

### Borneo Aqua Harvest Bhd. Competent Persons Report - Bukit Mantri Gold Project, Sabah, Malaysia - August 201<u>5</u>





#### J1865

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22 April 2016

Mr Akinori Hotani (Executive Director)

Borneo Aqua Harvest Bhd. Lot 4 Block E Bandar Nam Tung Leila Road P.O. Box 2112 90724 Sandakan Sabah Malaysia

Dear Mr Hotani,

#### **COMPETENT PERSONS REPORT - BUKIT MANTRI GOLD PROJECT**

Borneo Aqua Harvest Bhd. ("BAHB") formally commissioned Optiro Pty Ltd ("Optiro") to prepare a Competent Persons Report for its Bukit Mantri Gold Project in Sabah, Malaysia in August 2015. The report incorporated an update to the Mineral Resource estimate using 24 additional infill diamond drill holes completed in 2015. The data used for the Mineral Resource estimate comprised geological and assay information from 39 diamond drillholes (on a nominal 30 m by 40 m spacing) which were obtained from within an area of approximately 28 hectares (70 acres), surface mapping and an updated 2015 survey topographic pickup of the Bukit Mantri project area by independent surveyors. The drilling of the initial 15 drill holes and mapping information was carried out by Zamia Sdn. Bhd. ("Zamia") another Sabah based company between 1986 and 1991. Subsequent drilling has been carried out by Southsea Gold Sdn. Bhd. (SGSB) during 2013 and 2015.

Optiro is an independent consulting and advisory organisation which provides a range of services related to the minerals industry including, in this case, independent Mineral Resource estimation services, but also resource valuation, corporate advisory, mining engineering, mine design, scheduling, audit, due diligence and risk assessment assistance. The principal office of Optiro is at 16 Ord Street, West Perth, Western Australia, and Optiro's staff work on a variety of projects in a range of commodities worldwide.

The authors do not hold any interest in Borneo Aqua Harvest Bhd., its associated parties, or in any of the mineral properties which are the subject of this report. Fees for the preparation of this report are charged at Optiro's standard rates, whilst expenses are reimbursed at cost. Payment of fees and expenses is in no way contingent upon the conclusions drawn in this report.

Optiro visited the site between 7 and 10 December 2014 and again between 2 to 4 February 2015 to inspect drill core, road cuttings and exposures of outcropping mineralisation. Nine of the Zamia drill collar concrete marker blocks were sighted by Optiro and checked using a handheld GPS to obtain preliminary co-ordinates. The collar dip (-45°) and azimuth (315° magnetic) were confirmed by measuring a length of PVC pipe inserted into the collar of the holes. Final surveyed co-ordinates were provided by licensed surveyors and these were used to correctly locate the drillholes, match the Zamia geological mapping outlines on the topography against the drilling (using Zamia maps and plans) and to re-interpret the mineralisation wireframes. A programme of 24 infill drill holes was designed to confirm the mineralisation models and re-evaluate the Mineral Resource classification in



2015. The drilling successfully upgraded part of the deposit to the Indicated Mineral Resource category, as defined by the Joint Ore Reserves Committee (JORC) Code (2012 Edition).

The Bukit Mantri deposit is an epithermal vein style gold deposit with associated copper and silver mineralisation hosted in altered andesite rocks. The mineralisation is contained within narrow northeast-southwest and north-south striking (mag) quartz - sulphide veins in a tension vein array network of fractures bounded by regional fault structures. Diamond drilling was angled at -45 degrees towards 315 (local grid) to intersect the vein sets.

Optiro has reviewed all relevant technical information made available by the management of SGSB, and found it to be of sufficient quality to prepare a Mineral Resource estimate. Optiro has accepted this information in good faith as being true, accurate and complete, and takes no responsibility for any flaws or omissions in the information.

Optiro considers that the historical information, geological understanding and mapped exposures of mineralisation are of sufficient standard to support the classification of the Bukit Mantri August 2015 estimate as a Mineral Resource. The following confidence criteria are considered to be sufficient to support the classification of the central part of the deposit as an Indicated Mineral Resource under the JORC Code (2012 Edition):

- Diamond drilling on 30 m by 40 m spacing
- Vein set orientation, width and location defined by Zamia mapping and trenching
- Geological continuity of the structures confirmed by the infill drilling programme above the 290 mRL level to natural surface

Optiro also believes that it is appropriate to classify parts of the Bukit Mantri August 2015 Mineral Resource using the Inferred Mineral Resource category considering the following criteria:

- Vein set orientation, width and location defined by Zamia mapping and trenching
- Diamond drilling on spacings wider than 40 m

The geological continuity of the vein sets has been confirmed by the field mapping, trenching and sampling work completed by Zamia. The 15 Zamia diamond drillholes support and confirm the widths, extents and projection of the mineralised zones. The SGSB infill drilling of 24 holes has supported the geological interpretations of the vein sets and mineralised intersections.

The August 2015 Bukit Mantri Mineral Resource is detailed in Table 1.1.

Category	Tonnes (Mt)	Grade (g/t Au)	Ounces (Oz Au)	Tonnes Au (tonnes)
Indicated Mineral Resource	1.69	2.72	148,000	4.6
Inferred Mineral Resource	1.01	1.84	60,000	1.9
Total	2.70	2.39	207,000	6.5

Table 1.1 Bukit Mantri August 2015 Mineral Resource Estimate gold (Au) table (reported using a 0.35 g/t Au cut-off g	grade)
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The deposit outcrops at surface or is covered by a thin layer of overburden. The deposit dimensions are 450 m (northing), 550 m (easting) and up to 330 m below the natural surface but remains open along strike and laterally. The regional Wullersdorf block topography is characterised by low to moderately rugged terrain, with Bukit Mantri having a peak elevation of 595 metres above sea level. Weathering surfaces have been modelled using the logged weathering state and core photography from the 2015 drilling. Optiro notes that weathering of the veins will persist more deeply in fractures but this is not considered to have an effect on the estimated resource...



As part of the review of the historical information, Optiro carried out a quality control analysis based on laboratory reports which showed acceptable precision for repeat assays and no obvious bias in the sampling data. There are numerous exposures of mineralised vein sets in access road culverts and cuttings, which support the surface mapping and trenching information in terms of the orientation of the main mineralisation directions. Diamond core samples were inspected and photographed. Historical reports by Zamia corroborate the interpretation of narrow steeply-dipping veins, and Optiro interpreted the mineralisation wireframes by correlating the Zamia mapped surface geology to the mineralised drillhole intersections.

The August 2015 Mineral Resource estimated grades using the Ordinary Kriging technique within vein interpretations defined by surface mapping and 24 diamond drillholes. The block model has parent cells of 20 mE by 20 mN by 25 mRL, with sub-celling down to a minimum block size of 2.0 mE by 2.0 mN by 5 mRL to fill the narrow vein interpretations.

SGSB has taken 430 density readings for residual, oxidised and fresh rock samples. Density values are now calculated from these readings rather than assigned using assumed values. Residual soils have been assigned a density of  $1.51 \text{ g/cm}^3$ . Oxidised material changed from an assumed value of  $2.50 \text{ g/cm}^3$  to  $2.37 \text{ g/cm}^3$ , and fresh rock density is unchanged at  $2.80 \text{ g/cm}^3$ .

The block models were validated against the input data using visual checks and swath plots. Optiro notes that the global validation of the estimated grades against the input data is acceptable, but also that the accuracy of the local grade estimate is considered to be low, due to the small number of informing samples within each mineralised domain.

The other elements estimated within the gold domains are copper and silver, which are detailed in Table 1.2. Note: the tonnages containing the silver and copper mineralisation are the same as the gold Mineral Resource and are not additional to those reported in Table 1.1

Category	Tonnes (Mt)	Grade (g/t Ag)	Ounces (Oz Ag)	Tonnes Ag (tonnes)	Grade (Cu %)	Tonnes Cu (tonnes)
Indicated Mineral Resource	1.69	8.28	450,000	14.0	0.24	4,000
Inferred Mineral Resource	1.01	6.39	208,000	6.5	0.27	2,800
Total	2.70	7.57	657,000	20.4	0.25	6,800

 Table 1.2
 Bukit Mantri August 2015 Mineral Resource Estimate silver (Ag) and copper (Cu) table (reported using a 0.35 g/t Au cut-off grade)

Optiro considers the geological controls at Bukit Mantri to be consistent with a low sulphur epithermal style vein hosted deposit. The Zamia and SGSB drilling has defined an area of the mineralised system on a pattern of nominally 30 m by 40 m that in Optiro's opinion shows sufficient geological and grade continuity to define the mineralisation as an Indicated and Inferred Mineral Resource.

Optiro notes that the mineralised system is still open along strike and laterally, and SGSB/BAHB plans to continue diamond drilling to define additional resources at Bukit Mantri.

Optiro carried out a third site visit on the 21<sup>st</sup> April 2016 and is re-issuing this updated Competent Persons report to provide additional information relating to the August 2015 Mineral Resource estimate in the areas of historic trench sampling, mapping, interpretation and classification. To the authors knowledge there have been no material changes since the August 2015 Mineral Resource estimate and the effective date of the August 2015 estimate is unchanged. The effective date of this technical report is now 22 April, 2016.



Yours sincerely

Mark Drabble *MAusIMM, MAIG, B.App.Sci (Geology)* Principal Consultant – Optiro Pty. Ltd.

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- Appendix E: Variogram Experimental Fans and Model

### 1. EXECUTIVE SUMMARY

Borneo Aqua Harvest Bhd. ("BAHB") formally commissioned Optiro Pty Ltd ("Optiro") to prepare a Competent Persons Report for its Bukit Mantri Gold Project in Sabah, Malaysia in August 2015. The report incorporated an update to the Mineral Resource estimate using 24 additional infill diamond drill holes completed in 2015. The data used for the Mineral Resource estimate comprised geological and assay information from 39 diamond drillholes (on a nominal 30 m by 40 m spacing) which were obtained from within an area of approximately 28 hectares (70 acres), surface mapping and an updated 2015 survey topographic pickup of the Bukit Mantri project area by independent surveyors. The drilling of the initial 15 drill holes and mapping information was carried out by Zamia Sdn. Bhd. ("Zamia") another Sabah based company between 1986 and 1991. Subsequent drilling has been carried out by Southsea Gold Sdn. Bhd. (SGSB) during 2013 and 2015.

Optiro visited the site between 7 and 10 December 2014, and again between 2 to 4 February 2015 to inspect drill core, road cuttings and exposures of outcropping mineralisation. Nine of the Zamia drill collar concrete marker blocks were sighted by Optiro and checked using a handheld GPS to obtain preliminary co-ordinates. The collar dip (-45°) and azimuth (315° magnetic) were confirmed by measuring a length of PVC pipe inserted into the collar of the holes. Final surveyed co-ordinates were provided by licensed surveyors and these were used to correctly locate the drillholes, match the Zamia geological mapping outlines on the topography against the drilling (using Zamia maps and plans) and to re-interpret the mineralisation wireframes.

Optiro used the downhole survey information from the 2015 drilling to assign average rate of directional change trends to the Zamia drillholes to correct for drilling induced deviation of the drillholes. SGSB carried out measurement of density values for the soil, oxidised and fresh rock zones of the Bukit Mantri deposit. Weathering information from the logging was used to interpret weathering surfaces.

The August 2015 Mineral Resource estimate used the surveyed drillhole collar locations and updated topography surface. Grades were estimated using Ordinary Kriging within wireframes defined from surface mapping vein interpretations and 24 diamond drillholes. The block model has parent cells of 20 mE by 20 mN by 25 mRL with sub-celling down to a minimum block size of 2.0 mE by 2.0 mN by 5 mRL to fill the narrow wireframes.

The following confidence criteria are considered to be sufficient to support the classification of the central part of the deposit as an Indicated Mineral Resource under the JORC Code (2012 Edition):

- Diamond drilling on 30 m by 40 m spacing
- Vein set orientation, width and location defined by Zamia mapping and trenching
- Geological and grade continuity of the structures confirmed by the infill drilling programme

Optiro also believes that it is appropriate to classify parts of the Bukit Mantri August 2015 Mineral Resource as Inferred Mineral Resource using the following criteria:

- Vein set orientation, width and location defined by Zamia mapping and trenching
- Diamond drilling on wider spacing

The Mineral resource is reported above a 0.35 g/t Au cut-off grade in Table 1.1 (for gold) and in Table 1.2 (for silver and copper).

#### Table 1.1 Bukit Mantri August 2015 Mineral Resource Estimate for Au (reported using a 0.35 g/t Au cut-off grade)

Category	Tonnes (Mt)	Grade (g/t Au)	Ounces (Oz Au)	Tonnes Au (tonnes)
Indicated Mineral Resource	1.69	2.72	148,000	4.6
Inferred Mineral Resource	1.01	1.84	60,000	1.9
Total	2.70	2.39	207,000	6.5

Table 1.2	Bukit Mantri August 2015 Mineral Resource Estimate for Ag and Cu (reported using a 0.35 g/t Au cut-off grade)
TUDIC TIE	builte manarity agast 2025 milleral nessarie Estimate for Ag and ca (reported asing a olos 6/ r/a cat on grade)

Category	Tonnes (Mt)	Grade (g/t Ag)	Ounces (Oz Ag)	Tonnes Ag (tonnes)	Grade (Cu %)	Tonnes Cu (tonnes)
Indicated Mineral Resource	1.69	8.28	450,000	14.0	0.24	4,000
Inferred Mineral Resource	1.01	6.39	208,000	6.5	0.27	2,800
Total	2.70	7.57	657,000	20.4	0.25	6,800

The key premise of the updated interpretations is the use of the Zamia field mapping that defines the vein packages present at Bukit Mantri. These thin quartz-sulphide vein sets are visible in the drill core and in access road cuttings and are dominantly oriented NE-SW or N-S. Optiro interpreted the orientation and position of the mapped veining in 3D to match the assayed intersections in the drillholes and was able to generally get a good correlation using steep south-east dipping wireframes.

The 2015 infill drilling validated and confirmed the Optiro 3D model based on the Zamia mapping information as the new intersections of mineralisation were within or close to the original model shapes. New information from Zamia drillholes WS006 and WS008 allowed the interpretation to include additional mineralisation at the north end of the current Mineral Resource area. Follow up drilling in August 2015 intersected veining in this area and is expected to extend the Mineral Resource extents to the north.

The wireframes (also referred to as "domains") were used to code the drillhole database and extract the sample information from within the mineralised zones. The raw data was analysed and composited to two metre intervals for geostatistical analysis. The continuity analysis showed that the low number of composites (195) produced poorly structured variograms. The nugget effect represents 12% of the total variance for gold.

The presence of outlier values required the use of top-cuts to limit the effect of high grade samples and to reduce the Coefficient of variation (CV) to around 1.77. The top-cut values were set at 20 g/t for Au, 45 g/t for Ag and 22,000 ppm (2.2%) for Cu. The grade estimation was carried out using Ordinary Kriging (OK). Density values were assigned within weathering domains using average values derived from 430 readings taken from drill core and outcrop exposures.

