AMC Consultants Pty Ltd
ABN 58 008 129 164

Level 21, 179 Turbot Street
Brisbane Qld 4000
Australia

T +61 7 3230 9000
E brisbane@amcconsultants.com
W amcconsultants.com

Report

Independent Geologist Report

Tolu Minerals Limited

AMC Consultants Pty Ltd in accordance with the Australasian Code for the Public Reporting of Technical Assessments and Valuations of Mineral Assets, The VALMIN Code, 2015 Edition

Specialist:

R. Carlson BSc, MSc, MAIG RPGeo (Mining and Exploration) MAusIMM, Principal Geologist
D Hutchison BSc (Hons), MSc, MAIG Consultant Geologist

AMC Project 321045
3 August 2023

Executive summary

This technical report has been prepared by AMC Consultants Pty Ltd (AMC) at the request of Tolu Minerals Ltd (formerly Lole Mining Ltd) for an Independent Geological Report (IGR) and Mineral Resource report of the Tolukuma and Mt Penck Projects under the guiding principles of the 2012 JORC Code[1].

AMC has prepared this IGR in accordance with the Code for the Public Reporting of Technical Assessments and Valuations of Mineral Assets, the VALMIN Code, 2015 Edition[2] (VALMIN) and the 2012 JORC Code. The exploration results and estimates of mineral resources are based on, and fairly represent, information and supporting documentation prepared by named competent persons.

Location and Access

The Tolukuma Gold Mine (TGM) is located in the Goilala District of Central Province of Papua New Guinea (PNG), in the Owen Stanley Ranges, about 100 km north of the capital city Port Moresby.

At Tolukuma the gold and silver mine is situated in rugged mountainous terrain at an elevation of 1500 m to 2000 m above sea level. The Project consists of a granted mining lease (ML), six granted exploration licences (EL) and an exploration licence application (ELA) all in the immediate area surrounding Tolukuma. Access to the mine site is currently limited to air transport. All personnel are transferred by helicopter to and from either Port Moresby or Veimauri. Road access is planned as part of the re-establishment of the mine.

The Mt Penck project is an epithermal gold-silver project, comprising a single exploration licence, EL 2662, located in West New Britain Province, Papua New Guinea (PNG). The Property is located adjacent to the north coast of New Britain and is readily accessible by road or boat from the town of Kimbe, located 55 km to the east. Kimbe provides an excellent logistic base for work at Mt Penck.

Exploration History

The potential for gold in the Tolukuma area was first discovered in 1986 by Newmont Proprietary Limited (Newmont). The exploration then passed through a number of companies before being developed as an operating gold mine by Tolukuma Gold Mines Pty Ltd in 1995 to exploit high grade, epithermal veins within a large structural zone. The mine operated effectively until about 2011, before a significant production drop-off due to costs of helicopter borne logistics impacting profit margins and ability to fund exploration. In 2015 the mine was placed on care and maintenance. On 7 February 2018, Tolukuma Gold Mines Pty Ltd. was put into liquidation by Court order.

A Tolukuma Sale of Assets Agreement was executed between the Liquidator and a PNG registered company, Tolu Minerals Ltd (TML) on 27 April 2021 followed by the transfer of the Tenements ratified by the Minister of Mines on 2 July 2021.

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1 Australasian Joint Ore Reserves Committee (JORC), *Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves* (the JORC Code), 2012 edition, effective December 2012, 44 pp., available <http://www.jorc.org/docs/JORC_code_2012.pdf>, viewed 21 August 2019.

2 The Australasian Code for the Public Reporting of Technical Assessments and Valuations of Mineral Assets. The VALMIN Code 2015 Edition. The VALMIN Code has been prepared by the VALMIN Committee, a joint committee of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. The VALMIN Code is a companion to the Australasian Code for Reporting of Exploration Results, Mineral resources and Ore Reserves (the JORC Code). The VALMIN Code provides guidance on matters that may be subject to Australian regulations, other provisions of law and published policies and guidance of the Australian Securities and Investment Commission (ASIC) and the Listing Rules of the Australian Securities Exchange (ASX) or of other relevant exchanges.

The Mt Penck tenement is owned 100% by TML. EL 2662 was granted on 26 October 2021 for an initial term of 2 years and may be renewed biannually. Mt Penck has an extensive history of previous exploration carried out between 1968 and 2011. Extensive programs of mapping, rock and soil sampling, hand trenching, bulldozer costeaning, geophysical surveying and drilling were completed. A total of 115 historical drillholes, comprising 82 diamond core drillholes (DD) totalling 11,038.6 m and 33 reverse circulation aircore (RAC) drillholes totalling 1,140 m, have been completed.

Most historical exploration was carried out by Kanon Resources Limited between 2003 and 2011. Kanon completed four phases of diamond drilling (75 drillholes). No work has been carried out since 2011 and no Mineral Resource estimates have been completed. The historical work is summarised in detail in the main body of the report.

TML has carried out no work to date at Mt Penck and this report relies entirely on the results of historical work.

Geology and Mineralisation

TGM is located in the New Guinea metallogenic belt, a 2,300 km mineralised corridor running along the central spine and northern foothills of the island of New Guinea. Many large deposits of gold (and copper) occur in the metallogenic belt which is regarded as one of the most prospective gold-copper metallogenic provinces in the world.

The gold-silver vein deposits in the Tolukuma-Saki-Mt Tafa area are scattered over a roughly 100 km^2 area. However, most of the better developed vein systems occur within a northeast-trending 12 km by 6 km belt that is roughly coincident with the inferred sub-surface Tolukuma Intrusive Complex. All the known deposits are high level fissure veins formed in a classic epithermal-porphyry environment, mainly classified as low sulphidation style epithermal systems.

The mineralisation is hosted by north-northwest to northwest-trending narrow fissure veins which commonly dip steeply to the southwest or northeast. Vein widths typically range from roughly 0.5 m to 2.0 m but pinch and swell and can bulge out to widths of 10 m to 20 m at the intersections of the main fissures with cross structures or splay veins. The host rocks are Pliocene-age terrestrial volcanic rocks of the Mt. Davidson Volcanics. These comprise mainly fine to coarse tuffaceous and fragmental rocks with minor lavas, of andesitic to basaltic composition. The volcanics unconformably overlie a metamorphic basement sequence of the Kagi Metamorphics (Cretaceous to Eocene age).

Intermediate to basic pyroclastics (fine ash flow, crystal and crystal-lithic tuff, agglomerate, and breccia) with subordinate andesitic and basaltic lavas, of the Mt. Davidson Volcanics, are the dominant host rocks. These are widely intruded by late narrow dykes of porphyritic andesite, basalt, and dolerite, and locally intruded by small diorite intrusive bodies.

Typically, the mineralised fissures include massive quartz and quartz-sulphide veins, silicification, fault gouge, sheeted veins, stockworks, stringers and breccia zones. Breccias include structural, hydrothermal, and fluidised crackle varieties. Quartz textures include colloform, crustiform, comb, dogtooth, botryoidal, rosette, drusy, vuggy and massive crystalline; all are typical of the upper levels of a low sulfidation epithermal system.

The gold mineralisation is dominantly associated with a pyrite-marcasite-arsenopyrite-stibnite sulphide assemblage that is commonly strongly oxidised at surface with goethite-limonite-manganese staining. Copper, lead, and zinc sulphides occur in deeper parts of the systems. Fine visible gold is commonly observed at surface in oxidised veins.

Mt Penck comprises a large gold-silver mineralised hydrothermal system, of about 12 km^2, hosted by a partly dissected Plio-Pleistocene volcanic edifice. The system is located at the north-western end of the Kulu-Simi structural corridor, a northwest-trending extensional zone that transects central New Britain and hosts the Simuku porphyry copper-molybdenum-gold project and the Mt Nakru copper-gold breccia / VHMS deposit.

At Mt Penck epithermal style gold-silver mineralisation is associated with argillic / advanced argillic alteration, silicification and brecciation and controlled by dilational structures, hosted by andesite-dacite volcanics and porphyry intrusions. The system is complex and exhibits characteristics ranging from low to intermediate sulphidation style gold-silver to high sulphidation style gold-copper mineralisation. The sulphide mineral assemblage includes pyrite, galena, sphalerite, tetrahedrite, chalcopyrite, covellite and enargite.

Three main prospects have been identified within an area of about 1.5 km by 1.2 km: Kavola / Kavola East, Peni Creek and Koibua. This report focusses mainly on the Kavola Zone prospects where the majority of historical exploration has been completed. At Kavola the mineralisation occurs in veins, stockworks, breccias or zones of massive silica, spatially related to zones of intense argillic (or advanced argillic) alteration. The highest gold values occur in structurally controlled ore shoots, identified as possible feeder zones. The shoots are characterised by vuggy silica and form irregular pipes, elongate lenticular pods or veins composed primarily of quartz and pyrite.

Tolukuma Mineral Resource

The Inferred Mineral Resource at Tolukuma as of 18 August 2022 is 1.6 Mt at 10 g/t Au and 38 g/t Ag. This equates to contained metal of 500 Koz Au and 1.9 Moz of silver. Table ES1 shows the breakdown of the Mineral Resource based on vein. The Mineral Resource is reported as an undiluted underground resource above 3 g/t Au. The block models are limited to the interpreted veins, and do not have included dilution. Depletion is managed by excluding all areas of previous development and stoping by cookie cutting around the entire area.

AMC also estimated antimony, copper, lead, zinc and mercury grades for each vein.

Table ES1 Tolukuma Inferred Mineral Resource at a 3 g/t Au cut-off

Domain	Tonnage (kt)	Grade		Metal	
		Gold (g/t Au)	Silver (g/t Ag)	Gold (Koz Au)	Silver (Koz Ag)
Zine	488	9	43	146	673
Zine PK Splay	7	35	145	8	33
Tolukuma	140	9	27	40	121
Tinabar	55	13	42	23	74
Gulbadi	343	10	27	114	294
Gulbadi Red	115	8	19	29	69
120 Vein	56	5	15	8	28
Fundoot	212	13	59	91	403
Gufinis	149	7	39	31	187
Mystery	45	9	46	13	67
Total	1,610	10	38	503	1,950

Notes: Totals may not add up due to rounding.
All previously mined areas are excluded as assumed depletion.
Cut-off grade is assessed based on global tonnes/grade curves and similar operations in PNG.

Exploration Potential

The exploration potential at TGM is largely untested. Modern exploration methods have not been used at TGM to date. Many new applications of geophysical methods are to target generation in the area. The larger TGM tenement package has many undertested geochemical and structural targets that need further assessments.

Several well-defined mineralised vein systems, that may have potential to provide additional resources as feed for the Tolukuma mill, are located nearby in the adjacent EL 2531, which surrounds ML 104.

These systems include Saki, Kimono and Taula located south of the Auga River, and Soju-Yava and Mt. Sen located north of the Auga River. All are located within 5 km or less of the mine site. Mt. Sen was discovered and explored by TGM, the others were discovered by Newmont and explored by Newmont, TGM and, in some cases, Petromin. Duma-Dilava is an additional less advanced target located immediately south of ML 104 where little historical work has been completed.

Saki has a previously reported Mineral Resource reported in accordance with the JORC Code (2012) by Frontier Resources Limited (now Lanthanein Resources Limited) in 2022 (https://wcsecure.weblink.com.au/pdf/FNT/02492922.pdf). The resource is tabled as 2.0 Mt at 2.0 g/t gold for 128,000 ounces Au (using a 1 g/t Au cut-off). AMC considers the resource needs additional drilling to confirm and improve confidence in the resource.

The gold-silver mineralisation at Mt Penck is controlled by both structure and lithology and has been intersected by trenches or drillholes at depths ranging from surface to 170 m downhole. Two principal styles of mineralisation are present:

- Broad zones (10 m to >50 m wide) of lower grade (1.0 g/t Au to 3.0 g/t Au) stockwork mineralisation generally within the upper 50 m but intersected by drilling to depths of up to 167 m, preferentially controlled by favourable horizons in the volcanic sequence (Stockwork Targets).
- Narrow zones (0.5 m to 3.0 m wide) of much higher grade, >10.0 g/t Au, intersected by drilling at depths ranging from 5 m to 170 m with the highest grades at depths below 100 m. These are interpreted to be the feeder structures that channelled the mineralising fluids from depth (Feeder Zone Targets).

The property-wide average width / grade figures from historical drilling are 20.64 m at 2.2 g/t Au for the Stockwork Targets and 1.35 m at 16.94 g/t Au for the Feeder Zone Targets.

There is potential for a near-surface oxide zone gold deposit in the upper 30 m to 50 m at Kavola / Kavola East. This represents the highest priority target.

The historical exploration results justify further drilling and trenching at all three defined prospects. In addition, geophysical and geochemical anomalies exist outside the area of detailed historical work which require follow up.

Exploration Program and Budget

The Tolukuma tenement package has current annual rents of PGK 19,499 (AUD 7,991) and minimum expenditures of PGK 3,000,000 (AUD 1,229,508). The Mt Penck tenement package has current annual rents of PGK 5,400 (AUD 2,213) and minimum expenditures of PGK 100,000 (AUD 40,984).

The exploration planned for the Mining Lease includes re-establishing access to areas of the historic mine that will allow for diamond drilling and sampling. This includes re-establishing road, power, ventilation and dewatering systems to allow underground access. The drilling will target the areas of highest grade and thickness in the known veins to improve resource confidence. 200 metres of underground development accessing and extending the Milihamba Drive is planned to access drill platforms to test vein extensions.

Regional exploration expenditure on the Tolukuma and Mt Penck tenements is planned to include geophysical surveys, access (roads and helicopter), mapping, sampling, and trenching to develop prioritised targets. The planned use of funds is summarised in Table ES2

Table ES2 Planned use of funds raised for minimum and maximum capital raise

Uses of Funds	**$15M Minimum Capital Raise (AUD)**	**$20M Maximum Capital Raise (AUD)**
Pilot Access Road	1,800	1,800
General Mobilisation	1,130	1,553
Site Roads	216	216
Hydroelectric Refurbishment	0	212
Electrical Refurbishment	1,374	2,082
Underground Access	1,380	1,380
Underground Works	283	283
Bulk Sampling Gravity Circuit	0	1,347
Milihamba Exploration Drive and Diamond Drilling	1,131	1,630
Mineral Resource Development	737	737
Resource Conversion	52	52
Tolukuma Regional Exploration	738	738
Mt Penck Exploration	98	98
TMF Studies	107	107
Off Site	540	540
Acquisition of Frontier	500	500
Consultants	450	900
Working Capital	2,561	3,622
Cost of the Offer	1,500	1,800
Cost of Legal Services	403	403
Total	**15,000**	**20,000**

AMC considers that the Company has a reasonable proposed exploration budget over eighteen months consistent with its stated objectives and that this program is warranted and justified on the basis of the historical exploration activity and demonstrated potential for discovery of mineralisation.

Quality control

The signing of this statement confirms this report has been prepared and checked in accordance with the AMC Peer Review Process.

Project Manager	The signatory has given permission to use their signature in this AMC document Roderick Carlson	3 August 2023 Date
Peer Reviewer	The signatory has given permission to use their signature in this AMC document Alex Virisheff	3 August 2023 Date
Author	The signatory has given permission to use their signature in this AMC document Roderick Carlson	3 August 2023 Date

Important information about this report

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If a Client wishes to publish a Mineral Resource or Ore / Mineral Reserve estimate prepared by AMC, it must first obtain the Competent / Qualified Person's written consent, not only to the estimate being published but also to the form and context of the published statement. The published statement must include a statement that the Competent / Qualified Person's written consent has been obtained.

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Glossary of technical terms and abbreviations

Item	Description
°	Degrees.
%	Percent.
2D	Two dimensional.
3D	Three dimensional.
Ag	Chemical symbol for silver.
AIG	Australian Institute of Geoscientists
AMC	AMC Consultants Pty Ltd
As	Chemical symbol for arsenic.
ASX	Australian Securities Exchange
Au	Chemical symbol for gold.
AusIMM	Australasian Institute of Mining and Metallurgy
Chargeability	One of several units of induced polarization in the time domain. Chargeability is used to characterize the formation and strength of the induced polarization within a rock, under the influence of an electric field and describes how conductivity changes with electrical frequency.
Co	Chemical symbol for cobalt.
Conductivity	Conductivity is a diagnostic physical property that quantifies how easily electrical charges move through a given material when subjected to an applied electric field. For most electrical geophysical surveys electrical conductivity is the primary diagnostic physical property. Conductivity =1/Resistivity.
Cu	Chemical symbol for copper.
dB/dt	An electromagnetic survey measurement. The ratio between the amount of change in amplitude of the magnetic field (dB) and the time it takes to make that change (dt)
Dipole/dipole	Relates to the magnetic field created when an electrical charge is applied to the ground. A dipole is a pair of oppositely charged electrodes that are so close together that the electric field seems to form a single electric field rather than a field from two different electric poles. The dipole-dipole array offers a way to plot raw IP data in order to get an idea of a cross-section of the earth. Today, modern inversion software can recalculate these apparent data to true data, so that a realistic image of the earth can be created.
EM	The electromagnetic (EM) induction method is based on the measurement of the change in mutual impedance between a pair of coils on or above the earth's surface. These coils are electrically connected and are separated by a fixed distance. The transmitter coil is used to generate an electromagnetic field at a specific frequency. This is known as the primary field. The primary field causes electrical currents to flow in conductive materials in the subsurface. The flow of currents in the subsurface, called eddy currents, generate a secondary magnetic field, which is sensed by the receiver coil. The magnitude of the secondary field sensed by the receiver depends upon the type and distribution of conductive material in the subsurface.
g/t	Grams per tonne, a standard ratio for demonstrating the concentration of metals in a rock, equivalent to parts per million (ppm).
AGD	Geocentric datum of Australia as established in 1996.
ha	Hectare, standard metric unit area 100m by 100m.
IGR	Independent Geologist Report
IPO	Initial Public Offering
IP (2DIP and 3D IP)	Induced polarization (IP) is a geophysical imaging technique used to identify the electrical resistivity and chargeability of subsurface materials, such as ore. An electric current is transmitted into the subsurface through two electrodes, and voltage is monitored through two other electrodes. IP surveys provide additional information about the spatial variation in lithology and grain-surface chemistry. The IP survey can be made in time-domain and frequency-domain mode. The IP method is one of the most widely used techniques in mineral exploration and mining industry. IP surveys until recently have been carried out on 2D sections using linear arrays along single sections but recently the development of 3D resistivity and IP survey techniques and inversion software has revolutionised the way surveys are carried out and interpreted. Recent developments in field equipment design, interpretation software and microcomputer technology, 3D surveys are now practical geophysical exploration tools for mineral, environmental and engineering investigations.
kg	Kilogram, a standard metric unit for weight.
km	Kilometre, a standard metric unit measure of distance.

km^2	Square kilometre, a standard metric unit measure of area.
koz	Thousand troy ounces.
kt	Thousand tonnes, a standard metric unit measure of mass.
m	Metre, a standard metric unit measure of distance.
Ma	Million years ago.
Mn	Chemical symbol for manganese.
Mo	Chemical symbol for molybdenum.
oz	Troy ounces, common imperial weight measure applied to precious metals; equivalent to 31.1034807 grams.
Pb	Chemical symbol for lead.
PNG	Papua New Guinea
ppb	An abbreviation for parts per billion.
ppm	Parts per million, quantitative equivalent of grams per tonne (g/t), applied to define the concentration of trace elements.
RAC	Air Core (drilling)
RC	Reverse Circulation (drilling)
t	Tonne, a standard metric unit of weight.
t/m^3	Tonnes per cubic metre, a unit of density.
TGM	Tolukuma Gold Mine
Time-domain	Time-domain geophysical electrical methods represent an alternative approach to detecting weak electrical fields that works by simply switching the primary field off and measuring the decay of secondary electrical fields. This method is often referred to as transient electromagnetic exploration (TEM) or time-domain electromagnetic (TDEM) exploration. In the time-domain induced polarization method, the voltage response is observed as a function of time after the injected current is switched off or on. In the frequency-domain induced polarization mode, an alternating current is injected into the ground with variable frequencies. Voltage phase-shifts are measured to evaluate the impedance spectrum at different injection frequencies
TML	Tolu Minerals Limited
U	Chemical symbol for uranium.
Zn	Chemical symbol for zinc.

1 Introduction

1.1 Purpose of the report

This report is an Independent Geological Report (IGR) dated 3 August 2023 detailing the Tolukuma Project and the Mt Penck Project in Papua New Guinea (PNG). The Tolukuma Project includes the Tolukuma Gold Mine (TGM) and surrounding exploration property located approximately 100 km north of Port Moresby. Mt Penck is an exploration property located in the West New Britain Province of PNG.

