

16<sup>th</sup> September 2014

## High grade gold from Nicolson's diamond drilling

### Highlights:

The first diamond drill hole completed by Pacific Niugini at Nicolson's has returned an outstanding intercept of:

***NRCD14005 - 3.0m @ 20.43g/t from 106m, including 1.6m @ 34g/t from 107.4m***

This intercept confirms the ore body interpretation with assay results revealing grades double the existing resource block model predicted grade in the location of the hole. The intercept further highlights the potential to improve grade estimates from historic RC drilling in the known ore system.

### Background:

Pacific Niugini is progressing with required activities to re-commence mining and ore processing at the high-grade Nicolson's Project near Halls Creek in Western Australia.

The reviews undertaken by Pacific Niugini have defined a number of opportunities to improve the quality and quantity of previously defined resources at the project and have commenced an initial 11 hole, 2,500m diamond drilling program to confirm this thinking.

The drilling program has three primary objectives being:

- Resource expansion in the highly prospective northern resource area;
- Confirmation of resource grades and widths in immediate mining focus areas, including the twinning of existing RC drill hole results; and
- Provision of additional mining information, including geotechnical data collection to aid with re-commencement planning and mining cost evaluation.

The drilling program at Halls Creek has progressed as planned, with 7 holes from the initial 11 hole program completed to date. Assays have now been returned for a portion of hole NRCD14005, confirming very high grade mineralisation in within the defined ore zone:

***3.0m @ 20.43g/t from 106m, including 1.6m @ 34g/t from 107.4m***

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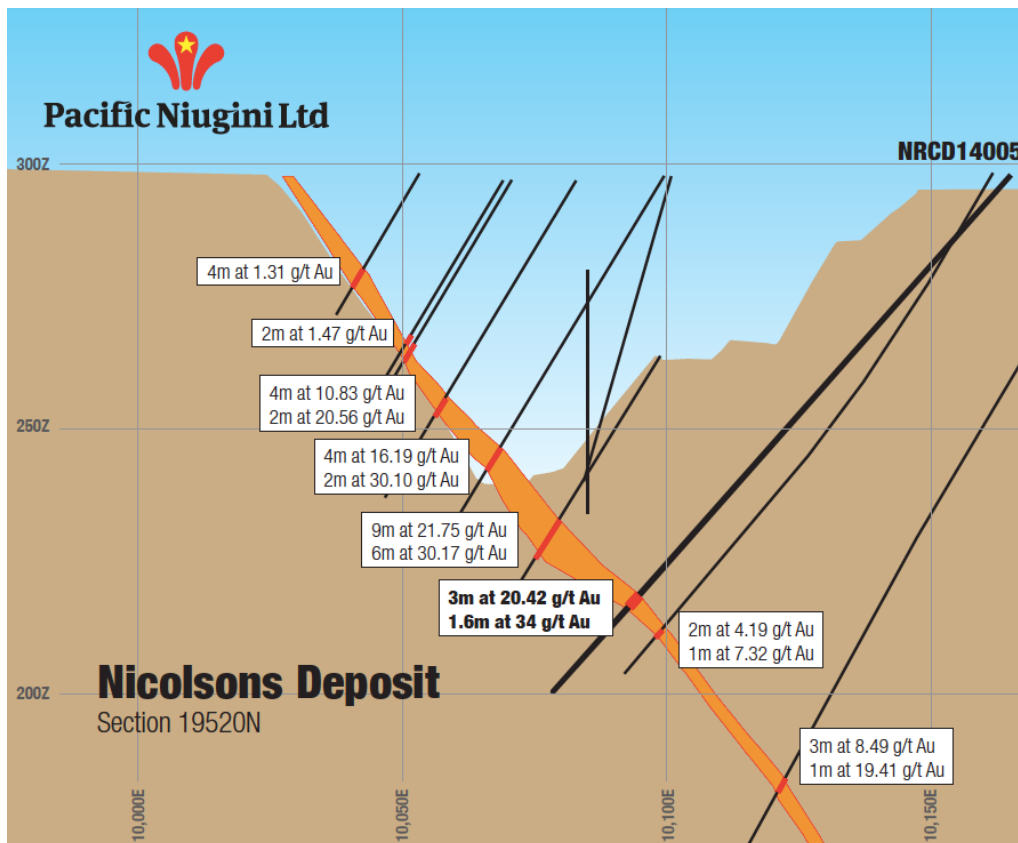
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Interpreted ore section at 19520N showing historical RC results and current diamond drilling result from NRCD14005

Hole NRCD14005 was designed to infill the resource between a high and a dubiously lower grade RC drilling intercept. Assay returns have confirmed continuity of the higher grade mineralization with grades significantly above that in the RC drilling.

