

JORC Code, 2012 Edition – Table 1 Report of Exploration Results for Macraes Operations

Section 1 Sampling Techniques and Data

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. - Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. - Aspects of the determination of mineralisation that are Material to the Public Report.	- Reverse Circulation (RC) drill hole samples comprise 95% of the drilling at Macraes. The remaining 5% are from sampled diamond core. - The RC sampling, logging and assay protocol has been in place since 1994. - Reverse circulation drill holes are sampled on 1 metre intervals from which 2kg to 4kg sub-samples are riffle split. - The 2kg to 4kg was pulverised to produce a 50g charge and assayed for Au by fire assay at the SGS (NZ) Ltd Macraes site laboratory. - A certified reference sample (CRM) is inserted every 20th sample - Representative RC drill chips for each 1 metre are collected and placed in plastic chip trays which are stored onsite at the Macraes Gold Project (MGP) for future reference. - Assay pulps are recovered from SGS (NZ) and stored onsite at MGP for future reference. - Diamond drill core is photographed, logged, sawn to half core and sampled by OceanaGold personnel at the onsite core shed. - Sample lengths are generally 1 metre lengths, or less, as dictated by lithological contacts. - Fire assay for Au is undertaken at SGS (NZ) Ltd MGP site laboratory. - A certified reference sample (CRM) is inserted every 20th sample. - The remaining half cut core and assay pulps are stored onsite at MGP for future reference.
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).	- The RC drill holes were obtained by using a reverse circulation drill rig with a 135mm face sampling hammer. - The diamond drill core was obtained generally using triple tube HQ diameter drilling, however, on occasions due to poor ground conditions was reduced to NQ.

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<i>Drill sample recovery</i>	• <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i> • <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i> • <i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i>	• The reverse circulation drilling was sampled in 1 metre intervals. Sample bags are weighted with a target of > 90% recovery. For the drill holes reported sample recovery was considered acceptable. It is OceanaGold's procedure that if a reverse circulation drill hole goes wet, drilling is stopped and completed with a diamond tail. Reverse circulation drill hole sampling at MGP under wet conditions is prone to sampling grade bias. • For diamond drilling recovery is recorded for every run and in general core recovery is in excess of 95%. Triple tube drilling was used to maximize core recovery through the Au mineralised zones. • Analysis of grade versus core recovery does not show any relationship to be present.
<i>Logging</i>	• <i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i> • <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i> • <i>The total length and percentage of the relevant intersections logged.</i>	• RC drilling is logged every 1 metre using Macraes Gold Project logging codes that have been in place since 1994. • Diamond core was geologically logged and photographed following OceanaGold's standard operating procedure for core logging. The geological logging process documents lithological and structural information as well as basic geotechnical information on RQD and major defects. Core logging generally identifies the upper surface of the mineralised shear. RC chip logging is not definitive about the position of this contact. Consequently, geological interpretation uses a combination of logged geology and gold grade data. • Drill holes were generally logged and sampled from 20m above the Hangingwall contact. If position of Hangingwall contact uncertain holes were logged and sampled in their entirety.
<i>Sub-sampling techniques and sample preparation</i>	• <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i> • <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i> • <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i> • <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i> • <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> • <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i>	• RC 1 metre samples are collected into a cyclone and then split through a riffle or cone splitter to produce a sample and a duplicate sample. Close attention is paid to ensure each interval sampled is 1 metre. Drilling advance is paused at the end of each 1 metre, to allow the entire sample to clear the splitter prior to resuming drilling. The cyclone and splitter are kept clean. • Half core was cut along the inferred long axis of the mineralised ellipse to achieve a representative sample. • Sub-sampling size is considered appropriate and the method representative for the style and thickness of mineralisation. This is borne out by 29 years of mining at Macraes. • Where enough core is available, generally >15kg's and preferably >30kg's of quarter cut core, metallurgical samples are selected. Due