In July 2021, Tolu Minerals Ltd, the "Issuer or TML", requested AMC Consultants Pty Ltd (AMC) to prepare a Mineral Resource estimate and report in accordance with the JORC Code[3] for the Tolukuma mine area and an IGR for the Tolukuma and Mt Penck Projects.

Tolukuma Project consists of a mining licence (ML 104) and six exploration licences EL 2385, EL 2535, EL 2536, EL 2538, EL 2539 and EL 2723 (together the "TGM Tenements") covering a total area of 1,252 km^2 as shown in Figure 1.1 and is located in the Central Province of PNG, some 100 km north of the capital Port Moresby. The Issuer has entered into a share sale agreement with Lanthanein Resources Ltd for the purchase of Frontier Copper (PNG) Ltd, which holds exploration licence EL 2531, and exploration licence application ELA 2529 on New Britain.

Figure 1.1 TML project locations

Source: AMC Projection: Lat/Long (WGS84)

[3] Australasian Joint Ore Reserves Committee (JORC), Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code), 2012 edn, effective December 2012, 44 pp., available <http://www.jorc.org/docs/JORC_code_2012.pdf>, viewed 29 July 2016.

The Mt Penck Project comprises a single exploration licence, EL 2662, located about 55 km west of the township of Kimbe in West New Britain Province, PNG (Figure 1.1).

AMC has compiled this Technical Report for the purposes of an IGR for an Initial Public Offering (IPO) on the Australian Securities Exchange (ASX).

At the Issuer's request the scope of the report includes:

- Production of an IGR is prepared in accordance with the JORC Code and Valmin[4].
- Preparation of a Mineral Resource estimate for the TGM deposits.
- Description of mining, milling and support infrastructure at TGM.
- Summarise the results of the redevelopment plan for TGM.
- Summarise the studies on various engineering works in support of the TGM redevelopment plan.
- Make recommendations for the further development of TGM and for near mine exploration.

The quality of information, conclusions, and estimates contained herein are consistent with the level of effort involved in the Consultants services, based on:

- Information available at the time of preparation.
- Data supplied by outside sources.
- The assumptions, conditions, and qualifications set forth in this report.

1.2 Reporting standard

AMC warrants that in the preparation of this IGR it has taken reasonable care in accordance with standards ordinarily exercised by members of the profession generally who practice in the same locality and under similar conditions. AMC accepts no liability whatsoever in respect of any failure to exercise a degree or level of care beyond such reasonable care. No other warranty, express or implied, is given, save where necessarily incorporated by statute. The IGR has been prepared in accordance with the scope of work and for the purpose outlined in the engagement letter dated 27 July 2021 and should be read in full. No responsibility is accepted for the use of any part of this IGR in any other context or for any other purpose or by third parties. This IGR does not purport to give to legal advice.

1.3 Reliance on information

In AMC's letter of engagement, TML agreed to comply with the obligations of the commissioning entity under the VALMIN Code, including that to the best of its knowledge and understanding, complete, accurate and true disclosure of all relevant material information has been made.

In preparing this IGR, to the extent that it is based on information and reports provided by TML, AMC has relied on information and reports provided to it by TML, and AMC has no reason to believe that information is materially misleading or incomplete or contains any material errors. AMC has not audited the information provided by TML but has exercised reasonable care as set below, in the use of such data and information. AMC makes no representation and gives no warranty as to the accuracy or completeness of the data or information contained in any information or reports that it has relied on.

The exploration results and estimates of mineral resources are based on, and fairly represent, information and supporting documentation prepared by a named competent person.

[4] Australasian Code for the Public Reporting of Technical Assessments and Valuations of Mineral Assets. The VALMIN Code 2015 Edition, Prepared by The VALMIN Committee, a joint committee of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists, with the participation of the Minerals Council of Australia and other key stakeholder representatives.

TML has been provided with drafts of this IGR to enable correction of any factual errors and notation of any material omissions. The views, statements, opinions and conclusions expressed by AMC are based on the assumption, that all data provided to it by TML are complete, factual and correct to the best of TML's knowledge.

During the preparation of this report, AMC has relied on the opinions and documentation prepared by other internal and external experts as well as information provided by the Issuer and verified by third-party experts, as required, concerning legal and environmental, in particular Section 2.

The third-party experts include O'Brien's Lawyers (mineral title, surface rights, legal agreements, and tax information), and BMT WBM (environment and waste disposal).

O'Brien's Lawyers are based in Port Moresby and have extensive experience in advising participants in the mining industry and a number of mine operating and exploration companies are clients.

BMT WBM have an office in Brisbane and have significant experience in the mining sector, including in PNG and have advised a number of mining companies as clients.

1.4 Effective date

The conclusions in this IGR are effective as at the date of the report, however those conclusions could change in the future depending on changes in commodity prices and/or results and technical changes at the proposed operations and/or results of exploration and / or status of tenements. AMC disclaims responsibility for any changes that may have occurred after the date of this IGR.

1.5 Consent

AMC consents to the inclusion of this IGR in listing documents to accompany an IPO for a listing by TML on the Australian Securities Exchange in 2023. Neither AMC's IGR nor any part of it, nor any reference to it, may be used for any other purpose without AMC's prior written consent. AMC may, at its discretion, withdraw consent for the client to use or rely on this IGR and its contents, including circumstances in which its fees remain outstanding.

1.6 Competent Person's Statement

All information in this IGR related to the Tolukuma Mining Lease has been compiled by Mr Roderick Carlson, a Competent Person who is a Fellow of the Australian Institute of Geoscientists. Mr Carlson is employed by AMC Consultants Pty Ltd. AMC Consultants Pty Ltd has been engaged by Tolu Minerals Limited under a services agreement. Mr Carlson has no relationship with Tolu Minerals Limited, or any employees or directors of Tolu Minerals Limited. Mr Carlson is not a shareholder of Tolu Minerals Limited. Mr Carlson has no beneficial interest in any of the claims or agreements related to the claims, the subject of this IGR. Mr Carlson has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Carlson consents to the inclusion of this IGR in the IPO prospectus in its entirety.

All information in this IGR related to Tolukuma regional exploration and Mt Penck data has been compiled by Mr Doug Hutchison, a Competent Person who is a Member of Australian Institute of Geoscientists. Mr Hutchison is self-employed. Mr Hutchison has been engaged by Tolu Minerals Limited under a services agreement. Mr Hutchison has no relationship with Tolu Minerals Limited, or any employees or directors of Tolu Minerals Limited. Mr Hutchison is not a shareholder of Tolu Minerals Limited. Mr Hutchison has no beneficial interest in any of the claims or agreements related to the claims, the subject of this IGR. Mr Hutchison has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the

'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Hutchison consents to the inclusion of this IGR in the IPO prospectus in its entirety.

The signatories of this IGR are members of the Australian Institute of Geoscientists (AIG) and/or Australasian Institute of Mining and Metallurgy (AusIMM) and are bound by its code of ethics.

R Carlson
BSc, MSc, FAIG (RPGeo), MAusIMM
Principal Geologist

D Hutchison
BSc (Hons), MSc, MAIG
Consultant Geologist

1.7 Indemnity

TML has indemnified AMC in regard to damages, losses and liabilities related to or arising out of AMC's engagement other than those arising from wilful default, negligence or unlawful act on our part.

1.8 Site Visits

The following Competent Person's conducted site visits to the Tolukuma and Mt Penck Projects on the dates indicated:

- Mr Roderick Carlson completed site visits to the Tolukuma Project in 2013 and 2015. The initial site visit was to validate the inputs to the Mineral Resource data used in the Tolukuma 2012 estimate. In addition, he reviewed exploration protocols, assessed results, collected information, and discussed the ongoing activities with site personnel. During subsequent visits the focus shifted on to technical aspects of the program and future planning.
- Mr Douglas Hutchison completed site visits to the Mt Penck Project during 2006-2007. Mr Hutchison has personal knowledge of the property gained from field visits during the period while employed by New Guinea Gold Limited (NGG). At the time NGG was a 50% joint tenement holder and operator of the project. Mr Hutchison has not visited Tolukuma regional prospects.

1.9 Independence

AMC acted as an independent party. Neither AMC nor the contributors to this IGR have any interests in TML or in the proposed transaction subject of this IGR that could be reasonably construed to affect their independence.

Neither AMC nor the contributors to this IGR or members of their immediate families hold shares in TML.

AMC is being paid a fee according to its normal per diem rates and out of pocket expenses in the preparation of this IGR. Its fee is not contingent on the outcome of the transaction subject to this IGR. AMC has no other pecuniary interest, association, or employment relationship with TML. AMC's fee for completing the Report is based on its normal professional daily rates plus reimbursement of incidental expenses. The fees are agreed based on the complexity of the assignment, AMC's knowledge of the assets and availability of data. The fee payable to AMC for this engagement is AUD 50,000 (inclusive of GST). The payment of this professional fee is not contingent upon the outcome of this Report.

1.10 Units of Measure

The metric system has been used throughout this report.

Tonnes are metric tonnes equivalent to 1,000 kilograms (2,204.6 lb).

Currency is stated in Australian Dollars (AUD) unless otherwise stated. Certain PNG based costs have been stated in Papua New Guinea Kina (PNGK or have been converted from PNGK to AUD. The defined exchange rate for the purposes of this report is PNGK 2.44: AUD 1.00.

1.11 Sources of Information

This report is based on technical data provided by the Issuer. The Issuer provided open access to all the records necessary to enable a proper assessment of Tolukuma and Mt Penck Projects. The Issuer has warranted in writing that full disclosure has been made of all material information and that, to the best of the Issuer's knowledge and understanding, such information is complete, accurate and true.

Additional relevant material was acquired independently from a variety of sources. This material was used to expand on the information provided by the Issuer and where appropriate, confirm or provide alternative assumptions to those made by the Issuer. With respect to Section 3 of this report, the Author has relied in part on historical information including exploration reports, technical papers, sample descriptions, assay results, computer data, maps and drill logs generated by previous operators and associated third party consultants. Historical documents and data sources used during the preparation of this report are listed in Section 8.0, References.

The Issuer has warranted to the Authors that the information provided for preparation of this report correctly represents all material information relevant to TGM. The Issuer has taken reasonable measures to ensure that title to its properties is in good standing, including obtaining a legal opinion with respect to validity of the tenements, relevant permits and agreements.

No attempt to independently verify the land tenure information was made by the Author.

The Author has relied on experience to determine if the information from previous reports was suitable for inclusion in this technical report and adjusted information that required amending. This report includes technical information, which required subsequent calculations to derive subtotals, totals, and weighted averages. Such calculations inherently involve a degree of rounding and consequently introduce a margin of error. Where these occur, the Author does not consider them to be material.

2 Project location and tenure

2.1 Tolukuma

2.1.1 Property Location

The Tolukuma Project is located in the Goilala District of Central Province of Papua New Guinea, in the Owen Stanley Ranges, about 100 km north of the capital city Port Moresby (Figure 2.1). The mine is situated in rugged mountainous terrain on the Tolukuma hill with rain forest at an elevation of 1500 m to 2000 m above sea level which has steep side slopes that descend into the Auga River. The Auga River is a tributary of the Angabanga River, which eventually flows to the sea 100 km from the mine.

Elevation at the site ranges from approximately 1,100 m above sea level at the Auga River up to 1,750 m at the top of Tolukuma Hill. This represents a difference in elevation of greater than 600 m over the mine site, which translates into an average slope of approximately 10%.

Steep gorges and sharp rising mountains are prominent in the region and are thought to be part of a large eroded volcanic system which was formed during late Miocene to early Pliocene during the collision of the Melanesian arc and the Australian continental plate.

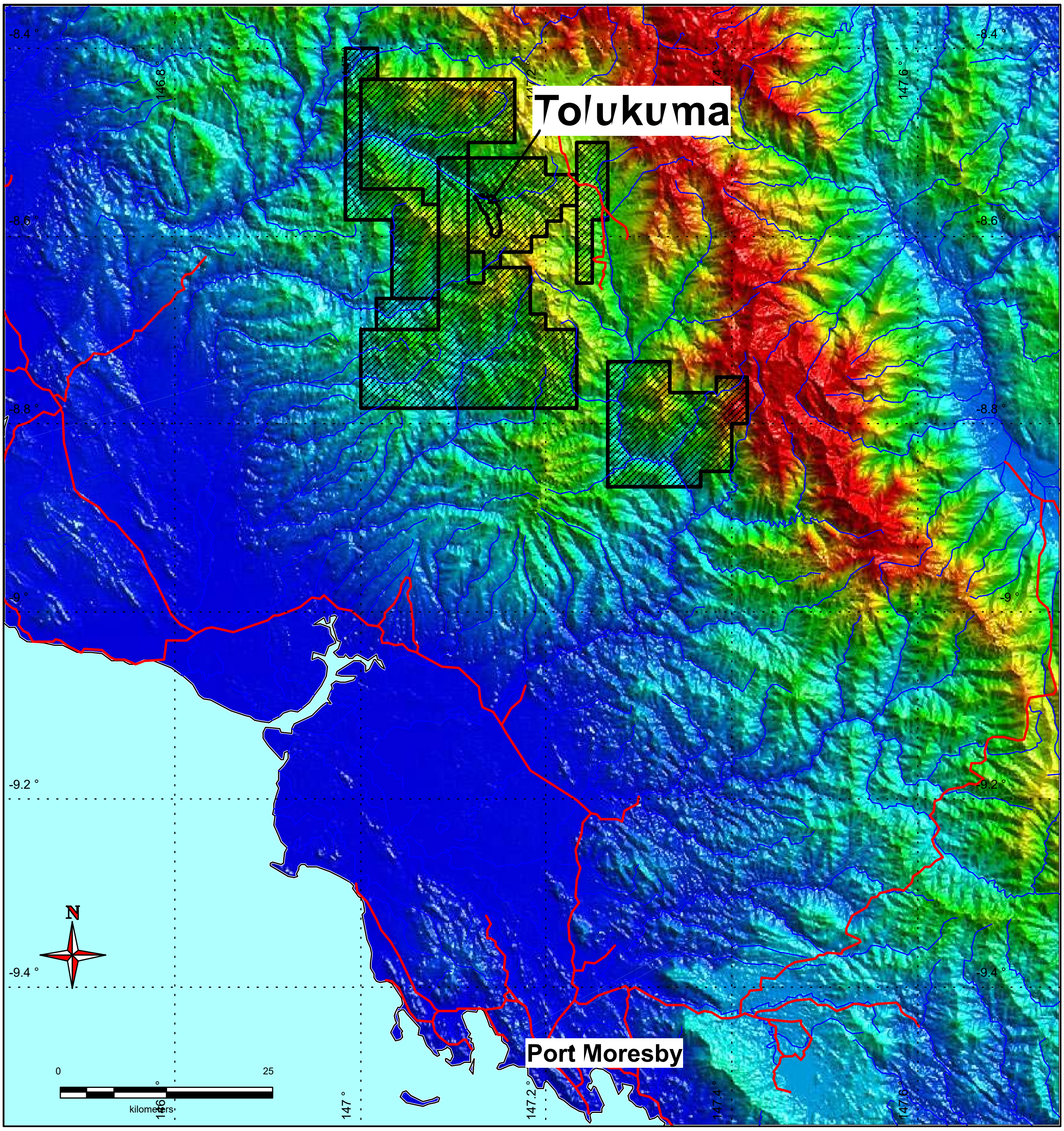
Access to the mine site is currently limited to air transport. All personnel are transferred by helicopter to and from either Port Moresby or Veimauri. All cargo and supplies are transported by helicopter to and from a storage and handling site at Veimauri, which is located approximately 70 km north-northwest of Port Moresby by road.

The nearest airstrip that can accommodate small fixed winged aircraft is at Fane, which is about 5 km west of the mine site and a second, longer airstrip that can accommodate larger aircraft is located at Woitape, some 22 km from the mine site. There is no road linking Tolukuma with the Hiritano highway to Port Moresby, although a 36 km pilot road excavation following old horse tracks from the mine site to Fane and Popole / Mafulu village was completed by previous TGM owner, Asidokona Mining Pte Ltd (Asidokona) in 2016.

Tolukuma Project is located in the Goilala District of the Woitape Local Level Government (Woitape LLG) in the Central Provincial government administrative region.

As discussed in Section 4.18.1 of this report, The Government of PNG has committed to an upgrade of the Hiritano Highway and the Issuers have set aside capital for the completion of the mine service road connecting from TGM to the Hiritano Highway at Bakoiudu. This will have a significant impact on project logistics and both capital and operating cost as it reduces the historical reliance on helicopter transport.

Figure 2.1 Regional location map of the Tolukuma Project with topography



Source: AMC, Projection Lat/Log AGD66. As at 17/07/23

The coverage area of the Tolukuma lease ML 104 is approximately 7.71 km^2.

Mining commenced in 1995 and continued through a combination of mostly underground mining (about 90%) and open cut mining. The TGM mineralised system is a structurally complex series of structurally controlled, high grade, steeply dipping, narrow epithermal veins and associated splays within a 500 m corridor trending roughly north to south. There is considerable exploration potential for extensions to depth and along strike within this corridor, but also outside the corridor in the vicinity. There is also potential for new discoveries in the district as will be discussed.

Mining was suspended and the site has been on care and maintenance since 2015.

2.1.2 Tenure

Information on Tenure is based on the opinion provided by O'Briens Lawyers, PNG in a letter dated 3 August 2023.

Note that Tolu Minerals Ltd (TML), the Issuer was previously known as Lole Mining Ltd. Some tenure is still registered to Lole Mining Ltd but is in the process of being changed.

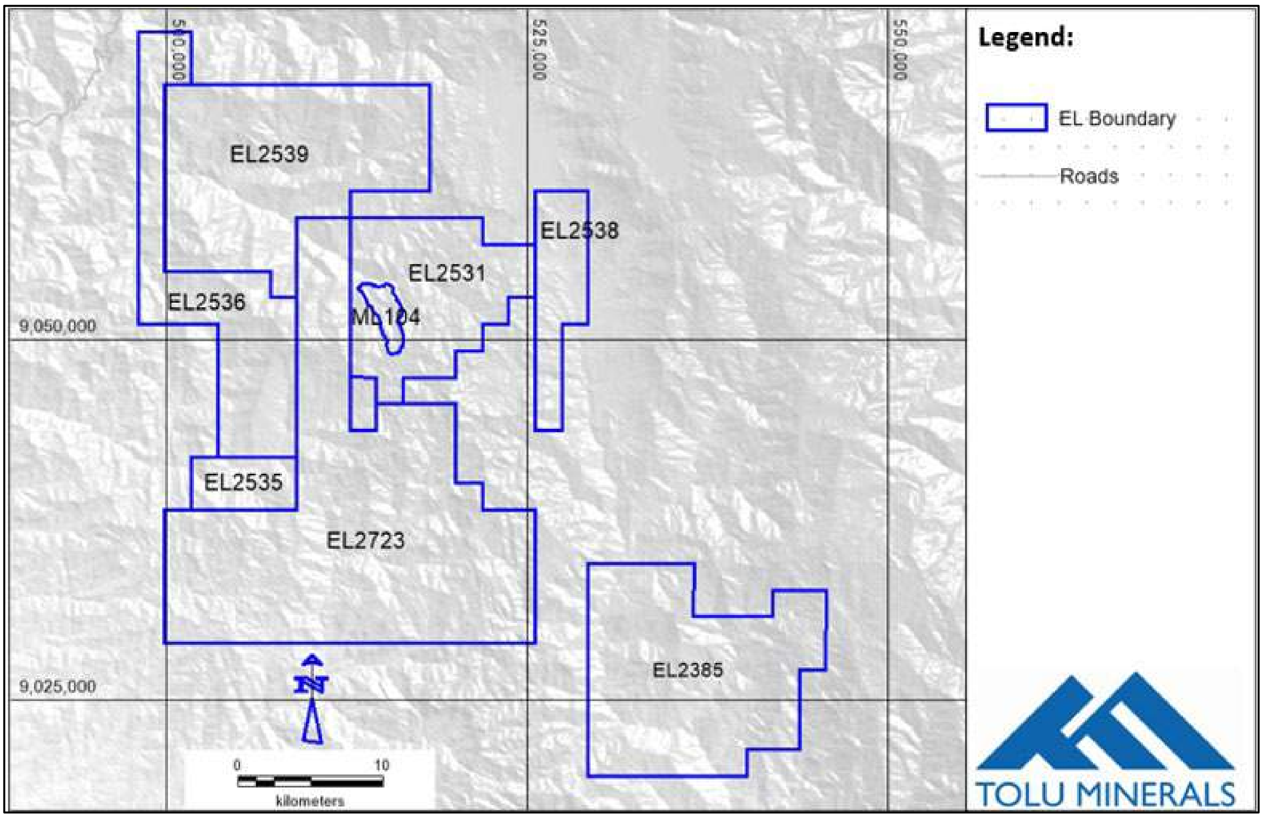
Tolukuma Gold Mines (Pty) Ltd, the company that previously owned the Tenements was liquidated in 2018 and remained under the custody of the liquidator until an Sale of Assets Agreement was executed between the Liquidator and a PNG registered company, Lole Mining Limited on 27 April 2021 followed by the transfer of the Tenements.