Managing Director, Paul Cmrlec said *"This is a pleasing result from our first hole, and it has confirmed our view that some of the RC drilling may be downgrading the ore system, and that a mine plan well above the global resource grade may be possible. These are the first of many results to come and we remain confident of restarting the operation. Nearly all the plant and equipment is in place and a simple mine restart is envisaged."*

PNR has continued to advance budgets and works schedules for the recommencement of the operation, and is contemplating an operation producing 100,000 to 150,000 tonnes per annum at a grade of 6 to 8 grams per tonne for production of 20,000 to 30,000 ounces per annum.

As previously advised, PNR submitted a Mining Proposal to the DMP for re-commencement of the operations during the first week of August 2014. The company continues to await feed back from the department, and understands that the proposal is currently being assessed by external agencies.

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## **Project Ownership:**

Pacific Niugini Limited (PNR) is currently the 49% owner, and sole manager of the Halls Creek Project following acquisition from Bulletin Resources (ASX:BNR). BNR is currently the 51% owner of the project. PNR is increasing its ownership of the project to 80% through expenditure on the project (refer June 2014 quarterly report for details).

Pacific Niugini expects to meet its first stage \$1.2 million expenditure around December 2014, at which time its ownership in the project will increase to 65%.

Ends

**Enquiries – Paul Cmrlec, Managing Director, (08) 9215 6005**

Details of all assay results from the current drilling program are detailed below.

**Hole Name:** NRCD14005

**Hole Collar Coordinates:** 7963716N, 326504E (AGD)

**Hole Azimuth:** 270°

**Hole Dip:** -48°

Interval lengths are approximately true width based on current resource interpretation.

Sample ID	Depth (from)	Depth (to)	Interval Length	Au (g/t)	Ag (g/t)
B035901	47.6	48.6	1	0	0.4
B035902	48.6	49.55	0.95	0	0.2
B035903	49.55	50.55	1	0.03	0.6
B035904	50.55	50.9	0.35	0.04	1.2
B035905	50.9	51.9	1	0	0.2
B035906	51.9	52.55	0.65	0.02	0.2
B035907	52.55	53.55	1	0	0
B035908	53.55	54	0.45	0	0
B035909	101	102	1	0.03	0
B035910	102	102.8	0.8	0	0
B035911	102.8	103	0.2	0	0
B035912	103	104	1	0	0
B035913	104	105	1	0	0
B035914	105	106	1	0	0
B035915	106	107	1	4.6	2.4
B035916	107	107.4	0.4	5.7	1.1
B035917	107.4	107.8	0.4	10.9	6.4
B035918	107.8	108.2	0.4	17.1	5.1
B035919	108.2	109	0.8	54	14
B035920	109	109.8	0.8	0.23	0.9
B035923	109.8	110.3	0.5	0.04	0.6
B035924	110.3	110.8	0.5	0.03	0.6
B035925	110.8	111.6	0.8	0.15	0.2
B035926	111.6	112.4	0.8	0.05	0

The information in this report that relates to exploration, mineral resources or ore reserves is based on information compiled by Mr. Peter Cook (B.Sc. Geol) ) MAusIMM (111072) who is the non-executive chairman of Pacific Niugini Limited. Mr. Cook 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. Cook consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

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## JORC 2012 Table 1 declaration

