re-assayed in their 1 m increments if initial assay results were anomalous.

Criteria	JORC Code explanation	Commentary
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>	strike north-south on the local grid and dip at 60oE. No bias of sampling is believed to exist through the drilling orientation.
Sample security	The measures taken to ensure sample security.	The chain of custody is managed by Pacific Niugini employees and consultants.     Samples are stored on site and delivered in bulk bags to the lab in Perth. Samples are tracked during shipping.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	A review of the resource was carried out by an independent consultancy firm when the project was acquired from Bulletin. No significant issues were noted.

### SECTION 2: REPORTING OF EXPLORATION RESULTS – HALLS CREEK

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul> <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</li> </ul>	• Tenements containing Resources and Reserves are 80% held by Pacific Niugini subsidiary company Halls Creek Mining Pty Ltd. They are: M80/343, M80/355, M80/359, M80/503 and M80/471. M80/362 Tenement transfers to HCM are yet to occur as stamp duty assessments have not been completed by the office of state revenue., The tenements lie on a pastoral lease with access and mining
	impediments to obtaining a licence to operate in the area.	<ul> <li>agreements and predate native title claims.</li> <li>The tenements are in good standing and no known impediments exist.</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	The deposits were discovered by prospectors in the early 1990s. After an 8,500 m RC program, Precious Metals Australia mined 23 koz at an estimated 7.7g/t Au from Nicolson's Pit in 1995/96 before ceasing the operation. Rewah mined the Wagtail and Rowdy pits (5 koz at 2.7g/t Au) in 2002/3 before Terra Gold Mines (TGM) acquired the project, carried out 12,000 m of RC drilling and produced a 100 koz resource estimate. GBS Gold acquired TGM and drilled 4,000 m before being placed in administration. Review of available reports show work to follow acceptable to standard industry practices.

Criteria	JORC Code explanation	Commentary
Geology	Deposit type, geological setting and style of mineralisation.	Gold mineralisation in the Nicolson's Find area is structurally controlled within the 400 m wide NNE trending dextral strike slip Nicolson's Find Shear Zone (NFSZ) and is hosted within folded and metamorphosed turbiditic greywackes, felsic volcaniclastics, mafic volcanics and laminated siltstones and mudstones. This zone forms part of a regional NE-trending strike slip fault system developed across the Halls Creek Orogen (HCO).
		The NFSZ comprises a NNE-trending anastomosing system of brittle-ductile shears, characterised by a predominantly dextral sense of movement. The principal shear structures trend NNE to N-S and are linked by NW, and to a lesser extent, by NE shears. Individual shears extend up to 500m along strike and overprint the earlier folding and penetrative cleavage of the HCO.
		<ul> <li>The overall geometry of the system is characterized by right step-overs and bends/jogs in the shear traces, reflecting refraction of the shears about the granite contact. Within this system, the NW-striking shears are interpreted as compressional structures and the NE-striking shears formed within extensional windows.</li> </ul>
		<ul> <li>Mineralisation is primarily focussed along NNE trending anastomosing systems of NNE-SSW, NW-SE and NE-SW oriented shears and splays. The NNE shears dip moderately to the east, while the NW set dips moderately to steeply to the NE. Both sets display variations in dip, with flattening and steepening which result in a complex pattern of shear intersections</li> </ul>
		<ul> <li>Mineralisation is strongly correlated with discontinuous quartz veining and with Fe-Si-K alteration halos developed in the wall rocks to the veins. The NE shears are associated with broad zones of silicification and thicker quartz veining (typically white, massive quartz with less fracturing and brecciation); however, these are typically poorly mineralized. The NW-trending shears are mineralized, with the lodes most likely related to high fluid pressures with over-pressuring and failure leading to vein formation. Although the NE structures formed within the same shear system, the quartz veining is of a different generation to the mineralized veins.</li> </ul>
		Individual shears within the system display an increase in strain towards their centres and comprise an anastomosing shear fabric reminiscent of the pattern on a larger scale.