TML was incorporated in March 2020 as the special purpose vehicle in order to acquire Tolukuma Gold Mines (Pty) Ltd's assets including the Tenements from the Liquidator and to secure the Mt. Penck exploration licence. The Issuer has completed the transfer of the Tenements to Tolukuma Gold Mines (Pty) Ltd, secured the ML 104 tenure extension for a period of ten (10) years up to 28 August 2032 and secured the Mt. Penck exploration project.

TGM was fully permitted for operation and the Issuer has secured agreement from PNG Government departments that all the permits will be updated when necessary and issued to Tolukuma Gold Mines (Pty) Ltd as the ML 104 holder.

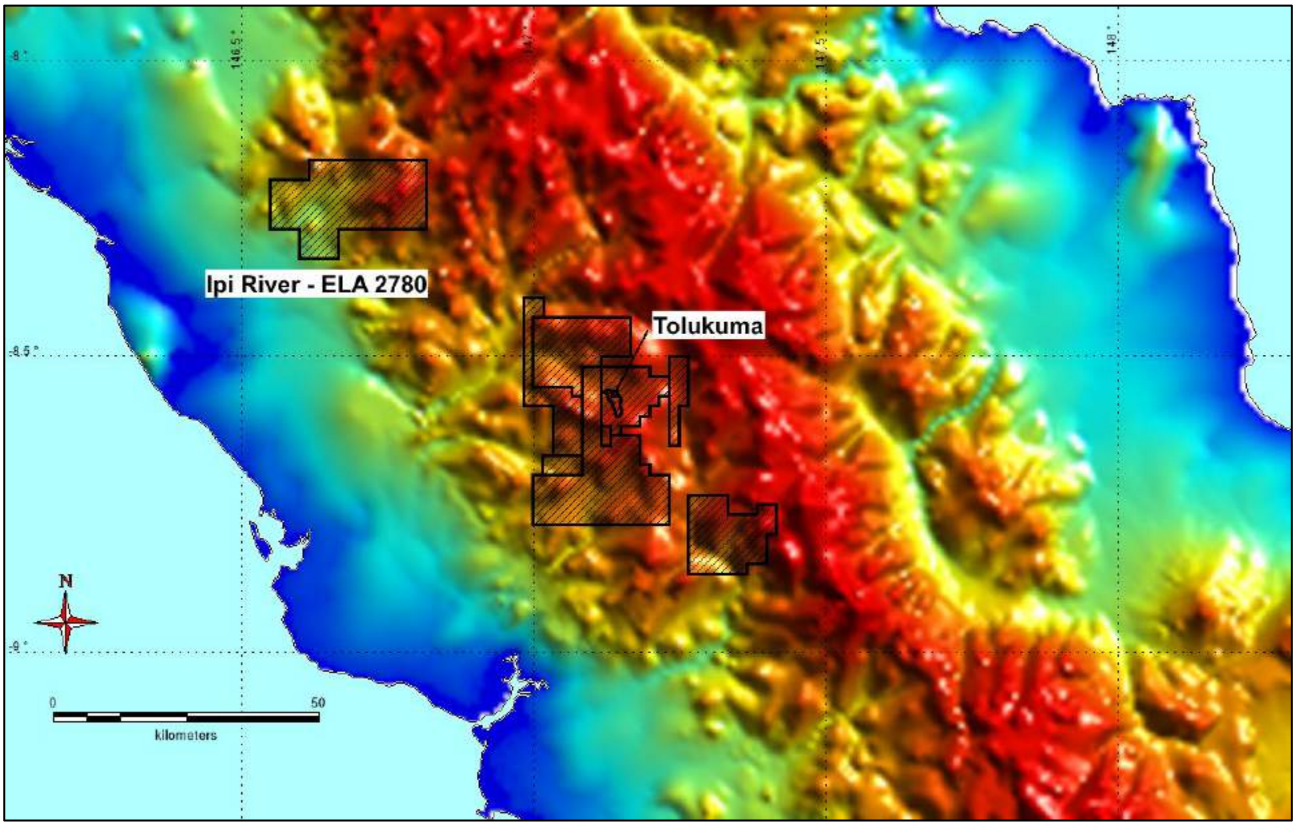
In addition to ML 104, the Issuer also holds six granted exploration licences EL 2385, EL 2535, EL 2536, EL 2538, EL 2539, EL 2723 plus ELA 2780 as shown in Figure 2.2, Figure 2.3 and Table 2.1. TML also will obtain EL 2531 and exploration licence application ELA 2570 post IPO (see 2.1.2.2)

Figure 2.2 TML Tolukuma area licences



Source: TML. Projection: UTM Zone 55S. As at 17/07/23

Figure 2.3 Ipi River exploration licence application area in relation to Tolukuma



Source: AMC. Projection: Lat Long (AGD66). As at 17/07/23.

Table 2.1 TML tenement details

Tenement No.	Province	Owner	Status	Application Date	Grant Date	Expiry Date	Area	
							Sub Blocks	Km^2
ML 104	Central	TML	Active		01/09/21	28/08/32		7.71
EL 2385	Central	TML	Active[1]	02/06/15	26/05/16	25/05/22	58	197
EL 2531	Central	Frontier	Active[2]	04/05/17	25/02/19	24/02/23	32.73	118
EL 2535	Central	TML	Active	30/05/17	24/01/22	25/01/24	8	255
EL 2536	Central	TML	Active	30/05/17	24/01/22	25/01/24	37	126
EL 2538	Central	TML	Active	13/06/17	24/01/22	25/01/24	14	101
EL 2539	Central	TML	Active	13/06/17	24/01/22	25/01/24	58	197
EL 2723	Central	TML	Active	09/08/21	08/11/22	07/11/24	108	368
ELA 2780	Central	TML	Application[3]	10/02/23	-	-	116	423

[1] EL 2385 expired on 25 May 2022 but is subject to statutory holding over pursuant to an undecided two year extension renewal application. The tenement remains in force until determinations are made.

[2] EL 2531 expired on 24 February 2023 but is subject to statutory holding over pursuant to a renewal application. The tenement remains in force until determinations are made.

[3] ELA 2780 (Ipi River) is an exploration licence application that is pending.

2.1.2.1 Mine lease ML 104 conditions

ML 104 was renewed on 1 September 2021 for a period of 10 years to 28 August 2032. The conditions of the lease renewal are summarised below:

- The lessee must comply with the TGM proposals for Tenure Transfer to TML dated 30 June 2021

- A registered compensation agreement dated 16 November 1993 continues in full force and effect for the term of ML 104.
- The mine must comply with the Mining Safety Act.
- The Lessee must comply with all relevant legislation.
- Develop a detailed rehabilitation and Mine Closure Plan at least 5 years prior to the planned closure of the mine or the expiration of the Mine lease or any extended Mining Lease, whichever occurs first.
- Any public statement in relation to the Mining Lease and TGM must also disclose any relevant conditions that form part of the extension of the Mining Lease.

2.1.2.2 Exploration licence EL 2531

The Issuer has entered into a share sale agreement with Lanthanein Resources Ltd for the purchase of Frontier Copper (PNG) Ltd, which holds exploration licence EL 2531, and exploration licence application ELA 2529.

The agreement is subject to the successful completion of the Offer.

Under the agreement the Company is required to pay on closing:
- AUD 500,000 in cash.
- at its election AUD 1,500,000 either by cash or the issue of Shares to be issued at the Offer Price.

The Issuer has elected to issue Shares and will issue on completion to Lanthanein Resources Ltd 3,000,000 Shares.

2.1.3 Expenditure commitments

The Tolukuma tenement package has current annual rents of PGK 29,219 and minimum expenditures of PGK 3,200,000 as listed in Table 2.2.

Table 2.2 Tolukuma exploration licence rent and minimum expenditure commitment

Exploration License	Province	Rent (PGK)	Minimum Expenditure (PGK)	Due Date
EL 2385	Central	5,220	200,000	26/05/2024
EL 2531	Central	3,749	1,600,000	25/02/2024
EL 2535	Central	720	300,000	24/01/2024
EL 2536	Central	3,330	300,000	24/01/2024
EL 2538	Central	1,260	300,000	24/01/2024
EL 2539	Central	5,220	300,000	24/01/2024
EL 2723	Central	9,720	200,000	07/11/2023

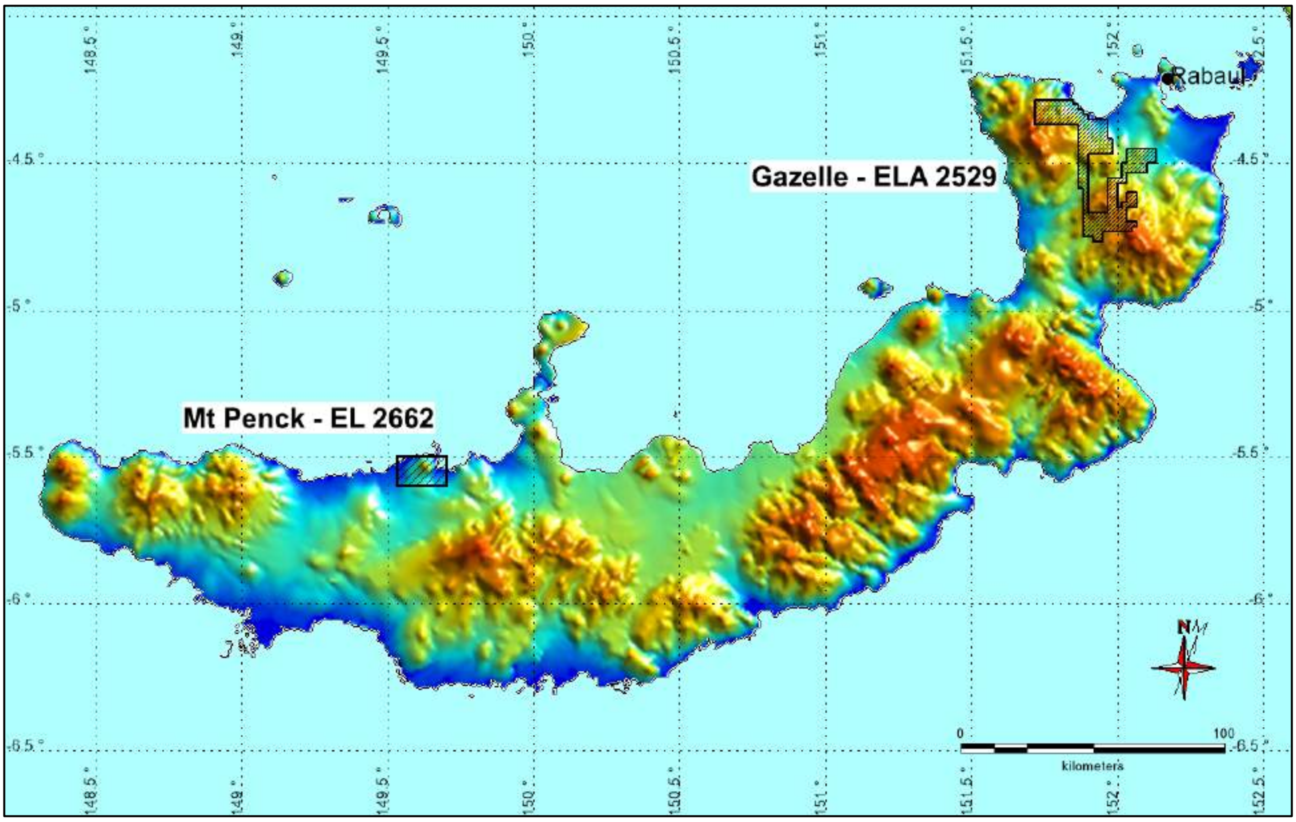
2.2 New Britain - Mt Penck and Gazelle

2.2.1 Property location

The Mt Penck property comprises a single Exploration Licence, EL 2662, located about 55 km west of the township of Kimbe in West New Britain Province, Papua New Guinea (PNG). The licence is located on the Cape Raoult-Arawe (SB 55-8 & SB 55-12) 1:250,000 and Namo (8886) 1:100,000 map sheets, centred at about 5° 32′ 30″ S latitude and 149° 37′ 00″ E longitude (Figure 2.4). Rabaul, the provincial capital of East New Britain Province, lies 300 km to the east, northeast of the property. The coordinate datum system used is AGD66, UTM Zone 55.

An exploration licence application ELA 2529 has been lodged by Frontier Copper (PNG) Limited for the Gazelle property.

Figure 2.4 Mt Penck and Gazelle tenement location map on New Britain island



Source: AMC. Projection: Lat Long AGD66. As at 17/07/23

2.2.2 Tenure

The gold prospective Mt Penck exploration licence, EL 2662, covers 60 sub-blocks, an area of 204 km^2 in west New Britain Province, PNG, about 90 km west of Hoskins as shown in Figure 2.4.

An application for an exploration licence has been lodged by Frontier Copper (PNG) Limited for ELA 2529 (Gazelle) on the eastern end of New Britain (Figure 2.4). Tenement details are summarized in Table 2.3.

Table 2.3 Mt Penck tenement details

Tenement No.	Province	Owner	Status	Application Date	Grant Date	Expiry Date	Area	
							Sub blocks	Area km^2
EL 2662	West New Britain	TML	Active	03/04/2020	26/10/2021	25/10/2023	60	204
ELA 2529	East New Britain	Frontier	Application	02/05/2017	-	-	210	719

2.2.3 Expenditure commitments

Expenditure commitments for Mt Penck are as listed in Table 2.4.

Table 2.4 Mt Penck exploration licence minimum expenditure commitments

Exploration Licence	Province	Rent	Minimum Expenditure (PNG K)	Due Date
EL 2662	West New Britain	5,400	100,000	26/10/2023

3 History

3.1 Tolukuma

The potential for gold in the Tolukuma area was first discovered in 1986 by Newmont Proprietary Limited (Newmont). The exploration then passed through a number of companies before being developed as an operating gold mine by Tolukuma Gold Mines Pty Ltd in 1995 to exploit high grade, epithermal veins within a large structural zone. The mine operated effectively until about 2011, before a significant production drop-off due to costs of helicopter borne logistics impacting profit margins and ability to fund exploration. The mine was put into care and maintenance in 2015.

The Tolukuma structures are open ended at depth and many along strike with future resource potential. It also affords the opportunity for discovery of new veins within the primary structure and in parallel structures adjacent to the mining licence and in the exploration licences controlled by TML in the Tolukuma area.

3.1.1 Prior Ownership and Ownership Changes

The ownership history of the property and major milestones are summarised in Table 3.1.

Table 3.1 Ownership history and major milestones

Year	Event
1985	PA 580 granted to Newmont Pty Ltd
1986	Tolukuma deposit discovered by Newmont Proprietary Limited (Newmont)
1987	Initial drill testing
1993	Tolukuma project sold to Dome Resources Limited of Canada
1994	ML 104 granted to Clayfield Pty Ltd (100% owned by Dome Resources Limited)
1995	Clayfield Pty Ltd changed name to Tolukuma Gold Mines Pty Ltd
1995	First gold poured from open pit production.
1997	Underground production commenced
2000	Tolukuma Gold Mines Pty Ltd sold to DRD Gold Limited of South Africa.
2002	Renewal of ML 104
2006	Tolukuma Gold Mines Pty Ltd sold to Emperor Mines Limited of Fiji.
2008	Tolukuma Gold Mines Pty Ltd sold by Emperor to Petromin (PNG) Holdings Ltd
2012	Renewal of ML 104
2015	Mine put into care and maintenance
2015	Tolukuma Gold Mines Pty Ltd sold to Asidokona
2018	Tolukuma Gold Mines Pty Ltd put into liquidation by court order
2021	Tolukuma Gold Mines Pty Ltd acquired from liquidator by and ML 105 approved
2021-2023	Exploration licences approved

Early regional exploration was undertaken in the Fane-Woitape area during the 1960s and 1970s. Initial exploration of the property was carried out under Prospecting Authority (PA 580) which was granted to Newmont Propriety Limited on 7 March 1985. The Tolukuma vein system itself was not discovered by Newmont until 1986 by means of following up on anomalous bulk leach extractable gold (BLEG) values and rock chip gold assays in Ilive Creek. Initial drilling occurred over the site in 1987.

Newmont subsequently sold the property to Dome Resources Limited of Canada in late 1993. From 1993 Dome Resources Limited progressed further drilling, completed a feasibility study and commenced construction of the mine in 1994.

A Mining Lease (ML) 104, was granted to Clayfield Pty Limited (100% owned by Dome Resources Limited (Dome)) on 29 August 1994. On 23 June 1995, Clayfield Pty Limited changed its name to Tolukuma Gold Mines Pty Ltd. The mining lease has been renewed several times since then. In December 1995 the first gold was produced at TGM under the ownership of Dome.

In 2000, Dome sold its interest to DRD Gold Limited of South Africa (DRD).

DRD operated the project for several years before selling Tolukuma Gold Mines Pty Ltd to Emperor Mines Limited of Fiji, as part of DRD restructuring in 2006.

Petromin (PNG) Holdings Ltd (Petromin) purchased Tolukuma Gold Mines Pty Ltd from Emperor Mines Limited through a share sale agreement on 5 February 2008. Petromin operated the mine until 2015, although production started declining from 2011. Petromin put the operation into care and maintenance on 15 April 2015 and sold Tolukuma Gold Mines Pty Ltd to Asidokona Mining Resources Pte Ltd (Asidokona) in October 2015. There has been no subsequent underground development or stoping activity at the mine.

Tolukuma Gold Mines Pty Ltd was put into liquidation on 7 February 2018 by court order due to insufficient funding by then owners Asidokona. The liquidator was Pini Accountants and Advisors, represented by Mr Andrew Pini.

3.1.2 Summary of historical exploration, development and production

The following provides a summary of the exploration, development and production history of the property.

Initial drill testing was carried out by Newmont in 1987. The deposit size, however, was not sufficient to make the operation commercially viable for a company of Newmont's scale and in late 1993 the mine was acquired by Dome Resources Limited.

Dome carried out further drilling and moved into feasibility and development in 1994 with production commencing from open pit mining of the Tolukuma and Gulbadi veins in 1995. Underground mining commenced in 1997 via several adits to access these veins below the open pits. Since 1997 TGM has operated mostly as an underground mine with small open pits to source oxide ore for blending purposes.

A brief operating history of the TGM operations is outlined as follows:

- The Mining Lease (ML 104) was awarded on 29 August 1994.
- Open cut mining commenced in 1995 and in December 1995, first gold was produced. At the time mining was exclusively open cut.
- The hydroelectric power station was commissioned in December 1997.
- Decline development and underground mining using mechanised cut and fill shrinkage methods commenced in 1997.
- DRD acquired the mine from Dome in 2000.
- The gravity gold circuit was commissioned by DRD in 2000.
- The plant contains a semi-autogenous (SAG) mill that in 2006 was designed to treat 18,000 tonnes per month (tpm) (DRDGold, 2006).
- In 2006 DRD sold its interest to Emperor Mines Limited, who operated TGM until 2008.
- Petromin purchased Tolukuma Gold Mines Pty Ltd from Emperor Mines Limited on 5 February 2008.
- Production started declining from 2011.
- On 15th April 2015, Petromin placed the mine on care and maintenance after several years of declining production.
- Asidokona took ownership of Tolukuma Gold Mines Pty Ltd in October 2015 but did not restart mining operations. The only work conducted was dewatering underground drives to get access to work headings and stoping areas. Other rehabilitation work included

refurbishment of the mill carbon-in-leach (CIL) tanks and waste tails neutralisation circuit, gold furnace room and Knelson plant.

- Asidokona also undertook some infrastructure work most notably road upgrades including constructing a pilot road access from TGM to reach the Hiritano Highway from Port Moresby. Although some 36 km of road grading was undertaken, the access road was not completed.
- On 7 February 2018, Tolukuma Gold Mines Pty Ltd. was put into liquidation by Court order.

A summary of all drill significant drill collars for the Mineral Resource estimate and significant intercepts from those drillholes is included in Appendix A and Appendix B.