Optiro notes that the mineralised system is still open along strike and laterally, within the larger Wullersdorf volcanic system and SGSB/BAHB plans to continue diamond drilling to define additional resources at Bukit Mantri.

Optiro carried out a third site visit on the 21<sup>st</sup> April 2016 and is re-issuing this updated Competent Persons report to provide additional information relating to the August 2015 Mineral Resource estimate in the areas of historic trench sampling, mapping, interpretation and classification. To the authors knowledge there have been no material changes since the August 2015 Mineral Resource estimate and the effective date of the August 2015 estimate is unchanged. The effective date of this technical report is now 22 April, 2016.

### 2. INTRODUCTION

#### 2.1. SCOPE OF THE REPORT

Borneo Aqua Harvest Bhd. ("BAHB") formally commissioned Optiro Pty Ltd ("Optiro") to prepare a Competent Persons Report (a technical report) for its Bukit Mantri Gold Project in Sabah, Malaysia, in August 2015. The August Bukit Mantri Mineral Resource estimate was completed by Mark Drabble and Kahan Cervoj (Principal Consultants), and Rebecca Morgan (Senior Consultant). The estimate and report have been reviewed by Paul Blackney (Principal Consultant) and Ian Glacken (Director - Geology) of Optiro.

The purpose of this technical report is to detail the August 2015 Bukit Mantri Gold project Mineral Resource estimate, including the methodology applied and the supporting information. The Mineral Resource reporting and classification is in accordance with the requirements of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' of December 2012 (the 2012 JORC Code) as produced by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC).

The effective date of the estimates is 31 August, 2015. As this report has additional information relating to the August Mineral Resource estimate the effective date of this Competent Persons Report is 22 April, 2016. To the authors knowledge there have been no material changes to the Mineral Resource estimate since 31 August, 2015.

The name and address of the client is:

Borneo Aqua Harvest Berhad Lot 4 Block E Bandar Nam Tung, Leila Road P.O. Box 2112, 90724 Sandakan Sabah, Malaysia

#### 2.2. COMPETENT PERSON AND CONTRIBUTING AUTHORS

The Mineral Resource estimate was prepared under the direction of Mr Mark Drabble. Mr Drabble meets the requirements of an independent Competent Person under the standards of the 2012 JORC Code. Mark Drabble holds a B.App.Sci (Geology), graduating from the University of Technology, Sydney, in 1990. Mark has over 25 years' experience in underground and open pit production of gold, nickel, copper, manganese, & chromite, along with resource development, resource estimation, consulting and geological management at operational and corporate levels.

Mark is also a member of a Recognised Professional Organisation (RPO) as specified by the Securities Commission of Malaysia. These organisations are the Australasian Institute of Mining and Metallurgy (AusIMM) and the Australian Institute of Geoscientists (AIG).

The following authors contributed to the report:

Name	Position	Qualifications and memberships	Technical report contribution
Mark Drabble	Principal Consultant, Optiro Pty Ltd	B.App.Sci (Geology), MAIG, MAusIMM	Site visit, geological modelling, peer review, report compilation, CP sign-off
Paul Blackney	Principal Consultant, Optiro Pty Ltd	BSc (Hons) (Geology), MAusIMM, MAIG	Technical peer review
Kahan Cervoj	Principal Consultant, Optiro Pty Ltd	B.App.Sci, MAIG, MAusIMM	Block model estimation, variography analysis, validation and reporting
Rebecca Morgan	Senior Consultant, Optiro Pty Ltd	BSc (Geology)(Hons), GDip (Mining), MEngSc (Mining), MAIG, MAusIMM	Assay QAQC review
lan Glacken	Director - Geology, Optiro Pty Ltd	BSc (Hons) (Geology), FAusIMM(CP), MIMMM, CEng	Technical peer review

#### Table 2.1 Bukit Mantri Competent Persons report – authors and contribution

#### **2.3.** INDEPENDENCE

Optiro is an independent consulting and advisory organisation which provides a range of services related to the minerals industry including, in this case, Mineral Resource estimation services, but also project valuation, corporate advisory, mining engineering, mine design, scheduling, audit, due diligence and risk assessment assistance. Optiro's staff work on a variety of projects across a range of commodities worldwide. The principal office of Optiro is at 16 Ord Street, West Perth, Western Australia, Tel: +61 8 9215 0000. Australian Business Number: 63 131 922 739 (www.optiro.com).

The authors do not hold any interest in Borneo Aqua Harvest Bhd., its associated parties, or in any of the mineral properties which are the subject of this report. Fees for the preparation of this report are charged at Optiro's standard rates, whilst expenses are reimbursed at cost. Payment of fees and expenses is in no way contingent upon the conclusions drawn in this report.

### 2.4. LOCATION

otiro

The Bukit Mantri project is located within the forest reserves of Mount Wullersdorf and Ulu Kalumpang on the Tawau Peninsula in eastern Sabah, Malaysia. The deposit contains epithermal gold, copper and silver mineralisation hosted in a sequence of volcanic andesite flows and breccia units. A location map of the Bukit Mantri Project area is shown in Figure 2.1.





#### 2.5. GEOLOGY

The following information is excerpted from Tan (2014) and Zamia (1991): "Bukit Mantri is within the Semporna Peninsula. The Semporna Peninsula is underlain by the Oligocene to Middle Miocene sediments of the Kalumpang formation that consist predominately of mudstone and shale with inter-bedded sandstone, conglomerate, limestone and rare chert. The formation includes also abundant tuffite and scattered occurrences of pyroclastic rocks and lava. During the middle Miocene, the rocks of the Kalumpang formation were strongly folded and faulted. Unconformably overlying the Kalumpang formation, volcanic flows and pyroclastics were erupted from the many volcanoes at the Semporna Peninsula.

The volcanic rocks, which are typical of the calc-alkaline basalt-andesite-dacite volcanic association found in the young fold mountains of the continental margins surrounding the Pacific Ocean are a continuation of the volcanic belt of the Philippines extending from Mindanao through the Sulu Archipelago. The middle to late Miocene Semporna consist of andesitic to dacitic volcanic flows with intercalated block and ash deposits, laharic breccias, lapilli tuffs, sedimentary clastic rocks (siltstone, sandstone and mudstone) and occasionally intruded by coeval dacite and andesite dykes.



The folding of the Kalumpang formation immediately NE of the Mantri-Wullersdorf Ridge is randomly oriented due to several faulting events, but the general trend is still north – northwest striking.

Mineralisation in the prospecting license area is related to epithermal vein systems. Bukit Mantri and Bukit Tundong are both examples of the adularia-sericite types of mineral deposits, accompanied by hydrothermal alterations. Mineralisation occurs as a series of quartz-sulphide hydrothermal breccia veins that pinch and swell and coalesce in a sigmoidal pattern typical of tension gash fractures. Most of the principal veins are northeast to east-northeast-striking and dip steeply (70°) to vertical to the southeast. Other minor trends are north-south and north-west striking. The principal veins are often accompanied, but not always, by <1 to 10-cm wide sub-parallel veinlets occurring in 1 to 20 m wide stockwork zones enveloping the principal vein (Zamia, 1991).

The ore mineralogy is generally characterised by pyrite, sphalerite, galena, chalcopyrite electrumnative gold and probable traces of unidentified sulphosalts and gold-silver tellurides. Within the oxidation zone (15 to 30 m from surface) sulphides are replaced by goethite, hematite, jarosite, limonite, covellite, chalcocite, digenite and manganese oxides. Associate gangue minerals in the veins include dominant quartz and subordinate sericite-illite, chlorite, kaolinite, adularia, manganocalcite, dolomite, barite and later carbonate minerals. (ankerite and siderite)."

Zamia produced a plan of the mapped geology, quartz vein interpretations, channel samples and drillholes and this is shown in Figure 2.2. An interpreted cross section through the deposit is shown in Figure 2.3.









#### 2.6. TENURE

Southsea Gold Sdn Bhd ("SGSB"), a company with common shareholders as Wullersdorf Resources Sdn Bhd ('WRSB'), had accepted an offer made by the Sabah Lands and Surveys Department, Kota Kinabalu, Sabah on 23 December 2014 whereby the Lands and Surveys Department agreed to grant SGSB a lease of 35 years commencing from 1 January 2014 to 31 December 2048 on a parcel of land held under Country Lease Title No. 105651438 in the Locality of Bukit Mantri in the District of Tawau, Sabah, Malaysia measuring approximately 1,000 hectares for mining purpose. Subsequently, the issue document of title of the Country Lease was issued and registered on 24 June 2015.

Prior to the issuance of the Title, SGSB had received a prospecting license dated 17 January 2013 from the Lands and Surveys Department, granting approval under Section 8 of the Sabah Mining Ordinance 1960 for a period of four (4) years commencing on 1 January 2013 to prospect and explore for minerals, namely zinc, lead, copper, gold, silver and other base metals, on an area covering approximately 200 square kilometres (equivalent to 20,000 hectares) at the Locality of Bukit Mantri in the District of Tawau, Sabah, Malaysia (Figure 2.4).

On 1 October 2015, WRSB entered into a sub-lease agreement with SGSB ("Sub-Lease Agreement") whereby SGSB agreed to sub-lease to WRSB on a portion of the Main Lease Land measuring an area approximately 317.7 hectares ("Sub-Lease Land") for a term of 33 years in consideration of an annual rent of RM60,000 ("Sub-Lease"). The Lands and Surveys Department had given its approval for the creation of the Sub-Lease and the Sub-Lease was registered on the Country Lease on 13 November 2015. The sub lease is renewable for another period of 33 years provided the tenure of

the master title is similarly extended. A summary of the salient information on the Sub-Lease Land is set out below. The sub-lease is shown in Figure 2.5 with the Mineral Resource area for reference.

Particulars	Description
Title no.	Country Lease No. 105651438, Locality of Bukit Mantri, District of Tawau, State of Sabah, Malaysia
Sub-Lease memorandum no.	MC1511100117
Total Land Area	Approximately 317.7 hectares
Terms of Sub-Lease	33 years
Commencement Date	1 October 2015
Expiry Date	30 September 2048
Category of land	Leasehold mining land
Registered Sub-Lessee	WRSB
Existing and proposed use	Mining
Terms	<ul> <li>(i) the land is solely for the purpose of mining</li> <li>(ii) transfer or sublease of the title is prohibited without the written permission of the Director of Lands and Surveys first obtained who shall charge additional premium and enhanced rent and any other conditions</li> </ul>





#### Figure 2.5 SGSB ML sublease and August 2016 Mineral Resource areas



#### 2.7. HISTORICAL EXPLORATION

The following information is reprised from Tan, 2014:

"In 1958-1960 Dr. H. J. C. Kirk commenced the geological survey. By 1967-69 the Geological Department of Sabah carried out the regional geochemical reconnaissance of the Wullersdorf area that includes the Bukit Mantri and Bukit Tundong. During 1972 to 1974 Mr P. S. Lim (a geologist from the State Geological Department) began the mapping of these areas followed by geochemical mapping till 1979. In 1981-1983, a physio-geological mapping was conducted by the joint Malaysia-Germany mineral exploration project.

Zamia Sdn. Bhd. was granted Prospecting License No. 99860001 in December 1986 (Figure 2.6). Regional reconnaissance sampling and mapping at Bukit Mantri led to the drilling of five (5) shallow diamond drill holes at Bukit Mantri area using a Winkie drill. In 1988, Zamia signed a joint-venture agreement with Pacific Arc Exploration N.L. of Australia, extensive reconnaissance stream sediment and panned concentrate, rock chip, soil sampling and geological mapping of the area. In 1989, Pacific Arc pulled out.

In 1990, Renison Gold Fields Consolidated Limited of Australia, through Wullersdorf Services Sdn. Bhd. as the project company, signed a joint venture agreement with Zamia. Ridge-and-spur soil sampling was continued and anomalous gold in soil was detected at Bukit Mantri and Bukit Tundong. Follow-up detailed grid soil and rock chip sampling were conducted on these areas that defined the extents of gold and base metal anomalies.

Bulldozer trenches were then dug on the anomalous zones to expose bedrock mineralization channel cut samples and geological mapping of the exposed rocks outlines drilling targets at Bukit Mantri and Bukit Tundong. A 50-100m spaced drilling programme was undertaken from August 1991 up to 1994. As of June 1992 a total of sixteen (16) holes aggregating to 3,653m of drill core had

been recovered. These drilling reports were being verified and confirmed by Southsea Gold in the resources drilling programme since 2013."



#### Figure 2.6 Zamia tenement areas within PL No. 99860001 (Zamia, 1991a)

#### 2.8. HISTORIC PRODUCTION

There have been no mining activities carried out at Bukit Mantri.

#### 2.9. ACCESS AND INFRASTRUCTURE

Access to the Bukit Mantri project is via unsealed palm plantation and forestry access tracks, which link up to the AH150 Pan-Borneo highway, northeast of Tawau. The exploration infrastructure consists of a number of exploration buildings, sheds and sea containers that service the exploration activities. Power is provided by diesel generator.

#### 2.10. ENVIRONMENTAL, SOCIAL AND FACILITIES

As the project is at an early stage of exploration there are no major environmental considerations apart from clearing of land for drill sites and access tracks; activities which are permitted by the licence conditions. Local personnel are employed by the company, and local and international companies provide contract services.

### 3. AUGUST 2015 MINERAL RESOURCE ESTIMATE

#### 3.1. DATA

#### 3.1.1. TRENCHING AND MAPPING (1991-1992)

Zamia carried out detailed 1:5,000 scale compass and tape geological mapping of creek exposures draining the Mantri-Tundong area. According to the quarterly reports the mapping showed that "the mapped area is generally overlain by porphyritic andesite. Flow banding structures and porphyry flows in some andesite outcrops near Bukit Mantri indicate that the rock is a flow dome. Near the top of Bukit Mantri, a mudstone-siltstone sequence is found unconformably overlying the andesite porphyry. The main alteration zonings were propylitic (chlorite) alteration and quartz-clay-pyrite assemblages. Mineralisation in the area is closely associated with silica rich zones" (Zamia, 1991a).

Zamia also carried out an extensive programme of bulldozer trenching and cut-rock channel sampling over the Bukit Mantri and Bukit Tundong prospects during 1991 -1992 (Bukit Tundong is to the south of Bukit Mantri). The information is recorded in quarterly reports submitted by Zamia and other technical reports, maps and plans drafted by the company. No digital data is available. The Zamia Quarterly exploration reports for all phases of the programme were sighted, apart from the January-March 1991 and July-September 1992 reports, which are missing. These reports for Zamia Sdn. Bhd. were prepared by Wullersdorf Services Sdn. Bhd. and cover Prospecting Licence number 99860001.