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		to the volume requirement this means a metallurgical sample may consist of material from multiple holes. - Metallurgical sampling aims to be as geologically and spatially representative as possible. - RC chips cannot be used at MGP for metallurgical sampling due to contamination with hammer oil which negatively impacts sulphide float test work.
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> <i>For geophysical tools, spectrometres, 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> <i>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.</i>	- At MGP, SGS (NZ) Ltd operates an assay laboratory under contract to OceanaGold (NZ) Ltd. - QAQC procedures involve the use of certified reference material, rig duplicates, lab duplicates, and lab standards. Sample batches are re-assayed if 1 of the OceanaGold's CRM's is outside defined limits. <u>Sample preparation RC</u> - Samples checked off against submission sheet. - Samples are then dried at 150 degrees until visibly dry. - Entire sample is crushed. Crush size is under 5mm and approximately 500g is retained for pulverising. - The 500g sample is pulverised to 90% passing 75 micron. <u>Sample preparation diamond</u> - Samples checked off against submission sheet. - Samples are then dried at 150 degrees until visibly dry. - Entire core pre-crushed using a crusher. Nominal top size is 30mm (in one dimension only). - Entire sample is crushed. Crush size is under 5mm and approximately 500g is retained for pulverising. - The 500g sample is pulverised to 90% passing 75 micron. <u>Assay</u> 50g fires assays were completed using SGS's FAA505 scheme. 30g of sample is weighed with 170g of lead flux and tumble mixed in a plastic pot. - contents are transferred to a crucible and fusion of the gold in the sample with the lead in the flux occurs in an LPG fired blast furnace at 1,100 degrees C. - cupellation of the lead button to recover the gold prill then occurs in an LPG fired muffle furnace set at 950 degrees C.

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		5. the prills are recovered from the cupels, digested in plastic test tubes with aqua regia. Gold determinations by atomic absorption. Q/QC is checked, and results released.
Verification of sampling and assaying	- The verification of significant intersections by either independent or alternative company personnel. - The use of twinned holes. - Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. - Discuss any adjustment to assay data.	- Geological logging is compiled digitally using Tough Books at the drill site or the core shed. - At hole completion the digital log is loaded into the MGP acQuire exploration database and validated. - Geological observation of mineralisation is generally well correlated with assay results. - No adjustments are made to the assay data received from SGS (NZ) Ltd.
Location of data points	- Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. - Specification of the grid system used. - Quality and adequacy of topographic control.	- All drill hole collars are surveyed by OceanaGold mine surveyors using MGP grid to an accuracy of +/- 0.10 metre - All drill holes are down hole surveyed every 30m using a digital down hole camera. - Topographic control is by detailed aerial surveys of mine and prospect areas to 0.5m accuracy.
Data spacing and distribution	- Data spacing for reporting of Exploration Results. - Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. - Whether sample compositing has been applied.	Drill hole spacing at the exploration stage is initially at 100m by 100m spacing. If drill holes intersect significant mineralisation the drill hole spacing is progressively reduced to limited infill to 25 x 25 metres. RC drill holes are sampled in 1 metre intervals. Diamond drill holes are generally sampled in 1 metre intervals unless hole geology dictates otherwise.
Orientation of data in relation to geological structure	- 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.	- Surface drill holes are generally vertical to intersect a generally 15 to 25 degree dipping gold mineralised structure. - Whilst this direction is sub-optimal for steeply dipping quartz vein arrays, near-vertical reverse circulation and diamond drilling has been used as the basis for resource definition MGP since 1985.
Sample security	The measures taken to ensure sample security.	Sample bags are uniquely numbered and transported directly from the drill site or core shed to the onsite laboratory operated by SGS (NZ) Ltd and are logged into the laboratory system on delivery.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	RSC completed an audit of the MGP site laboratory in June 2014 and concluded that "the laboratory in general operates at an acceptable

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		level of quality” OceanaGold’s sampling procedure conforms to industry standard practice and has been reconciled with mining data over the past 29 years.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

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<i>Mineral tenement and land tenure status</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. - 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.	- The results reported for Golden Point and Round Hill prospects are within MP 41 064 which is a granted mining permit held 100% by OceanaGold (NZ) Ltd which expires 31-1-2030 and MP52 738 which is a granted mining permit held 100% by OceanaGold (NZ) Ltd which expires 30/10/2020. - OceanaGold (NZ) Ltd owns the land that covers the Golden Point and Round Hill prospects. - OceanaGold has a 29 year track record of obtaining and maintaining all the necessary consents and permits required to mine defined resources and reserves at MGP.
<i>Exploration done by other parties</i>	Acknowledgment and appraisal of exploration by other parties.	At Golden Point and Round Hill initial exploration drilling was carried out in the late 1980’s by Homestake (NZ) Ltd and BHP Gold (NZ) Ltd within MP 41 064 and MP52 738.
<i>Geology</i>	Deposit type, geological setting and style of mineralisation.	The Macraes orogenic gold deposits are located within a low-angle (~15-20°) late metamorphic (Jurassic) shear zone, the Hyde Macraes Shear Zone (HMSZ), which has been traced for at least 30km along strike. The HMSZ consists of variably altered, deformed, and mineralized schist up to 150m thick, known as the Intrashear Schist. The thickest part of the shear zone consists of several mineralized zones stacked on metre-thick shears. These shears have ductile deformation textures overprinted by cataclasis. The Hangingwall shear can be up to 25m thick and is commonly darker coloured due to fine grained graphite and sheared sulphide minerals. The following four types of mineralization occur within the HMSZ at Macraes.