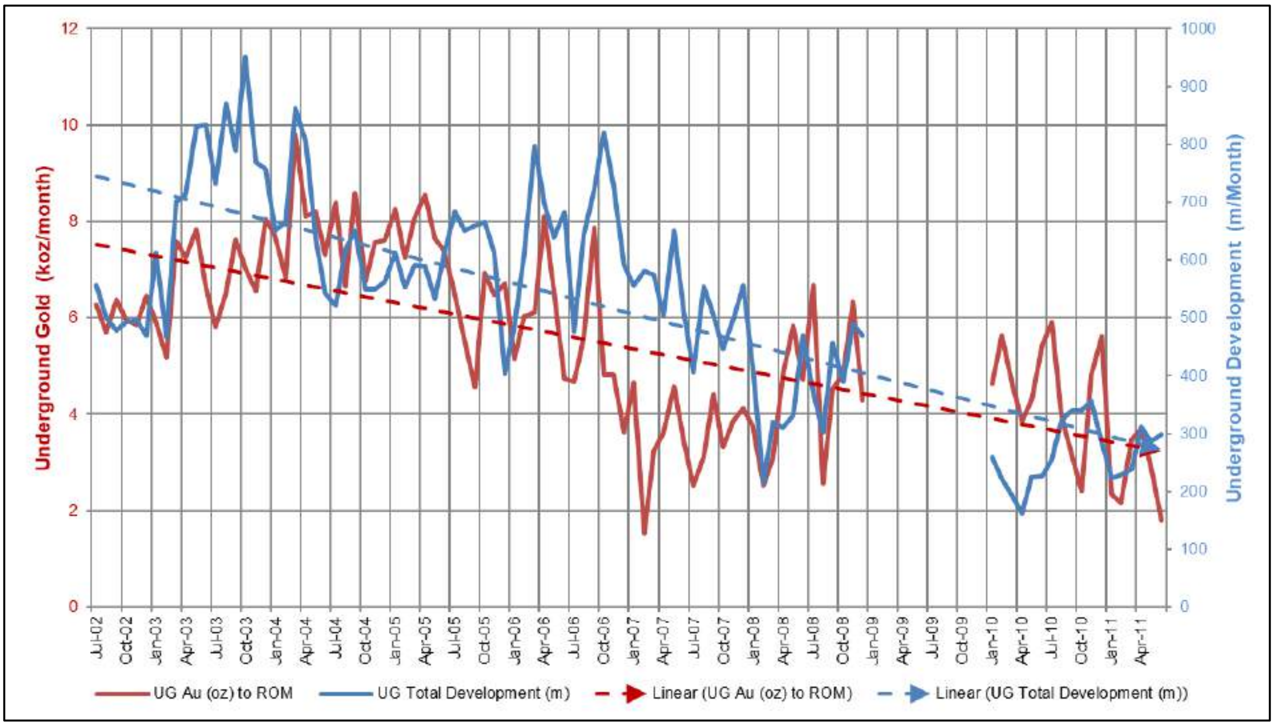
TGM's annual production was maintained at an average of around 50 Koz Au and 146 Koz Ag until 2011 (Table 3.2).

Table 3.2 TGM annual gold and silver metal production history 1996 to 2015

Production	Gold Metal		Silver Metal	
Year Ending	Yearly (oz Au)	Cumulative (oz Au)	Yearly (oz Ag)	Cumulative (oz Ag)
Jun-96	28,275	28,275	43,326	43,326
Jun-97	54,970	83,245	153,239	196,565
Jun-98	72,375	155,620	293,422	489,987
Jun-99	73,448	229,068	299,121	789,108
Jun-00	17,811	246,879	160,079	949,187
Jun-01	63,593	310,472	181,967	1,131,154
Jun-02	71,955	382,427	141,899	1,273,053
Jun-03	68,096	450,523	157,844	1,430,897
Jun-04	85,715	536,238	148,007	1,578,904
Jun-05	76,314	612,552	72,150	1,651,054
Jun-06	54,790	667,342	109,580	1,760,634
Jun-07	44,181	711,523	88,362	1,848,996
Jun-08	43,000	754,523	125,827	1,974,823
Jun-09	25,000	779,523	136,666	2,111,489
Jun-10	24,000	803,523	76,911	2,188,400
Jun-11	24,000	827,523	62,662	2,251,062
Jun-12	21,414	848,937	47,345	2,298,407
2013	8,250	857,187	30,030	2,328,437
2014	14,402	871,589	29,937	2,358,374
2015	2,986	874,575	6,623	2,364,997

Source: S&P Global database to 2012, and from Petromin annual reports (where gaps exist in public reporting). Numbers are estimated for silver in 2006 and 2007.

Figure 3.1 Tolukuma mine production tonnes and grade by month (AMC, 2011a)



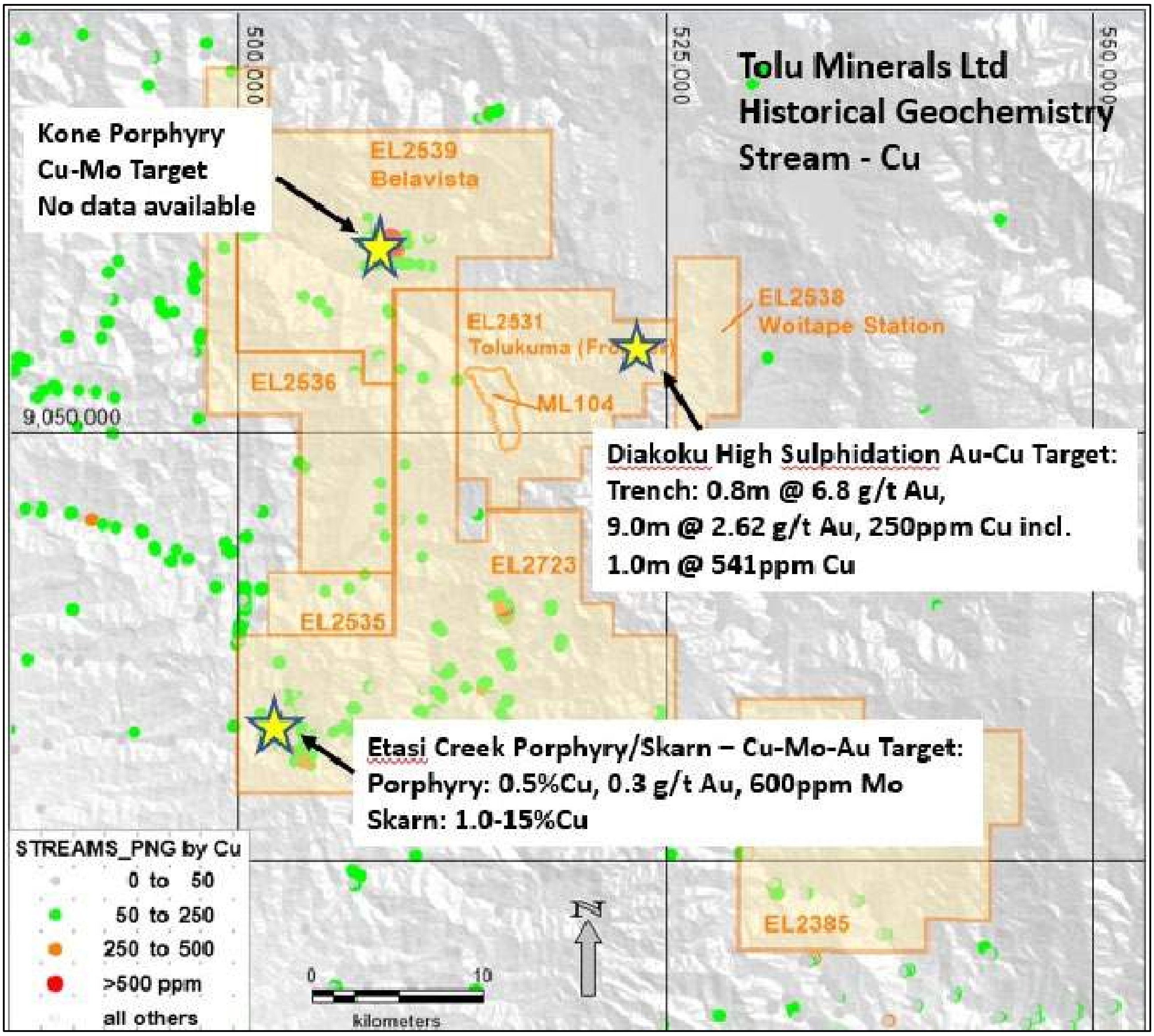
3.2 Tolukuma regional

3.2.1 EL 2531

EL 2531 surrounds the Tolukuma mining lease. Exploration has included:

Late 1960s to 1992: Early exploration of the licence area included regional scale steam sediment and rock chip sampling surveys by Kennecott in the late 1960's (PA 29) and CRA Exploration in the 1970's (PA 217), targeting porphyry-style copper mineralization (Figure 3.2), and Newmont Proprietary Limited (PA 589) between 1985 and 1992 targeting gold mineralization.

Figure 3.2 Historical stream sediment sampling (copper) highlights



Source: TML

Newmont's work led to the discovery of the Tolukuma vein system in ML 104 and the nearby Saki, Kimono, Taula and Soju-Yava vein systems in EL 2531. Newmont also discovered the Duma-Dilava and Diakoku prospects which have had little follow up work.

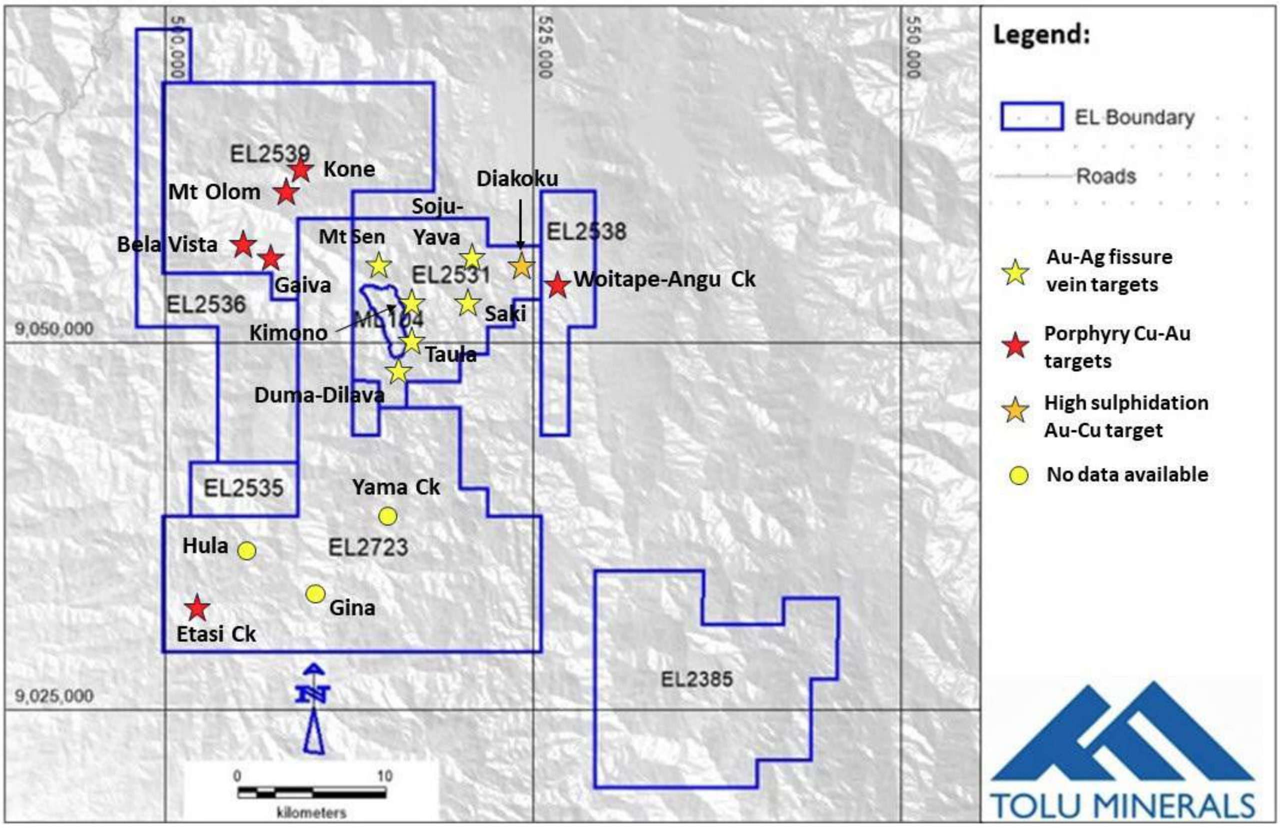
1992-2014: Between 1992 and 2014 TGM / Dome / DRD / Petromin completed re-interpretation of historical regional geochemistry combined with airborne geophysics to define follow up targets, and continued exploration of the area surrounding ML 104 including the ground now held under EL 2531. Additional field work was carried out at the known Saki, Kimono, Taula and Soju-Yava vein systems and new targets were discovered at Mt Sen and Evese. A total of nine targets are now known in EL 2531 as shown in Figure 3.3.

Historical diamond core drilling, totalling about 8,471 m in 78 drillholes, was undertaken by Newmont and / or TGM at the five main targets: Saki, Taula, Kimono, Mt Sen and Soju-Yava. Table 3.3 summarises the historical drilling that was carried out.

Table 3.3 Historical drilling completed in EL 2531

Target	Historical Drilling
Saki	48 DD drillholes in three phases totalling 4,610 m; maximum depth 237 m; only 8 drillholes >150 m.
Taula	13 DD drillholes at Seriseri (Taula Vein) totalling 1,316 m; maximum depth 90.4 m; 5 DD drillholes at Sisimonda totalling 464 m.
Kimono	2 DD drillholes totalling 670 m(approximate); maximum depth 350 m (approximate); no drill logs available; no assays; drillholes missed targets; Kimono Vein is totally untested.
Mt Sen	3 DD drillholes totalling 367 m; maximum depth 140.8 m.
Soju-Yava	7 DD drillholes totalling 1,044 m; maximum depth 240.1 m.

Figure 3.3 Location of exploration prospects in Tolukuma region



Source: TML

2017-2022: Frontier Resources Ltd was granted EL 2531 in February 2019. Frontier exploration completed at the nine known targets is summarised in Section 4.5. In 2022, Frontier reported a Mineral Resource reported in accordance with the JORC Code (2012) (Frontier, 2022a) at Saki. An Inferred Mineral Resource of 2.0 Mt at 2.0 g/t Au for 128 Oz Au was reported.

3.2.2 Other regional tenements surrounding Tolukuma

Numerous targets outside ML 104 with gold and/or copper potential were discovered and explored to a greater or lesser degree by various companies including Kennecott, Triako, CRAE, BHP, Newmont, Tolukuma Gold Mine Pty Ltd and Petromin since the late 1960s.

3.3 Mt Penck

3.3.1 Summary

The Mt Penck property has an extensive history of exploration carried out in stages by several companies between 1968 and 2011, as summarised in Table 3.4. The programs generated a large database of historical information. A total of 115 historical drillholes, comprising 82 DD drillholes totalling 11,038.6 m and 33 RC drillholes totalling 1,140 m, has been completed to date. Systematic modern exploration of the property and its surrounds commenced in 1968. Between 1968 and 1997 work programs were completed by Placer, BHP Havana, Nord Resources Corporation (Nord), BHP-UTAH Minerals International (BHP) and Indo Pacific Mining (PNG) Pty Ltd (Indo Pacific). From 2003 to 2015 work was conducted by Kanon Resources Limited (Kanon).

Table 3.4 Mt Penck - Summary of historical ownership and exploration activities

Period	Company	Tenement	Activity Summary
1968-70	Placer / BHP Havana	?	Regional exploration of surrounding area for porphyry-style copper mineralization.
1981	Nord Resources	?	Helicopter supported stream sediment sampling targeting gold and base metal mineralization.
1985-90	BHP	PA 617 Silavuti	Stream sediment sampling; geological mapping; rock chip sampling; ridge and spur soil sampling; 600-line km airborne magnetic/radiometric survey; bulldozer costeaning; first drill testing (aircore (RAC) drilling; 33 drillholes, 1,140.5m).
1994-97	Indo Pacific	EL 1088 Silavuti	Geological mapping; bulldozer costeaning; hand trenching; first DD drill testing (7 drillholes, 1,098.5m)
2003-15 (No work after 2011)	Kanon Resources	EL 1322 Mt Penck	Geological mapping; rock chip sampling; stream sediment sampling; grid auger soil sampling; hand trenching; bulldozer costeaning; 3D-IP surveying; DD drilling (75 drillholes, 9,940.1m).

BHP completed initial aircore drill testing in 1989 (33 drillholes) and Indo Pacific undertook the first diamond drill testing in 1996 (7 drillholes).

Most of the historical exploration on the property was carried out by Kanon between 2003 and 2011. Kanon completed four phases of DD drilling (75 drillholes). A fifth phase of drilling was planned for 2013 but was aborted due to lack of funding and the tenement was eventually relinquished in 2015. To the best of the Author’s knowledge, no work has been carried out on the property since 2011.

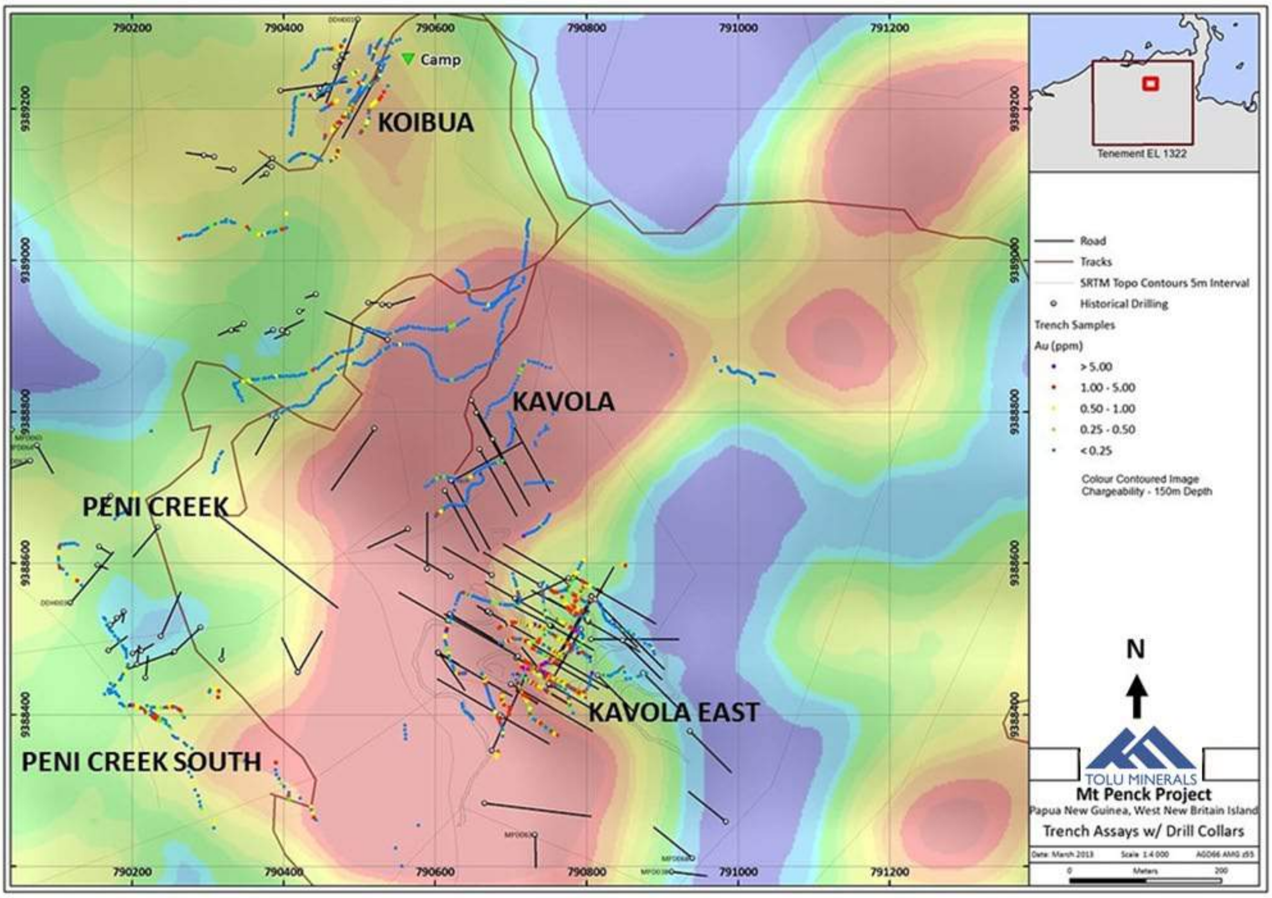
The historical work has identified several individual exploration targets/prospects within the overall Mt Penck hydrothermal system. The naming of these prospects in historical reports is somewhat confusing. Prospect names that have been used include Kavola, Kavola Central, Kavola East, Kavola South, Kavola North, Kavola Zone, Koibua, Koibua North, Koibua South, Peni Creek, Peni Creek South, Big Bend and Angahiai.