The bulldozer trenching was carried out in phases early in 1991, with follow up trenches cut in subsequent quarters to trace extensions and follow up gold-copper soil anomalies. A summary of the trenching and sampling by quarter is shown in Table 3.1 below:

Period	Number of trenches	Length of trenching (m)	Number of samples	Location
Jan-Mar 1991	20*	Not known	Not known	Bukit Tundong
Apr-Jun 1991	24	3,792m	112	Bukit Tundong
Apr-Jun 1991	33*	Not known	546	Bukit Mantri
Jul-Sep 1991	8	1,578m	604	Bukit Tundong
Oct-Dec 1991	5	760m	67	Bukit Mantri
Jan-Mar 1992	12	1,376m	164	Bukit Mantri
Apr-Jun 1992	2	482m	37	Bukit Mantri
Total	104	7,988	1,418	

#### Table 3.1 Zamia trenching and sampling summary

Note that the quarterly reports are incomplete so an (\*) indicates that the quarterly number of trenches is estimated using the remainder of the total number noted on plans and in the reports.

Zamia used a Caterpillar D7 bulldozer to cut tracks and trenches on the steep hillside as shown in Figure 3.1 (Photo 1). Of the 104 trenches completed 52 were at Bukit Mantri and 47 are over the August 2015 Mineral resource area.

These trenches exposed oxidised andesite and vein material that was sampled as per Photo 2, where approximately 5 kg of material was collected from 2 m channel samples using hammers and chisels onto canvas sheets. The samples were analysed for gold by McPhar Geoservices (Phil) Inc. using the 50 gram fire assay technique. Any samples assaying greater than 0.5g/t Au were analysed for Ag and

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Pb (Zamia, 1991a). Cu, Pb, Zn and Ag were analysed by AAS following a hot HCL leach (to remove carbonates) and HCL/HNO3 in latter stages for 1 hour on a 0.25 gram sample.

Figure 3.1 Zamia photographs of bulldozer and channel sampling activities (Zamia, 1991a)



The main objectives of the programmes were to trace the continuity and extent of the mineralised zones. Optiro sighted plans and maps showing the trench locations, and these showed annotations of samples, although many are barely legible. A copy of one of the rock chip sample batches submitted by Zamia is shown in Figure 3.2 with Cu, Pb, Zn and Ag reported in ppm. Au is reported in grams per tonne (ppm). Despite efforts to retrieve the trench channel sample assays it appears they were not provided with the data package, or have been lost.

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Figure 3.2 McPhar Assay certificate - Batch No. 92-829 with 10 samples from Bukit Mantri (Zamia, 1991b)

The trench numbers are shown in Figure 3.3, with the interpreted quartz-sulphide veining represented by black lines within grey hashed zones representing the stockwork zones. Zamia



defined 13 "productive" veins and several subordinate veinlets (7-20 cm wide). The major productive veins measure from 0.5 m to 6.0 m wide, 50 m to 300 m long and 20 m to 280 m deep.





An image showing the plotted assays was found in a metallurgical report (Figure 3.4), but as the copy was faxed the results are barely legible. However there is enough resolution to show that there are Au grades above background levels in areas defined as either veining or stockwork zones. The results of the composited intervals are plotted in Figure 3.5, which shows Au and Ag g/t on the upper, and Cu, Pb, Zn % on the lower section of the text boxes. An inset detailed view is provided in Figure 3.6. No widths are plotted on this plan, but these are shown in Figure 3.7.



#### Figure 3.4 Zamia Au sample assays plotted on trench lines (Zamia, 1991)









Figure 3.6 Inset detail of Zamia Surface Resource Map (figure 3.5) showing vein sets 1-4 (Zamia, 1991)

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The widths of the mineralised zones are plotted on Figure 3.7 based on the results of the 2 m channel samples. These were compiled into the final interpretation of mineralisation and geology which is available as an AO sized plan. This is included in Appendix D and an inset view is presented in Figure 3.8 showing the basis for the digitised outlines provided to Optiro.

This summarises the collection, interpretation and reasoning for the use of the mapping strings as the primary control on continuity, width and extent of the mineralised zones at Bukit Mantri. The interpretations are considered to be robust and well supported by the fieldwork and sampling programmes carried out by Zamia.





QUARTERLY REPORT : July - Sept. 1991





Figure 3.8 Finalised geology and vein/stockwork interpretations (detail of larger plan – Zamia, 1991d)

#### 3.1.2. HISTORICAL DRILLHOLES (1987 – 1992)

The collar, survey, lithology and assay information was imported into Datamine and desurveyed into a single drillhole database. Optiro conducted basic validation checks on the provided drillhole files. The checks included:

- missing assay and collar information
- overlapping sample and geology intervals
- duplicate assay data
- duplicate survey data

Drilling at Bukit Mantri was carried out by Zamia in 1987, with five reconnaissance drillholes completed for 669.25 m, using a lightweight Winkie drill dig. No substantial gold mineralisation was encountered. Zamia recommenced drilling operations in 1991 after trenching and geochemical sampling identified anomalous gold and base metals values at Bukit Mantri and Bukit Tundong.

Drilling by Zamia during 1991-1992 was carried out using a Longyear LM38 and a Korean made diamond drill rig (Figure 3.9). Sixteen drillholes, for 3,338.0 m, were drilled on a local orientation of 315<sup>°</sup> and dip of -45<sup>°</sup>. These sixteen holes were used for the January 2015 Mineral Resource update of the Bukit Mantri Main zone (Figure 3.10, Figure 3.11).

Figure 3.9 Photos of drilling activities at Bukit Mantri in 1991 (source: Zamia Quarterly exploration reports)





Figure 3.10 Bukit Mantri Zamia drill holes – plan view with access road overlay

Figure 3.11 Bukit Mantri Zamia drill holes – long section view looking west



The Zamia holes were verified by Optiro on a site visit which found nine of the original 15 drillhole collar cement blocks. The locations of all holes were surveyed by licensed surveyors using a total station during an updated topographic survey carried out during February 2015. The collar for WS005 was destroyed by earthworks but the remains of the hole are visible. The blocks for WS014 and WS011 were damaged but are still in-situ.

The details of each hole were inscribed into concrete collar caps and these were checked against the records in the database (Figure 3.12). All collars visited by Optiro were checked for collar dip and azimuth using PVC pipe in the collar and these were found to match the recorded values in the database (Figure 3.13).

Figure 3.12 Drill hole collar cement block recording drilling details for WS-010



Figure 3.13 Drillhole azimuth and dip checks using PVC pipe inserted into the collars (LHS) and the WS-005 collar remains.



#### 3.1.3. RECENT DRILLING (2013 – 2015)

SGSB used two track mounted diamond drill rigs to carry out exploration and infill drilling at Bukit Mantri (Figure 3.14). During the period 10 Feb 2015 to 4 June 2015 a series of 15 infill drillholes for 2,272m of NQ2 core (M6 to M20) were completed over the central area of Bukit Mantri. An additional 14 infill and exploration holes ("M1-2-W1" to W8, W9A, W16 - W18, W30 - W31) were drilled in the north-western area of the deposit for 1,998.5 m. The drilling used contract drilling personnel (Eagle Drilling Expert) under supervision by SGSB.





A plan of the drilling is shown in Figure 3.15 and cross-section in Figure 3.16 with the drillhole names colour coded by the company. Holes BH-1 to BH6 were early reconnaissance drillholes and these were not used in the Mineral Resource update. In February 2015 SGSB drilled the "M" series infill holes as shown in purple and red drillhole names.



Figure 3.15 Plan view of drillholes at Bukit Mantri with drillhole names colour coded by company.



#### 3.1.4. SURVEY CONTROL

Survey control at Bukit Mantri is provided by licenced surveyors Jurukur Masa Sdn. Bhd. Coordinates have been provided in the Borneo RSO (Rectified Skew Orthomorphic) grid system for the drillhole collars and topographic survey. Level datum is based on BMST 0033 (RL: 63.608 m) a.m.s.l. located at Klinik Kesihatan Balung, Tawau, with local temporary bench marks (TBM) set up in the project area.

Drill collars are encased in concrete with PVC pipe and the details of the drillhole inscribed into the capstone for reference (Figure 3.17).

Figure 3.17 Survey total station unit and concrete collar with casing and hole details





#### 3.1.5. DTM SURFACES

The surface topography was provided by SGSB using a June 2015 topographic survey carried out by licenced surveyors Jurukur Masa Sdn. Bhd. Co-ordinates have been provided in the Borneo RSO (Rectified Skew Orthomorphic) grid system for the drillhole collars and topographic survey. The elevation strings are shown with the drillhole collars in Figure 3.18.





The data in Figure 3.19 was imported into Surpac and the 1 m contour strings were used to form a digital terrain model (DTM) of the natural topographic surface at Bukit Mantri.



#### Figure 3.19 Bukit Mantri topographic survey (rotated plan view)
## 3.1.6. DOWNHOLE SURVEYS

The drillhole deviation was measured using a Camteq International Proshot PS-403 electronic multishot downhole survey tool (Figure 3.20). Readings were generally taken every 10 m down hole and showed that the drillholes usually steepened with a slight movement south on azimuth.

The Camteq tool uses wireless communication between an iPod control (and data storage) unit and the probe to input drillhole information and to download the survey data. The listed specifications are as follows in Table 3.2:

Table 3.2	Camteq Proshot PS-403	<b>EMS specifications</b>

Camteq Proshot PS-403 EMS					
	Range	Accuracy			
Azimuth and Roll angle	0 <sup>°</sup> to 360 <sup>°</sup>	+-0.5 RMS			
Dip	+-90 <sup>0</sup>	+-0.2 RMS			
Magnetic Field	< 90,000nT				

As the Zamia drilling did not have any downhole surveys a correction was made to insert dip and azimuth values into the database on 10 m intervals based average rates of change observed in the 2015 downhole survey information. The magnitude of the corrections was generally small in terms of the changes observed when updating the mineralisation wireframes.

#### Figure 3.20 Camteq Proshot PS-403 EMS survey tool and accessories



## 3.1.7. CORE SAMPLING

### 3.1.7.1. ZAMIA DRILLING 1991-1992

The drill core was cut using a diamond saw (Figure 3.21). Sampling of the core used half core samples with intervals ranging from 0.03 to 2.15 m in length. The core samples were sorted, dried at  $105^{\circ}$ C, jaw crushed (95% <10mm) riffle split and pulverised to 95% passing -75µ to give a 1.5 – 2.0 kg sub-sample.





Copies of the Intertek McPhar assay reports were provided by SGSB and these indicate that the samples were assayed for Au by 30 gram fire assay (scheme: FAS1). Cu, Pb, Zn and Ag were all assayed using scheme AAS1, and As used scheme XRF1. No cover sheet information was included so detection ranges and details of the schema are unknown. The laboratories on the reports are part of the Intertek Group (PT. Citrabuana Indoloka – Intertek Indonesia). Recent assaying of SGSB drill core has been carried out by Intertek McPhar in the Philippines.

The following information was provided by SGSB in the JORC Table 1 summary: "Prior to 2013 Zamia has conducted more than 1113 pulp samples tests for gold assay and other base metal analysis employing Intertek McPhar laboratory in the Philippines.

Intertek McPhar has a diverse number of reference materials that are used in the QC program. Certified reference material and/or in house controls, blanks, splits and replicated are analysed with each batch of samples. These quality control results are reported along with the samples values in the final report. In case of poor reproducibility due to particulate gold, additional repeats are being carried out.

Since Feb 2013, Southsea Gold feasibility study has targeted to verify and check the reproducibility of the assay results of Zamia. All samples extracted were sent for analysis in Intertek McPhar in the Philippines. All analysis was conducted with standard QA/QC. Insignificant bias was identified between the original and check laboratories results for mineralized veins where gold ranged between 6.70 g/t to 9.80 g/t, copper ranged from 90ppm to 3850ppm and silver ranged from 1.5-7.0ppm".

This would tend to indicate that both the original Zamia samples and the check samples were sent to Intertek McPhar, and that the only QAQC carried out was the lab's internal QAQC.

Optiro analysed the QAQC of assay repeats on the Zamia analytical reports. Plots of the repeat values showed that there is acceptable precision for Au (Figure 3.22), excellent precision for Cu, Pb and Zn, good precision for Ag and poor precision for As.





#### 3.1.7.2. SGSB DRILLING 2013 AND 2015

SGSB drilled eight reconnaissance diamond drill holes (BH1 to BH-8) in the Bukit Mantri area during 2013. Small intervals of these were assayed for gold and showed mineralised intersections associated with quartz + sulphide veining. The depths of the samples were noted but widths of the sample intervals were not recorded.

SGSB drilled 24 diamond drill holes in 2015. Core cutting was carried out onsite using SGSB field personnel (Figure 3.23). NQ2 size core was selected for sampling based on the observed geology (veining, alteration or halo zones around mineralised intervals). Depths were marked on the core as part of the lithology logging and used to match the sample numbers to the intervals. The intervals ranged from 0.3 m to 4.4 m, and averaged 1.85 m for the "M" and "M1" series drillholes drilled in 2015. Half core samples were collected.

#### Figure 3.23 Core cutting using a diamond tipped saw

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Samples were crushed and pulverised at an onsite mobile sample preparation unit supplied by SGS Mineral Services (SGS) according to the following schema in Figure 3.25. The sample receipt and custody used the following protocol: SGS received and logged each half core sample at the facility on-site (Figure 3.24). The samples were dried in an oven at  $105^{\circ}$ C, jaw crushed to 85% passing 4 mm, then split into representative subsamples using riffle splitter. SGS pulverised 500 g to 85% passing 75µm to prepare a 200 g subsample pulp for analysis. Reject coarse and pulps were retained for archive.





The MSPU employed the same quality control measures as the SGS commercial facilities (compressed air and blank sample cleaning of crushers, silica washing of pulveriser bowls, analysis of preparation blanks).



Twice weekly the pulps were packaged and sealed with SGS seals before being couriered directly to the SGS Bau laboratory. At Bau the sealed package was received, the seal verified and the samples checked against the listing provided by the facility. All samples were registered with the SGS CCLASS LIMS system and results exported directly from that system.

The standard gold assay was a 50g fire assay finished by AAS analysis (with detection limits of 0.01-100ppm). For the Ag & Cu analysis a 4 acid digest (nitric, hydrofluoric, perchloric & hydrochloric - considered near total) was followed by AAS finish.



#### Figure 3.25 SGS Minerals Services sample preparation flowchart for mobile sample preparation unit (MSPU)

#### Process Flow For Tawau Project Sample Preparation Samples



### 3.1.8. DENSITY

Optiro was provided with a density database containing a total of 430 density sample results from the 2015 drilling program. The database included 47 waxed measurements for soil and oxide samples and 383 'non wax' measurement readings for fresh rock. Density measurements were derived using the Archimedes weight in air – weight in water method. The core samples were weighed in air and then in water using a suspended cage in a water bath, as shown in Figure 3.26.

Figure 3.26 Density measurement scales showing dry weight (left) and weight in water (right)



The samples were coded in Datamine as 'Soil', 'Oxidised' and 'Fresh' using the Residual Soil Base of Oxidation and Top of Fresh wireframes. The wireframes were used to select the samples within each domain and the fresh sample results analysed by a process of declustering (Figure 3.27) to determine the average density values to assign to the block model (Table 3.3).