### Section 1: Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<i>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.</i>	<p>The Nicolson's deposit has been sampled predominantly by RC and minor historical RAB about the Nicolson's open pit area. The Wagtails and Rowdies deposits were sampled mainly by RC with follow-up aircore. Holes were sampled on 1 m increments, or 3 m increments above the known mineralisation. Anomalous intercepts from the 3 m increments were re-split into 3 1 m increments.</p> <p>Samples from the current drill program are RC collars with diamond drill tails. All assays in this release are from diamond drill core. Core was sampled in 1m intervals, or in accordance with observed geology for shorter runs.</p>
	<i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i>	<p>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.</p> <p>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.</p>
	<i>Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.</i>	<p>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.</p> <p>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.</p>
Drilling techniques	<i>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.</i>	<p>RC drilling was completed with several rigs. All RC rigs used face sampling hammers with bit size of 140 – 146mm. Historical holes used a 130 mm bit size). Aircore drilling was completed by the RC rig with an aircore bit assembly. RAB drilling (20 holes only in the Nicolson's pit area) is historical and details are unknown.</p> <p>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.</p>
Drill sample recovery	<i>Method of recording and assessing core and chip sample recoveries and results assessed.</i>	All holes were logged at site by an experienced geologist. Recovery and sample quality were visually observed and recorded. Recovery for older (pre 2011) holes is unknown.
	<i>Measures taken to maximise sample recovery and ensure representative nature of the samples</i>	All drilling was completed within rig capabilities. Rigs used auxiliary air boosters when appropriate to maintain sample

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Criteria	JORC Code explanation	Commentary
		quality and representivity. Where aircore drilling could not provide sufficient penetration an RC drilling set-up was used.
	<i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i>	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.
Logging	<i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i>	Geological logging parameters include: depth from, depth to, condition, weathering, oxidation, lithology, texture, colour, alteration style, alteration intensity, alteration mineralogy, sulphide content and composition, quartz content, veining, and general comments. 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
	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</i>	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 quantatative. Core was photographed.
	<i>The total length and percentage of the relevant intersections logged.</i>	All drilling has been logged apart from diamond drill pre-collars.
Sub-sampling techniques and sample preparation	<i>If core, whether cut or sawn and whether quarter, half or all core taken.</i>	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.
	<i>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</i>	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.
	<i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i>	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. For core samples, core was separated into sample intervals and separately bagged for analysis at the certified laboratory.
	<i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i>	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.
	<i>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.</i>	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.
	<i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i>	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	<i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i>	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.

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	<i>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.</i>	No geophysical logging of drilling was performed. This is not relevant to the style of mineralisation under exploration.
	<i>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established</i>	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.
<i>Verification of sampling and assaying</i>	<i>The verification of significant intersections by either independent or alternative company personnel.</i>	Significant intersections are noted in logging and checked with assay results by company personnel. Some significant intersections have been resampled and assayed to validate results. Diamond drilling confirms the width of the mineralised intersections.
	<i>The use of twinned holes.</i>	The current drill program includes holes testing the current resource and twinning existing RC holes as shown on announcement sections.
	<i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i>	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.
	<i>Discuss any adjustment to assay data.</i>	No adjustments have been made to assay data.
<i>Location of data points</i>	<i>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i>	Drilling is surveyed using DGPS with accuracy of $\pm 0.3\text{m}$ . Downhole surveys are 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. Mine workings (open pits) were surveyed by external surveyors using RTK survey equipment. A subset of historical holes was surveyed to validate collar coordinates.
	<i>Specification of the grid system used.</i>	The project lies in MGA 94, zone 52. Local coordinates are derived by conversion: $\text{GDA94\_EAST} = \text{NIC\_EAST} * 0.9983364 + \text{NIC\_NORTH} * 0.05607807 + 315269.176$ $\text{GDA94\_NORTH} = \text{NIC\_EAST} * (-0.05607807) + \text{NIC\_NORTH} * 0.9983364 + 7944798.421$ $\text{GDA94\_RL} = \text{NIC\_RL} + 101.799$
	<i>Quality and adequacy of topographic control.</i>	Topographic control uses DGPS collar pickups and external survey RTK data and is considered adequate for use.
<i>Data spacing and distribution</i>	<i>Data spacing for reporting of Exploration Results.</i>	Drill hole spacing at Nicolson's is generally between 10 m by 10 m and 30 m x 30 m in the upper areas of the deposits and extends to 50 m x 50 m at depths greater than 200 m. The drill spacing at Wagtail and Rowdies is generally 20 m x 20 m with some areas of 10 m x 20 m infill.
	<i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i>	The Competent Person is of the view that the drill spacing, geological interpretation and grade continuity of the data supports the resource categories assigned.
	<i>Whether sample compositing has been applied.</i>	Sample compositing to 3 m occurred in holes above predicted mineralised zones. Composite samples were re-assayed in their 1 m increments if initial assay results were anomalous.