For clarity there are five main prospective zones, Kavola East, Kavola, Koibua, Peni Creek and Peni Creek South as shown in Figure 3.4 which includes locations of the prospects, trenches, and drill holes. Big Bend and Angahai prospects are located between Peni Creek and Koibua. This report focusses on the Kavola prospects where the majority of historical exploration work has been focussed.

The following sources of data were used in the preparation of this report:

- Copies of publicly available open file historical annual reports submitted to the PNG Mineral Resources Authority (MRA) by Kanon for the years 2004 to 2008 and 2011 to 2013 (in several instances figures and appendices are missing from the digital copies available).
- Historical drill logs for 72 of the 82 DD drillholes.
- Some historical assay sheets.
- Previously compiled independent technical reports prepared on the property.
- Unpublished technical data and maps and internal company reports acquired from companies that have previously explored the property.
- Personal knowledge of the property gained from several field visits during the period 2006-2007.

Figure 3.4 Mt Penck main IP chargeability prospects plan



Source: Amended from image prepared by Caira, 2013.

The database available for this review is not complete. Some historical annual reports, and much original data such as early drill logs, most assay sheets, most drill sections, sample description sheets and most field maps were not available for review. AMC has relied on Kanon annual reports for descriptions of pre-Kanon historical work, on descriptions and summaries compiled in previous independent technical reports prepared on the property by consultants Peter Swiridiuk and Ralph Stagg (Swiridiuk, 2004, Swiridiuk, 2009; Stagg, 2006; Stagg and Swiridiuk, 2008;) and on the writer's personal knowledge of the Property. Other internal unpublished reviews by consultants Exploration Alliance (2010) and Nadia Caira (Caira, 2013) were also helpful. Information or quotes from historical independent reports are referenced where appropriate.

3.3.2 1968 to 1997

3.3.2.1 Placer and BHP Havana – 1968-70

Placer Exploration (in 1968) and BHP Havana (in 1970) explored the area surrounding Mt Penck targeting porphyry-style copper mineralization hosted by Oligocene-age intrusive rocks. The younger Pliocene-age volcanics, which host the gold mineralization at Mt Penck, were not investigated.

3.3.2.2 Nord - 1981

Nord held part of the Mt Penck license area in 1981 and conducted helicopter supported stream sediment sampling targeting gold and base metal mineralization. Nord assayed their samples for Au, Ag, As, Cu, Pb and Zn but failed to identify any geochemical anomalies. However, they noted sulphide-bearing float in the Uteir River 20 km east of Mt Penck.

3.3.2.3 BHP – 1985-90

BHP explored the area in 1985-90 under PA 617 Silavuti. In 1985, an initial regional program of bulk leach extractable gold (BLEG) and minus 80 mesh drainage sampling was completed which located a 17 ppm Au pan concentrate result in Meto Creek, the first indication of gold mineralization at Mt Penck.

Subsequently, during 1986-87 geological mapping, rock chip sampling and ridge-spur soil sampling was conducted in the Meto and Kavola Creek areas (Wright and Irvine, 1989). Anomalous arsenic geochemistry (the highest value was 1280 ppm As) in soil at Meto Creek and a 49.4 g/t Au assay from a rock float sample in Kavola Creek led to follow up airborne geophysics, bulldozer costeaning and RAC drilling.

In July 1988, a 600-line kilometre airborne magnetic-radiometric survey was completed which outlined Kavola Prospect as a coincident magnetic low / potassium high anomaly. Other combined potassium high / magnetic low anomalies were defined peripheral to Kavola, some coinciding with anomalous gold in stream samples.

In 1989, BHP commenced initial drill testing with a program of shallow RAC targeting mineralised structures exposed by costeans at Koibua and Peni Creek. A total of 1,140.5 m was drilled in 33 drillholes (PA01-33) to an average depth of 34 m and a maximum depth of 74 m. Drill samples were assayed for gold and arsenic. Table 3.5,Table 3.6 and Table 3.7 summarise the drilling results, using a 0.1 g/t gold lower grade cut-off, for Peni Creek, Koibua and Koibua South, respectively.

The drilling intersected several zones of low tenor gold mineralization (1.0 g/t Au to 3.0 g/t Au) ranging from 3.0 m to 33 m wide from surface to drill depths of 33 m (Swiridiuk, 2009). The best intersections were:

- Peni Creek – 4 m at 2.41 g/t Au from 24 m (PA12)
- Peni Creek – 32 m at 0.98 g/t Au from 16 m (PA14)
- Koibua – 33 m at 2.41 g/t Au from surface (PA33)
- Koibua – 10 m at 2.91 g/t Au from 2 m (PA6)
- Koibua - 21.5 m at 1.43 g/t Au from surface (PA 7)

Table 3.5 Mt Penck BHP Peni Creek RC (aircore) drilling results

Drillhole Number	From (m)	To (m)	Interval (m)	Gold Grade (g/t Au)
PA 11	6	24	18	0.56
PA 12	16	20	4	1.03
	24	28	4	2.41
	30	36.5	6.5	0.51

Drillhole Number	From (m)	To (m)	Interval (m)	Gold Grade (g/t Au)
PA 13	44	50	6	1.3
	52	58	6	0.78
PA 14	16	48	32	0.98
PA 15	4	28	24	0.65
PA 16	4	6	2	0.57
PA 17	0	4	4	0.72
	26	30	4	1.15
PA 18	8	16	8	1.4
PA 19	0	26	26	0.95
PA 22	22	26	4	1.84

Note: 0.1 g/t Au lower grade cut-off (From Swiridiuk, 2009)

Table 3.6 Mt Penck BHP Koibua RAC drilling results

Drillhole Number	From (m)	To (m)	Interval (m)	Gold Grade (g/t Au)
PA 6	2	12	10	2.19
	24	27	3	1.37
PA 7	0	21.5	21.5	1.43
PA 10	8	19.5	11.5	1.3
PA 33	0	33	33	2.41

Note: 0.1 g/t Au lower grade cut-off (From Swiridiuk, 2009)

Table 3.7 Mt Penck BHP Koibua South RAC drilling results

Drillhole Number	From (m)	To (m)	Interval (m)	Gold Grade (g/t Au)
PA 3	0	30	30	0.68
PA 4	2	8	6	0.49
PA 5	0	4	4	2.09
PA 30	0	8	8	0.59

Note: 0.1 g/t Au lower grade cut-off (From Swiridiuk, 2009)

The drilling results indicated that both the Peni Creek and Koibua mineralised zones are controlled by northwest trending structures in argillic altered volcanics at Peni Creek, and in altered hornblende porphyritic quartz andesite at Koibua. At Koibua a 10 m wide zone across the structure averaged 3.7 g/t Au (Swiridiuk, 2009). Three types of alteration were recognized: propylitic, transitional argillic, and argillic usually with >1% pyrite. The sulphide mineral assemblage included pyrite / sphalerite with subordinate chalcopyrite, zincian tennantite, and zincian argentite / tetrahedrite.

In 1990, BHP Gold Limited merged with Newmont Australia to form Newcrest Mining Limited, and PA 617 was subsequently relinquished.

3.3.2.4 Indo Pacific – 1994-97

Indo Pacific was granted EL 1088 (Silavuti) in 1994. They completed the following programs at Kavola East, Koibua and Peni Creek (Hall, 2004):

- detailed mapping and hand trenching (200 m of trenching)
- drainage and rock chip sampling
- bulldozer costeaning (2.2 km)
- a 7-drillhole (1,098.5 m) DD drilling program, the first diamond core testing of the property; drill depths ranged from 101.8 m to 287.0 m downhole.

Three prospects with gold potential were confirmed Kavola East, Koibua and Peni Creek.

Figure 3.5 shows the location of Indo Pacific's trench sampling, with gold-in trench values greater than 0.5 g/t Au, and the diamond drill hole locations. Table 3.8 provides a summary of the trenching results at Kavola East and Table 3.9 provides selected highlights from the diamond drilling.

Indo Pacific's work confirmed the presence of broad zones of near-surface gold mineralization up to 30 m wide at the Koibua and Peni Creek prospects, with average grades of 1.59 g/t Au to vertical depths of 130 m (Hall, 2004).

Indo Pacific noted that the mineralisation dominantly occurs in zones of strong argillic alteration and silicified hydrothermal crackle breccias, associated with weak stockwork of fine dark sulphide veinlets, hosted mainly by quartz andesite and hornblende andesite.

Figure 3.5 Location of Indo Pacific's bulldozer trenches with gold assay highlights and location of initial DD drillholes (DDH001-DDH007).

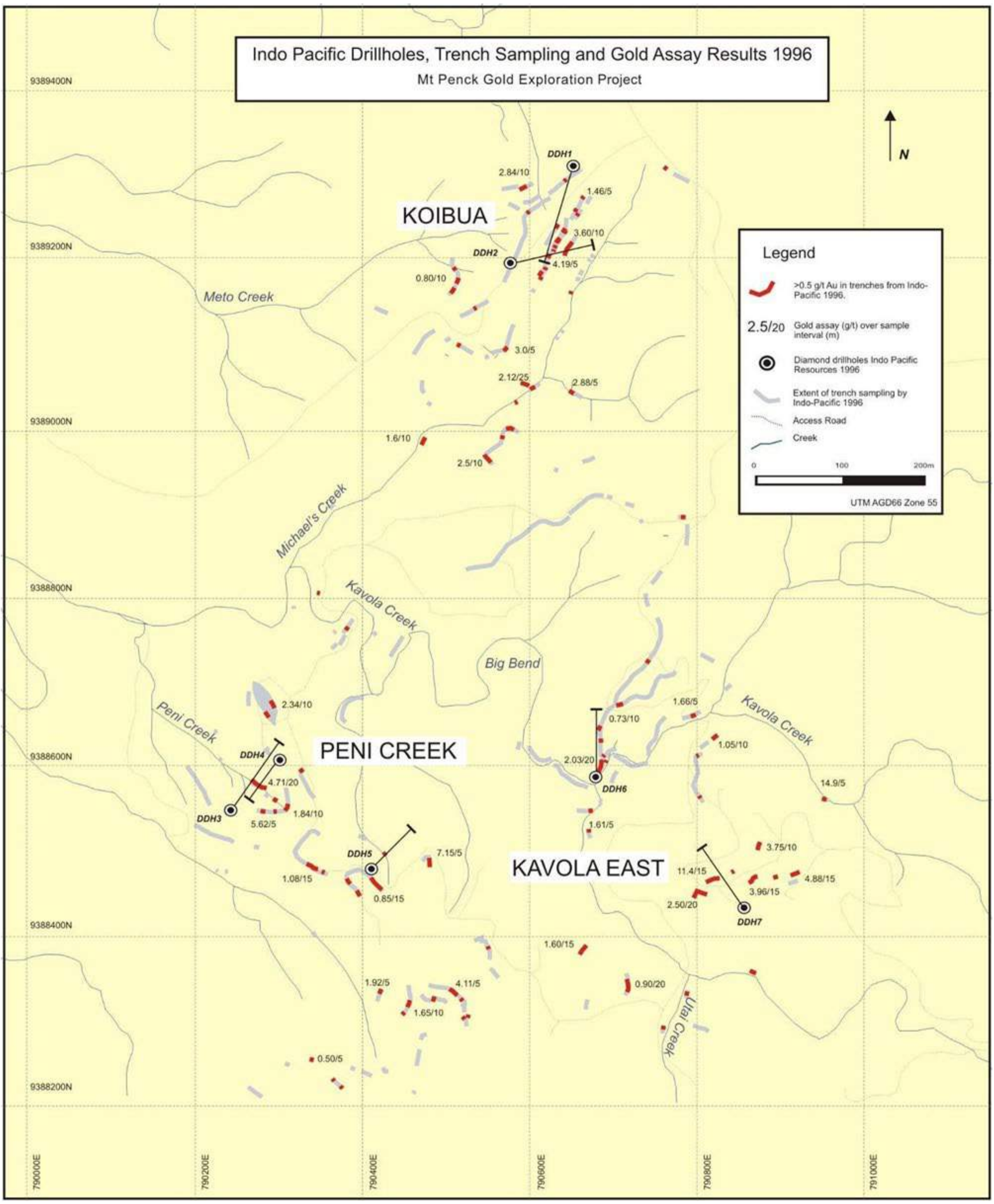


Table 3.8 Indo Pacific Trenching Selected Results at Kavola East Prospect

Trench Number	Trench Length (m)	Interval Gold Results
1	60	5 m @ 1.26 g/t Au
2	60	5 m @ 0.94 g/t Au

Trench Number	Trench Length (m)	Interval Gold Results
3	55	45 m @ 1.06 g/t Au, incl. 5m @ 6.51 g/t Au
		5 m @ 1.16 g/t Au
4	160	40 m @ 8.89 g/t Au, incl. 5 m @ 61.0 g/t Au
5		10 m @ 3.73 g/t Au
6		5 m @ 4.99 g/t Au
		5 m @ 2.72 g/t Au
7	15	15 m @ 4.6 g/t Au
8	130	5 m @ 1.45 g/t Au
9	15	15 m @ 2.55 g/t Au
10	15	15 m @ 11. 73 g/t Au
11	20	20 m @ 2.49 g/t Au
12	5	5 m @ 1.28 g/t Au
13	15	15 m @ 0.89 g/t Au, incl. 5 m @ 1.48 g/t Au
14	**2**	**2 m @ 1.06 g/t Au**

(From Lindley, 2005 in Bucher, 2008; cut-off not reported)

Table 3.9 Indo Pacific diamond drilling selected results

Drillhole Number	From (m)	To (m)	Interval (m)	Gold Grade (g/t Au)
DDH 001 (184 m)	145	173	28	1.59
DDH 002 (136.8 m)	46	113	67	1.68
	incl. 76.3	81.3	5	2.85
	incl. 90.6	103.6	13	3.13
DDH 003 (153.1 m)	145	173	28	1.59
	incl. 145	155	10	2.54
DDH 004 (101.8 m)	58	60	2	0.10
DDH 005 (106.8 m)	1	6	5	0.50
	34	36	2	0.99
	84	90	6	1.01
DDH 006 (287 m)	0	287	287	0.05
	incl. 50	52	2	1.14
DDH 007 (128 m)	0	128	128	0.63
	incl. 0	2	2	4.76
	incl. 18	38	20	2.08
	incl. 28	34	6	6.08
	incl. 29	30	1	23.2
	incl. 66	120	54	0.43
	incl. 67	68	2	0.83
	incl. 85	88	3	1.92
	incl. 112	115	3	1.47
	incl. 114	115	1	2.85
	incl. 119	120	1	1.93

(From Swiridiuk, 2009).

3.3.3 2003 to 2011

3.3.3.1 Summary

Kanon, a PNG-incorporated private company originally owned by Macmin (PNG) Limited, was granted EL 1322, Mt Penck, on 1 May 2003. In 2004, TSX-listed companies New Guinea Gold Limited (NGG) and Vangold Resources Limited (Vangold) became 50% equal joint owners of Kanon. Until 2009, subsequent exploration was jointly funded by both companies with NGG as operator. In 2009, Vangold acquired NGG's equity and became a 100% owner of the property. On 25 February 2010, Kanon changed its name to Vangold (PNG) Limited, a subsidiary of Vangold Resources Limited.

Between 2003 and 2011 Kanon completed a series of work programs, as summarised in Table 3.10, which included:

- mapping and prospecting,
- rock chip and chip-channel sampling,
- grid-based auger soil sampling (two phases) and spectral analysis of soils,
- hand and bulldozer trenching, several phases,
- three-dimensional (3D) IP surveying, and
- diamond drilling (total of 75 drillholes in four phases).

All reported Kanon drill results are drill intervals not true widths.

Table 3.10 Summary of Kanon Exploration Programs – 2003-2011

Period	Work Completed
2003-05	Mapping & rock chip sampling at Kavola and Kavola East. Hand trenching - 10 trenches (596 m) at Kavola; 12 trenches at Kavola East; 4 old trenches at Koibua and 3 old trenches at Kavola East resampled. Grid auger soil sampling over the main prospects; spectral analysis of soil samples. Phase 1 diamond drilling at Kavola East; (7 drillholes; MPD001-007, 998.7 m); combined with program of bulldozer costeaning totalling 1037.8 m.
2006	Phase 2 diamond drilling program (31 drillholes, 3,640.8 m, MPD008-038); 29 drillholes (MPD008-035 & MPD038) at Kavola East Prospect; 2 drillholes (MPD036, MPD037) SW of Kavola / Kavola East creek junction.
2007-08	Regional mapping, prospecting & rock chip sampling; detailed mapping & rock chip sampling at Peni Creek, Big Bend & Angahiai prospects; re-sampling of old bulldozer trenches at Kavola East; hand trenching at Kavola East & Peni Creek; re-survey of all drill collars; field checking airborne geophysical anomalies.
2009-10	Phase 3 diamond drilling program (34 drillholes, 4,111.6 m).
2010	3D-IP survey (200 m spaced E-W lines, 9.7 km^2; soil sampling of IP grid (1,258 samples).
2010-11	Phase 4 DD drilling program (3 drillholes, 1,189 m, maximum depth 402 m); chip-channel sampling of access roads and tracks, 5 m – 30 m composite samples, 1,268 samples.

3.3.3.2 Initial Trenching and Soil Sampling Programs – 2003 to 2006

During the period 2003 to 2006 Kanon completed the following surface exploration programs: hand trenching at Kavola, Kavola East and Koibua; bulldozer costeaning mainly at Kavola; and grid-based soil sampling. Creek mapping and re-interpretation of the historical 1985 BHP airborne geophysical data was also undertaken.

Hall (2004) also reported that four by 40 kg samples were collected from the Koibua, Kavola and Kavola East zones for metallurgical testing but no record can be found of metallurgical test results in the database available to the writer.

Trenching

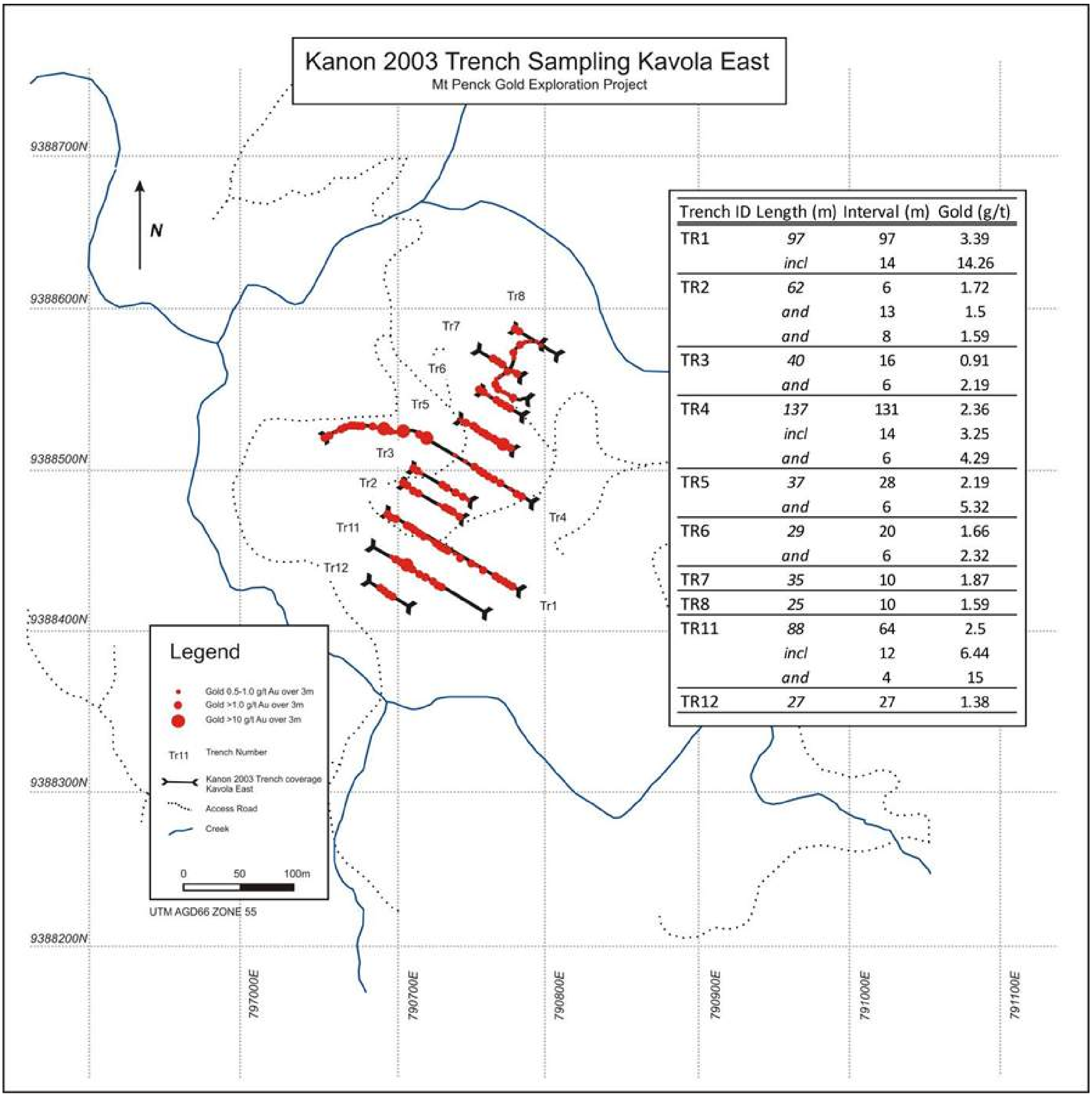
A total of 29 hand-dug trenches were completed at Kavola, Kavola East and Koibua. The trenches were sampled at 1.0 m intervals in zones of silicification and / or limonite-hematite veining, at 2.0 m to 3.0 m intervals in zones of argillic-phyllic alteration and at 5.0 m intervals in zones of propylitic alteration. Figure 3.6 shows the location of the hand trenches at Kavola East with gold assay highlights and Table 3.11 provides a summary of the assay results with a 0.5 g/t Au lower grade cut-off.