Criteria	JORC Code explanation	Commentary
Drill hole Information	<ul> <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:</li> <li>» easting and northing of the drill hole collar</li> </ul>	<ul> <li>23/9/2014 and 9/10/2014.</li> <li>Drillholes used in the Nicolson's Resource estimate included 242 RC and 20 RAB holes for a total of 1,338m within the resource wireframes. Rowdies drilling</li> </ul>
	» elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar	m of intersection with the resource wireframes. Wagtail South comprised 23 RC
	» dip and azimuth of the hole	and 20 AC holes for 203 m of intersection within the resource wireframes.
	» down hole length and interception depth	
	» hole length.	
	<ul> <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>	
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> </ul>	mineralisation wireframes which form the basis of the resource. Intercepts are composited from 1 m sample increments and no weighting other than length
	<ul> <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>	downhole length above 200 mRL and a nominal 1.0g/t Au with a 1 m minimum downhole length below 200 mRL. Top cuts for Nicolson's lodes were 40 g/t and 45g/t Au for different domains dependent upon the lode grade distribution. Rowdies, Wagtail North and Wagtail South had top cuts of 20g/t, 45g/t and 50g/t
		<ul> <li>All sample intervals within the interpreted wireframe shells were used in the grade estimation.</li> </ul>
		No metal equivalent values are used.
Relationship between mineralisation widths and	These relationships are particularly important in the reporting of Exploration Results.	strike 0o to the local grid and dip at 60oE (i.e. having a 60o intersection angle to
intercept lengths	• If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	increases the intersection angle, but not to a significant extent.
	• 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').	<ul> <li>Downhole lengths are reported and true widths are approximately 60 – 90% of down-hole length.</li> </ul>
Diagrams	<ul> <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>	dated 16/9/2014, 23/9/2014 and 9/10/2014.
Balanced reporting	<ul> <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>	

Criteria	JORC Code explanation	Commentary
Other substantive exploration data	• Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	systems with low yields and able to be controlled with air pressure while drilling.  Metallurgical and geotechnical work studies have been completed as part of
Further work	<ul> <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>	at levels in line with local grade estimates.

### SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES – HALLS CREEK

Criteria	JORC Code explanation	Commentary
Database integrity	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.	Data input has been governed by lookup tables and programmed import of assay data from lab into database. The database has been checked against the original assay certificates and survey records for completeness and accuracy.
	Data validation procedures used.	Data was validated by the geologist after input. Data validation checks were carried out by an external database manager in liaison with Bulletin personnel. The database was further validated by external resource consultants prior to resource modelling. An extensive review of the data base was undertaken when Pacific Niugini acquired the project.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The Competent Person has visited the site and has a good appreciation of the mineralisation styles comprising the Mineral Resource.
	If no site visits have been undertaken indicate why this is the case.	
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	Confidence in the geological interpretation is generally proportional to the drill density. Surface mapping confirms some of the orientation data for the main mineralised structures.
	Nature of the data used and of any assumptions made.	
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	• Data used for the geological interpretation includes surface and trench mapping and drill logging data.
	The use of geology in guiding and controlling Mineral Resource estimation.	• An alternative interpretation (steeper lodes) of deeper portions of the deposit
	The factors affecting continuity both of grade and geology.	was modelled and provides no material change to the resource estimate. In general the interpretation of the mineralised structures is clear.
		Geological interpretation of the data was used as a basis for the lodes which were then constrained by cut-off grades.
		Geology and grade continuity is constrained by quartz veining within the NFSZ and by parallel structures for the other prospects.
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.	• Full results from the drilling program are set out in ASX reports dated 16/9/2014, 23/9/2014 and 9/10/2014.

