



*Martlet Consultants*



## **Gold Anomaly Limited**

# **Nevera Prospect (Crater Mountain) Mineral Resource Estimate**

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Submitted to: Pat Smith  
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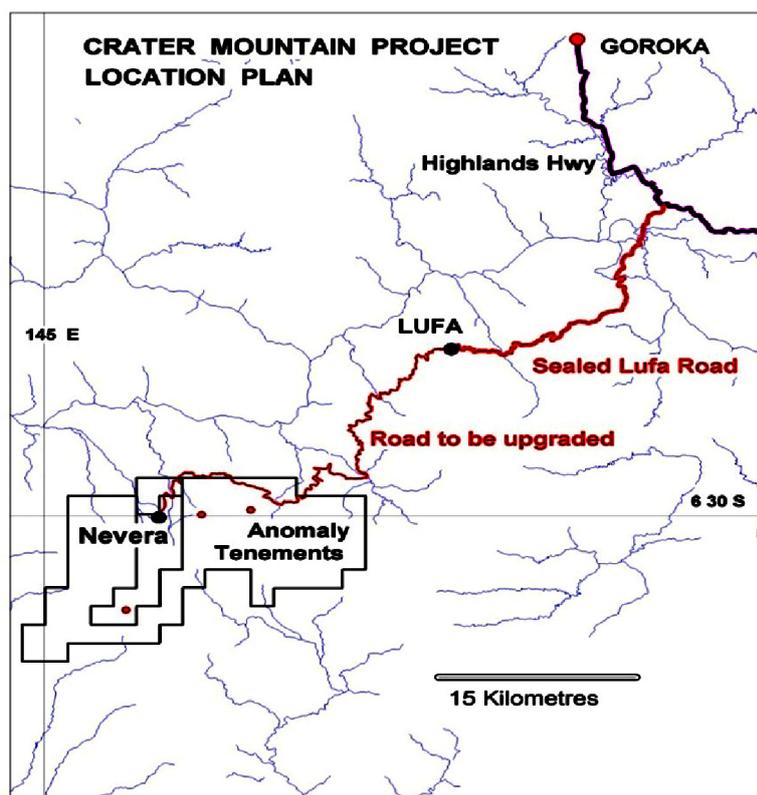
## Introduction

Gold Anomaly Limited (Gold Anomaly) has a 70% beneficial interest and is currently operator of the joint venture covering the Crater Mountain Project, Papua New Guinea (PNG). Gold Anomaly is currently undertaking a 10,000 m drilling program at Nevera Prospect at Crater Mountain.

Pat Smith of Gold Anomaly approached Martlet Consultants Pty Ltd (Martlet) with regard to completing a resource estimate in accordance with the 2004 JORC Code for the Nevera Prospect, Crater Mountain Project, PNG. As the first stage of the resource estimate, Dr Andrew Richmond from Martlet undertook a site visit from the 25<sup>th</sup> to the 28<sup>th</sup> October 2011, which was documented in Memorandum 001-2011010-Rev1. The present report describes the inputs, methods and results of the Nevera Mineral Resource Estimate that was based on the assay results of 26 drill holes available in November 2011.

### Location and access

Exploration activities for the Crater Mountain Project are based either at the Marmati camp located near the village of Guasa approximately 50 km south west of Goroka, or at the “Top Camp”, which has been built on the fringes of the Nevera prospect and is situated approximately 750 m south of the Marmati camp but at a much higher elevation. Access to the camps is currently by helicopter from Goroka (20 minute flight) or by fixed wing flight to the airstrip at Guasa, which is a one hour walk from Marmati. There are airstrips at other locations around the periphery of the license area but the interior can only be accessed by helicopter in good weather or by cutting walking tracks. A location map for the project area is presented in Figure 1.



**Figure 1:** Crater Mountain Project location map

There is a sealed road from Goroka to the Lufa Mission (the sub-provincial administrative centre) from there a 20 km dirt track, passable by 4WD, extends to the village of Ubaigubi on the north east edge of the Tenement block. Guasa is 10 km west of Ubaigubi and was previously linked by a 17 km dirt

road track which is presently un-passable. This road was temporarily re-opened to allow access for a bulldozer and excavator to begin work at Crater Mountain, however, after constant rainfall and subsequent landslips this road is no longer passable.

**Tenements**

Exploration License (EL) 1115 was first granted to Macmin NL on the 26<sup>th</sup> September 1994 for a period of 2 years. Initially the tenement covered an area of 700 km<sup>2</sup>, however this area has since been reduced several times to what is now the minimum 43 km<sup>2</sup> for an EL in PNG. EL1115 has been renewed several times and the tenement now expires on the 25<sup>th</sup> October 2012. The current ownership of EL 1115 includes Gold Anomaly with a minimum 70% beneficial interest, with the balance shared amongst two or more of Triple Plate Junction, Celtic Minerals, and New Guinea Gold Ltd. Gold Anomaly is the current manager of the project.

EL1115 together with EL's 1353 and 1384 comprise the Crater Mountain Project. The tenement outline is presented in Figure 2.

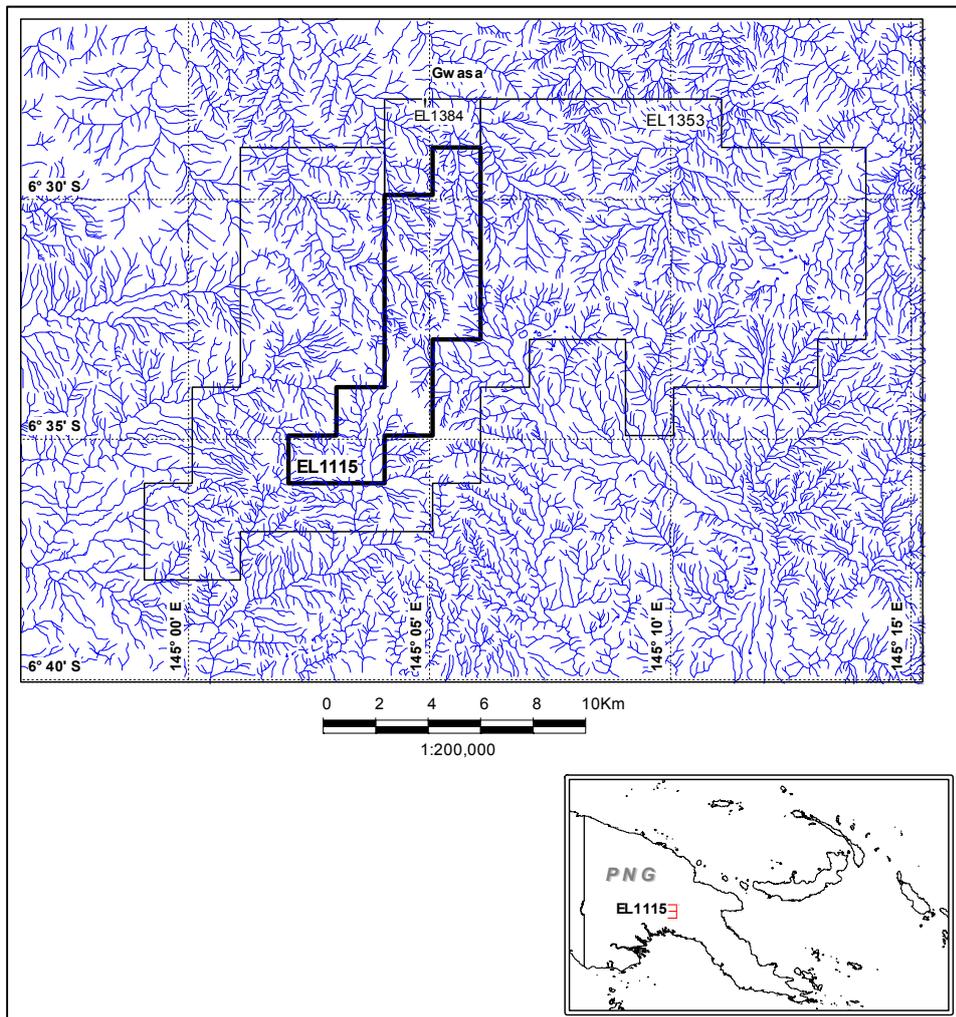


Figure 2: Tenement location map

**Conventions**

For the purposes of reporting, reference is made to a number of technical terms, the definitions of which are listed below.

*Grid coordinates*

All grid co-ordinates are in Universal Transverse Mercator (UTM) co-ordinates. The project area lies in UTM Zone 55 referenced to the World Geodetic System 1984 (WGS84) datum.

### *Block dimensions*

Three-dimensional entities in this report are described in the format X by Y by Z, where X refers to the easting distance in metres, Y refers to the northing distance in metres and Z refers to the elevation in metres.