Table 3.11 Results of 2003 Kanon Hand Trenching at Kavola East

Trench Number	Trench Length (m)	Intercept (m)	Gold Grade (g/t Au)
1	97	97	3.39
2	62	62	0.84
3	40	40	0.80
4	137	131	2.36
5	37	28	2.19
6	29	20	1.66
7	35	35	0.97
8	25	10	1.59
11	88	64	2.50
12	27	27	1.38

(0.5 g/t Au lower grade cut-off) (From Swiridiuk, 2009)

Figure 3.6 Location of 2003 hand trenches at Kavola East with gold assay highlights.



Trench ID	Length (m)	Interval (m)	Gold (g/t)
TR1	*97*	97	3.39
	incl	14	14.26
TR2	*62*	6	1.72
	and	13	1.5
	and	8	1.59
TR3	*40*	16	0.91
	and	6	2.19
TR4	*137*	131	2.36
	incl	14	3.25
	and	6	4.29
TR5	*37*	28	2.19
	and	6	5.32
TR6	*29*	20	1.66
	and	6	2.32
TR7	*35*	10	1.87
TR8	*25*	10	1.59
TR11	*88*	64	2.5
	incl	12	6.44
	and	4	15
TR12	*27*	27	1.38

(From Swiridiuk, 2009)

Bulldozer costeaning was also undertaken but no location map for the bulldozer costeans can be found in the database.

The results of the initial hand and bulldozer trenching programs, using a 0.5 g/t Au lower grade cut-off, defined wide intervals (up to 97 m wide) of plus 1.0 g/t Au within which were narrower 1.0 m to 3.0 m intervals of plus 10.0 g/t Au. Examples include (Swiridiuk, 2009):

- 97 m at 3.39 g/t Au (hand Trench 1)
- 131 m at 2.36 g/t Au (hand Trench 4)
- 28 m at 2.19 g/t Au (hand Trench 5)
- 20 m at 4.73 g/t Au (bulldozer Costean 26)
- 18 m at 7.72 g/t Au (bulldozer Costean 23)
- 18 m at 3.79 g/t Au (bulldozer Costean 20)

- 13 m at 2.65 g/t Au (bulldozer Costean 33)
- 3 m at 16.32 g/t Au (bulldozer Costean 28)
- 1.0 m at 10.1 g/t Au (bulldozer Costean 22)

Grid Soil Sampling and Spectral Analysis - 2005 (Hall, 2006)

In 2005, Kanon completed a grid-based soil survey over an area of 1400 m by 1000 m covering all the prospects. Samples were collected from the B-horizon at depths of 0.4 m to 1.3 m using a hand auger, at 25 m spacing along 100 m spaced lines oriented magnetic East to West. The soil samples were analysed for gold, arsenic and copper and splits were sent to AusSpec International in Sydney for spectral HyChips analysis to assist with mapping the surface alteration patterns (Hall, 2006).

Figure 3.7 displays gridded images of the combined soil assay results for Au-As and Au-Cu. The results show a strong correlation between gold and arsenic concentrations in soil and a broad correlation between gold and copper. The highest copper and gold values occur at Kavola. The gold-arsenic anomalies showed a strong correlation with areas of clay (argillic) alteration (Hall, 2006).

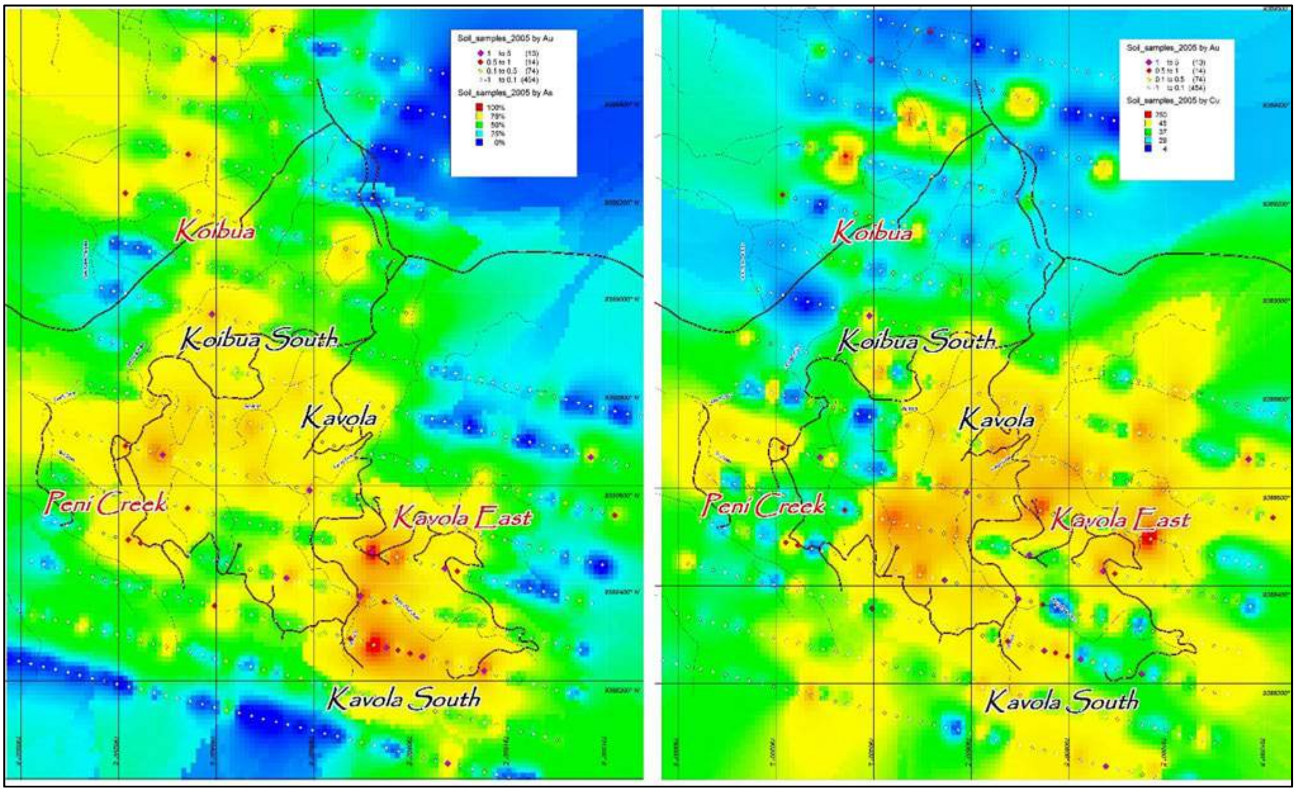
An interpretation of the gold soil results suggests the gold anomalies are in part controlled by a series of NE-trending structures. The highest gold-in-soil value was 4.49 g/t Au at Kavola South.

The aims of the HyChips spectral study were (i) to provide an analysis of the alteration mineralogy, (ii) to assess whether variations in mineral assemblages could be related to mineralisation and (iii) to assist with mapping alteration patterns (Pontual, 2006).

The following minerals were identified: white mica, halloysite / kaolinite, pyrophyllite, nontronite, montmorillonite and goethite. The white mica is dominantly paragonitic illite (Na-rich) which is common in acidic epithermal settings and most likely indicates phyllic alteration. Halloysite / kaolinite, dominant in many samples, is most likely due to a weathering overprint.

Figure 3.8 shows alteration maps prepared by AusSpec. Kavola Zone has the best-defined alteration zone with an intense white mica signature (reflecting phyllic alteration) and a central intense zone of goethite development. Goethite occurs in a large number of samples and most likely is a weathering product of pyrite in the original sericite-pyrite alteration.

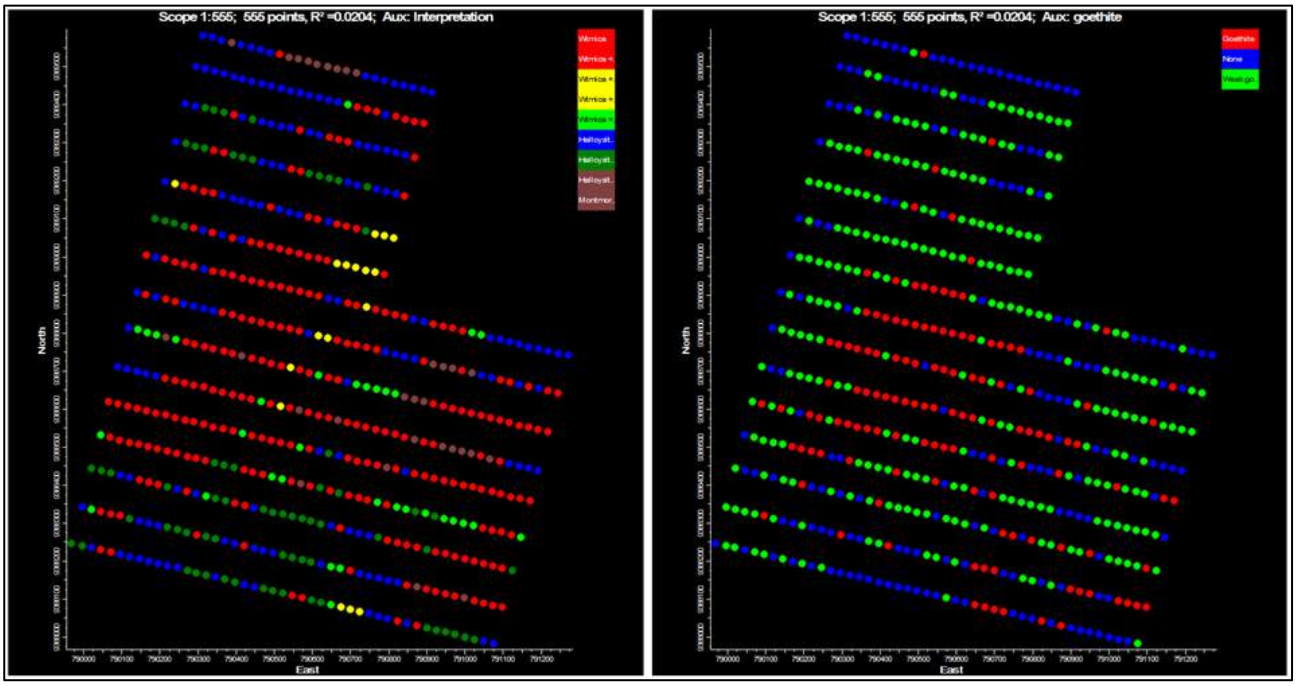
Figure 3.7 Gridded soil anomaly maps for Au-As (left) and Au-Cu (right) from the 2005 grid soil survey.



(Image from Kanon database.)

The results of the spectral analysis corresponded well with mapped alteration patterns. Clearly defined distinct alteration zones were defined including phyllic, argillic and propylitic. Paragonitic white micas characteristic of acidic epithermal systems were identified and smectite and montmorillonite were also identified. A well-defined central zone of phyllic alteration (Figure 3.8) coincident with goethite is present at the core of the system (Hall, 2006).

Figure 3.8 Alteration maps based on soil spectral data.



Note: Left: clay-chlorite alteration and weathering (red+yellow+pale green = white mica +/- pyrophyllite +/-chlorite). Right: distribution of goethite (red = strong goethite). (Abbreviations used: h/k = halloysite/kaolinite, montmor = montmorillonite, neglig = negligible). (From Pontual, 2006)

3.3.3.3 Phase 1 & 2 DD drilling programs – 2005-06

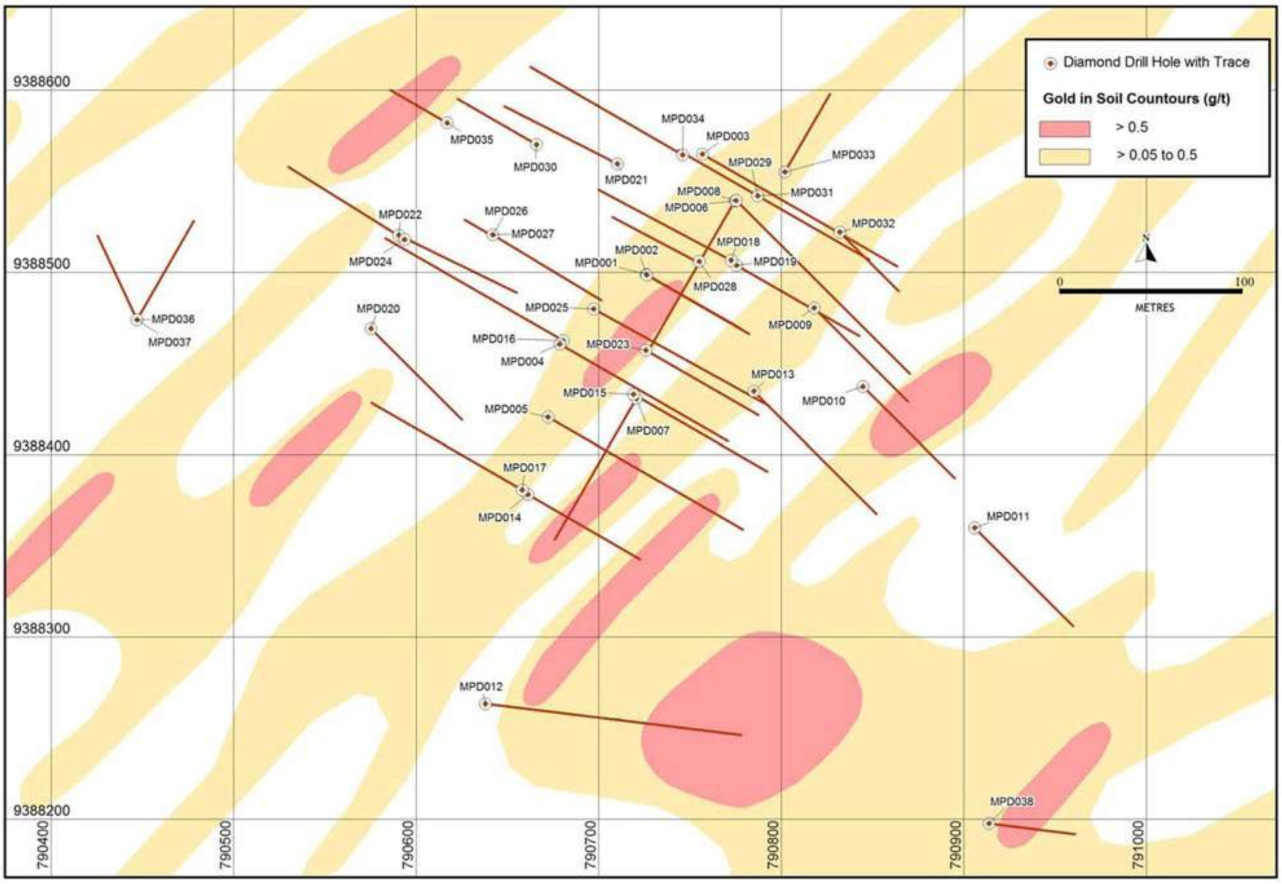
In 2005, Kanon's initial (Phase 1) DD drilling program was completed at Kavola East comprising 7 drillholes (MPD001-MPD007) totalling 998.7 m to depths ranging from 88.4 m to 174.4 m downhole. The aim of the program was to test the near surface extent and continuity of the widespread gold mineralisation defined by trenching and to provide information on the style of gold mineralisation (Hall, 2005). The drillholes were drilled over a distance of 250 m along the mineralised system controlled by the interpreted Kavola East structure. Gold mineralisation was intersected at depths ranging from surface to 160 m downhole.

In 2006, a follow up (Phase 2) DD drilling program was completed, comprising 31 drillholes totalling 3,640.8 m to depths ranging from 31.1 m to 199.5 m (MPD008-MPD038); 5 drillholes were <100 m. Twenty-nine drillholes (MPD008-MPD035 & MPD038) were located at Kavola East and 2 drillholes (MPD036, MPD037) were located southwest of the Kavola / Kavola East creek junction.

The drill hole locations for both programs are shown in Figure 3.9. Appendix C provides a table listing the location and orientation data for all Kanon's DD drillholes up to MPD072 and Appendix D provides a detailed list of all mineralised intervals >0.5 g/t Au intersected during the Phase 1 and Phase 2 drilling campaigns. The intervals are all drill widths.

The results of the Phase 1 and Phase 2 drilling confirmed the trenching results that indicated the presence of wide near surface zones of plus 1.0 g/t Au, which were contained within even wider envelopes of anomalous gold in the range of 50 ppb to 200 ppb gold (Swiridiuk, 2009). In addition, there were a number of narrow 2.0 m to 3.0 m intersections of much higher grade (plus 10.0 g/t Au).

Figure 3.9 Location of Kanon’s Phase 1 and Phase 2 diamond drillholes (MPD001-MPD038) on gold soil geochemistry.