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		- Mineralized schist. This style of mineralization involved hydrothermal replacement of schist minerals with sulphides and microcrystalline quartz. Mineralization was accompanied by only minor deformation. - Black sheared schist. This type of schist is pervaded by cm to mm scale anastomosing fine graphite and sulphide bearing micro shears. This type of mineralization is typically proximal to the Hanging wall Shear. Scheelite mineralization occurs in the silicified cataclastic shears. - Shear-parallel quartz veins. These veins lie within and/or adjacent to the black sheared schist and have generally been deformed with the associated shears. The veins locally cross-cut the foliation in the host schist at low to moderate angles. Veins are mainly massive quartz, with some internal lamination and localized brecciation. Sulphide minerals are scattered through the quartz, aligned along laminae and stylolitic seams. These veins range from 1cm to > 2m. Scheelite mineralization is associated with quartz veining in some areas. - Stockworks. These veins occur in localized swarms that are confined to the Intrashear Schist. Individual swarms range from c. 100 to 2000m² in area and consist of numerous (10 – 100) subparallel veins. Most of these veins formed sub-perpendicular to the shallow east dipping shear fabric of the Intrashear Schist. Stockwork veins are typically traceable for 1-5m vertically with most filling fractures that are 5 – 10cm thick but can be up to 1m thick. Swarms of stockwork veins within the Intrashear Schist were lithologically controlled by the dimensions and locations of more competent pods of Intrashear Schist.
Drill hole Information	- A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: - easting and northing of the drill hole collar - elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar - dip and azimuth of the hole	- Figures 2 to 3, and Table 1 in the document provide the relevant information for the significant intersections. - A full listing of all the Round Hill and Golden Point, drill holes for the area covered by the press release are in files containing the collar, down hole survey, assay and geology information which is accessible using the link in the press release.

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	○ down hole length and interception depth ○ hole length. ● If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	
Data aggregation methods	● 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. ● 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. ● The assumptions used for any reporting of metal equivalent values should be clearly stated.	● Figures 2 to 3, and Table 1 in the document provide the relevant information for the significant intersections. ● A full listing of all the Round Hill and Golden Point drill holes for the area covered by the press release are in files containing the collar, down hole survey, assay and geology information which is accessible using the link in the press release. ● Figures 2 to 3 and Table 1 “Significant Intersections” – a significant intersection is defined as an intersection $\geq 0.4\text{g/t Au}$, where intersection gram-metres is greater than 15 and can include up to 5 metres $< 0.4\text{g/t Au}$, e.g. $5\text{m @ } 3.1\text{g/t Au} = 15.3\text{ Au gram-metres}$. ● 0.4g/t is the current Macraes Gold Project mining cut off. ● Assay grades are not top cut when calculating an intersection.
Relationship between mineralisation widths and intercept lengths	● These relationships are particularly important in the reporting of Exploration Results. ● If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. ● If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg ‘down hole length, true width not known’).	● At Golden Point and Round Hill, the drill holes are generally steeply inclined ($>75^\circ$) to intersect a generally 15 to 25 degree dipping gold mineralised structure.
Diagrams	● Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	● Figures 2 to 3, and Table 1 in the document provide the relevant information for the significant intersections. ● A full listing of all the Round Hill and Golden Point drill holes for the area covered by the press release are in files containing the collar, down hole survey, assay and geology information which is accessible using the link in the press release.
Balanced reporting	● Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	● Figures 2 to 3, and Table 1 in the document provide the relevant information for the significant intersections. ● In the interests of balanced reporting a full listing of all drill holes completed at Round Hill and Golden Point for the area covered by the

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		press release are in files containing the collar, down hole survey, assay and geology information which is accessible using the link in the press release.
-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.	- OceanaGold has been mining at the MGP for 28 years and in that time has mined and milled over 115Mt of ore. Any future ore sourced from Round Hill and Golden Point is not expected to be metallurgically different from the ore previously treated. - Further mining at Round Hill / Golden Point will be subject geotechnical review as a cut back of the Round Hill / Golden Point pit has the potential to re-initiate movement of the plant site along the Footwall Fault. - A number of RC drill holes drilled in the 1990's were drilled wet. Wet RC drilling at Macraes has the potential to produce a positive grade bias. As a result, wet RC drilling of the Au mineralisation since 1996 has been prohibited.
Further work	- The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). - Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	- Based on the results from Golden Point a further drilling program is planned to infill where required to a spacing of 25 x 25m and step out resource expansion drilling down dip. - Metallurgical test work will be completed. - Resource estimates for both the open pit and underground mining scenarios will be updated and mining optimisations run. - Geotechnical investigations for any proposed open cut or underground mining will be completed. - A review of current and required permits and consents will be completed and the process of obtaining permits and consents may commence.