Abbreviations used in this report are:

ALS	Australian Laboratory Services
CMVC	Crater Mountain Volcanic Complex
CRM	Certified reference material
DBD	Dry bulk density
DDH	Diamond drill hole
GPS	Global positioning system
g/t	Grams per ton
ICPAES	Inductively coupled plasma atomic emission spectroscopy
JORC	Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia
IDW	Inverse distance weighting
Mt	Million tonnes
OK	Ordinary kriging
PNG	Papua New Guinea
ppm	Parts per million
QAQC	Quality assurance and quality control
QED	Quest Exploration Drillers
UTM	Universal Transverse Mercator
WGS84	World Geodetic System 1984

## Geology

This geological section is paraphrased from Smith (2011).

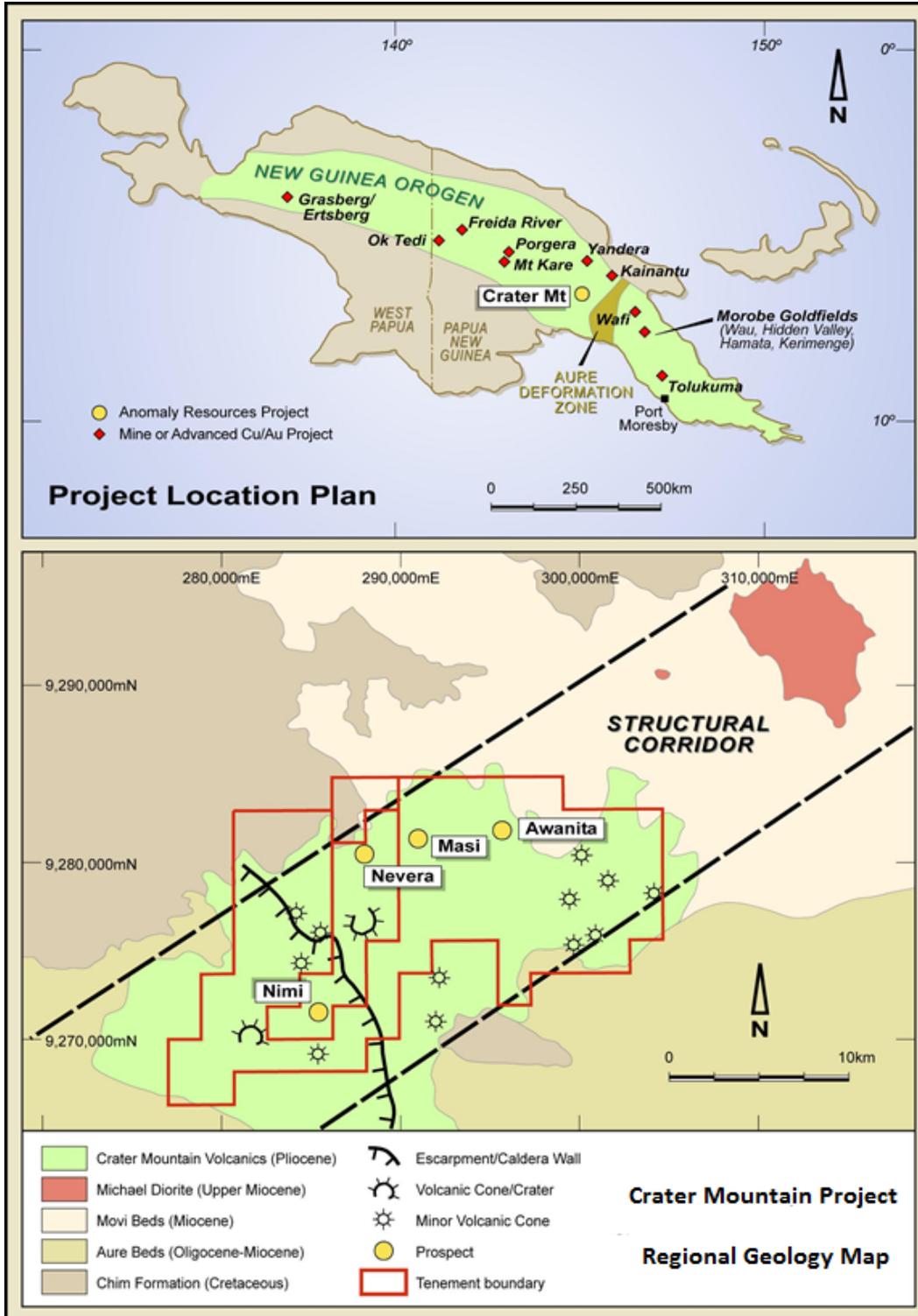
### ***Regional geology***

The Crater Mountain Project is centered on the Crater Mountain Volcanic Complex, which is located in the Papuan Fold Belt, shown in Figure 3. The belt forms part of the New Guinea Orogen, a 600 km long by 200 km wide mobile zone that makes up the mountainous spine of PNG.

The Papuan Fold Belt comprises a thick succession of late Triassic and Tertiary passive margin marine sediments merging to the east into the Aure Deformation Zone. The fold belt is host to a number of high level intrusions and volcanic centers of Late Miocene to Pliocene age that are progressively more eroded and unroofed from east to west, and significantly mineralised in places. The intrusive centers are interpreted to be of mantle origin with some degree of crustal contamination based on strontium isotope data. The location of the centers and related mineralisation reflects a fundamental structural control with the largest deposits (Ok Tedi, Grasberg, Porgera, Mt Kare, Freida River, and Nena) all being located at the intersection of large NNE trending transfer structures perpendicular to the direction of accretion and WNW trending arc parallel faults. The transfer structures are thought to represent long lived deep crustal fractures possibly associated with rifting of the craton margin in the Mesozoic that were reactivated as wrench faults by oblique convergence.

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Crater Mountain is adjacent to the Aure trough or deformation zone that represents a significant discontinuity in the fold belt between the Papuan Fold Belt to the west and its eastern extension commonly referred to as the Eastern Fold Belt. The Aure Deformation Zone is characterised by NS trending faults and fold axes and is thought to reflect deformation associated with oblique convergence between the Australian and Pacific Plates.



**Figure 3:** Regional geology map

### *Local geology*

The Crater Mountain Volcanic Complex (CMVC) is located on the Karimui 1:250,000 [1974] and the Crater 1:100,000 [1977] Geological Sheets and is predominantly on the Crater 1:100,000 topographic sheet [9784], although parts are on the Kubor [7885], Goroka [9875] and Karimui [7887] topographic sheets.

The CMVC is a deeply eroded Quaternary strato-volcano located at the eastern end of the Papuan Fold Belt adjacent to the Aure Deformation Zone. It was emplaced on a partially peneplaned surface of Cretaceous to lower Tertiary fine to medium grained marine clastic sediments and limestone. A second phase of volcanism postdates much of the erosion.

The CMVC is much more eroded than adjacent volcanoes that are well defined strato-volcanoes. There is no well-preserved central crater although there are two craters approximately 1.5 km in diameter at Crater Mountain and approximately 9 km to the south west at Nimi, as well as numerous smaller volcanic cones, intrusive plugs and hot springs related to a second phase of volcanic activity.

The CMVC may be one of the oldest of the Papuan Fold Belt volcanoes. A late Pliocene age has been proposed based on the degree of subsequent erosion compared to adjacent volcanic centers. The less eroded strato-volcanoes of Karimui, Mt Murray and Surau are regarded as Pleistocene in age as Mt Murray volcanics overlie faulted and folded Pliocene sediments. The second stage of volcanism at the CMVC, which postdates the erosion, is interpreted to be late Pleistocene to recent in age.

#### *Phase one volcanics*

The first phase volcanic rocks are characterized by massive shoshonitic basalt and andesite flows that occur as ridge cappings in the north and residual volcanic aprons that are more predominant in the south. Agglomerate, tuff and lahars are present but were probably preferentially eroded. The volcanic pile shows evidence of hydrothermal alteration and mineralisation where exposed by erosion and the absence of later volcanics along the northern flank of the complex.

#### *Phase two volcanics*

The younger phase of volcanics are well preserved lava flows associated with discrete volcanic centers as well as ash fall deposits and lahars. Valleys often host two parallel streams each side of a recent lava flow emplaced in the eroded valley. Many dolines and sink holes are developed on the surface of porous phase two volcanics.

#### *Dacite volcanism*

Dacitic rocks associated with hydrothermal alteration and mineralisation have been recognised at Nevera and Awanita on the northern margin of the CMVC. The rocks have been variously interpreted as volcanics and subvolcanic plugs. They clearly predate the Phase 2 volcanics but their relationship to Phase 1 volcanics is unclear.

#### *Diorite intrusives*

Float rock of medium grained diorite has been reported by explorers in many parts of the CMVC and outcrop is documented at Nimi, to the north of Nevera, in the Masi Creek drainage, and at Awanita. The diorites clearly intrude Chim Formation sediments and are altered and cut by quartz-pyrite veins, but the relationship between the diorite, dacite volcanics and Phase 1 volcanics is unclear. The diorite may be related to, or coeval with, the late Miocene Michael Diorite that outcrops in the prominent Mt Michael massif of 3,500 m elevation approximately 10 km to the NW of the edge of the CMVC. The Michael Diorite is described as a hypabyssal porphyritic hornblende microdiorite that is hydrothermally altered with 2-3 % pyrite and traces of chalcopyrite.