(From Swiridiuk, 2009)

Table 3.12 Summary of Kanon’s Phase 1 and Phase 2 DD drilling results

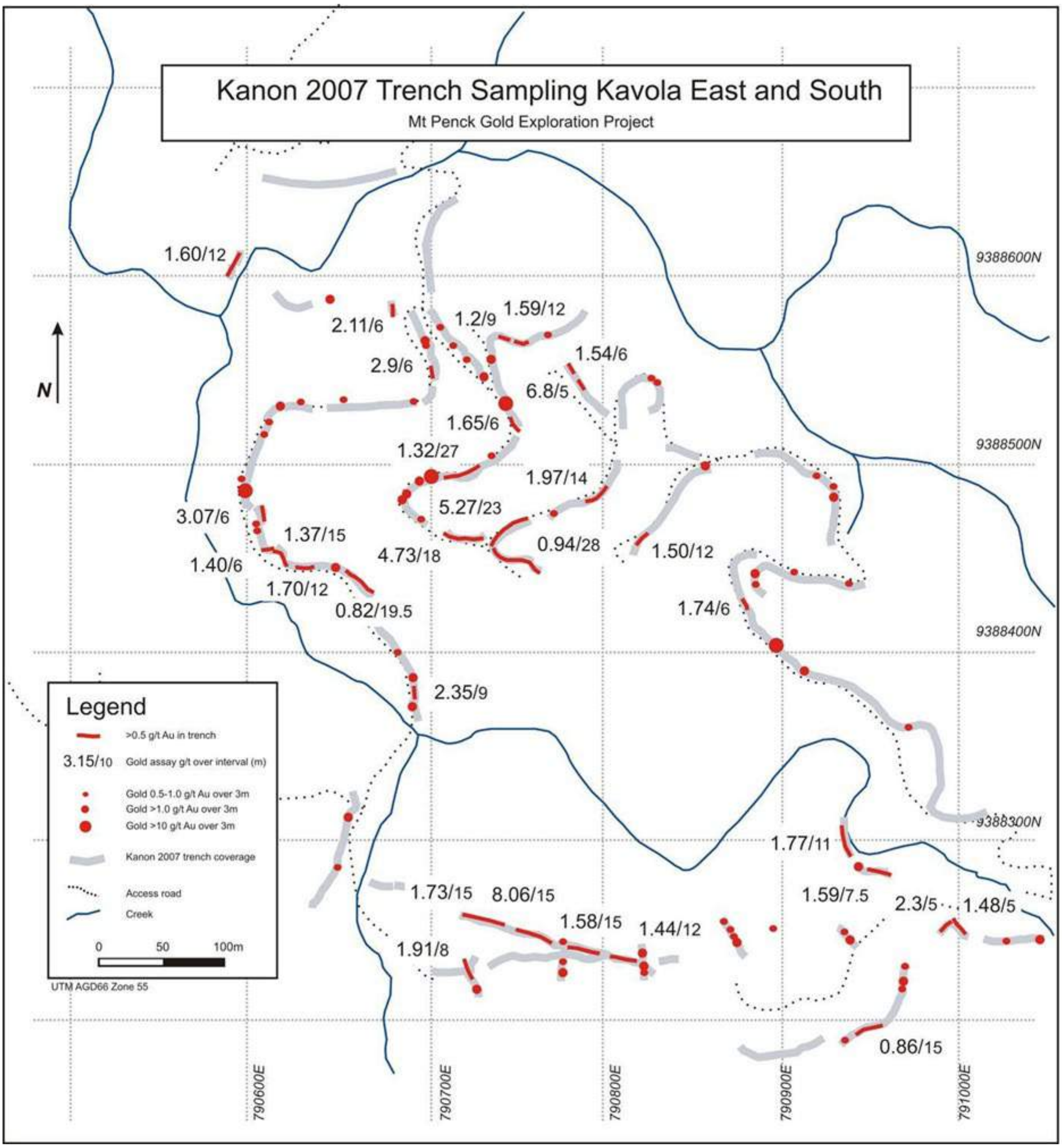
Drillhole Number	Interval (m)	Starting Depth (m)	Gold Grade (g/t Au)
Plus 10 m wide intercepts at >1.0 g/t Au:			
002	10	70	1.99
003	10	163	2.18
005	13	154	3.06
006	10	7	1.25
	43	23	2.35
007	14	0	2.83
008	23	0	2.29
015	11	13	1.10
018	13	10	2.10
033	10	0	2.20
Plus 10.0 g/t Au intercepts:			
007	2	168	36.70
008	1	6	11.70
011	1	75	16.20
022	1	50	16.35
	3	91	14.94
035	1*	24	13.30*
	(*within a 6m at 7.16 g/t Au interval)		

From the drilling results Kanon's initial interpretation of a relatively simple, mineralised, north easterly trending structure at Kavola East was modified to conclude the mineralisation was partly controlled by quartz stockwork zones within favourable lava horizons in the volcanic sequence.

3.3.3.4 Hand Trenching and Bulldozer Costeaning – 2007-08

During 2007 to 2008 additional programs of hand and bulldozer trenching were completed at Kavola East and Kavola South. These programs confirmed the earlier results of wide but irregular zones of near-surface gold mineralisation. Figure 3.10 shows the trench locations and gold assay highlights.

Figure 3.10 Kanon's 2007 trench sampling with gold assay results >0.5 g/t Au.



(From Swiridiuk, 2009)

3.3.3.5 Phase 3 Diamond Drilling – 2009 to 2010

In 2009 to 2010, Kanon completed its Phase 3 DD drilling program, comprising 34 drillholes (MPD039-MDP072) totalling 4,111.6 m to depths ranging from 75.0 m to 241.5 m downhole; 11 drillholes were <100 m and one drillhole was >200 m. The aim was to provide sufficient data to complete a NI 43-101 resource estimate for Kavola East and to test anomalous gold values in trenches at Kavola South, Peni Creek and Koibua (Swiridiuk, 2009). The drillhole locations are shown in Figure 3.11.

Twenty-one drillholes (MPD039-MPD049) were drilled at Kavola East and 13 drillholes (MPD050-MPD072) were drilled at targets generated by strong gold-in-trench results at Peni Creek, Kavola south and Koibua. New targets that had been defined at Koibua and Kavola were also tested. A detailed list of assay results is provided in Appendix E and the drillhole locations are shown in Figure 3.11.

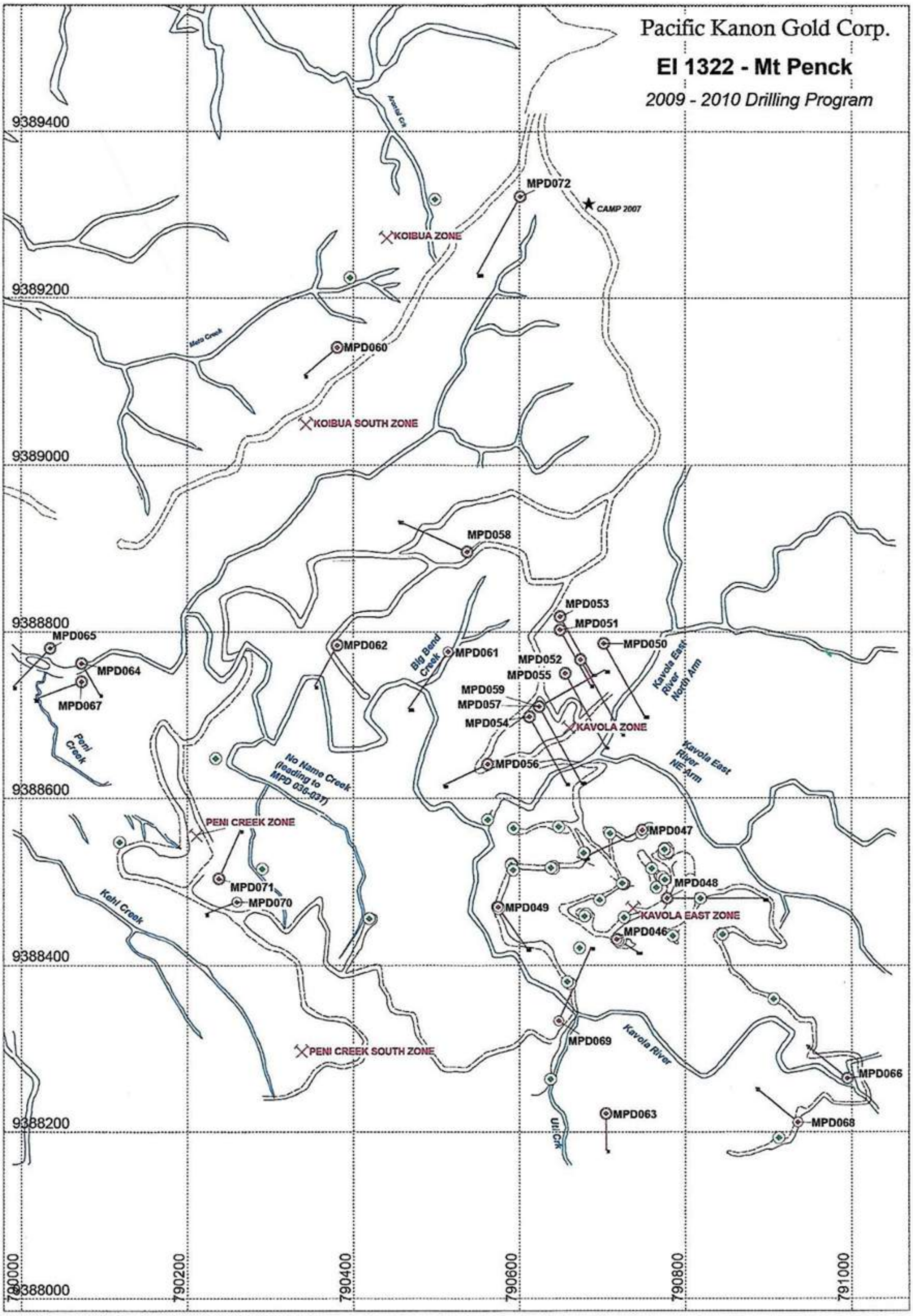
The results of the Phase 3 drilling confirmed the earlier model of wide zones of lower grade mineralisation (1.0 g/t Au to 3.0 g/t Au) at shallower levels (generally less than 50 m) and narrow zones (up to 3.0 m) of much higher grade (>10.0 g/t Au) interpreted to be the feeder conduits. Table 3.13 provides a summary of the Phase 3 results for both styles of mineralisation, based on the data provided in Appendix E.

Table 3.13 Summary of Kanon's phase 3 diamond drilling results

Drillhole Number	Interval (m)	Starting Depth (m)	Gold Grade (g/t Au)
Plus 10m wide intercepts at >1.0 g/t Au:			
039	25.7	0	2.43
	32.3	37.2	1.57
040	21.0	2.0	3.13
042	47.0	5.0	2.06
	19.0	55.0	1.64
	19.0	75.0	1,17
	10.0	123.0	3.14
044	21.0	70.0	1.85
045	11.0	0	1.06
	16.0	14.0	3.72
***Plus 10.0 g/t Au intercepts*:**			
040	2.0	20.0	10.01
045	2.0	20.0	13.36
	1.0	23.0	13.55
048	0.7	3.5	16.7
052	0.9	153.6	15.45

At Kavola south track excavation for drill access exposed extensive zones of phyllic alteration and strong silicification, along with strong earthy hematite (red iron oxide) mineralisation. Ubiquitous fine pyrite is disseminated throughout and centimetre scale bornite after chalcopyrite veinlets were recognized (Vangold, 2009).

Figure 3.11 Location of Kanon's 2009-10 (Phase 3) DD drillholes.



3.3.3.6 Kanon exploration programs – 2010-11

In mid-2010, Vangold Resources Limited acquired NGG's 50% share of the project and became 100% owner and operator. Following completion of this transaction, Kanon completed additional work programs during 2010-11, including:

- 3D-IP geophysical survey.
- Auger soil sampling of the IP grid lines.
- Initial DD drill testing of 3D-IP anomalies (Phase 4 drilling program).
- Chip-channel sampling of access roads and tracks.

Some of the work completed and the results for this period are not well documented in the database.

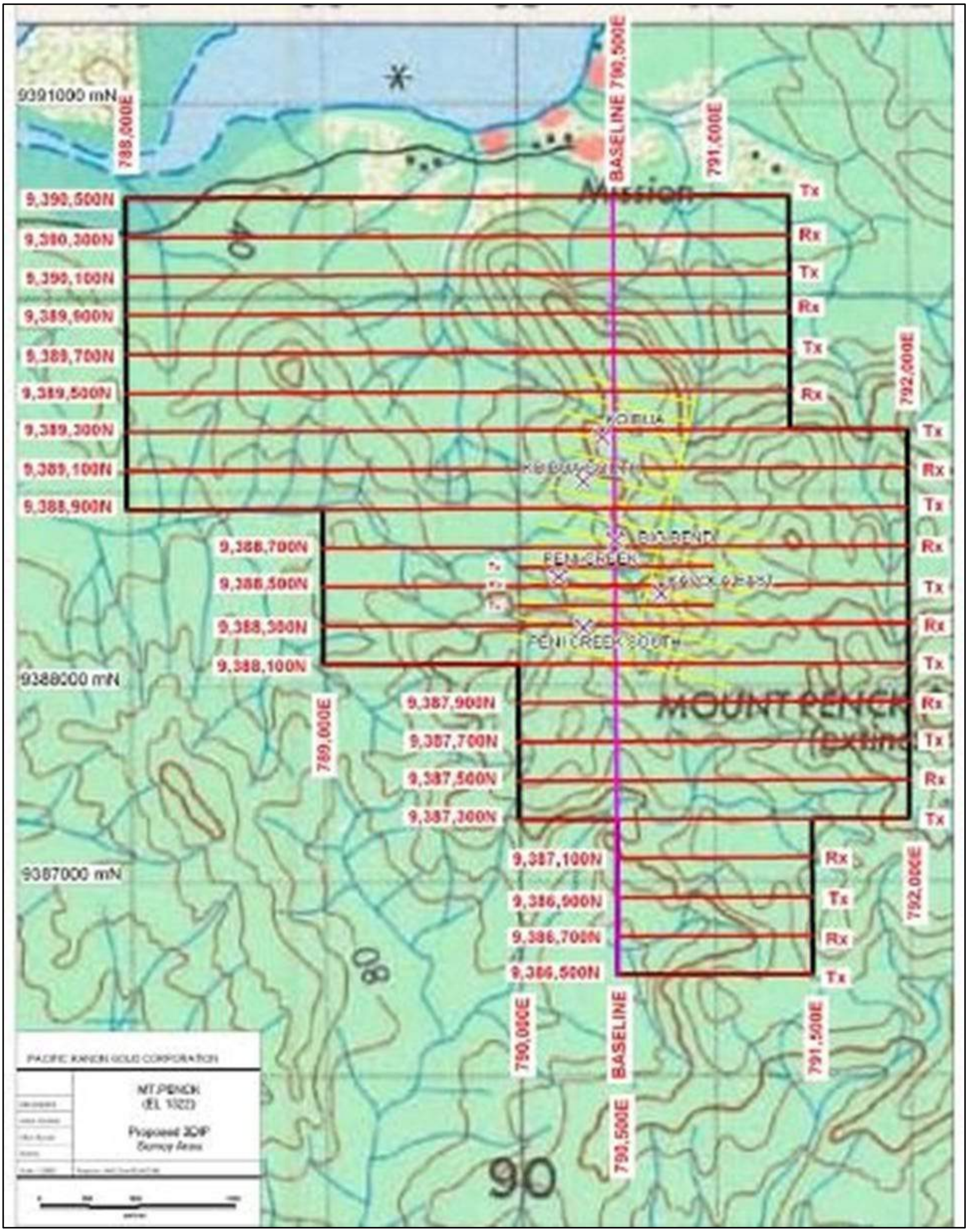
3.3.3.7 3D-IP geophysical survey

In 2010 a three-dimensional induced polarisation (3D-IP) ground geophysical survey was undertaken, covering an area of 9.7 km^2 along E-W lines spaced 200 m apart and 100 m apart over Kavola East (Figure 3.12). The aim of the survey was to help define mineralisation associated with zones of disseminated pyrite-arsenopyrite-chalcopyrite (expected to generate chargeability anomalies) and to help define mineralised structures or quartz veins from the resistivity component. Massive sulphides, if present, should also be detected from the conductivity component (Swiridiuk, 2010a). The following summary of the survey results is taken from Swiridiuk (2010b).

Five sub-surface chargeability anomalies, named Talasea, Kavola North, Silivuti, Kavola Zone and Angahia, were identified and selected as drill targets, as shown in Figure 3.13. These are summarised in Figure 3.16.

The anomalies were interpreted to be related to disseminated sulphides including pyrite, chalcopyrite and arsenopyrite. Swiridiuk considered that the anomalies are "*very similar in intensity and size to that resolved at the Nakru copper-gold breccia systems. The prospects at Mt.Penck occur within an interpreted caldera. Similarly, the Nakru copper / gold systems occur as clusters of mineralised deposits nested within an interpreted caldera. The narrow epithermal gold structures at Mt.Penck potentially overlie Nakru style copper/gold systems*" (Swiridiuk, 2010b).

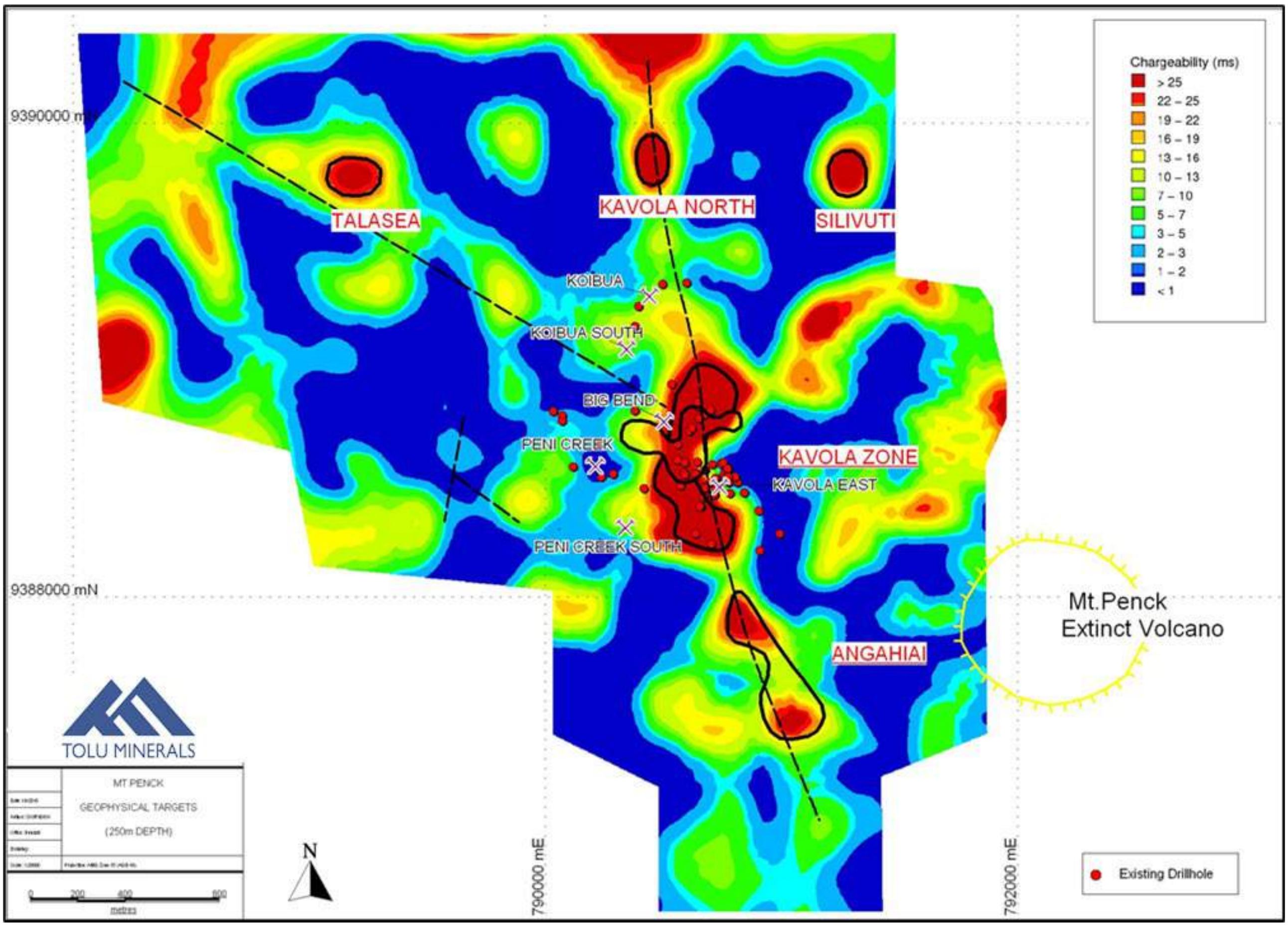
Figure 3.12 Location of 2010 Kanon 3D-IP survey grid lines.



Note: Projection AGD66 Z55S

Kavola Zone is the largest anomaly. At shallower levels it coincides with the central zone of phyllic alteration (Figure 3.14). A summary of the chargeability anomaly characteristics is provided in Table 3.14.

Figure 3.13 Chargeability plan map (horizontal slice) at 250 m depth showing chargeability anomalies selected as drill targets.



(From Swiridiuk, 2010b) Projection AGD66 Z55S

Table 3.14 3D-IP chargeability anomalies identified as drill targets

Anomaly	Description
Kavola Zone	18Ha chargeability anomaly at 200 m depth; coincident east to west zone of higher resistivity (>700 ohm.m) at 100 m depth; indicates possible east to west structure through the Kavola Zone.
Kavola North	Discrete intrusive-style chargeability anomaly; located on Kavola Structure; possible intrusive source.
Silavuti	Discrete intrusive-style chargeability anomaly located at 200 m depth; possibly due to disseminated sulphides.
Talasea	Discrete chargeability anomaly located at 200 m depth; adjacent to major northwest-trending structure that intersects the Kavola Structure at Kavola East.
Angahiai	700 m long chargeability anomaly located at 200 m depth; 200 m sout-southeast of Kavola; associated with mineralised Kavola Structure.