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Criteria	JORC Code explanation	Commentary
<i>Orientation of data in relation to geological structure</i>	<i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i>	Drilling is predominantly at 270° to local grid at a dip of - 60°. Local structures strike north-south on the local grid and dip at 60°E. No bias of sampling is believed to exist through the drilling orientation.
<i>Sample security</i>	<i>The measures taken to ensure sample security</i>	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.
<i>Audits or reviews</i>	<i>The results of any audits or reviews of sampling techniques and data</i>	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

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<i>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</i>	Tenements containing Resources and Reserves are 49% held by Pacific Niugini subsidiary company Halls Creek Mining. 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 agreements and predate native title claims.
	<i>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area</i>	The tenements are in good standing and no known impediments exist.
<i>Exploration done by other parties</i>	<i>Acknowledgment and appraisal of exploration by other parties.</i>	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.
<i>Geology</i>	<i>Deposit type, geological setting and style of mineralisation</i>	Gold mineralization 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 volcanics, 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. 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-

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		<p>striking shears formed within extensional windows. Mineralization 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..</p> <p>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.</p> <p>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.</p> <p>(Adapted from Robertson(2003))</p>
Drill hole Information	<p>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:</p> <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> <p>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.</p>	<p>Table 1 and Figures 1 - 3 summarise all drilling used in the resource estimation.</p> <p>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 included 36 RC and 2 aircore holes (AC) for a total of 241 m of intersection within the resource wireframes. Wagtail North comprised 84 RC and 6 AC holes for 553 m of intersection with the resource wireframes. Wagtail South comprised 23 RC and 20 AC holes for 203 m of intersection within the resource wireframes.</p>
Data aggregation methods	<p>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</p> <p>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.</p> <p>The assumptions used for any reporting of metal equivalent values should be clearly stated.</p>	<p>Drill results as reported are composited intersections within the interpreted mineralisation wireframes which form the basis of the resource. Intercepts are composited from 1 m sample increments and no weighting other than length is applied. The Lower cut-off grade is a nominal 0.5g/t Au with a minimum 2m 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 Au respectively.</p> <p>All sample intervals within the interpreted wireframe shells were used in the grade estimation.</p> <p>No metal equivalent values are used.</p>

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<i>Relationship between mineralisation widths and intercept lengths</i>	<p><i>These relationships are particularly important in the reporting of Exploration Results.</i></p> <p><i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></p> <p><i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</i></p>	<p>Drilling is predominantly at 270° to local grid at a dip of - 60°. Local structures strike 0° to the local grid and dip at 60°E (i.e. having a 60° intersection angle to lode structures). Deeper holes have some drillhole deviation which decreases or increases the intersection angle, but not to a significant extent.</p> <p>Downhole lengths are reported and true widths are approximately 60 – 90% of down-hole length.</p>
<i>Diagrams</i>	<i>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.</i>	Refer figures and table in this release.
<i>Balanced reporting</i>	<i>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.</i>	All drillhole intercepts currently available from the current program are included in the release. Historical intercepts are included in previous resource reports released to the ASX.
<i>Other substantive exploration data</i>	<i>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.</i>	Groundwater is largely confined to fault structures, typical of fracture rock 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 feasibility studies in support of ore reserves with no significant issues noted. No significant deleterious substances have been noted.
<i>Further work</i>	<p><i>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></p> <p><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></p>	Further drilling is underway at Nicolsons. Studies relating to re-starting production activities at the mine are underway..

### Section 3: Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
<i>Database integrity</i>	<i>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</i>	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.
	<i>Data validation procedures used.</i>	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.
<i>Site visits</i>	<p><i>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</i></p> <p><i>If no site visits have been undertaken indicate why this is the case.</i></p>	The Competent Person has not been to site. He is highly experienced in the mineralisation style, and has had independent geologists from Optiro visit the site, along with highly experienced consulting geologists.*
<i>Geological interpretation</i>	<i>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</i>	Confidence in the geological interpretation is generally proportional to the drill density. Surface mapping confirms some of the orientation data for the main