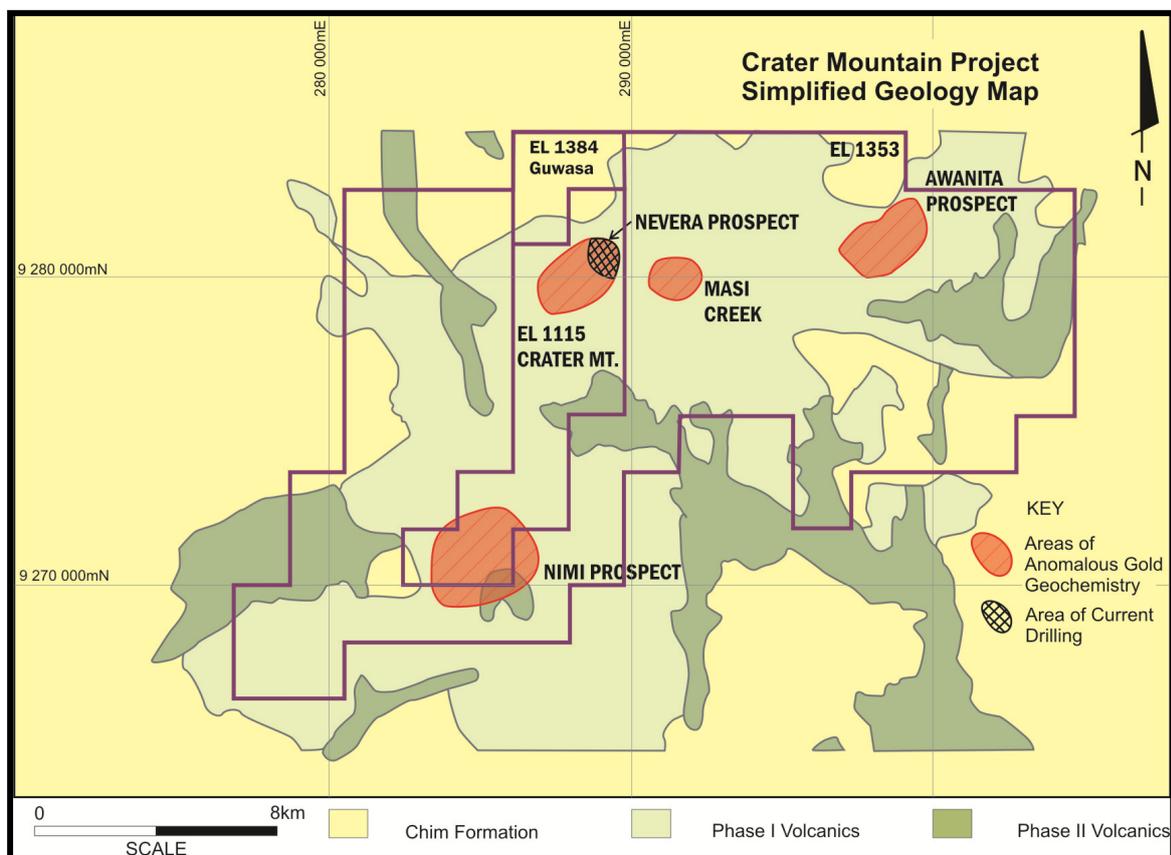
#### *Chim formation*

These rocks are finely bedded massive shales and siltstone that represent the oldest rock units at Nevera and are present throughout the Highlands of Papua New Guinea, including the host rocks to the Porgera Intrusion Complex. Un-metamorphosed Chim Formation is black grey in colour and soft and friable and may contain syngenetic pyrite.

### *Bleached Chim formation*

Bleached or hornfelsed Chim Formation rocks developed as a result of contact metamorphism that is associated with nearby intrusions (as recognised at Porgera). The bleached sediments are more competent in character than regular Chim Formation material, and therefore represent a superior vein host than the fresh shales. In addition to baking and localised silicification bleached Chim contains disseminated and very fine fracture pyrite introduced during metamorphism. Importantly, bleached Chim Formation rocks may represent competent hosts for mineralised vein formation, which at Porgera-Waruwari occurs as halos around intrusive stock-like sources for metamorphism and vein mineralisation. At Nevera, bleached Chim formation rocks have been intersected by several holes, and generally contain quartz-pyrite veining and base metal (Pb–Zn–Cu) carbonate veining. Gold mineralisation of varying intensities is associated with these veins.

A simplified geology map for the Crater Mountain Project is presented in Figure 4.



**Figure 4:** Local geology map

## Project Data

Extensive exploration work has been undertaken on EL1115 since it was first granted in 1994. This work includes:

- Stream sediment and soil geochemical sampling;
- Rock chip sampling;
- Historical shallow benching by mostly manual methods;
- Bulldozer and excavator benching by Gold Anomaly;
- Channel sampling of benches;

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- Historical diamond drilling, with a total of 17 holes for 5,035.6 m drilled by BHP, MacMin and TPJ;
- Nine diamond holes for 4,180.4 m drilled by Gold Anomaly in 2011.

Table 1 lists the drill holes included in the November 2011 drill hole database that was used for the resource estimate. Martlet confirmed the Easting and Northing co-ordinates within 10 m by GPS (Garmin GPSmap 62S) for holes NEV018, 019, 022, 023, 024, and 025 during a site visit.

**Table 1:** List of drill holes in November 2011 database

Hole	Year	Easting	Northing	RL	Depth	Company
NEV001	1997	287858	9280674	2025.69	330.7	BHP
NEV002	1997	288565	9281060	2185.64	340	BHP
NEV003	1997	288266	9281488	1978.54	316.7	BHP
NEV004	1998	287955	9280950	2049.18	200.3	Macmin
NEV005	1998	288530	9281049	2167.04	250.6	Macmin
NEV006	1998	288361	9280928	2272.38	271.6	Macmin
NEV007	1999	288484	9281028	2193.16	261	Macmin
NEV008	2005	288544	9281053	2172.62	450.04	TPJ
NEV009	2005	287918	9281106	2014.89	458	TPJ
NEV010	2005	288306	9281128	2210.72	453.22	TPJ
NEV011	2005	288437	9281175	2131.51	348.79	TPJ
NEV012	2005	287891	9280546	2062.63	277.79	TPJ
NEV013	2006	287768	9280516	1954	243.1	TPJ
NEV014	2006	288562	9281058	2186.02	240	TPJ
NEV015	2006	288726	9281137	2042.53	210.39	TPJ
NEV016	2006	288361	9280925	2272.13	253.89	TPJ
NEV017	2006	286964	9279448	2005	129.39	TPJ
NEV018	2011	288461	9281113	2170.5	594.59	Gold Anomaly
NEV019	2011	288564	9281120	2156.71	525.4	Gold Anomaly
NEV020	2011	288204	9281218	2146.18	532	Gold Anomaly
NEV021	2011	288179	9280888	2169.37	605.4	Gold Anomaly
NEV022	2011	287995	9281003	2032.95	282.5	Gold Anomaly
NEV023	2011	287996	9281007	2031.54	91.5	Gold Anomaly
NEV024	2011	288767	9281182	1961.38	642.4	Gold Anomaly
NEV025	2011	288258	9281011	2176.81	612	Gold Anomaly
NEV026	2011	287983	9281091	2050.68	306.6	Gold Anomaly

### **Drilling method**

Drilling at Crater Mountain by BHP, Macmin, TPJ, and Gold Anomaly has been exclusively by diamond core methods. The type of drill rigs used by explorers prior to Gold Anomaly is not known, but they were able to achieve PQ diameter near surface and only reach depths of up to 450 m.

Diamond core drilling for Gold Anomaly is being undertaken by Quest Exploration Drillers (QED) from Lae using an MD500 rig and triple tube methods. QED drill rig D38 is rated to 1,000 m, and achieved 1,104.4 m in NEV027.

Relocation and consumable supply is essentially by helicopter.

Drill rig setup is supervised by a geologist to ensure the correct orientation. Holes are initially drilled with PQ rods, which are reduced to HQ and NQ as required downhole.

Core is orientated for each drill run using a Reflex ACT II device. A red mark is drawn on the broken end of core at the bottom of the run. Should the core not be able to be pieced together core orientation will be lost up hole of this point for the remainder of the run. It is recommended that the orientation is marked lengthways along the core whilst still in the splits. This line could be used to guide core cutting.

All core was transferred directly from the splits to correctly sized plastic core trays at the rig site. Plastic core blocks were placed in the trays to record down hole depth at the end of each drill run. At intervals the core trays were transported to a centralised core handling area by an excavator using a cage.