Table 3.3	Density values assigned to the August 2015 Mineral Resource Model
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Weathering Code	Weathering Code	Density (g/cm <sup>3</sup> )
10	SOIL	1.51
20	OXIDE	2.37
30	FRESH	2.80

Previous Mineral Resource estimates used an average density value of 2.5 g/cm<sup>3</sup> assigned to oxidised andesite and an average density value of 2.8 g/cm<sup>3</sup> for fresh andesite. Historical density measurements were taken by Zamia used graduated flasks to determine volume (Figure 3.28). This information has been lost.

Figure 3.28	Density readings taken by Zamia (Quarterly report - March 1992)
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Measuring of specific gravity of drill core by geotechnician.

## 4. QAQC REVIEW

Quality control measures employed during the Bukit Manti 2015 drill program included the use of certified standards, field duplicates, and blanks.

Optiro was provided with a total of 24 Assay Certificate Reports from SGS, which contained results for SGS's internal QAQC samples (repeats, standards and blanks). Optiro recommends development of written procedures for the documentation of field QAQC such as the insertion and performance of standards, blanks or field duplicate samples in ongoing drilling programmes to improve monitoring and tracking.

Umpire laboratory campaigns with other laboratories are yet to be undertaken. Optiro recommends that any additional field programs include the submission of umpire samples to record the independent validation of the analytical results.

### 4.1. LABORATORY STANDARDS

A total of 195 certified standard samples were analysed by SGS for gold, silver and copper. Ninety (90) were analysed for gold (OXA89, SF57 and SQ48) and 105 were analysed for copper and silver (GBM 306-8, GBM 399-6, and GBM 398-1) (Table 4.1). The certified reference material (CRM) is sourced from independent specialist suppliers Rocklabs Ltd. and Geostats Pty. Ltd.

Two certified pulp standards (GLG304-4 and GBMS304-1) were used during the 2015 drilling program. GLG304-4 has a low detection (121.43 ppb Au) and is a standard more appropriate for use in initial grassroots geochemical exploration programs and should not be used for ore definition drill programs. GBMS304-1 has a mid-range gold grade (3.06 ppm Au), but has a high copper grade (3,156 ppm Cu). Optiro recommends a range of CRM values with low to high grades, with at least one standard having a value around the mean grade of the deposit (2 to 4 ppm Au), and one at the marginal cut-off grade of the deposit (0.4 ppm Au), and one high grade standard (5 to 10 ppm Au).

Optiro considers the approach to the use of CRM's to be acceptable but has recommendations for improving the selection of gold and copper grade standards:

- The grade ranges of the standards are clustered. Optiro recommends improving the coverage by selecting standards with low, medium and high grade values
- OXA89 is an oxide standard, but the value of 0.08 ppm renders it effectively a blank at the resolution of the analytical results. Optiro recommends changing this standard to a higher grade oxide standard (0.3 to 3 ppm Au range).
- Optiro recommends using matrix matched standards that approximate the host rock material. In this case the gold standards are basalt and feldspar with some pyrite, which is appropriate for this mineralisation style
- Check that any new standards selected are certified for the analytical method chosen
- Ensure weathering domains are covered: Optiro recommends inclusion of a fresh rock standard for copper, and a transitional standard for gold.

#### Table 4.1 Internal certified standards submitted by SGS

Certified Standard	Consultan	Chan david Truce	Expected Values		
ID	Supplier	Standard Type	Gold (ppm)	Silver (ppm)	Copper (ppm)
OXA89	Rocklabs	Oxide	0.0836		
SF57	Rocklabs	Sulphide	0.848		
SQ48	Rocklabs	Sulphide	30.25		
GBM 306-8	Geostats	Oxide/transition Cu		5.6	5,868
GBM 399-6	Geostats	Oxide Cu		15.5	21,373
GBM 398-1	Geostats	Cu/Pb/Zn cap rock		5.1	14,823

A total of six (6) gold standards from 195 submitted failed outside of three (3) standard deviations which is within acceptable limits. Results did not indicate any evidence of sample swapping. Optiro does not know whether the batches with failed standards were resubmitted for analysis.

Standard plots are included in Appendix B.

#### 4.2. LABORATORY BLANKS

A total of 123 internal laboratory blank samples were analysed by SGS. Fifty (50) were analysed for gold, and 73 were analysed for copper and silver. All laboratory blanks returned values less than background values (Appendix B).

#### 4.3. LABORATORY REPEATS

Assay results have been received for 331 Gold laboratory repeats. Scatter plots of the data shows strong correlation coefficients, indicating good repeatability of grades between paired samples. Precision plots of the laboratory repeats indicate that almost 90% of samples are within 15% precision, and just 65% of samples are within 5% precision, suggesting moderate level of repeatability.

No silver or copper laboratory repeats were provided. Optiro does not know whether silver and copper lab repeats were analysed in addition to gold repeats.

Scatter Plots, QQ Plots and Precision Plots of laboratory repeats are included in Appendix B.

## 5. 3D MODELLING

## 5.1. GEOLOGICAL INTERPRETATIONS

The geology of the Bukit Mantri deposit is of a low sulphidation epithermal gold system hosted in andesitic volcanics. The andesite unit has been modelled into alteration domains. Zones of veining are logged as "mineralised zone" (MZ) and these were used to create a vein array model within the alteration zones to guide the mineralisation interpretations. A 3D geological model was created in Leapfrog 3D Geological modelling software and is shown in Figure 5.1, with the projection of the mineralised wireframes above the topography in red for reference.





The 3D geological model was cut to the topography and the residual soil surface adjusted to follow the topographic surface where there was no drilling to constrain it or to define its depth. Propylitic and phyllic alteration were modelled as geological units, with a steeply south dipping contact plane. The argillic and residual soil contacts were modelled as erosional style contacts to overprint the underlying units. Intervals of "MZ" (mineralised zone) where veining was logged were formed into an array of separate vein models and given precedence over all other alteration units apart from the residual soils. A plan view of the relationships is shown in Figure 5.2. The vein intervals logged in the drilling had a good 3D correlation to the vein packages mapped by Zamia at the surface, and support the two sets of veins that are visible in outcrop exposures in roadside cuttings. Optiro used the vein models as a reference for the mineralisation interpretation process.

Figure 5.3 shows a cross-sectional view of the geological model with south dipping chlorite and silicified alteration contact, argillic upper zone and narrow mineralised zone (veining ± sulphides) in yellow. Residual soils are coloured brown and form a thin layer on the topography surface.



#### Figure 5.2 Plan slice of the 3D model at the 311 mRL showing drilling, alteration and vein model







### 5.2. WEATHERING

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The weathering surfaces at Bukit Mantri used the logging of weathering state and rock hardness, along with examination of core photographs to model the residual soil, oxidised andesite, and fresh andesite. In general the soil thickness is thin, averaging 2 m, and the oxidised/fresh boundary averages 30 m to 50 m below natural surface. Photos of drill hole M17 are shown in Figure 5.4 to illustrate the soil/oxide and oxidised/fresh transitions at Bukit Mantri. The domains were checked against the topography and manually modified in areas not covered by drilling. A sectional view of the domains is shown in Figure 5.5 with soils in brown, oxidised material in dark blue and fresh rock coloured grey.



Figure 5.4 Drill core from drillhole M17 showing weathering transitions



#### Figure 5.5 Cross-section view showing soil, oxidised and fresh rock domains

#### 5.3. MINERALISATION INTERPRETATIONS

The mineralised domains were interpreted using the Zamia surface mapped outlines of the vein sets to establish the orientations, thickness and extent of the zones. As discussed in Section 3.1.1 - Trenching and mapping (1991-1992), Zamia also sampled a substantial number of bulldozed trenches cut across the hillsides at regular intervals. This sampling was used to define the location and widths of the mineralised outlines. The plan outlines were digitised into XY local grid coordinate outlines with a zero value for Z.

When viewed in 3D the mineralised intersections in the drillholes WS001-WS016 showed some trends in the data that reflected a NE trend to the main zone of mineralisation. However the peripheral zones are narrow and continuity was not compellingly demonstrated by the small number of holes. Optiro found that by rotating the drillhole intersections into alignment with the mapped vein outlines the correspondence of these in three dimensions showed dips and azimuths consistent with the Zamia sectional interpretations.

In order to construct three dimensional wireframe models of the mineralised zones Optiro imported the GIS shapefiles into Surpac for wireframe modelling. The Borneo ROS grid used for the topographic surface required a transformation of the outlines in location (approximately 310 m on a 110 bearing). To register the mapping outlines against the topography, the 2015 surveyed location of the Zamia drillholes were used as reference points, with some clearly recognisable collar and vein relationships used for WS001/Vein 4, WS004/Vein2A and WS005/Vein3 to provide high confidence in the transformed location of the mapping information. Optiro used Surpac to drape them over the 2015 topographic surface as shown in Figure 5.6.





Figure 5.6 Topographic surface with draped outlines of Zamia mapping strings

The 2D quartz vein outlines were copied and projected vertically to the 533 mRL and 200 mRL level. The 533 mRL was chosen to project the vein outlines above the topography. Optiro adjusted the position of the upper and lower set of outlines for dip so that the wireframes corresponded with the draped outlines and the intersections in the drillholes. Instead of creating cross sections for each drillhole intersection these were digitised as individual segments with a point at the upper and lower contact positions. These were used to manually triangulate the wireframe, allowing a high degree of control on the consistency of widths and volume extents.

This process of interpretation was able to fit the vein set projections into the 3D drillholes with good consistency with some minimal adjustment in some cases, and to define some additional intersections of vein mineralisation that do not outcrop at surface. The **2015 infill drilling tested and confirmed** the Optiro interpretations by requiring generally only minor changes to incorporate the new drillhole intersections into the existing wireframes. The relationship of the old and new datasets is clearly demonstrated in Figure 5.7 which are comparative rotated plan views looking down the plane of mineralisation showing the Zamia drilling only on the left hand view, and the Zamia + SGSB 2015 drilling in the right hand view. Au assays shown are above 0.3 g/t Au.

Figure 5.7 Rotated plan views of mapped vein outlines overlaid on the Zamia drilling and (LHS) and Zamia + SGSB2015 drilling (RHS)



The structural framework interpreted by Zamia is considered to be robust and well supported by the data. Optiro manually adjusted the shape and orientation where necessary to conform to the updated drilling results, whilst maintaining the overall consistency of the mapped outlines, and including additional subsurface veins not mapped by Zamia.

The infill drilling and updates to the geological model show that there is a spatial relationship between vein development and gold mineralisation and the contact of the chloritic (propylitic) and silicified (phyllic) alteration zones (Figure 5.8). The bulk of the mineralisation appears to occur within the chloritic altered zone, proximal to the contact zone.

Corbett (2002) discusses the formation of quartz + sericite + pyrite + base and precious metals in a low sulphidation environment due to the flow of near neutral pH diluting fluids developed by the entrainment of magmatic components within deep circulating groundwater. As the system gets shallower, changes in the groundwater chemistry to  $CO_2$  rich, then acid sulphate and then oxygenated waters near surface cause changes in the characteristics of the mineralisation. The mineralisation at Bukit Mantri is dominantly quartz + sericite + carbonate so would appear to be within the shallow upper parts of the epithermal system.

Optiro considers the structures that host the vein sets to be well developed and persistent in the area of the contact. Lateral persistence outside the drilled area has yet to be demonstrated, but exploration drilling is planned to test the areas west of the Bukit Mantri deposit.



Figure 5.8 Plan slice of the 3D model at the 327 mRL showing drilling, alteration and mineralisation wireframes

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The drillholes, wireframes and access tracks are displayed in plan view in Figure 5.9. Note the consistent steep SE dipping control of the mineralised domains and the relative orientation of the two dominant vein sets.



Figure 5.9 Plan view of drillholes, gold mineralisation wireframes (red) and access roads for reference

## 6. SAMPLE SELECTION AND STATISTICAL ANALYSIS

### 6.1. DOMAINING

The 30 mineralisation wireframes were grouped into sub-domains (geodomains) primarily based on lode geometry which forms the basis of the final estimation domains (Table 6.1 and Figure 6.1).

Table 6.1	Domain numbers and	estimation	geodomains
	Domain numbers and	countration	Scouomanis

Geodomain Number	Object Number/ Domain Number		Location	Dip Direction	
100	36	46	Newth	1609	
100	38	47	North	160-	
	51	90			
200	52	92	Northwest	130°	
	86				
	76	82			
300	78	85	Central	150°	
	80	93			
	70	91			
400	72	94	Control	130°	
400	74	95	Central		
	84				
	54	69			
500	58	87	South East	1250	
500	66	88	SouthEast	122	
	68				
600	56		East	160°	



#### Figure 6.1 Plan view of the interpreted mineralisation grouped by GEODOMAIN



#### 6.2. DRILLHOLES

The drillhole database consists of 53 drillholes totalling 8,381.1 metres, which were coded by domain and geodomain using the mineralisation wireframes.

Unsampled intervals within the mineralisation wireframes were given default detection limit assay values for gold, copper and silver (Table 6.2).

Element	Assigned Assay Value	Number of unsampled Intervals
Au (ppm)	0.01	1
Ag (ppm)	0.01	12
Cu (ppm)	0.01	11

Table 6.2 Grades assigned to unsampled intervals within the mineralised lode wireframes

## 6.3. COMPOSITING

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Drillhole data was composited to two metre downhole intervals. Sample lengths within the mineralised domains range in length from 0.03 m to 3.3 m. Approximately 53% of the sample intervals had a sample length of two metres (Figure 6.2); as such, the two metre sample length was selected for compositing. Optiro used a compositing routine that eliminates residuals by slightly modifying the composite length around the target length if required to accommodate the overall drillhole intersection within each estimation domain. Consequently, there was minimal sample loss (0.31%) during the compositing process using this approach.





### 6.3.1. DATA ANALYSIS – COMPOSITES

Statistical analysis was undertaken on the 2 m coded composite data for each domain in order to check the robustness of the geological interpretation and to detect any characteristics that may influence the grade continuity modelling and block grade estimation processes.

Summary grade statistics by geodomain are provided in Table 6.3.