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Criteria	JORC Code explanation	Commentary
		mineralised structures.
	<i>Nature of the data used and of any assumptions made.</i>	Data used for the geological interpretation includes surface and trench mapping and drill logging data.
	<i>The effect, if any, of alternative interpretations on Mineral Resource estimation.</i>	An alternative interpretation (steeper lodes) of deeper portions of the deposit was modelled and provides no material change to the resource estimate. In general the interpretation of the mineralised structures is clear.
	<i>The use of geology in guiding and controlling Mineral Resource estimation.</i>	Geological interpretation of the data was used as a basis for the lodes which were then constrained by cut-off grades.
	<i>The factors affecting continuity both of grade and geology.</i>	Geology and grade continuity is constrained by quartz veining within the NFSZ and by parallel structures for the other prospects.
<i>Dimensions</i>	<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>	Refer to Figures 1 - 3
<i>Estimation and modelling techniques</i>	<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>	Separate block models were generated for Nicolson's, Rowdies and Wagtail North and South. Individual mineralised structures were domained separately. Models contain grade estimates and attributes for blocks within each domain only. Ordinary Kriging (OK) using Surpac software was used to generate the resource estimates. Variography of gold grades from drilling data provides a maximum grade continuity of 50 m down plane plunge, 20 m perpendicular to plunge and 5 m across plunge for Nicolson's Find; 90 m down plunge, 55 m perpendicular to plunge and 5 m across plunge for Nicolson's South and 20.5m down plunge, 14.5 m perpendicular to plunge and 12, across plane for Wagtail South. Rowdies and Wagtail North have a strike-dip control on mineralisation. Rowdies grade 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 across the plane.
	<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>	A number of resource estimates by consultants, Optiro have been generated with previous resource estimates reconciled to later upgrades. Reconciliation of the Nicolson's open pit resource model with mine records provides a difference of -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 resource extents. Production figures from Rowdies and Wagtails are low in confidence and have not reconciled to the resource model.
	<i>The assumptions made regarding recovery of by-products.</i>	By products are not included in the resource estimate.
	<i>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</i>	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.
	<i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i>	Models were interpolated with a block model cell size of 10 mN x 5 mE x 5 mRL, 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 1 <sup>st</sup> 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 1 <sup>st</sup> 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 3 <sup>rd</sup> pass. The search radius was increased by a factor of 3 and the

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		minimum number of samples decreased to 1 for the 4 <sup>th</sup> pass at Nicolson's.
	<i>Any assumptions behind modelling of selective mining units.</i>	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.
	<i>Any assumptions about correlation between variables.</i>	Only gold has been estimated.
	<i>Description of how the geological interpretation was used to control the resource estimates.</i>	Geological interpretation constrained initial resource wireframes; these were oriented along trends of grade continuity and were constrained further by cut-off grades.
	<i>Discussion of basis for using or not using grade cutting or capping.</i>	Grade distribution statistics were used to generate top cuts, along with the analysis of distribution graphs and disintegration analysis.
	<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>	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	<i>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content</i>	Tonnage was estimated on a dry basis.
Cut-off parameters	<i>The basis of the adopted cut-off grade(s) or quality parameters applied</i>	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	<i>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.</i>	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	<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>	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	<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>	The deposits are on granted mining leases with existing mining disturbance and infrastructure present.
Bulk density	<i>Whether assumed or determined. If assumed, the</i>	Bulk density measurements of ore were calculated from

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	<p><i>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></p> <p><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></p> <p><i>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</i></p>	<p>drill core using the water displacement method and data from historical mining. Pit data provided 29 samples and drilling provided 91 samples.</p> <p>Bulk density estimates used were: Oxide All: 2.0 t/m<sup>3</sup> Transitional All: 2.4t/m<sup>3</sup> Fresh Rowdies and Wagtails: 2.7t/m<sup>3</sup> Fresh Nicolson's: 2.9t/m<sup>3</sup></p>
Classification	<i>The basis for the classification of the Mineral Resources into varying confidence categories.</i>	Indicated material is defined where geology and grade continuity was evident 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.
	<i>Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</i>	Input data is considered sufficiently comprehensive for the level of confidence assigned to the resource estimate by the Competent Person.
	<i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i>	The estimate appropriately reflects the view of the Competent Person.
Audits or reviews	<i>The results of any audits or reviews of Mineral Resource estimates</i>	An audit of the estimate was carried out by an independent consultant. No significant issues were noted.
Discussion of relative accuracy/ confidence	<i>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</i>	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.
	<i>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</i>	The statement reflects local estimates at the block size.
	<i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i>	The resource model produced a 9% oz Au undercall against recorded production for the Nicolson's 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.

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