Martlet observed two QED drill rigs. Drilling operations on both were carried out with reasonable care and very high core recovery was achieved during observation.

Following completion of the drill hole PVC casing is cemented into the ground to mark the location.

### **Logging approach**

The core is geologically logged onto paper by company geological staff. This includes lithology, alteration, mineralisation, as well as geotechnical criteria. Alpha and beta (where successful core orientation exists) angles of veins are measured in the core.

### **Sampling method**

Drill core sampling procedures for Gold Anomaly are documented, and involve:

- Core is checked against core markers and pieced together if required;
- Core is marked at meter intervals and also lengthways, based on core orientation marks made for each run;
- A sample dispatch form is created prior to sampling with assigned consecutive sample numbers that allow for blanks, CRMs, and field duplicates;
- Two metal tags are created with the sample number as well as a pre-marked calico sample bag;
- One metal tag is attached to the core tray, the other is inserted in the calico bag;
- Core is cut lengthways using a Compact CM41 diamond saw, and one half is placed in the numbered calico bag and sealed;
- Several calico bags are placed into poly-weave sacks;
- Samples are despatched to Goroka by helicopter, then forwarded to SGS in Lae for sample preparation.

Intervals with thick sulphide veins are subjectively orientated in an attempt to get 50% of the sulphide vein in each half of the cut drill core. This practice is not ideal but acceptable at Crater Mountain as high grade Au is commonly spatially associated with these veins. The alternative would be high nugget values, poor field duplicates, and potentially bias if the sulphide rich half of the core is preferentially selected.

It was noted that some core intervals were not cut centrally. This could be due to the core saw not being adjusted when changing core diameter. The cutting width of the diamond core saw should be checked by a geologist when sampling moves from PQ to HQ and from HQ to NQ core to avoid bias

Drill core sampling procedures for BHP, Macmin, and TPJ are not known. However, core trays for historical drill holes NEV008-016 were observed stacked in storage sheds at the Mamati camp. All core observed was cut in half apart from some PQ core near top of NEV008. All core appeared to be well cut and sampled. The vast majority of core was HQ and NQ. Metal tags with sample numbers were still intact on most trays. Core recovery appeared to be mostly good (>90%).

### **Assaying method**

Little is known about the assay method used by explorers prior to Gold Anomaly. However, an assay certificate (237029) for NEV008 indicated that TPJ used Australian Laboratory Services (ALS) method AA26 for Au (0.01 g/t detection limit), ME-ICP41 for a suite of 33(?) elements, and OG46 for re-assay when Ag >100 g/t; Cu >10,000 ppm, or Zn >10,000 ppm. An assay certificate (Ref 06200PC) indicated that method FA50 was used by TPJ for NEV015.

For Gold Anomaly drill holes, sample preparation is carried out by SGS PNG Ltd (SGS) in Lae, and pulps are assayed by SGS in Townsville, Australia. Sample preparation involves:

- Samples are dried in the original calico bag at 105°C for a minimum of 4 hours in an Essa DO1 2m<sup>3</sup> drying oven;
- Dried samples are crushed to 90% passing 3 mm using a Rocklabs Boyd Mk III jaw crusher;
- The crushed sample is then riffle split to achieve a 0.6 to 1.2 kg subsample;
- The 0.6 to 1.2 kg subsample is pulverised to a specification of >90% passing 75 µm. This is achieved by pulverising the sample for approximately 3 minutes in an Essa LM2-P pulveriser equipped with B2000 bowl sets;
- One sample in twenty is wet sieved to ensure pulverising performance meets the specification. Samples are selected alternately from both LM2 pulverisers;
- One sample in ten is selected randomly and resplit prior to pulverisation. These control samples are shipped as part of the batch to SGS Townsville;
- Assay pulps are placed in wire-top bags, and several included in a heat-sealed plastic bag placed in a shipping box. The shipping box is sealed with packaging tape and SGS security tape. Up to three shipping boxes are placed into a labelled white poly-weave sack that is sealed with cable ties and a numbered security seal;
- Samples are then shipped to SGS Townsville by DHL Express.

SGS Townsville used method ICP12S (ICP-OES) with a 2 acid aqua regia digest (DIG12S) at low temperature for a suite of elements, and method FA505 or 50 g fire assay for Au.

Both ALS and SGS Australian laboratories have high level Quality Management Systems in place on site that conforms to Australian Standards ISO 9001 and ISO 17025.

### QAQC

The QAQC programs for historical drilling are not known in detail. It was noted from TPJ reports that they used CRMs, including OREAS60PA (assays returned were 4.5 – 5 g/t Au), OREAS61PA (2.5 – 3 g/t Au), OREAS62PA (±9.5 g/t Au), and an unknown CRM of ±1.0 g/t Au. The actual certified values are not known. CRMs were inserted at 1:20. Blanks were inserted at 1:40, and 5 assays ranged from 0.04 to 0.08 g/t Au. It is recommended that Gold Anomaly attempt to source and collate digitally all historical QAQC data.

Gold Anomaly's QAQC program involved intra-laboratory pulp duplicates, blind field duplicates, blanks, and certified reference material.

Pulp duplicates have been collected and are to be submitted to an alternative laboratory for analysis.

Blanks are inserted every 20 to 30 samples and at the start of each drill hole. Blanks consist of 3-5 kg of bentonite. Results indicate little to no contamination with results mostly below the detection limit of 0.01 g/t Au.

Filed duplicates are taken every 20 to 30 samples. In the vast majority of cases the duplicates were ½ core, however, in some instances ¼ was used. It is recommended that field duplicate samples are consistently ½ core. Duplicates show variability that is within an acceptable range.

CRMs are inserted every 20 to 30 samples on a random basis. Table 2 lists the Geostats' CRMs used by Gold Anomaly. It is recommended that an additional high grade (15-30 g/t Au) CRM should be purchased and used in expected zones of high grade Au mineralisation, for example, the artisanal mining area.

The QAQC results indicated that the assays for the Gold Anomaly drilling program were satisfactory for resource estimation purposes.

**Table 2: List of Geostats Au CRMs used by Gold Anomaly**

Standard	Mean (FA)	S.Dev.	Confidence Interval	Comment
G310-4	0.43	0.03	±0.005	Sub ore low sulphide
G998-1	2.95	0.12	±0.025	Oxide high Fe
G399-5	0.87	0.05	±0.01	Fresh SW mineral field
G397-3	1.72	0.11	±0.016	Laterite/kaolin
G397-2	4.49	0.18	±0.044	Composite oxide ore
G907-2	0.89	0.06	±0.01	Low sulphide/low ore grade
G904-7	1.58	0.09	±0.02	Low sulphide Pacific rim
G305-5	2.43	0.12	±0.026	Sulphide Au Murchison
G303-8	0.26	0.03	±0.007	Gold tail – minor sulphide
G307-5	4.87	0.17	±0.003	Diorite low sulphide

### **Bulk density**

It is not known whether BHP, Macmin or TPJ has programs to measure *in situ* dry bulk density (DBD) of the various rock types. Gold Anomaly initiated a program to measure DBD of drill core using a calliper method from drill hole NEV027 onwards. Average DBD values derived from a total of 111 measurements of drill core in NEV27, included:

Chim Formation	2.64 t/m <sup>3</sup> (24 samples; 2.51 t/m <sup>3</sup> to 2.99 t/m <sup>3</sup> );
Altered Chim Formation	2.60 t/m <sup>3</sup> (31 samples; 2.42 t/m <sup>3</sup> to 3.02 t/m <sup>3</sup> );
Porphyry	2.52 t/m <sup>3</sup> (38 samples; 2.24 t/m <sup>3</sup> to 2.83 t/m <sup>3</sup> ); and
Volcanics	2.55 t/m <sup>3</sup> (18 samples; 2.38 t/m <sup>3</sup> to 2.75 t/m <sup>3</sup> ).

It was noted that for NQ core measurements that there was a strong negative correlation between calliper measured diameter and DBD. Consequently, it is recommended that ongoing training be implemented to ensure that several diameter measurements are taken for each piece of core and the results averaged.

Oxidation tends to be limited to a maximum depth of 20 m. As the “mixing zone” that is the subject of the current resource estimate falls entirely below this depth, the following DBD values were adopted for resource estimation purposes:

Altered Chim Formation	2.60 t/m <sup>3</sup> ; and
Other rock material	2.50 t/m <sup>3</sup> .

### **Database**

Gold Anomaly supplied Excel files containing drill hole collar, downhole survey, geology, and assay information. Martlet imported the data into an Access Database to undertake a validation. Validation included check for gaps, overlaps, missing data, and cross table mismatches. Some issues noted by Martlet were rectified in Gold Anomaly’s drill hole database.

Martlet undertook additional validation of drill hole assays for NEV018-021 against SGS assay certificates (TV074615, TV074870, TV074876, TV075129, and TV075415). Only one discrepancy was noted for NEV018 from 290-292 m (sample 111496) where a preliminary 0.57 g/t Au assay was included in the database rather the final 0.70 g/t Au value on the assay certificate.