 Table 6.3
 Basic statistics of 2m composites grouped by geodomain

		Field	No. Samples	Minimum	Maximum	Mean	Variance	Standard Deviation	cov
		Au (ppm)	3	0.04	3.15	1.09	2.13	1.46	1.34
	100	Ag (ppm)	3	1	1.00	1.00	-	-	
		Cu (ppm)	3	47	1100	648	195902	443	0.68
		Au (ppm)	32	0.06	57.5	4.45	114.22	10.69	2.40
	200	Ag (ppm)	32	0.01	37.91	9.64	88.54	9.41	0.98
		Cu (ppm)	32	0.01	16400	4664	24725606	4972	1.07
		Au (ppm)	95	0.03	36.38	3.64	56.77	7.53	2.07
mbei	300	Ag (ppm)	95	0.01	65.91	12.58	161.00	12.69	1.01
in Nu		Cu (ppm)	95	0.01	26706	4415	36256411	6021	1.36
loma		Au (ppm)	36	0.02	14.21	2.30	12.36	3.52	1.53
Geod	400	Ag (ppm)	36	1	49.37	6.49	69.63	8.34	1.29
		Cu (ppm)	36	9	5805	592	1012506	1006	1.70
		Au (ppm)	29	0.01	34.4	2.29	39.05	6.25	2.73
	500	Ag (ppm)	29	0.01	25.74	7.39	50.10	7.08	0.96
		Cu (ppm)	29	0.01	8780	1269	4704311	2169	1.71
	-	Au (ppm)	195	0.01	57.5	3.29	55.21	7.43	2.26
	sloba	Ag (ppm)	195	0.01	65.91	10.03	121.07	11.00	1.10
		Cu (ppm)	195	0.01	26706	3224	25591237	5059	1.57

## 6.3.2. TOP-CUTS

The top-cut analysis was undertaken by viewing log probability plots and by identifying values at which the population distributions started to become discontinuous (termed a disintegration analysis). Top-cuts are employed to reduce the influence of high-grade outliers that could invariably affect the outcome of a resource estimate if not controlled. Based upon the disintegration analysis, global top-cuts were assigned to gold, silver and copper (Table 6.4).

Summary grade statistics after top-cutting are provided in

Table 6.5. The Coefficients of Variation (COV in statistics tables) have subsequently improved in all geodomains, but most notably for gold.

Table 6.4	Assigned top-cut values
-----------	-------------------------

Element	Top-cut	No. Samples Cut
Au (ppm)	20	9
Ag (ppm)	45	3
Cu (ppm)	22,000	1

#### Table 6.5 Composite statistics after top-cutting

		Field	No. Samples	Minimum	Maximum	Mean	Variance	Standard Deviation	cov
		Au (ppm)	3	0.04	3.15	1.09	2.13	1.46	1.34
	100	Ag (ppm)	3	1	1.0	1.00	-	-	
		Cu (ppm)	3	47	1100	648	195902	443	0.68
		Au (ppm)	32	0.06	20	3.10	25.46	5.05	1.63
	200	Ag (ppm)	32	0.01	37.9	9.64	88.54	9.41	0.98
		Cu (ppm)	32	0.01	16400	4664	24725606	4972	1.07
	300	Au (ppm)	95	0.03	20	3.03	28.67	5.35	1.77
mber		Ag (ppm)	95	0.01	45	12.26	133.95	11.57	0.94
in Nu		Cu (ppm)	95	0.01	22000	4366	34278566	5855	1.34
lomai		Au (ppm)	36	0.02	14.2	2.30	12.36	3.52	1.53
Geod	400	Ag (ppm)	36	1	45	6.37	59.74	7.73	1.21
		Cu (ppm)	36	9	5805	592	1012506	1006	1.70
		Au (ppm)	29	0.01	20	1.79	14.06	3.75	2.10
	500	Ag (ppm)	29	0.01	25.74	7.39	50.10	7.08	0.96
		Cu (ppm)	29	0.01	8780	1269	4704311	2169	1.71
	_	Au (ppm)	195	0.01	20.0	2.69	22.82	4.78	1.77
	sloba	Ag (ppm)	195	0.01	45.0	9.84	105.43	10.27	1.04
	9	Cu (ppm)	195	0.01	22000	3200	24570799	4957	1.55

### 6.3.3. VARIOGRAPHY

Variogram analysis was undertaken to determine the continuity of gold, silver and copper mineralisation. Due to the low number of composites, variography was carried out on a global scale (i.e. all composites grouped together).

Variography was carried out within the plane of the mineralisation (strike of 250° and approximate dip of 80° to the southeast) with the final variogram models shown in Table 6.6 and the experimental variogram fans and model contained in Appendix E. The dip plane variogram fans were examined to identify the presence of a plunge component; however, no plunge component was identified by the available composites. Due to the low number of composites, the resulting variogram models are poor and have a low level of confidence. The following general observations from the variogram models generated apply to the modelling parameters:

- Nugget effects are lower than expected and represent approximately 12% of the total variance for gold and silver, and 27% of the total variance for copper.
- First range structures range between 35 m and 80 m along strike and between 20 m and 40 m down-dip. The proportion of the total variance represented by the first structure varies from 56% (gold), 25% (silver) and 30% (copper).
- Second range structures range between 35 m and 100 m along strike and between 50 m and 120 m down-dip. The proportion of the total variance represented by the second structure varies from 23% (gold), 26% (silver) and 20% (copper).
- Third range structures range between 130 m and 220 m along strike and between 56 m and 170 m down-dip. The proportion of the total variance represented by the second structure varies from 9% (gold), 36% (silver) and 23% (copper).

Optiro has carried out other Mineral Resource estimates on epithermal gold deposits and notes that grade continuity can be difficult to define from the input data, and yet continuity of mineralised structures is clear. Corbett (2002) states that "carbonate-base metal gold deposits are characterised by extremely irregular gold grades, especially if epithermal quartz gold-silver mineralisation is present." This observation is consistent with the issue of producing robust variography despite good understanding of the anisotropy, and low COV in the domains. The narrow nature of the mineralised zones means that the number of samples per domain will always be low in comparison to broader styles of mineralisation, and this will impact the ability to model consistent variography.

Variable	Orientation	Rotation	Nugget	с <sub>1</sub>	A <sub>1</sub>	C <sub>2</sub>	A <sub>2</sub>	C3	A <sub>3</sub>
	00°/250°	160°			35		100		150
Gold	-80°/160°	80°	0.12	0.56	20	0.23	51	0.09	56.5
	10°/160°	90°			6.5		7		7
	00°/250°	160°			35		35		130
Silver	-80°/160°	80°	0.12	0.25	35	0.26	120	0.36	130
	10°/160°	90°			6		20		20
	00°/250°	160°			80		95.5		220
Copper	-80°/160°	80°	0.27	0.3	40	0.2	96	0.23	220
	10°/160°	90°			18		18		18

#### Table 6.6 Bukit Mantri variogram models

## 7. BLOCK MODEL ESTIMATION

### 7.1. PARAMETERS

The Bukit Mantri block model was created with parent block dimensions of 20 mE by 20 mN by 25 mRL using Datamine software (Table 7.1). Block sub-celling was allowed down to a minimum block size of 2.0 mE by 2.0 mN by 5 mRL. This was deemed appropriate to adequately represent the geometry of the mineralisation in the respective estimation domains. The block model includes domain coding as described in earlier sections of this report. The block model was validated against drill hole lithology data and the wireframes to ensure that the blocks were coded correctly.

Table 7.1	Block model origin and extents
-----------	--------------------------------

Bukit Mantri Block Model Extents									
Axis	Minimum Sub-Cell								
Easting	935000	20	40	2					
Northing	500900	20	35	2					
Elevation	150	25	16	5					

A comparison of wireframe and block model volumes indicates an acceptable volume comparison between wireframes and the block model (Table 7.2).

The final model contains a number of key variables that provide grade, resource classification, density and other information. The names of the fields and their meaning is summarised in Table 7.3 and key estimation parameters are tabulated in Table 7.5.



Domain	Wireframe volume (m <sup>3</sup> )	Model volume (m <sup>3</sup> )	Difference	% Difference
36	20,864	21,040	-176	-0.8%
38	28,253	28,640	-387	-1.4%
46	60,089	60,480	-391	-0.6%
47	26,304	26,360	-56	-0.2%
51	81,649	81,920	-271	-0.3%
52	44,923	45,380	-457	-1.0%
54	98,866	99,700	-834	-0.8%
56	16,605	16,560	45	0.3%
58	100,116	100,740	-624	-0.6%
66	36,106	36,760	-654	-1.8%
68	2,401	2,440	-39	-1.6%
69	103,451	104,080	-629	-0.6%
70	14,287	14,180	107	0.7%
72	15,212	15,320	-108	-0.7%
74	55,724	55,900	-176	-0.3%
76	70,751	71,240	-489	-0.7%
78	126,076	126,940	-864	-0.7%
80	173,700	173,900	-200	-0.1%
82	33,536	33,680	-144	-0.4%
84	77,573	77,540	33	0.0%
85	47,064	47,020	44	0.1%
86	6,175	6,260	-85	-1.4%
87	46,143	46,620	-477	-1.0%
88	8,454	8,300	154	1.8%
90	27,651	27,700	-49	-0.2%
91	9,884	9,880	4	0.0%
92	4,008	3,880	128	3.2%
93	11,730	11,940	-210	-1.8%
94	17,123	17,360	-237	-1.4%
95	36,353	36,400	-47	-0.1%
522	63,870	64,660	-790	-1.2%
552	33,380	33,860	-480	-1.4%
601	4,467	4,480	-13	-0.3%
TOTAL	1502788	1511160	-8372	-0.6%

#### Table 7.2 Lode, geocode and Object codes and wireframe/block model volume comparison

#### Table 7.3

Key block model fields

Model variable	Description					
AU_ppm	Gold grade estimate					
AG_ppm	Silver grade estimate					
CU_ppm	Copper grade estimate					
DOMAIN	Lode Number					
GEODOM	Geodomain Number					
WEATH	10 = Soil, 20= Oxide, 30 = Fresh					
DENSITY	Density value					

Note: The reported Mineral Resource combines Soil and Oxide into the "Oxide" category



#### Table 7.4 Key estimation parameters for Bukit Mantri

Block model and estimation parameters for Bukit Mantri									
	Parameter			Value					
Database cut	t-off date		August 2015						
Resource est	imate		August 2015 (Optiro)						
Software			Datamine						
Estimation m	nethod		Ordinary Kriging						
Drillhole spa	cing		Variable						
Strike			NF - SW						
Din			80 degrees						
210		Northing	500 900mF	to	510 600 mE				
Plack	nodal avtant	Easting	025 000 mN	to	025 800 mN				
DIOCK	nouer extent	Easting	925,000 IIIN	to	955,600 IIIN				
		KL	150 MRL	10	650 MKL				
BI	ock size	Parent	X – 20 m	Y – 20 m	Z – 25 m				
		Sub-cell	X – 2.0m	Y – 2.0 m	Z – 5 m				
	Bulk density		Soil 1.51	Oxide 2.37	Fresh 2.80				
0	Compositing interva			2 m					
	Discretisation			8 (x) by 8(y) by 8 (z)					
	Search Parameters		Pass 1	Pass 2	Pass 3				
		Dip	Search Distance	Search Distance	Search Distance				
GEOCODE	DOMAIN	Direction	Min Samples	Min Samples	Min Samples				
			Max Samples	Max Samples	Max Samples				
	46, 601		120 by 150 by 50	180 by 225 by 75	240 by 300 by 100				
			4	1	1				
100		160	24		24				
	36 38 47		Global Averages as	signed (2.69 nnm Au	10.08 nnm Ag and				
	50,50,47		3237 ppm Cu)						
	51,52,86, 90,92,522,552		120 by 150 by 50	180 by 225 by 75	240 by 300 by 100				
200		130	4	1	1				
			24	24	24				
	76,78,80,		120 by 150 by 50	180 by 225 by 75	240 by 300 by 100				
300	82.85.93	150	4	1	1				
			24	24	24				
	72,74,84,		120 by 150 by 50	180 by 225 by 75	240 by 300 by 100				
	91,94		4	1	1				
400		130	24	24	24				
	70.05		C	NO COMPOSITES					
	70, 95		Geodom 400 Avera	iges assigned (2.30 p)	om Au, 6.37 ppm Ag				
			120 hu 150 hu 50	100 by 225 by 75	240 hu 200 hu 100				
	54,58,66,		120 by 150 by 50	180 by 225 by 75	240 by 300 by 100				
	69,87,88		24	24	24				
500		135	27		27				
	68		Geodom 500 Avera	NO COMPOSITES	om Διι 739 ppm Δσ				
			and 1269 nnm Cul						
				NO COMPOSITES					
600	56	160	Global Averages assigned (2.69 ppm Au, 10.08 ppm Ag and						
			3237 ppm Cu)						

The proportion of each domain, informed by each search pass, is calculated on the basis of block volume and presented in Table 7.5. The results indicate that almost two thirds of the blocks were estimated in the primary search pass (search pass 1), and 98% of blocks were estimated grades by the first and second search passes.

Proportion of each domain informed by search pass									
Domain	Search Pass 1	Search Pass 2	Search Pass 3	Assigned					
46	0%	99%	1%	0%					
51	85%	15%	0%	0%					
52	82%	18%	0%	0%					
54	74%	26%	0%	0%					
58	53%	47%	0%	0%					
66	0%	100%	0%	0%					
69	58%	33%	9%	0%					
72	0%	100%	0%	0%					
74	62%	28%	9%	0%					
76	53%	39%	8%	0%					
78	73%	27%	0%	0%					
80	70%	30%	0%	0%					
82	0%	100%	0%	0%					
84	73%	27%	0%	0%					
85	99%	1%	0%	0%					
86	0%	100%	0%	0%					
87	100%	0%	0%	0%					
88	0%	100%	0%	0%					
90	100%	0%	0%	0%					
91	49%	51%	0%	0%					
92	0%	100%	0%	0%					
93	100%	0%	0%	0%					
94	0%	100%	0%	0%					
522	0%	100%	0%	0%					
552	0%	100%	0%	0%					
Global	57%	42%	2%	0%					

#### Table 7.5 Proportion of domain informed by search pass – (excludes lodes with no composites)

## 7.2. BLOCK MODEL VALIDATION

Validation of the block model was carried out by examining global grade profile plots of crosssection, long-section and plan views of input composite data and the estimated block grades.

The block estimates were then statistically validated against the informing composites on a wholeof-domain basis. The estimated mean block model grades for each domain were compared to the naïve and declustered sample composited input data means (Table 7.6, Table 7.7 and Table 7.8).

Whilst on a global basis, the block model comparison with the declustered composite data for gold is acceptable (i.e. within 10%). The block model does not correlate well with the composite grades for the individual lodes. This is evidence that the current drilling does not have a sufficient number of samples to approximate the local grade distribution due to the degree of grade extrapolation that has occurred.

Validation of the model includes analysis of global grade profile plots of cross-section, long-section and plan views. These compare input composite data and the estimated block grades, along with the number of composite samples. The charts illustrate the degree of extrapolation and smoothing of block grades in the estimate (Figure 7.1, Figure 7.2 and Figure 7.3).

Grade profile plots by geodomain are included in Appendix C.