Criteria	JORC Code explanation	Commentary
Estimation and modelling techniques	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.	ng, and South. Individual mineralised structures were domained separately. Model contain grade estimates and attributes for blocks within each domain only.
	of computer software and parameters used.	<ul> <li>Ordinary Kriging (OK) using Surpac software was used to generate the resource estimates. Variography of gold grades from drilling data provides a maximum</li> </ul>
	<ul> <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> </ul>	unt 5 m across plunge for Nicolson's Find; 90 m down plunge, 55 m perpendicula to plunge and 5 m across plunge for Nicolson's South and 20.5m down plunge
	The assumptions made regarding recovery of by-products.	14.5 m perpendicular to plunge and 12, across plane for Wagtail South. Rowdie and Wagtail North have a strike-dip control on mineralisation. Rowdies grad
	• Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	continuity was 60 m down-dip, 50 m along strike and 4 m across the plane Wagtail North parameters were 50 m along strike, 30 m down-dip and 4 m acros
	• In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	A number of resource estimates by consultants, Optiro have been generated with
	Any assumptions behind modelling of selective mining units.	previous resource estimates reconciled to later upgrades. Reconciliation of th Nicolson's open pit resource model with mine records provides a difference of
	Any assumptions about correlation between variables.	-6% in tonnes, +15% in grade and +9% in gold metal compared to the resource model; however, the open pit area is only a small proportion of the current
	Description of how the geological interpretation was used to control the resource estimates.	resource extents. Production figures from Rowdies and Wagtails are low in confidence and have not reconciled to the resource model.
	Discussion of basis for using or not using grade cutting or capping.	By products are not included in the resource estimate.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	<ul> <li>No deleterious elements have been estimated. Arsenic is known to be present however metallurgical test work suggests that it does not adversely affect metallurgical recovery.</li> </ul>
		• Models were interpolated with a block model cell size of 10 mN x 5 mE x 5 mRI with sub-celling for volume representation only to 0.3 m. Estimation used 4 passes at Nicolson's and 3 passes elsewhere. At Nicolson's Find, the 1st pass used a search radius of 50 m with a minimum of 8 and maximum of 32 samples Nicolson's South estimation used a 90m radius for the 1st pass with a minimum of 4 and maximum of 12 samples. The search radius was increased by 1.5 for second pass and the minimum number of samples was decreased to 4 for the 3rd pass. The search radius was increased by a factor of 3 and the minimum number of samples decreased to 1 for the 4th pass at Nicolson's.

Criteria	JORC Code explanation	Co	mmentary
Estimation and modelling techniques (continued)		•	The size of the blocks was determined by Kriging Neighbourhood Analysis in conjunction with the assumption of a relatively selective mining approach for both open pit and underground operations.
		•	Only gold has been estimated.
		•	Geological interpretation constrained initial resource wireframes; these were oriented along trends of grade continuity and were constrained further by cutoff grades.
		•	Grade distribution statistics were used to generate top cuts, along with the analysis of distribution graphs and disintegration analysis.
		•	Models were validated visually and by statistical comparison to input data both on a whole-of-domain and on a sectional basis using continuity or swathe plots.
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content	•	Tonnage was estimated on a dry basis.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied	•	Cut-off grades for reporting were based on notional mining cut-off grades for open pit (0.6 g/t Au) and underground operations (3 g/t Au).
Mining factors or assumptions	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.	5	An optimised pit shell was used to constrain material described as open pit with material outside this shell assigned to a potential underground operation.
			The minimum downhole intersection width of 2m for material above 200m and 1 m below 200m is considered to represent minimum mining widths for selective open pit and underground operations respectively.
Metallurgical factors or assumptions	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.		Metallurgical testwork has shown acceptable (> 95%) gold recovery using CIP technology. No factors from the metallurgy have been applied to the estimates.
Environmental factors or assumptions	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 beer considered this should be reported with an explanation of the environmental assumptions made.	5 5 1 7	The deposits are on granted mining leases with existing mining disturbance and infrastructure present.

Criteria	JORC Code explanation	Commentary
Bulk density	<ul> <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> </ul>	
	<ul> <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> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	Oxide All: 2.0 t/m3
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 (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	<ul> <li>and supported by drill spacing of less than 30 m by 30 m with at least 2 intercepts in the quartz lode. Inferred material is defined where lodes are supported by less than 3 holes and drill spacing was greater than 30m x 30m.</li> <li>Input data is considered sufficiently comprehensive for the level of confidence assigned to the resource estimate by the Competent Person.</li> </ul>
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates	An audit of the estimate was carried out by an independent consultant. No significant issues were noted.
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 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> <li>The relative accuracy of the Mineral resource estimate is reflected in the reporting of the Mineral Resource as per the guidelines of the 2012 JORC Code.</li> <li>The statement reflects local estimates at the block size.</li> <li>The resource model produced a 9% oz Au undercall against recorded production for the Nicolsons Find pit. This amount is considered to be within acceptable limits for the classification of the resource. Moreover, the open pit mining represents a small fraction of the existing resource area.</li> </ul>