Database preparation included:

- Database audit and corrections;
- Conversion of below detection limit values stored in the database as negative, to positive values corresponding to half the detection limit for the available assay method;
- Conversion blank or null sample intervals where no assays existed to -9; and
- Imported all data into a Vulcan database.

Drill core in potentially mineralised zones was collected predominately at 1 or 2 m intervals, and was composited to 4 m.

**Survey data**

All coordinates are in UTM Zone 55 referenced to the WGS84 datum.

*Ground survey*

Some topography and collar ground survey has been collected as spot heights by Differential GPS (DGPS). DGPS has been used to record Gold Anomaly drill hole collars as well as historical drill hole collars (excluding NEV013 and 017), and all dozed benches. The DGPS survey was undertaken by Mr Alan Leeds, who has stated an accuracy of ±0.1 m in the horizontal and 0.15 m in the vertical in open terrain, and ±0.25 m in the horizontal and 0.5 m in the vertical for those holes located in gullies or under dense vegetation.

It is recommended that detailed topographic information for the tenements is acquired.

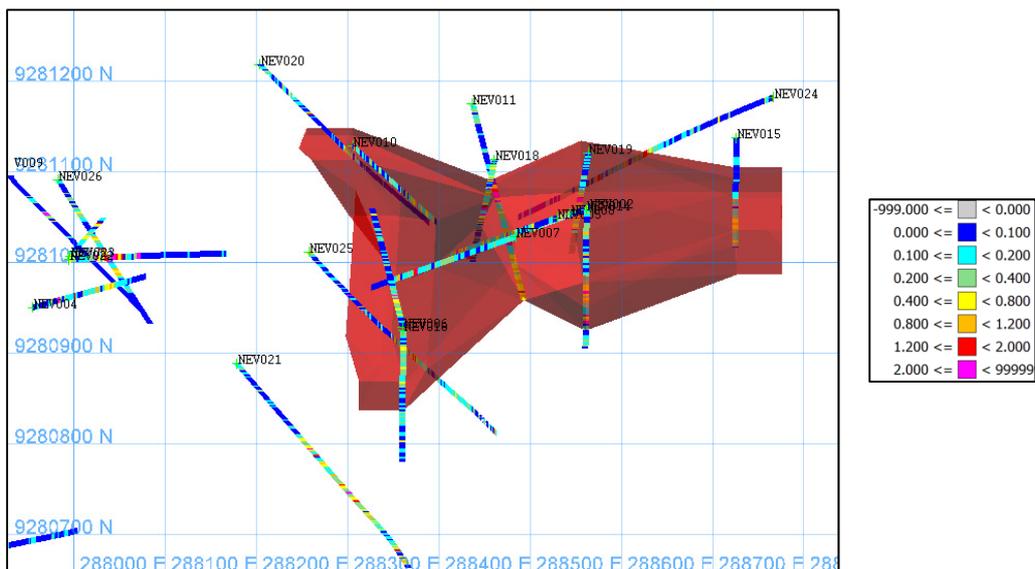
*Downhole survey*

Downhole surveys for Gold Anomaly drill holes were carried out by Reflex EZ-shot camera at 50 m intervals. The drill hole database contains downhole survey information at ±100 m intervals for BHP drill holes NEV001 to 003, but methods used to record this information are not known. Macmin and TPJ drill holes in the database do not contain downhole survey information.

**Mineral Resource Block Modelling**

*Geological Modelling*

The “mixing zone” at Nevera is a sub-horizontal zone of elevated Au grades that lies within altered Chim and various porphyry and volcanic rocks that has been sampled by 12 drill holes. As a consequence, a mineralised envelope wireframe was constructed based on sectional interpretations using a nominal 0.2 g/t Au to represent the “mixing zone”, as shown in Figure 5. The wireframe included a nominal 50 m horizontal extrapolation from the drill holes at the margins of the mineralised zone. Due to the irregular orientation, location, and depth of drilling, and to generate a consistent mineralised envelope some vertical extrapolation >50 m was permitted. NEV021 was not included in the mineralised envelope as it was an isolated drill hole and was not consistent with the essentially EW mineralised trend of the 12 holes considered. Additional drilling between NEV025 and NEV021 is required to clarify the continuity of “mixing zone” mineralisation.



**Figure 5:** Plan view of drill holes and mineralised wireframe

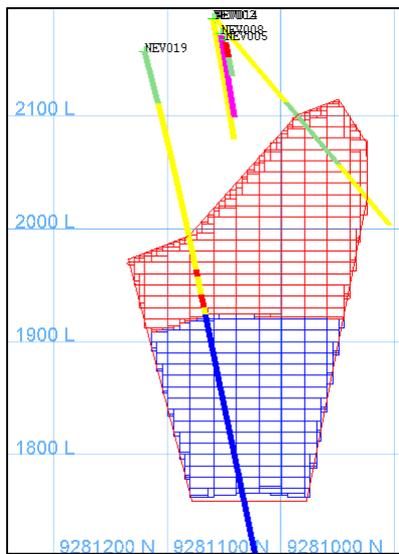
**Block model and coding**

Table 3 shows the block model dimensions for the Nevera deposit. Martlet employed 20 m by 20 m by 10 m (X, Y, Z) block dimensions. Sub-blocking to 5 m by 5 m by 2 m was employed in the peripheral parts of the mineralised wireframe. The block model volume of 13,284,100 m<sup>3</sup> corresponds closely to the wireframe volume of 13,287,609 m<sup>3</sup>. In places these block dimensions represent <1/4 of the drill hole spacing and would normally be considered to be too small for robust resource estimation purposes. The likelihood that these small block dimensions may introduce additional smoothing into the block model grade estimates was considered during selection of the estimation method and resource classification.

**Table 3: Block model dimensions**

	<b>X</b>	<b>Y</b>	<b>Z</b>
Minimum	288,000	9,280,500	1,500
Maximum	289,000	9,281,260	2,200
Parent	20 m	20 m	10 m
Sub-block	5 m	5 m	2 m
Number blocks	50	38	70

A block model was generated constrained to the mineralised wireframe. A surface separating the Chim Formation and other rock types within the “mixing zone” was constructed to allocate a rock type that was used to assign DBD values to blocks, as shown in Figure 6. The geological coding of the block models was validated visually by stepping through both plans and sections.



Blue = Chim Fm

**Figure 6:** Section through block model coded by rock type

**Data declustering**

Clustering of drill hole data was observed due to the different drill hole spacings and orientations. Clustered data may bias sample statistical measurements. Martlet undertook cell declustering on the 4 m composite dataset using a cell dimension of 100 m by 50 m by 20 m (X, Y, Z). This approach is suitable where extrapolation is not considered significant. Cell declustering weights were applied in all statistical and validation plots and calculations in this study.

**Summary statistics**

Declustered and top capped summary statistics for the mineralised domain are shown in Table 4. Figure 7 shows cumulative probability plots for Au, where the green points represent composites in the mineralised wireframe, and red points represent the remaining composites. There is a clear segregation of higher grade Au composites in the mineralised wireframe, and other elements also tend to be elevated in value. Top caps were based on evidence of extreme grade populations in the cumulative probability plots and mostly tend to fall around the 97 - 98 cumulative percentile, as shown in Figure 7. The top cap of 4 g/t for Au reduces the mean declustered Au grade from 0.94 g/t to 0.80 g/t, or by around 15%.