Geodomain	Domain	No. Samples	Top-cut Composite Mean	Declustered Mean	Block Model	% Difference (composites)	% Difference (Declustered composites)
	46	2	0.06	0.06	0.05	-0.2%	-0.2%
100	601	1	3.15	3.15	3.15	0.0%	0.0%
	Global	3	1.09	1.15	1.62	48.7%	40.4%
	51	10	2.88	2.52	2.60	-9.8%	3.1%
	52	7	4.02	3.82	4.33	7.5%	13.2%
	86	3	0.77	0.80	0.77	0.4%	-3.5%
200	90	5	0.68	0.68	0.69	2.0%	2.0%
200	92	3	6.75	6.53	6.60	-2.2%	1.2%
	522	3	3.84	3.17	3.23	-15.8%	1.9%
	552	1	4.77	4.77	4.77	0.0%	0.0%
	Global	32	3.10	3.29	3.00	-3.1%	-8.7%
	76	13	1.12	0.93	0.69	-38.0%	-25.5%
	78	35	4.64	4.64	4.70	1.2%	1.2%
	80	26	1.50	1.48	1.63	8.7%	10.3%
300	82	3	3.88	3.21	4.01	3.3%	24.8%
	85	14	3.61	2.96	2.57	-28.7%	-13.3%
	93	4	2.44	2.17	2.10	-13.9%	-3.4%
	Global	95	3.03	2.68	2.54	-16.1%	-5.1%
	72	2	5.76	5.76	6.37	10.7%	10.7%
	74	8	3.46	2.73	3.18	-8.1%	16.4%
400	84	21	1.47	1.42	1.20	-18.7%	-15.8%
400	91	4	3.04	2.75	3.05	0.3%	10.8%
	94	1	0.60	0.60	0.60	0.0%	0.0%
	Global	36	2.30	2.21	2.36	2.7%	7.1%
	54	7	1.22	1.67	0.84	-30.8%	-49.6%
	58	6	0.38	0.34	0.32	- <b>16.3%</b>	-5.4%
	66	1	0.70	0.70	0.70	0.0%	0.0%
500	69	8	1.27	1.12	1.53	20.1%	36.1%
	87	5	4.83	3.13	5.91	22.4%	<b>89.0%</b>
	88	2	3.02	3.02	3.02	-0.1%	-0.1%
	Global	29	1.79	1.61	1.44	-19.6%	-10.5%
Global		195	2.69	2.39	2.23	-19.6%	-6.9%

 Table 7.6
 Global comparison sample and block grades - Gold



Geodomain	Domain	No. Samples	Top-cut Composite Mean	Declustered Mean	Block Model	% Difference (composites)	% Difference (Declustered composites)
	46	2	1.00	1	1.00	0.0%	0.0%
100	601	1	1.00	1	1.00	0.0%	0.0%
	Global	3	1.00	1	5.85	485%	485%
	51	10	8.50	9.54	8.33	-2.0%	-12.7%
	52	7	12.20	11.79	13.04	6.9%	10.6%
	86	3	4.62	4.75	4.76	3.0%	0.3%
200	90	5	9.20	9.20	9.47	2.9%	2.9%
200	92	3	19.10	22.62	20.51	7.4%	-9.3%
	522	3	3.67	3.17	3.06	-16.6%	-3.4%
	552	1	10.00	10.00	10.00	0.0%	0.0%
	Global	32	9.64	10.39	8.17	-15.3%	-21.4%
	76	13	3.98	3.99	3.41	-14.4%	-14.4%
	78	35	15.86	13.83	14.11	-11.0%	2.0%
	80	26	10.87	8.38	7.09	-34.8%	-15.4%
300	82	3	4.45	4.67	4.41	-0.8%	-5.6%
	85	14	13.51	13.25	10.99	-18.6%	-17.0%
	93	4	18.09	17.71	17.96	-0.7%	1.4%
	Global	95	12.26	9.47	8.91	-27.3%	-5.9%
	72	2	5.48	5.48	5.70	3.9%	3.9%
	74	8	5.05	4.86	6.35	25.6%	30.6%
400	84	21	5.92	5.93	5.50	-7.1%	-7.3%
400	91	4	12.53	10.17	10.47	-16.4%	3.0%
	94	1	3.47	3.47	3.47	0.0%	0.0%
	Global	36	6.37	5.94	6.61	3.8%	<b>11.3%</b>
	54	7	6.12	7.23	5.48	-10.5%	-24.2%
	58	6	9.71	7.88	6.62	-31.8%	- <b>16.0%</b>
	66	1	0.01	0.01	0.01	0.0%	0.0%
500	69	8	4.35	3.91	4.56	4.8%	16.7%
	87	5	6.92	5.30	7.08	2.3%	33.7%
	88	2	21.87	21.87	21.82	-0.2%	-0.2%
	Global	29	7.39	7.27	5.73	-22.5%	-21.2%
Global		195	9.84	8.06	7.34	-25.4	-8.9%

 Table 7.7
 Global comparison sample and block grades – Silver

Geodomain	Domain	No. Samples	Top-cut Composite Mean	Declustered Mean	Block Model	% Difference (composites)	% Difference (Declustered composites)
	46	2	422	422	419.2	-0.7%	-0.7%
100	601	1	1100	1100	1100.0	0.0%	0.0%
	Global	3	648	662	1969.7	<b>204%</b>	198%
	51	10	2606	2337	2487.5	-4.6%	6.4%
	52	7	4947	4753	5150.1	4.1%	8.3%
	86	3	2588	2786	2797.8	8.1%	0.4%
200	90	5	12322	12322	12001.7	-2.6%	-2.6%
200	92	3	1907	2289	2022.3	6.1%	-11.6%
	522	3	2353	1931	1860.0	-21.0%	-3.7%
	552	1	6390	6390	6390.0	0.0%	0.0%
	Global	32	4664	4023	4560.1	-2.2%	13.3%
	76	13	343	399	409.9	19.5%	2.7%
	78	35	5571	4166	4532.8	-18.6%	8.8%
	80	26	1106	893	837.2	-24.3%	-6.2%
300	82	3	2553	1990	2663.1	4.3%	33.8%
	85	14	9272	8104	8492.0	-8.4%	4.8%
	93	4	12264	11936	12439.8	1.4%	4.2%
	Global	95	4366	3424	3152.7	-27.8%	-7.9%
	72	2	339	339	371.1	9.5%	9.5%
	74	8	192	178	298.4	55.3%	67.9%
400	84	21	723	621	598.8	-17.2%	-3.6%
400	91	4	599	632	662.4	10.6%	4.8%
	94	1	1515	1515	1515.0	0.0%	0.0%
	Global	36	592	567	1047.1	76.9%	84.7%
	54	7	578	633	582.0	0.8%	-8.1%
	58	6	1166	890	730.6	-37.4%	-17.9%
	66	1	0	0.01	0.0	0.0%	0.0%
500	69	8	816	736	967.7	18.6%	31.5%
	87	5	534	391	450.7	-15.7%	15.2%
	88	2	8282	8282	8287.4	0.1%	0.1%
	Global	29	1269	1549	891.9	-29.7%	-42.4%
Global		195	3200	2582	2394.3	-25.2	-7.3%

#### Table 7.8 Global comparison sample and block grades – Copper





Figure 7.1 Global grade swath plots of input composite data and block estimates - GOLD





Figure 7.2 Global grade swath plots of input composite data and block estimates - SILVER





Figure 7.3 Global grade swath plots of input composite data and block estimates - COPPER

## 8. CLASSIFICATION AND RESOURCE REPORTING

Optiro has reviewed the information provided by SGSB and has prepared a Mineral Resource estimate based on the data. The more recent 2015 drilling programmes support the historical information, geological understanding and mapped exposures of mineralisation. Optiro considers the information to be of sufficient standard to support the classification of the Bukit Mantri August 2015 Mineral Resource as an Indicated and Inferred Mineral Resource according to the guidelines of the 2012 JORC Code.

Geological continuity of the vein sets has been defined by the mapping and trenching work completed by Zamia, and the diamond drillholes support the widths, extents and projection of the mineralised zones. Furthermore, the later drillholes support interpretations made from earlier drilling campaigns. There is some uncertainty in previous estimates concerning the absence of downhole survey data needed to accurately define drillhole path. Optiro has addressed this issue by applying average drill path rate of change characteristics to unsurveyed holes which was derived from latter surveyed holes. Due to the steeply dipping mineralised domains, the effect of the adjustments is considered to be minor.

SGSB has taken 430 density readings for residual, oxidised and fresh rock samples which Optiro used to derive calculated rather than assumed density values. Measured density values varied little from the previously assumed values but confidence in the factors is now greater.

Grade distribution is irregular but this is a normal feature of epithermal gold and base metal deposits. Due to the current drill spacing and narrow vein mineralisation constraints there will always be a relatively low number of mineralised samples to carry out continuity analysis. Channel sampling of the deposit by Zamia demonstrates mineralised samples along the veins with above cut-off grade returned for the majority of samples. Optiro considers the geological continuity of the vein structures to be well demonstrated, the grade continuity less so; however mineralisation is demonstrated to be persistent along the structures with assays within expected grade ranges for this type of mineral deposit.

The geological and grade continuity demonstrated by the available data is considered to be sufficient to support the classification of the central part of the deposit as an Indicated Mineral Resource under the 2012 JORC Code due to the following key factors:

- Diamond drilling on 30 m by 40 m spacing
- Vein set orientation, width and location defined by Zamia mapping and trenching
- Geological continuity of the structures confirmed by the 2015 infill drilling

Optiro also believes that it is appropriate to classify parts of the August 2015 Bukit Mantri Mineral Resource as Inferred Mineral Resource category using the following criteria:

- Vein set orientation, width and location defined by Zamia mapping and trenching
- Diamond drilling on wider spacing

A number of vein sets mapped by Zamia do not have any drillhole intersections and these have not been estimated and are not reported as part of the Mineral Resource. These unclassified veins are coded as "4" in the block model field "SV\_AU". A plan and oblique long-section view of the Mineral Resource boundaries are displayed in Figure 8.1 and Figure 8.2. The colour coding for the classification is red = Indicated, yellow = Inferred and blue = unclassified (not reported).



Figure 8.1 Plan view of Bukit Mantri Mineral Resource classification




The Mineral Resource is reported at a 0.35 g/t gold cut-off in Table 8.1 and silver and copper in Table 8.2 (note: the tonnes in Table 8.2 are the same as Table 8.1 and are not additional).

Table 8.1 Bukit Mantri August 2015 Mineral Resource Estimate for Au (reported using a 0.35 g/t Au cut-off grade)

Category	Tonnes (Mt)	Grade (g/t Au)	Ounces (Oz Au)	Tonnes Au (tonnes)
Indicated Mineral Resource	1.69	2.72	148,000	4.6
Inferred Mineral Resource	1.01	1.84	60,000	1.9
Total	2.70	2.39	207,000	6.5

Table 8.2 Bukit Mantri August 2015 Mineral Resource Estimate for Ag, Cu (reported using a 0.35 g/t Au cut-off grade)

Category	Tonnes (Mt)	Grade (g/t Ag)	Ounces (Oz Ag)	Tonnes Ag (tonnes)	Grade (Cu %)	Tonnes Cu (tonnes)
Indicated Mineral Resource	1.69	8.28	450,000	14.0	0.24	4,000
Inferred Mineral Resource	1.01	6.39	208,000	6.5	0.27	2,800
Total	2.70	7.57	657,000	20.4	0.25	6,800

The Mineral Resource is reported by classification and weathering type for gold in Table 8.3 and silver and copper in Table 8.4.

Table 8.3
 Bukit Mantri August 2015 Mineral Resource Estimate for Au by material type (reported using a 0.35 g/t Au cut-off grade)

Classification	Inc	licated N	/lineral Re	source	Inf	erred M	ineral Re	source	Т	otal Min	eral Resou	irces
Material Type	Tonnes (Mt)	Grade (g/t Au)	Ounces (Oz Au)	Tonnes Au (tonnes)	Tonnes (Mt)	Grade (g/t Au)	Ounces (Oz Au)	Tonnes Au (tonnes)	Tonnes (Mt)	Grade (g/t Au)	Ounces (Oz Au)	Tonnes Au (tonnes)
Oxide	0.36	2.73	31,000	1.0			Ι		0.36	2.73	31,000	1.0
Fresh	1.33	2.71	116,000	3.6	1.01	1.84	60,000	1.86	2.34	2.34	176,000	5.5
Subtotal	1.69	2.72	148,000	4.6	1.01	1.84	60,000	1.86	2.70	2.39	207,000	6.5

 Table 8.4
 Bukit Mantri August 2015 Mineral Resource Estimate for Ag, Cu by material type (reported using a 0.35 g/t Au cut-off grade)

Classification	India	ated Mi	neral Reso	ource	Infer	red Mine	eral Resou	irce			Total Mine	eral Resourc	es	
Material Type	Tonnes (Mt)	Grade (g/t Ag)	Ounces (Oz Ag)	Grade (Cu %)	Tonnes (Mt)	Grade (g/t Ag)	Ounces (Oz Ag)	Grade (Cu %)	Tonnes (Mt)	Grade (g/t Ag)	Ounces (Oz Ag)	Tonnes Ag (tonnes)	Grade (Cu %)	Tonnes Cu (tonnes)
Oxide	0.36	7.81	89,000	0.16					0.36	7.80	89,000	2.8	0.16	600
Fresh	1.33	8.41	360,000	0.26	1.01	6.39	208,000	0.27	2.34	7.54	568,000	17.7	0.27	6,200
Subtotal	1.69	8.28	450,000	0.24	1.01	6.39	208,000	0.27	2.70	7.57	657,000	20.4	0.25	6,800

The tonnage grade chart in Figure 8.3 shows the predicted rate of tonnage decrease with increasing cut-off grade and the associated increase in head grade.



#### Figure 8.3 Grade-tonnage curve for the Indicated and Inferred Mineral Resources

#### 8.1. EVENTUAL ECONOMIC EXTRACTION

The Bukit Mantri August 2015 Mineral Resource satisfies the criteria for eventual economic extraction for the following reasons:

- The mineral deposit is low sulphidation epithermal type gold deposit with associated silver and base metals, the type and characteristics of which are well understood and are exploited from many locations around the world.
- The mineralogy is described as refractory, but a number of metallurgical tests have shown that good recoveries of minerals can be obtained by flotation and gravity methods. These methods of metal recovery are common and well understood in terms of performance, capital and operating costs. The ability to produce a concentrate with copper credits is an additional benefit to the project.
- The deposit is near surface and easily exposed for extraction by open pit mining methods.

### 9. CONCLUSION AND RECOMMENDATIONS

Optiro considers that this technical report accurately represents the Bukit Mantri August 2015 Mineral Resource estimate in terms of the review and validation of input data, methodology and results. Optiro has reviewed all relevant technical information made available by SGSB. Optiro has accepted this information in good faith as being true, accurate and complete, and takes no responsibility for any flaws or omissions in the information.

Optiro considers that the historical information, geological understanding and mapped exposures of mineralisation are of sufficient standard to support the classification of the Bukit Mantri August 2015 estimate as a Mineral Resource under the JORC Code (2012 Edition).

In advancing the project Optiro recommends the following points for consideration:

- Resource development drilling to define the extents of the mineralised system, and testing of mapped vein sets that are not currently reported in the August 2015 Mineral Resource
- Close spaced infill drilling pattern over a selected area in the central part of the deposit to collect information on short scale grade variability or
- Trenching of the major vein sets on a 10m interval with channel sampling.
- Exploration drilling to test for mineralised veins to the south of Bukit Mantri
- Categorisation of veining styles and detailed alteration studies to interpret core and peripheral zones within the deposit.
- Density measurements should be continued and taken from more drillholes to improve the spread of coverage within the deposit.

Optiro notes that the mineralised system is still open along strike and laterally, and SGSB/BAHB plans to continue diamond drilling to define additional resources at Bukit Mantri. The drilling of holes to the south of Bukit Mantri is underway, and has intersected mineralised veining and breccias that are identical to the Bukit Mantri deposit. Optiro has viewed intersections of this veining in drillcore that are yet to be assayed.

### **10. REFERENCES**

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Appendix A – JORC Table 1

### APPENDIX 1 – JORC 2012 TABLE 1

### SECTION 1 SAMPLING TECHNIQUES AND DATA

Criteria	JORC Code explanation	Commentary
Sampling techniques	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.	The deposit was sampled using diamond drill holes (DD) on a nominal 40 m x 30 m grid spacing. A total of 45 NQ2 size DD holes were drilled for 7,608.5 m. Holes were angled dipping at $-45^{\circ}$ towards 315 degrees (magnetic) to optimally intersect the mineralised zones.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	The drill hole locations were picked up by survey contractors and downhole surveyed by the contract drilling company. Diamond core was used to obtain good quality samples that were logged for lithological, alteration, weathering, geotechnical, density and other attributes. Sampling and QAQC procedures were carried out following industry best practice.
	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	Diamond core is NQ2 size, sampled on geological intervals (0.3 m to 3.3 m) and cut into half core. Samples were dried, crushed, split into 500g subsamples and pulverised to prepare a 200g aliquot at an onsite mobile sample preparation unit supplied by SGS Mineral Services. Gold analysis was by 50 gram fire assay, and copper + silver by four acid digest with an AAS finish.
Drilling techniques	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).	Bukit Mantri has been sampled by diamond drilling only using NQ2 core size standard tube drilling. Core has not been oriented. Drillhole lengths range from 26.7m to 400.65m and these have all been cored from surface.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed	Core run lengths are entered into a spreadsheet and the measured recovered length of core entered to calculate a recovery factor per interval. In general there are variable recoveries in the oxidised material, and thereafter the holes then average over 90% in the transitional and fresh rock parts.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	The use of diamond drilling maximises the recovery of samples. The core is kept clean and free of grease.
	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.	No relationship between sample recovery and grade has been demonstrated at Bukit Mantri.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	Drilling prior to 2015 was not geotechnically logged, but since drillhole M6 (April 2005) geotechnical logging of rock strength, RQD, fracture type, intensity, roughness, infill type and width has been recorded.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	Logging of Diamond drill holes includes recording of lithology, alteration, mineralisation, colour and other features of the samples. Core trays are photographed with drillhole ID, box number and from and to depths. Geological descriptions of the mineral percentages are semi-quantitative.
	The total length and percentage of the relevant intersections logged	All drillholes are logged in full.

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Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	<ul> <li>Zamia Drilling 1991-1992</li> <li>The Zamia drill core was cut using a diamond saw and was sampled using half core, with intervals ranging from 0.03 to 2.15m in length.</li> <li>Southsea Gold Sdn. Bhd. (SGSB) Drilling 2013</li> <li>SGSB drilled eight reconnaissance diamond drill holes (BH1 to BH-8) in the Bukit Mantri area during 2013. Small intervals of these were assayed for gold and showed mineralised intersections associated with quartz + sulphide veining. The depths of the samples were noted but widths of the sample intervals were not recorded. These holes were not used in the resource estimate.</li> <li>BAHB Drilling 2015</li> <li>Core cutting was carried out onsite using BAHB field personnel. NQ2 size core was selected for sampling based on the observed geology. The intervals ranged from 0.3m to 4.4m, and averaged 1.85m for the "M" and "M1" series drillholes drilled in 2015. Half core samples were collected</li> </ul>
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	Not applicable – all drilling was diamond core.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	<b>Zamia Drilling 1991-1992</b> The core samples were sorted, dried at $105^{\circ}$ C, jaw crushed (95% <10mm) riffle split and pulverized to 95% passing -75 $\mu$ to give a 1.5 – 2.0 kg sub-sample. <b>BAHB Drilling 2015</b> Samples were crushed and pulverised at an onsite mobile sample preparation unit supplied by SGS. SGS received and logged each half core sample. The samples were dried in an oven at $105^{\circ}$ C, jaw crushed to 85% passing 4mm, then split into representative subsamples using a riffle splitter. SGS pulverised 500g to 85% passing 75 $\mu$ m to prepare a 200g subsample pulp for analysis. Reject coarse and pulps were retained for archive.
	Quality control procedures adopted for all sub- sampling stages to maximise representivity of samples.	<ul> <li>Zamia Drilling 1991-1992</li> <li>Optiro's review of the Zamia drilling indicates that both the original Zamia samples and the check samples were sent to Intertek McPhar, and that the only QAQC carried out was the lab's internal QAQC.</li> <li>BAHB Drilling 2015</li> <li>Quality control measures employed during the Bukit Manti 2015 drill program included the use of certified standards, field duplicates and blanks.</li> <li>Two certified pulp standards (GLG304-4 and GBMS304-1) were used during the 2015 drilling program. GLG304-4 has a low detection (121.43 ppb Au) and is more appropriate for use in initial grassroots geochemical exploration programs. GBMS304-1 has a mid-range gold grade (3.06 ppm Au), but has a moderate copper grade (3,156 ppm Cu). The performance of these standards is considered acceptable.</li> <li>Umpire laboratory campaigns using other laboratories are yet to be undertaken.</li> <li>Optiro was provided with a total of 24 Assay Certificate Reports from SGS, which contained results for SGS's internal QAQC samples (repeats, standards is considered to be acceptable. Laboratory repeat assay show a moderate to good precision and repeatability.</li> </ul>
	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.	No field duplicates have been collected to date from the diamond drilling.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sample size of half NQ2 core over lengths averaging 1.85m is considered to be appropriate to this style of gold mineralisation.

Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	Gold analysis was by 50 gram fire assay, and copper + silver by four acid digest with an AAS finish. The assaying technique is accepted as industry best practice for gold mineralisation and is considered to be a total digest method.
	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.	No geophysical tools were used to determine any element concentrations.
	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.	Laboratory QAQC involves the use of internal lab standards using certified reference material, blanks, and repeats as part of their in house procedures. Analysis of the blanks and repeats indicates good performance, with all blanks returning values less than background. Precision plots of the laboratory repeats indicate that almost 90% of samples are within 15% precision, and 65% of samples are within 5% precision.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Mark Drabble of Optiro visited the site and inspected mineralised intersections of drillcore and outcrops of mineralised veining on access tracks and cuttings.
	The use of twinned holes.	No twin holes have been drilled at Bukit Mantri to date.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Data was manually entered from the Zamia drill logs. Logging now uses template logging forms on laptop computers. Data transfer is carried out digitally and the information is stored at site, head office and archived offsite. The Zamia drilling was visually verified by Optiro during a site visit as each hole collar was encased in cement with details recorded on the plinth.
	Discuss any adjustment to assay data.	No adjustments or calibrations have been made to any assay data.
Location of data points	Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Survey control at Bukit Mantri is provided by licensed surveyors Jurukur Masa Sdn. Bhd. Co-ordinates have been provided in the Borneo RSO (Rectified Skew Orthomorphic) grid system for the drillhole collars and topographic survey. Level datum is based on BMST 0033 (RL: 63.608m) a.m.s.l., located at Klinik Kesihatan Balung, Tawau, with local temporary bench marks (TBM) set up in the project area. Drill collars are encased in concrete with PVC pipe, and the details of the drillhole inscribed into the capstone for reference. Downhole surveys of the recent (2014-2015) drilling were measured using a Camteq International Proshot PS-403 electronic multi-shot downhole survey tool. Readings were generally taken every 10m down hole and showed that the drillholes usually steepened with a slight movement south on azimuth. As the Zamia drilling did not have any downhole surveys a correction was made to insert dip and azimuth values into the database on 10m intervals based average rates of change observed in the 2015 downhole survey information.
	Specification of the grid system used.	Co-ordinates have been provided in the Borneo RSO (Rectified Skew Orthomorphic) grid system.
	Quality and adequacy of topographic control.	The surface topography was provided by SGSB using a June 2015 topographic survey carried out by licenced surveyors Jurukur Masa Sdn. Bhd. The data points were imported into Surpac and the 1 m contour strings were used to form a digital terrain model (DTM) of the natural topographic surface at Bukit Mantri
Data spacing and distribution	Data spacing for reporting of Exploration Results.	There are 45 diamond drillholes (on a nominal 30 m by 40 m spacing). Diamond drilling was angled at -45 degrees towards 315 (magnetic) to optimally intersect the vein sets.

Criteria	JORC Code explanation	Commentary
	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.	The current data spacing and distribution is considered sufficient for the purpose of carrying out a Mineral Resource estimate.
	Whether sample compositing has been applied.	Sample lengths within the mineralised domains range in length from 0.03 m to 3.3 m. Approximately 53% of the sample intervals had a sample length of two metres. Sample compositing to 2m lengths was carried out for the Mineral resource estimation.
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.	The orientation of the sampling is based on field mapping of mineralised vein sets, identified by Zamia using bulldozed trench lines oriented perpendicular to the NE-SW striking vein sets. The mapped vein packages were extended down dip (steeply to the NW) to intersect the mineralised zones in the drillholes. Subsequent infill drilling of the interpreted mineralised zones has supported the interpretations.
	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.	No sampling bias has been observed at Bukit Mantri.
Sample security	The measures taken to ensure sample security.	Twice weekly pulps are packaged and sealed with SGS seals before being couriered directly to the SGS Bau laboratory. At Bau the sealed package is received, the seal verified and the samples checked against the listing provided by the facility. All samples are registered with the SGS CCLASS LIMS system and results exported directly from that system.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Apart from the reviews as part of the Mineral Resource estimation process no other audits of the sample data have been carried out.



#### SECTION 2 REPORTING OF EXPLORATION RESULTS

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	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.	Southsea Gold Sdn Bhd (SGSB), a company with common shareholders as Wullersdorf Resources Sdn Bhd (WRSB), had accepted an offer made by the Sabah Lands and Surveys Department, Kota Kinabalu, Sabah ("Lands and Surveys Department") on 23 December 2014 whereby the Lands and Surveys Department agreed to grant SGSB a lease of 35 years commencing from 1 January 2014 to 31 December 2048 on a parcel of land held under Country Lease Title No. 105651438 in the Locality of Bukit Mantri in the District of Tawau, Sabah, Malaysia measuring approximately 1,000 hectares for mining purpose. Subsequently, the issue document of title of the Country Lease was issued and registered on 24 June 2015. Prior to the issuance of the Title, SGSB had received a prospecting license dated 17 January 2013 from the Lands and Surveys Department, granting approval under Section 8 of the Sabah Mining Ordinance 1960 for a period of four (4) years commencing from 1 January 2013 to prospect and explore minerals, namely zinc, lead, copper, gold, silver and other base metals, on an area covering approximately 200 square kilometres (equivalent to 20,000 hectares) at the Locality of Bukit Mantri in the District of Tawau, Sabah, Malaysia. On 1 October 2015, WRSB entered into a sub-lease agreement with SGSB whereby SGSB agreed to sub-lease to WRSB on a portion of the Main Lease Land measuring an area approximately 317.7 hectares for a term of 33 years in consideration of an annual rent of RM60,000. The Lands and Surveys Department had given its approval for the creation of the Sub-Lease and the Sub-Lease was registered on the Country Lease on 13 November 2015.
	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.	SGSB has tenure over the sub-lease of 317.7 hectares (which covers the Bukit Mantri deposit) for a term of 33 years with an annual rent of RM60,000 which has been approved for mining purposes .
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	The drilling of the initial 15 drill holes and mapping information was carried out by Zamia Sdn. Bhd. (Zamia) between 1986 and 1991. Subsequent drilling has been carried out by Southsea Gold Sdn. Bhd. (SGSB) during 2014 and 2015. Prior to this, exploration was undertaken by various parties (including Geological Department of Sabah, Zamia Sdn. Bhd, Renison Gold Fields Consolidated Limited of Australia) from 1958.
Geology	Deposit type, geological setting and style of mineralisation.	The Bukir Mantri deposit is an epithermal vein style gold deposit with associated copper and silver mineralisation hosted in altered andesite rocks. The mineralisation is contained within narrow northeast-southwest and north-south striking quartz - sulphide veins in a tension vein array network of fractures bounded by regional fault structures. The deposit outcrops at surface or is covered by a thin layer of overburden. The deposit dimensions are 450 m (northing), 550 m (easting) and up to 330 m below the natural surface but the deposit remains open along strike and laterally. The regional Wullersdorf block topography is characterised by low to moderately rugged terrain, with Bukit Mantri having a peak elevation of 595 metres above sea level. Weathering surfaces have been modelled using the logged weathering state and core photography from the 2015 drilling. Optiro notes that weathering of the veins will persist more deeply in fractures but this is not considered to have an effect on the bulk density.

Criteria	JORC Code explanation	Commentary
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 • down hole length and interception depth • hole length.	Refer to Annexure 2
Data aggregation methods	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.	No exploration results have been reported at this time. Any reporting will length weight intersections and will report downhole widths and uncut grades.
	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.	Mineralisation is defined by narrow vein packages and do not have low grade intervals included in the aggregated results.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent values have been reported.
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 (e.g. 'down hole length, true width not known').	The true width of mineralisation is as vein packages in the order of 1-3m on average.
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.	Refer to figures in the body of text.
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.	All results within the mineralised zones are reported.
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.	SGSB has submitted 10 bulk samples of 24kg each for metallurgical testwork by SGS labs in April 2015.
Further work	The nature and scale of planned further work (e.g. 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	The mineralised system is large and still open along strike and laterally. SGSB plans to continue diamond drilling activities to define additional resources in the Bukit Mantri project area.