**Table 4:** *Declustered and top capped summary statistics for the mineralised domain*

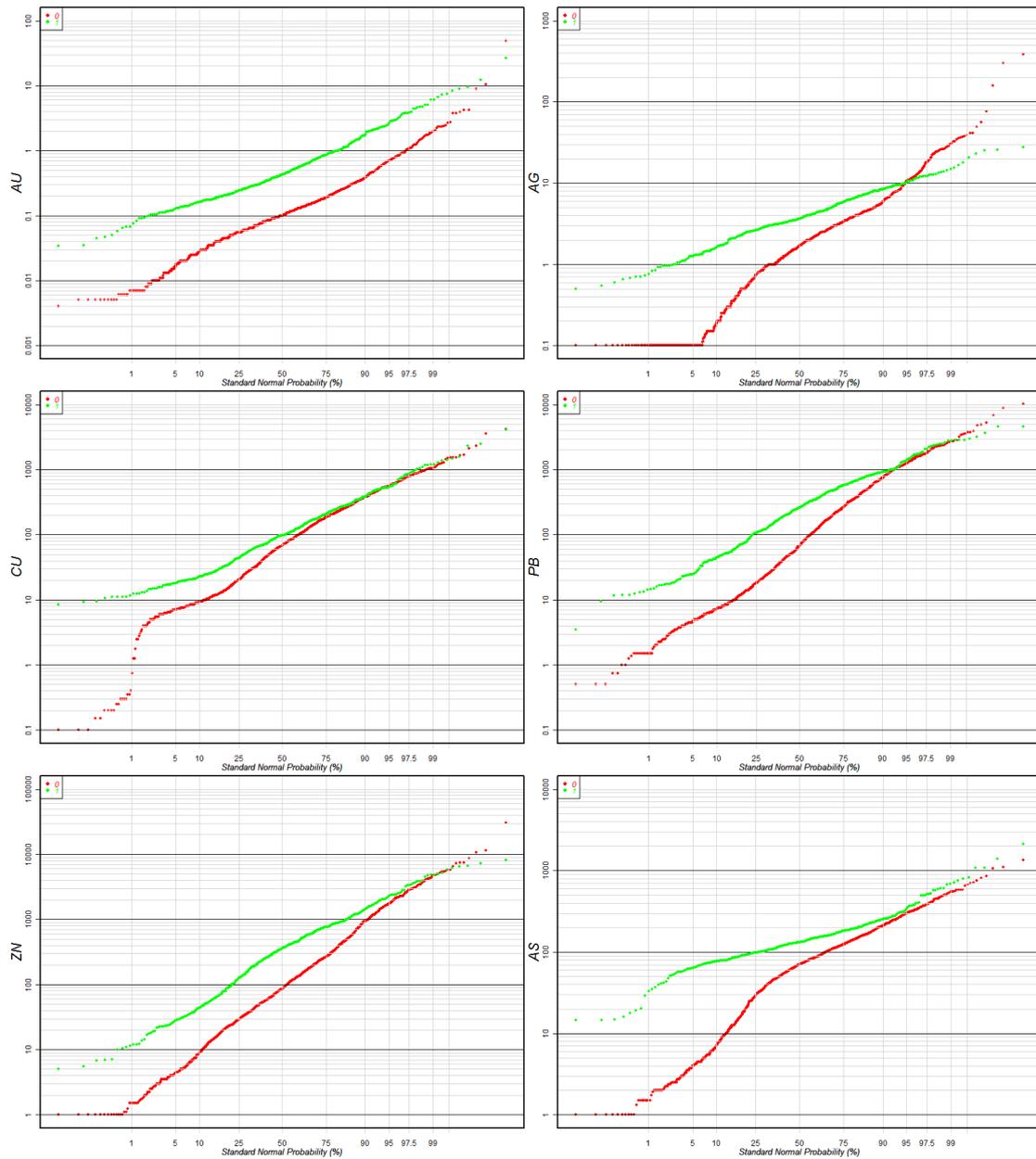
Element	Number	Minimum	Maximum	Mean	Median	S. Dev.	CV	Uncapped max.
Au	453	0.03	4	0.80	0.43	0.94	1.17	26.5
Ag	425	0.5	12	4.21	3.36	2.83	0.67	27.5
As	414	14.4	600	173	134	130	0.75	2,126
Cu	453	8.5	1,000	208	111	244	1.17	4,100
Pb	453	3.5	3,000	428	209	568	1.33	4,630
Zn	453	5	5,000	648	304	952	1.47	8,195

**Variography**

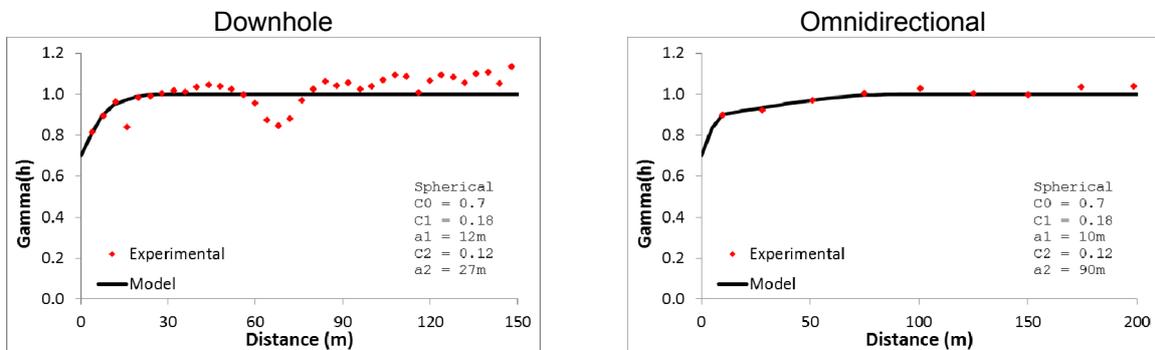
Variography analysis employed correlograms as they are less susceptible to extreme grade values. In this memorandum they are inverted as 1-correlogram value so they present as variograms with a known theoretical sill of 1.

There were insufficient composites to determine anisotropy. As a consequence variogram modelling was based on omnidirectional correlograms with nugget values determined from the downhole correlogram. Experimental and modelled downhole and omnidirectional correlograms for Au in the mineralised zone are shown in Figure 8.

# Nevera Prospect (Crater Mountain) Mineral Resource Estimate



**Figure 7:** Cumulative probability plots for Au, Ag, As, Cu, Pb, and Zn



**Figure 8:** Experimental and modelled correlograms

**Block grade estimation**

Ordinary kriging (OK) and inverse distance weighting (IDW) methods were used to estimate Au, Ag, As, Cu, Pb, and Zn block grades. The implementation strategy included:

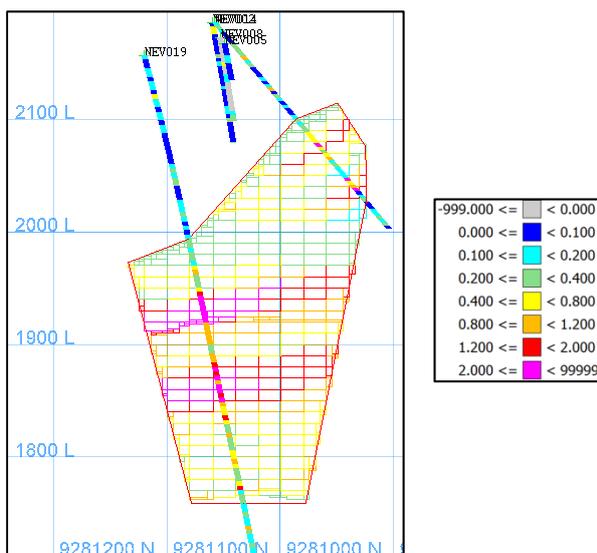
- Block discretisation of 3 by 3 by 2;
- Ordinary kriging with horizontal anisotropy for both the variogram and search ellipsoids;
- Inverse distance weighting with a power of two using a search ellipsoid with horizontal anisotropy;
- Two pass search strategy, with first pass search ellipsoid radii of 125 m by 25 m (horizontal and vertical), and second pass search ellipsoid radii of 300 m by 100 m;
- Minimum of 7 (4 for 2<sup>nd</sup> pass) and maximum of 12 composites, with a maximum of 3 selected from any one drill hole;
- Top caps of 4 g/t Au, 12 g/t Ag, 600 ppm As, 1,000 ppm Cu, 3,000 ppm Pb, and 5,000 ppm Zn; and
- Hard boundaries were used to restrict composite selection to the dataset corresponding to the block domain code.

**Validation**

Martlet carried out the following block model validation checks:

1. on-screen visual comparisons with the drill-hole data (e.g. Figure 9);
2. statistical checks between declustered data and the OK/IDW block estimates, shown in Table 5;
3. block validation (swath) plots by easting, northing and RL to assess the conformance of the block average grade against the drill hole data, shown in Figure 10; and
4. Discrete Gaussian change of support smoothing check, shown in Figure 11.

The block model was visually examined in section and plan to confirm correct model construction and for visual checking of the grade estimates. No obvious errors or inconsistencies were observed. In general a sub-horizontal anisotropy was applied to block estimates by the search ellipsoid and limiting the number of composites per drill hole to three, as demonstrated in Figure 9.



**Figure 9: Section through block model**

Table 5 shows the composite and block model mean grade values. The OK block model has mean grade value around 9% higher than the declustered samples. This may be related to extrapolation into the periphery of the mineralised envelope. Alternatively due to the high nugget value it is likely that the high grade samples are given unrealistically high weights in blocks distant from their location. This was a key reason for selecting the IDW block model for public reporting.

**Table 5: Composite and model mean grade values**

Element	No. comps	Mean	No. blocks	OK Mean	IDW Mean
Au	453	0.80	11,686	0.87	0.83
Ag	425	4.21	11,686	4.65	4.37
As	414	173	11,686	175	185
Cu	453	208	11,686	218	219
Pb	453	428	11,686	424	414
Zn	453	648	11,686	678	636

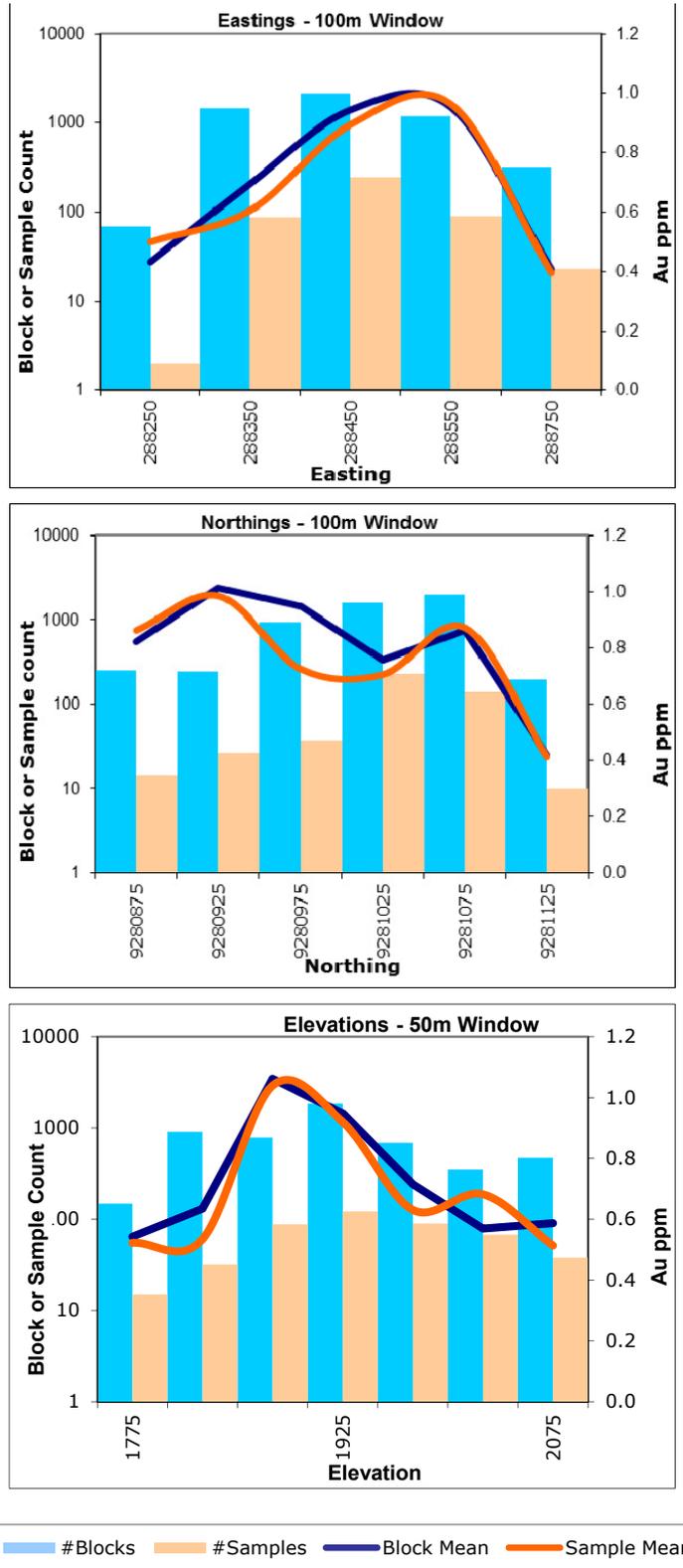
Further evaluation of the conformance of the block estimates with the composite grades was done by the means of swath plots. Swath plot generation involves averaging both the blocks and composites in super blocks of 100 m (easting) by 50 m (northing) by 50 m (RL), then averaging of the super blocks into Easting, Northing and RL swaths to allow trend plots of block versus composite grades to be constructed. Figure 10 shows global swath plots for the composites and IDW block model. Note that a super block must contain at least one composite and block before consideration, thus, extrapolated super blocks do not influence swath plots. Block grade values used in the super block calculations were from the IDW model. Except where there are low numbers of samples or in the western part of the block model area there is close agreement between composite and block swath plots. Some smoothing (conditional bias) is indicated by the swath block grades tending to have lower peaks and higher troughs.

The discrete Gaussian (DG) or Hermitian polynomial change-of-support method is typically used to assess smoothing in block models based on a variance reduction factor  $F$ . For a specific selective mining unit (SMU),  $F$  is usually calculated from the modelled variogram and Krige's relationship or less frequently through a conditional simulation study. The variogram models from this study are not suitable for calculating an  $F$  factor. Consequently, a range of  $F$  factors from 0.15 through to 0.3 in 0.05 increments were chosen to represent the results that may be achieved through bulk mining. Higher  $F$  values result in grade-tonnage distributions that could be achievable through more selective mining and high quality grade control practices. Conversely, lower  $F$  values result in grade-tonnage distributions that would result from bulk mining and/or poor quality grade control practices. It is also important to stress that the theoretical DG change of support method does not account for extrapolation as it works with the declustered sample distribution.

Figure 11 shows the results of the DG approach in determining the theoretical Au grade-tonnage curves for various  $F$  factors. These plots also show the actual grade-tonnage curves from the OK and IDW resource models. Note that:

- The IDW curve falls between the DG curves for  $F = 0.2$  and  $F = 0.25$ ; and
- The OK curve cuts across the DG curves, which is a sign of extreme smoothing of block estimates in the OK model.

# Nevera Prospect (Crater Mountain) Mineral Resource Estimate



**Figure 10:** Global swath validation plots comparing composites and IDW block estimates

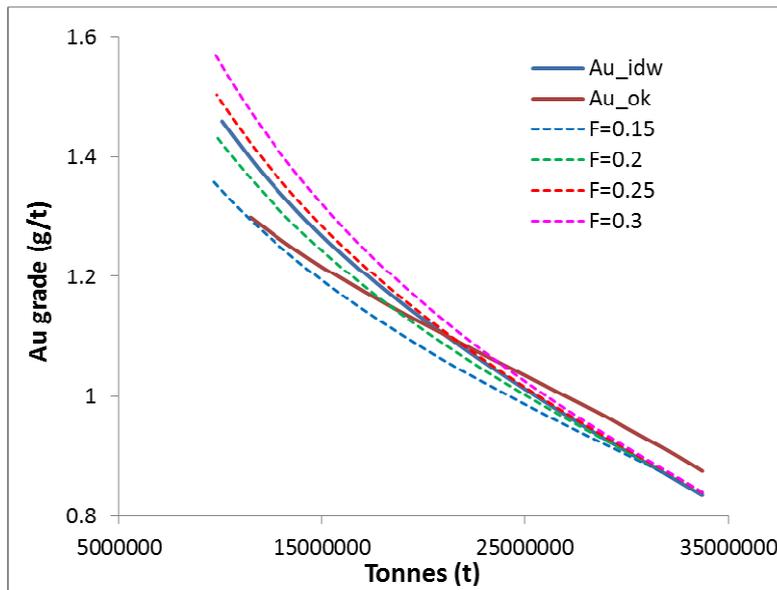


Figure 11: Grade-tonnage curves for the DG approach and OK and IDW models

**Bulk density**

The following DBD values were adopted for resource estimation purposes:

- Altered Chim Formation            2.60 t/m<sup>3</sup>; and
- Other rock material                2.50 t/m<sup>3</sup>.

These were assigned to blocks based on a modelled surface that separated altered Chim Formation material and other rock types within the “mixing zone”. The block model had an average DBD of 2.54 t/m<sup>3</sup>.

**Resource classification**

Due to the current drill spacing and limited *DBD* measurements the initial resource is classified as an Inferred Mineral Resource.

**Grade-tonnage information**

Grade-tonnage information at various Au cut-off grades is shown in Table 6 and Table 7 for the IDW and OK models respectively. The information in this table is also shown graphically in Figure 11.

Table 6: Grade-tonnage information for IDW model

Au cut-off	Tonnes	Au	Ag	As	Cu	Pb	Zn
0.1	33,724,785	0.84	4.37	185	219	414	636
0.2	33,241,360	0.84	4.38	186	221	411	629
0.3	30,352,180	0.90	4.45	192	235	406	619
0.4	27,176,000	0.97	4.53	198	249	405	614
0.5	23,810,445	1.04	4.67	204	261	411	620
0.6	20,830,910	1.11	4.81	205	270	419	628
0.7	17,733,065	1.19	4.90	205	279	419	636
0.8	14,605,505	1.28	5.00	206	287	426	636
0.9	11,887,390	1.38	4.97	202	279	407	607
1.0	10,066,185	1.46	4.99	203	282	408	600

**Table 7: Grade-tonnage information for OK model**

<b>Au cut-off</b>	<b>Tonnes</b>	<b>Au</b>	<b>Ag</b>	<b>As</b>	<b>Cu</b>	<b>Pb</b>	<b>Zn</b>
0.1	33,726,160	0.88	4.65	175	218	424	678
0.2	33,439,410	0.88	4.66	175	219	422	675
0.3	31,776,665	0.91	4.66	178	227	412	659
0.4	29,926,815	0.95	4.66	181	235	403	645
0.5	27,882,860	0.99	4.68	184	244	394	631
0.6	25,150,695	1.03	4.76	184	249	396	634
0.7	22,160,255	1.08	4.80	184	253	390	623
0.8	18,866,285	1.14	4.84	186	257	385	610
0.9	14,997,470	1.22	4.88	189	263	384	610
1.0	11,475,225	1.30	4.92	188	264	385	603

## Mineral Resource Statement

Martlet Consultants Pty Ltd (Martlet) has estimated the resource for parts of the Nevera Prospect (Crater Mountain Project), in which Gold Anomaly Ltd (Gold Anomaly) has a majority beneficial interest. The resource estimate is based on the assay results of 26 drill holes available in November 2011, including 17 drilled by previous owners/operators BHP Billiton Pty Ltd (BHPB), Macmin NL (Macmin), and Triple Plate Junction Plc (TPJ), and 9 by Gold Anomaly.