#### SECTION 3 ESTIMATION AND REPORTING OF MINERAL RESOURCES

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 is entered into spreadsheets and field checks are carried out for overlapping intervals and valid codes.
	Data validation procedures used.	Data is checked using Leapfrog 3D validation routines for missing information, overlapping intervals, incorrect hole depths, repeated records and conflicts in data files, then checked graphically for errors.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Optiro visited the site between 7 and 10 December 2014 and again between 2 to 4 February 2015, to inspect drill core, road cuttings and exposures of outcropping mineralisation. Nine of the Zamia drill collar concrete marker blocks were sighted by Optiro and checked using a handheld GPS to get initial co- ordinates. Optiro visited site again on April 21, 2016.
	If no site visits have been undertaken indicate why this is the case.	Not applicable – site visits have been undertaken by the Competent Person.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	Geological continuity of the vein sets has been defined by the mapping and trenching work of Zamia, and the (15 Zamia and 29 SGSB) diamond drillholes (on a nominal 30 m to 40 m spacing over the central part of the deposit) support the widths, extents and projection of the mineralised zones. As such there is a moderate level of confidence in the geological interpretation, which is supported by infill drilling intersecting mineralisation on, or close to the predicted positions in the current model.
	Nature of the data used and of any assumptions made.	Mineralisation wireframes, which were interpreted using the Zamia surface mapped outlines of the vein sets, were used to constrain the estimation. Surface mapping and bulldozed trenches cut across the hillsides at regular intervals were used to establish the orientations, thickness and extent of the mineralised veins. The quartz vein outlines were projected vertically to the 200 mRL level and adjusted for dip so that the wireframes corresponded with intersections in the drillholes. This process of interpretation was able to fit the vein set projections into the 3D drillholes with good consistency The 2015 infill drilling confirmed the Zamia interpretations with generally only minor changes required to snap the new drillhole intersections into the existing wireframes.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	The structural framework interpreted by Zamia is considered to be robust and well supported by the data. Optiro manually adjusted the shape and orientation where necessary to conform to the updated drilling results, whilst maintaining the overall consistency of the mapped outlines. The controls on and interpretation of mineralisation are considered to be consistent with the orientation observed in outcrop exposures, and no alternative interpretations have been considered.
	The use of geology in guiding and controlling Mineral Resource estimation.	The geology of the Bukit Mantri deposit is that of a low sulphidation epithermal gold system hosted in andesitic volcanics. The andesite unit was modelled into alteration domains as the de facto lithological code. Zones of veining are logged as "mineralised zone" (MZ) and these were used to create a vein array model within the alteration zones to guide the mineralisation interpretations. A 3D geological model was created in Leapfrog 3D geological modelling software.

Criteria	JORC Code explanation	Commentary			
	The factors affecting continuity both of grade and geology.	The infill drilling and updates to the geological model show that there is a spatial relationship of vein development and gold mineralisation to the contact of the chloritic (propylitic) and silicified (phyllic) alteration zones. The bulk of the mineralisation appears to occur within the chloritic altered zone, proximal to the contact zone. Grade distribution is irregular, but this is noted as a characteristic feature of epithermal gold and base metal deposits.			
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	The mineralisation at Bukit Mantri consists of steep SE dipping controls on the mineralised domains and the relative orientation of the two dominant vein sets. The vein sets are NE – SW striking The deposit dimensions are 450 m (northing), 550 m (easting) and up to 330 m below the natural surface, but the deposit remains open along strike and laterally.			
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 of computer software and parameters used.	Grade estimation using Ordinary Kriging (OK) was completed for Bukit Mantri. Datamine Studio 3 software was used to estimate gold, copper and silver. Silver and copper were estimated within the gold mineralisation wireframes. The drill grid spacing is variable, and ranges from 30 m to 70 m. Over the central part of the deposit, drillhole spacing is on a nominal 30 m to 40 m grid. Drillhole sample data was flagged using domain codes generated from three dimensional mineralisation domains, alteration surfaces and oxidation surfaces. Sample data was composited per element to a two metre downhole length using a best fit-method, which consequently resulted in no residuals. Unsampled intervals within the mineralisation wireframes were given default detection limit assay values of 0.01 ppm for gold, copper and silver and coded as ASS (Assigned) in the assay file. The presence and correction of outliers was determined using a combination of top-cut analysis tools (grade histograms, log probability plots, CVs and disintegration analysis). Outliers were evident in the gold, copper, and silver sample populations and top-cuts were assigned. Variogram analysis was undertaken to determine the continuity of gold, silver and copper mineralisation. Due to the low number of composites, variography was carried out on a global scale (i.e. all composites grouped together). Variography was carried out within the 2D plane of the mineralisation (strike of 250° and approximate dip of 80° to the southeast). The dip plane variogram fans were examined to identify the presence of a plunge component; however, no plunge component was identified with so few composites. Due to the low number of composites, the resulting variogram models are poor and have a low level of confidence. The narrow nature of the mineralised zones means that the number of samples per domain will always be low in comparison to broader styles of mineralisation, and this will impact the ability to model consistent variography.			
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	There was some uncertainty in previous estimates concerning the lack of downhole survey data to record drillhole deviation, and Optiro has addressed this by applying average rate of change characteristics of the 2015 drillhole surveys to calibrate theoretical deviation for the Zamia holes. Due to the steeply dipping mineralised domains the effect of the adjustments was considered to be very minor.			
	The assumptions made regarding recovery of by- products.	No assumptions have been made regarding recovery of any by- products.			
	Estimation of deleterious elements or other non- grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	No deleterious elements were estimated.			

Criteria	JORC Code explanation	Commentary				
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	A single block model for Bukit Mantri was constructed using a 20 mE by 20 mN by 25 mRL parent block size with sub-celling to 2 mE by 2 mN by 5 mRL for domain volume resolution. All estimation was completed at the parent cell scale. Discretisation was set to 8 by 8 for all domains. The size of the search ellipse per domain was based on variogram models. Three search passes, with increasing search distances and decreasing minimum sample numbers, were employed. The first pass search distances were based on the ranges of the variogram and a minimum of 4 and maximum of 24 samples. In the second pass the search ranges, and the minimum number of samples was decreased to 1. In the third pass the search ellipse was increased to double the first pass search ranges and the minimum number of samples was maintained (1).				
	Any assumptions behind modelling of selective mining units.	No selective mining units were assumed in this estimate.				
	Any assumptions about correlation between variables.	No assumptions about correlation between variables were made in this estimate. Gold, copper and silver were estimated independently.				
	Description of how the geological interpretation was used to control the resource estimates.	Mineralisation domains were treated as hard boundaries in the estimation process.				
	Discussion of basis for using or not using grade cutting or capping.	Top-cuts were applied to gold, silver and copper sample populations to reduce the effect of outliers and reduce the coefficient of variation.ElementTop-cutNo. Samples CutAu (ppm)209Ag (ppm)453Cu (pom)22.0001				
	The process of validation, the checking process used, the comparison of model data to drillhole data, and use of reconciliation data if available.	Validation of the block model involved a volumetric comparison of the resource wireframes to the block model volumes. Validating the estimate compared block model grades to the input data using tables of values, and swath plots showing northing, easting and elevation comparisons showed that the estimate honoured the raw data, though considering the data spacing there is evidence of smoothing as a result of the kriging process. The block estimates were then statistically validated against the informing composites on a whole-of-domain basis. Whilst on a global basis, the block model comparison with the declustered composite data for gold is acceptable (i.e. within 10%), the block model does not correlate well with the composite grades for the individual lodes. This is evidence that the current drilling does not have a sufficient number of samples to approximate the local grade distribution due to the degree of grade extrapolation that has occurred. No mining has taken place; therefore no reconciliation data is available.				
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	Tonnages are estimated on a dry basis.				
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied	A nominal grade cut-off grade of 0.3ppm gold was used to define the mineralised domains.				

Criteria	JORC Code explanation	Commentary			
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.	No minimum mining assumptions were made deposit during the resource wireframing or estimation process.			
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.	No metallurgical factors or assumptions were made during the resource estimation process.			
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 been considered this should be reported with an explanation of the environmental assumptions made	No environmental factors or assumptions were made during the resource estimation process.			
Bulk density	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.	SGSB has taken 430 density readings for residual, oxidised and fresh rock samples. Residual soils have been assigned a density of 1.51 g/cm <sup>3</sup> . Oxidised material changed from 2.5 g/cm <sup>3</sup> (assumed) to 2.37 g/cm <sup>3</sup> in the current estimate, and fresh rock density remains unchanged at 2.8 g/cm <sup>3</sup> .			
	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,	The density measurement database included 47 waxed measurements for soil and oxide samples and 383 'non wax' measurement readings for fresh rock. Density measurements were derived using the Archimedes weight in air – weight in water method.			
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	The samples were coded in Datamine as 'Soil', 'Oxidised' and 'Fresh' using the Residual Soil Base of Oxidation and Top of Fresh wireframes. The wireframes were used to select the samples within each domain and the fresh sample results analysed by a process of declustering to determine the average density values to assign to the block model			

Criteria	JORC Code explanation	Commentary			
Classification	The basis for the classification of the Mineral Resources into varying confidence categories	<ul> <li>The geological and grade continuity demonstrated by the available data is considered to be sufficient to support the classification of the central part of the deposit as an Indicated Mineral Resource under the JORC Code (2012 Edition), based upon the following criteria: <ul> <li>Diamond drilling on 30 m by 40 m spacing</li> <li>Vein set orientation, width and location defined by Zamia mapping and trenching</li> <li>Geological continuity of the structures confirmed by the infill drilling programme</li> </ul> </li> <li>In addition, parts of the Mineral Resource were classified as Inferred Mineral Resources using the following criteria: <ul> <li>Vein set orientation, width and location defined by Zamia mapping and trenching</li> <li>Diamond drilling on wider spacing</li> </ul> </li> </ul>			
	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).	The classification takes into account the relative contributions of geological and data quality and confidence, as well as grade confidence and continuity.			
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The classification reflects the view of the Competent Person.			
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	There have been no independent audits of the Optiro Mineral Resource estimates. The Bukit Mantri Mineral Resource has been updated twice since January 2015, and the inclusion of new drilling information has validated the interpretations and methodology.			
	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	The relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource as Indicated and Inferred per the guidelines of the JORC Code (2012 Edition)			
	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	The statement relates to global estimates of tonnes and grade. The confidence intervals have been based on estimates at the parent block size.			
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available	No production data is available as no mining has taken place.			



### ANNEXURE 2 – DRILLHOLE COLLAR INFORMATION

BHID	EASTING	NORTHING	ELEVATION	DEPTH	READING	DIP	DATE	DRILLED
					DEARING		DRILLED	BY
M10	935389.905	501172.805	484.964	130	315	45	28/03/2015	Eagle
M11	935371.401	501191.91	481.453	85	316	47	29/03/2015	Eagle
M12	935349.677	501211.958	475.306	210.5	313	46	4/04/2015	Eagle
M1-2-W1	935283.507	501152.276	433.191	190	317	46	20/04/2015	UCSB
M1-2-W2	935258.166	501167.933	430.431	150.4	317	45	25/04/2015	UCSB
M1-2-W3	935232.017	501191.843	427.726	150	314	45	29/04/2015	UCSB
M1-2-W4	935200.574	501219.185	422.282	26.7	315	45	30/04/2015	UCSB
M1-2-W5	935169.928	501239.315	425.306	150	318	44	7/05/2015	UCSB
M1-2-W6	935151.367	501255.919	421.625	150	316	45	16/05/2015	UCSB
M1-2-W7	935129.719	501280.824	416.157	150	321	45	24/05/2015	UCSB
M1-2-W17	935149.46	501215.967	412.493	150.2	305	45	4/06/2015	Eagle
M1-2-W8	935102.955	501312.192	411.723	138.1	313	45	6/05/2015	UCSB
M1-2-W9A	935112.433	501343.866	414.494	150.8	305	47	14/05/2015	Eagle
M1-2-W16	935108.793	501259.403	406.719	141.1	313	41	28/04/2015	Eagle
M1-2-W18	935124	501242.602	408.492	151.2	307	44	27/05/2015	Eagle
M1-2-W30	935048.128	501263.587	386.077	150	315	45	4/06/2015	UCSB
M1-2-W31	935034.31	501279.439	384.41	150	312	46	29/05/2015	UCSB
M13	935302.966	501275.989	470.069	100	312	46	8/04/2015	UCSB
M14	935519.516	501109.187	445.073	140.1	312	46	5/04/2015	Eagle
M15	935458.624	501165.481	471.145	170.5	316	46	1/04/2015	Eagle
M16	935432.41	501190.655	486.689	120	307	47	24/03/2015	Eagle
M17	935407.231	501212.241	496.922	80	315	46	21/03/2015	Eagle
M18	935563.452	501161.836	473.802	140	315	49	20/03/2015	UCSB
M19	935468.837	501242.951	502.845	45.4	315	45	9/03/2015	Eagle
M19A	935467.558	501244.078	502.789	130	314	48	16/03/2015	Eagle
M20	935289.986	501172.72	441.547	139	313	46	12/04/2015	Eagle
M6	935409.257	501119.197	452.598	211	315	45	21/04/2015	Eagle
M7	935378.842	501142.254	471.193	170	315	45	22/02/2015	Eagle
M8	935360.506	501162.47	467.249	250.9	315	45	5/03/2015	Eagle
M9	935471.595	501203.176	490.166	150	313	45	13/04/2015	Eagle
WS001	935435.26	501240.908	507.354	64.5	315	45		Zamia
WS002	935455.386	501218.801	497.643	102.7	315	45		Zamia
WS003	935338.174	501182.273	462.192	121	315	45		Zamia
WS004	935503.967	501178.311	473.826	383.35	315	45		Zamia
WS005	935314.125	501286.934	478.152	121	310	45		Zamia
WS006	935362.813	501314.435	493.147	165.55	310	45		Zamia
WS008	935390.579	501363.04	510.329	143.75	305	45		Zamia
WS009	935438.543	501078.983	425.673	250.9	315	45		Zamia
WS010	935274.326	501117.374	422.59	160.75	315	45		Zamia
WS011	935581.462	501096.236	452.918	209.55	315	45		Zamia
WS012	935629.349	501163.132	446.208	345	315	45		Zamia
WS013	935320.697	501070.308	429.644	300.35	315	45		Zamia
WS014	935352.732	501109.451	452.358	284.35	315	45		Zamia
WS015	935271.448	501050.433	417.676	294.1	315	45		Zamia
WS016	935515.235	501002.135	420.708	400.65	315	45		Zamia



Appendix B – QAQC Plots

### SGS – Gold Standards





### SGS – Silver Standards





### SGS – Copper Standards







### SGS – Blanks







### SGS - Lab Repeats - Gold







Appendix C – Grade Profile Plots



#### **GEODOMAIN 100 - AU**



### GEODOMAIN 200 - AU





#### **GEODOMAIN 300 - AU**



#### **GEODOMAIN 400 – AU**





#### **GEODOMAIN 500 - AU**





#### **GEODOMAIN 100 – AG**





#### **GEODOMAIN 200 – AG**




### **GEODOMAIN 300 – AG**





### **GEODOMAIN 400 – AG**



### **GEODOMAIN 500 – AG**





#### **GEODOMAIN 100 - CU**





#### **GEODOMAIN 200 – CU**





#### **GEODOMAIN 300 – CU**





### **GEODOMAIN 400 – CU**







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# Appendix D: Zamia Geology Map





## Appendix E: Experimental Variogram Fans and Model

## Variogram Fans – Gold



## Variogram Model – Gold



### Variogram Fans – Silver



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### Variogram Model – Silver



### Variogram Fans – Copper



## Variogram Model – Copper

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