The initial Mineral Resource for the Nevera Prospect at a cut-off grade of 0.5 g/t Au is:

Inferred            24 Mt @ 1.0 g/t Au for 790 koz of contained Au\*

\* Each value has been rounded independently.

This Mineral Resource estimate is appropriate for a bulk open pit mining scenario, but does not account for mining dilution or mining losses. Key features of the resource estimate are:

- PNG Mineral Resources Authority documents provided to Martlet indicate that EL 1115 (the tenement containing the Mineral Resource) is in good standing and expires on 25<sup>th</sup> October 2012.
- Joint Venture documents provided to Martlet indicate that the current ownership of EL 1115 includes Gold Anomaly having a minimum 70% beneficial interest in EL 1115, with the balance shared amongst two or more of Triple Plate Junction, Celtic Minerals, and New Guinea Gold Ltd.
- All work was carried out in UTM (Zone 55) grid co-ordinates.
- Drill holes used for resource estimation were drilled by several project owner/operators.
- Collars of all holes drilled by Gold Anomaly were surveyed by Mr Alan Leeds using a differential GPS with a stated accuracy of ±0.1 m in the horizontal and 0.15 m in the vertical in open terrain, and ±0.25 m in the horizontal and 0.5 m in the vertical for those holes located in gullies or under dense vegetation. Mr Leeds was able to survey the collars of the majority of the historical holes drilled by BHPB, Macmin, and TPJ.
- Drilling methods were exclusively diamond drill core utilising PQ, HQ, and NQ dimensions. The vast majority of the samples used for resource estimation were HQ or NQ.
- Downhole surveys for Gold Anomaly drill holes were carried out by Reflex EZ-shot camera at 50 m intervals. Downhole survey methods for historical drill holes are not known.
- Core recovery in the mineralised zone by Gold Anomaly is believed to be mostly good (>90%) to excellent (>98%). A small number of sample intervals had poor (<50%) recovery. Observation of some historical drill core trays suggested that similar recoveries were likely achieved by previous explorers.
- Drill core in potentially mineralised zones was collected predominately at 1 or 2 m intervals, and was composited to 4 m.

- Drill core was cut in half with one half sampled for assaying purposes.
- SGS PNG in Lae was used for sample preparation for Gold Anomaly drill holes, with assaying undertaken by SGS Mineral Services in Townsville. Gold was assayed by 50 g fire assay using method FA505, with a suite of additional elements by ICP-OES using method OES12S. TPJ utilised Australian Laboratory Services with Au assayed by method AA26, and a suite of additional elements by ME-ICP41. Sample preparation and analytical methods used by Macmin and BHPB are not known.
- The QAQC programs for Gold Anomaly drilling involved intra-laboratory pulp duplicates, blind field duplicates, blanks, and certified reference material. The QAQC results indicated that the assays for the Gold Anomaly drilling program were satisfactory for resource estimation purposes. The QAQC programs for historical drilling are not known in detail. However, TPJ used certified reference material as part of their procedures.
- The “mixing zone” that is the subject of the current resource estimate does not crop out at surface, however, overlying mineralisation was observed at surface in road cuttings during a field visit by Dr Richmond. Channel samples collected along road cuttings returned significant Au assays in places and were used to assist in drill targeting.
- Drilling, logging, and sampling procedures by Gold Anomaly contractors and staff were observed during a field visit by Dr Richmond, and were considered to be appropriate for resource estimation purposes.
- Martlet undertook basic validation checks of the drill hole database. Some minor errors were rectified prior to use of the database.
- Au composites were capped at 4 g/t, around the 97<sup>th</sup> cumulative percentile.
- The Mineral Resource is limited to the Nevera “mixing zone” that has been sampled by 12 drill holes. A mineralised envelope wireframe was constructed based on sectional interpretations using a nominal 0.2 g/t Au to represent the “mixing zone”.
- The wireframes included a nominal 50 m horizontal extrapolation from the drill holes at the margins of the mineralised zone. Due to the irregular orientation, location, and depth of drilling, and to generate a consistent mineralised envelope some vertical extrapolation >50 m was permitted.
- A computer block model was constructed by filling the mineralised wireframe with 20 m by 20 m by 10 m blocks. Sub-blocking to 5 m by 5 m by 2 m was employed in the peripheral parts of the mineralised wireframe.
- Grades of Au, Ag, As, Cu, Pb, and Zn were estimated by inverse distance methods using a two pass search strategy with a maximum of 12 composites, including a maximum of 3 composites selected from any one drill hole. A minimum of 7 composites were used for Pass 1, and a minimum of 4 composites for Pass 2.
- Hard boundaries were used between the mineralised envelope representing the “mixing zone” and the remaining material.
- Validation included visual observation, statistical checks, and swath plots.
- Internal dilution has been accounted for, but not dilution at the margins of the mineralised wireframe.
- *In situ* dry bulk densities were assigned to blocks by rock type, and ranged from 2.50 to 2.60 t/m<sup>3</sup>. Bulk density values applied were derived from 111 measurements of drill core in NEV27.
- Due to the current drill spacing and limited *in situ* bulk density measurements the initial resource is classified as an Inferred Mineral Resource.
- Significant Au mineralisation was intersected in isolated drill holes outside the resource area, but insufficient drilling is present to include these areas in the initial Mineral Resource.

- Gold Anomaly advises that the 0.5 g/t cut-off grade is considered appropriate for a large-scale open pit operation in PNG. Analogous projects that are more advanced in evaluation or currently in operation in PNG and SE Asia indicate that there is a reasonable prospect for future economic extraction at this cut-off grade should additional resource tonnages be identified. However, the suitability of this cut-off grade needs to be confirmed by economic evaluation. No such study has been undertaken on the Nevera Prospect as this is the initial Mineral Resource.

This Mineral Resource estimate is based upon and accurately reflects data compiled, validated or supervised by Dr Andrew Richmond, who is a Fellow of the Australian Institute of Geoscientists (Membership Number 4840), a Member of the Australasian Institute of Mining and Metallurgy (Membership Number 111459), and a full time employee of Martlet Consultants Pty Ltd. Dr Richmond has sufficient experience that is relevant to the style of mineralisation and the type of deposit under consideration and to the activity which he has undertaken to qualify as a Competent Person as defined in the 2004 edition of the 'Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Dr. Richmond consents to the inclusion of this information in the form and context in which it appears in this letter.

### Recommendations

As the ordinary kriging resource block model contained excessively smoothed Au block estimates, the public resource statement is based on block grade estimation by inverse distance squared methods. When sufficient additional drill hole data becomes available to permit reasonable characterisation of the spatial continuity of gold grades by variography, and provide sufficient data in the local neighbourhood for block grade estimation, ordinary kriging should be the preferred estimation approach.

The measurement of *in situ* bulk density from drill core should be carried out routinely to provide a robust dataset for future resource estimates. Consideration should be given to using the calliper approach routinely and the Archimedes' method for validation purposes. When using the calliper approach, especially on NQ core, several measurements of the core diameter are required for each piece of core selected.

The 0.5 g/t Au cut-off grade used to report publicly the Nevera Mineral Resource has been assumed from analogous projects (eg Tujuh Bukit, Maoling, Hidden Valley) that are more advanced in evaluation or currently in operation in PNG and SE Asia. All of the analogous projects have significantly higher resource tonnages than identified at Nevera. Gold Anomaly should progress resource evaluation studies on items listed in Table 1 of the 2004 JORC Code that may influence significantly the resource cut-off grade.

Additional recommendations based on a site visit by Dr Andrew Richmond from the 25<sup>th</sup> to the 28<sup>th</sup> October 2011 were included in a memorandum by Martlet (document 001-2011010-Rev1), and the reader is referred to that document.

### References

Smith, P. 2011. Annual report to September 25<sup>th</sup> 2011, EL1115, Crater Mountain. Unpublished Gold Anomaly report to Department of Mines dated 14<sup>th</sup> October 2011.

Dr Andrew Richmond, FAIG, MAusIMM