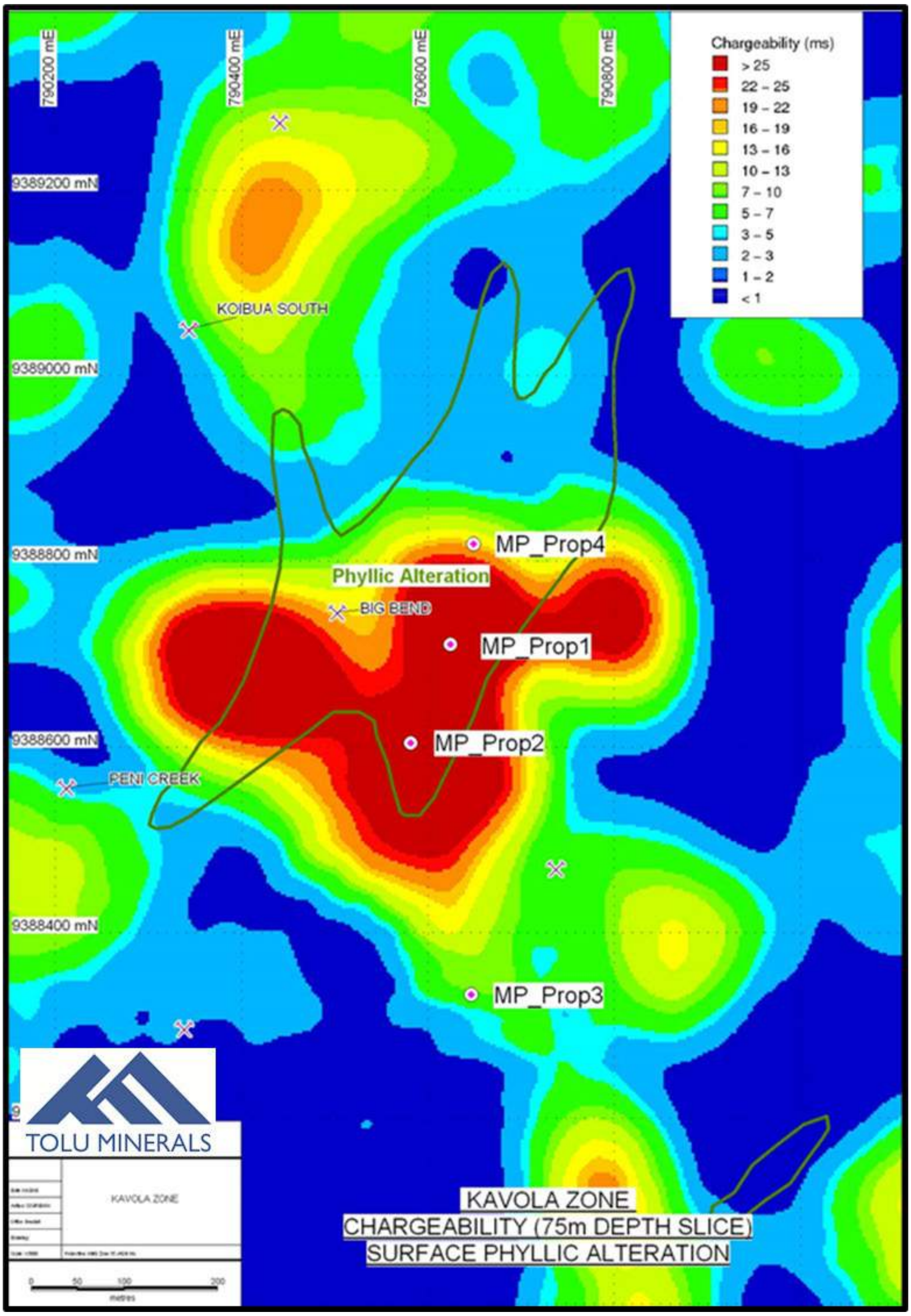
3.3.3.8 2010 - Grid Soil Sampling

Following completion of the 3DIP survey, grid-based soil sampling was undertaken along the IP grid lines. A total of 1,258 soil samples were collected but no details are available regarding sampling procedure or sample depth.

Figure 3.15 displays gridded soil anomaly maps for gold and arsenic. The results confirm the remarkable geochemical correlation between gold and arsenic in soils at Mt. Penck. The extensive gold-soil anomaly over the central Kavola area is evident and other peripheral anomalies are present, including:

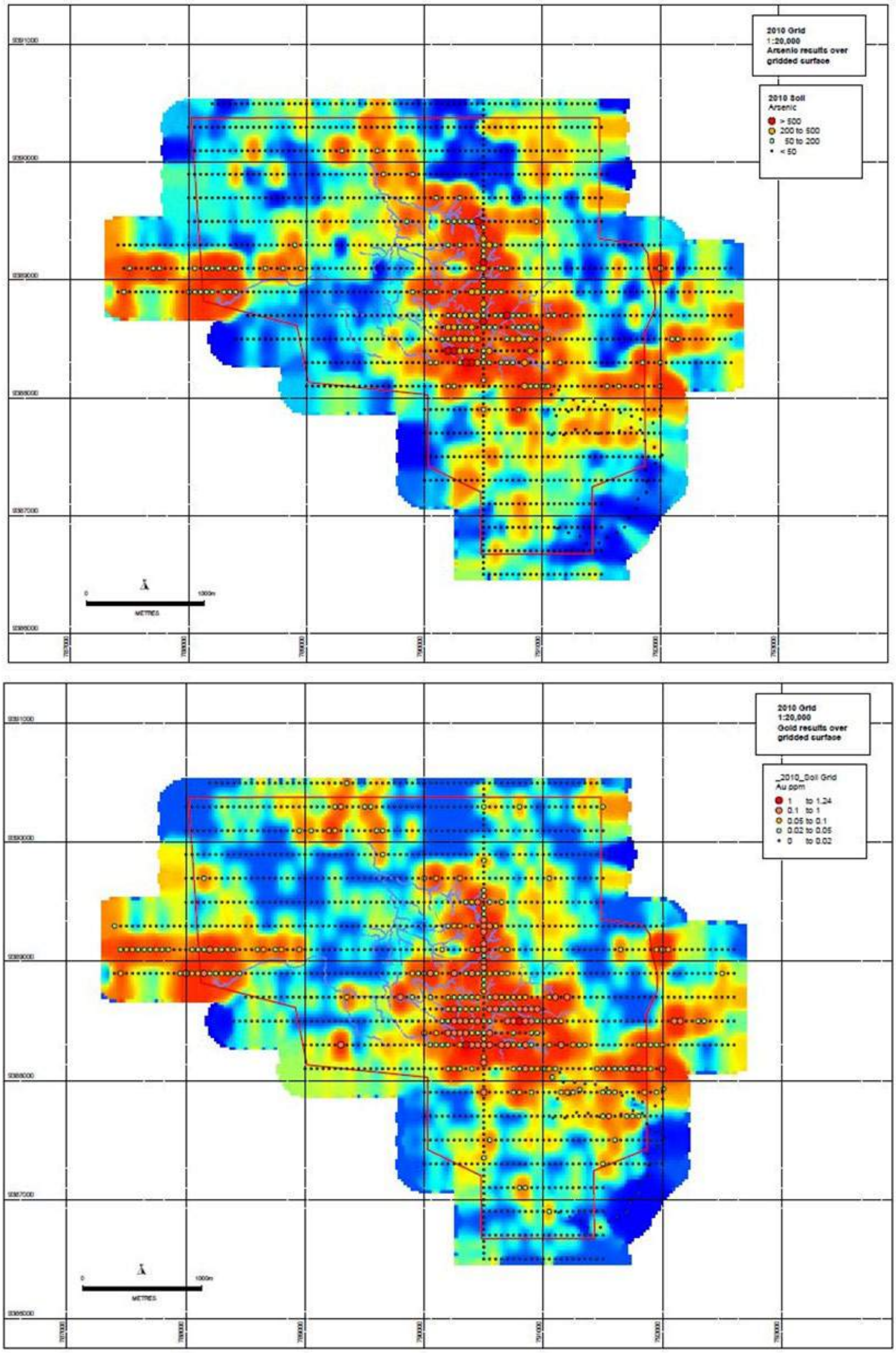
- West-northwest of Kavola (788025E, 9389000N), "north bank of the west flowing river" a gold soil anomaly across two lines, not closed off to the south, coincident with a high chargeability zone on the western edge of the grid, trending east-west.
- East of Kavola a gold soil anomaly extending over three adjacent lines near a zone of anomalous (>0.5 g/t Au) "trench/track" samples.

Figure 3.14 Kavola Zone chargeability anomaly at 75 m depth in relation to the central zone of phyllic alteration mapped at surface.



(From Swiridiuk, 2010b) Projection AGD66 Z55S

Figure 3.15 Gridded soil anomaly maps for gold (top) and arsenic from Kanon's 2010 soil survey.



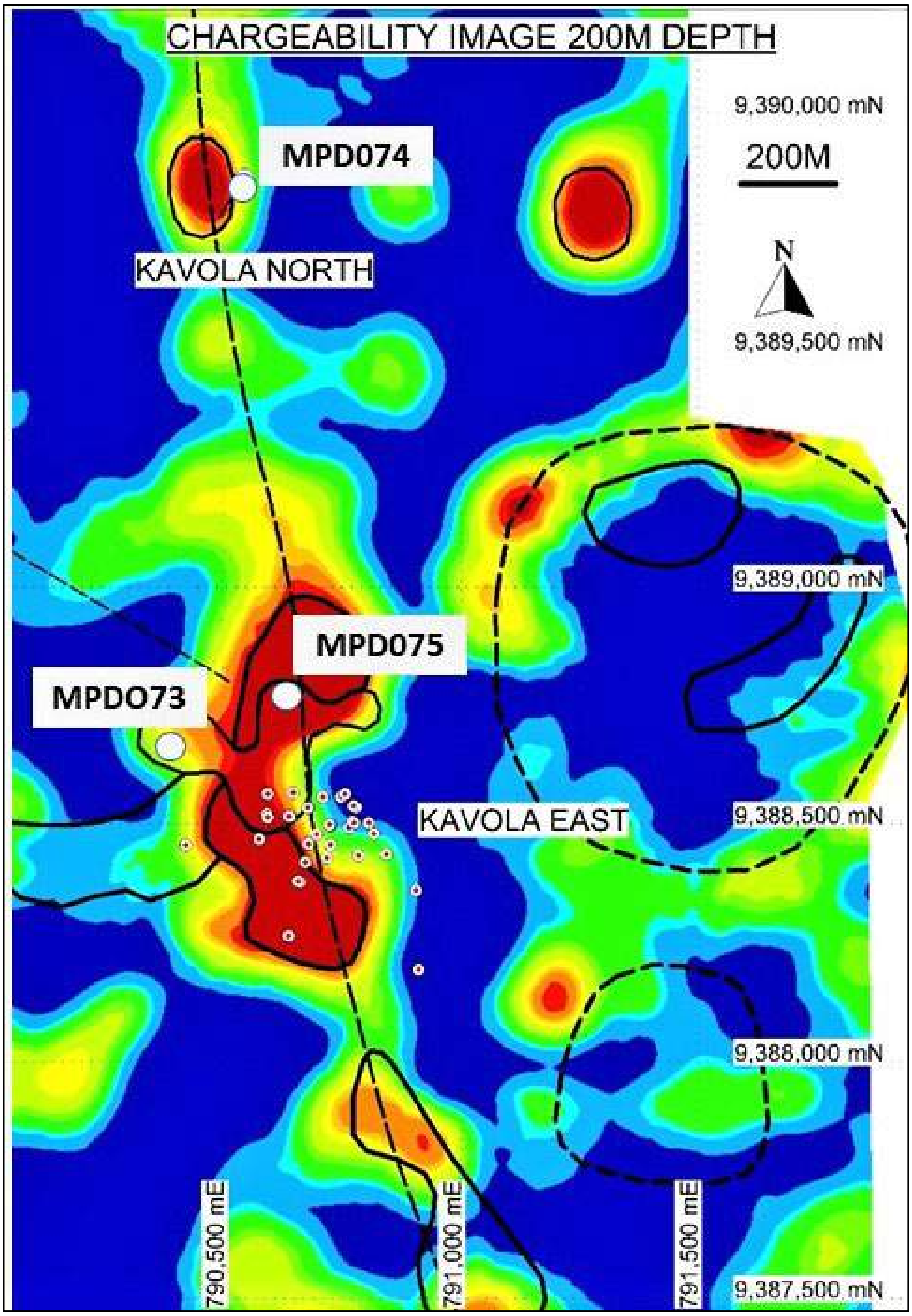
Note: Projection AGD66 Z55S

3.3.3.9 Phase 4 Diamond Drilling – 2010-11:

The following summary is based mainly on unpublished internal Vangold field reports.

In late 2010 to early 2011 a three-drillhole program of deep DD drilling, totalling 1,189 m to a maximum depth of 402 m, was undertaken to test 3D-IP geophysical targets selected in association with structural and geochemical data. The drillhole collar locations are shown in Figure 3.16.

Figure 3.16 Mt Penck drillhole collar locations on IP Chargeability image



Note: Projection AGD66 Z55S

Two angled drillholes (MPD073 and MPD074) were drilled to test the shoulders of 3D-IP chargeability anomalies coincident with structural features at Kavola East and Kavola north, respectively. One deep vertical drillhole (MPD075) was also drilled at Kavola East to test the main chargeability anomaly.

Apart from a summary lithological log for MPD074 (Table 3.15), no logging information is available in the database for these drillholes. MPD074 was reported to be unmineralised and was not sampled. The other two drillholes intersected mineralisation but an assay list is available only for MPD073. The best reported intercepts were 3 m at 2.80 g/t gold from 148 m in MPD073 and 7 m at 0.46 g/t gold in MPD075.

MPD 073 (386.9 m) was drilled to test the western shoulder of a 3D-IP anomaly located at Kavola East Prospect. Strong sulphide mineralisation (pyrite, arsenopyrite ± chalcopyrite) was intersected over wide intervals. Gold mineralised intersections included 3 m at 2.80 g/t gold from 148 m and 3 m at 0.68 g/t gold from 41 m, with several additional narrow 1.0 m to 2.0 m zones grading 0.75 g/t Au to 1.65 g/t Au down to 266 m depth.

MPD 074 (402.0 m) was sited to test the southern shoulder of a discrete coincident chargeability and resistivity high at Kavola north. The drillhole failed to intersect significant mineralisation and was not sampled or assayed. However, it is the only drillhole for which any drill log information is available from the Phase 4 program. The summary log for MPD074 is provided in Table 3.15.

Table 3.15 Summary log for diamond drill hole MPD074

Interval (m)	Summary Description
0 - 5.0	Grayish green strongly weathered; illite-sericite-chlorite-carbonate altered hornblende porphyry; moderate manganese/goethite fracture coating; moderately shattered/fractured.
5 - 19	Green coarse grained fresh barren hornblende porphyry; propylitic alteration with vein/fracture controlled chlorite/carbonate/manganese/goethite coating, strongly magnetic.
19 – 21	Grayish green weathered hornblende porphyry, illite-sericite-chlorite alteration.
21 - 332	Green coarse grained fresh barren hornblende porphyry; propylitic alteration with chlorite-carbonate vein/fracture coating, v. weak carbonate±quartz veins in places; strongly magnetic.
332 - 342	As in 19.0 m to 21.0 m, illite-sericite-chlorite alteration with 3-5% jarosite-goethite ± carbonate staining.
342 – 386.9 (EOH)	Green coarse grained barren hornblende porphyry, propylitic alteration with moderate chlorite-carbonate fracture staining, strongly magnetic.

MPD 075 (400.5 m) was a vertical hole that targeted the northern lobe of a chargeability high located at Kavola East. Disseminated and vein / veinlet sulphide mineralisation, comprising pyrite-arsenopyrite-dark sulphide, associated with illite-smectite-kaolinite-sericite alteration hosted by feldspar porphyry was intersected throughout the entire hole. Anomalous gold values ranging up to 0.60 g/t Au were also present, irregularly distributed throughout the 400 m section drilled. The best intersections were 7 m at 0.46 g/t gold and 3 m at 0.59 g/t Au.

4 Tolukuma Project

4.1 Geology

4.1.1 Regional Geology

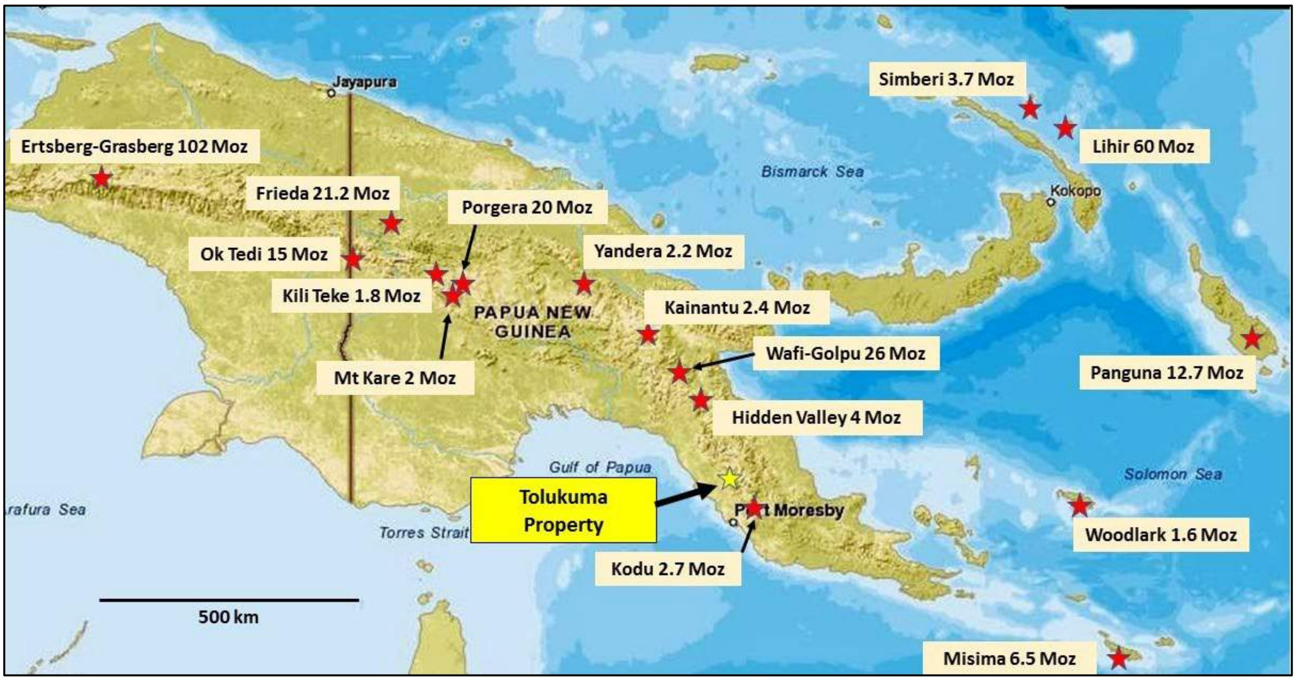
4.1.1.1 Tectonic Setting

The Tolukuma Property is located in the highly prospective New Guinea metallogenic belt, a 2,300 km mineralised corridor running along the central spine and northern foothills of the island of New Guinea (Figure 4.1). This highly complex belt (also called the Central Orogenic Belt) was formed by oblique convergence between the northward moving Australian continental plate and the westward moving Pacific oceanic plate. Interaction between these two major crustal plates since the Cretaceous has produced a fragmented zone of successively accreted terranes characterized by mountain building, folding, large-scale deep-seated faulting and thrusting, metamorphism, volcanism, and intrusive emplacement.

Many large deposits of gold (and copper) occur in the metallogenic belt which is regarded as one of the most prospective gold-copper metallogenic provinces in the world. Major discoveries include Ertsberg-Grasberg (in Irian Jaya), Ok Tedi, Frieda, Porgera, Wafi-Golpu and Hidden Valley (PNG), with total combined resources exceeding 180 Moz gold (including Ertsberg-Grasberg).

The belt is divided into a southern Fold Belt underlain by rigid continental crust of the Australian craton and a northern Thrust Belt underlain by thinner oceanic crust of the Pacific Plate. Two series of intermediate to acid intrusions are present; an older series of Early Oligocene to Late Miocene age (30 Ma to 10 Ma) intruding the Thrust Belt, many of which are associated with major copper-gold deposits including Frieda, and a younger series of Late Miocene to Pleistocene age (10 Ma to 1.0 Ma) intruding the Fold Belt, including those intrusions associated with the large Porgera and Mt. Kare gold deposits, and the Ok Tedi copper-gold deposit. The intrusions in the Tolukuma area belong to the younger series.

Figure 4.1 Property location in the New Guinea metallogenic belt showing the distribution of major gold deposits, with approximate total gold resources.



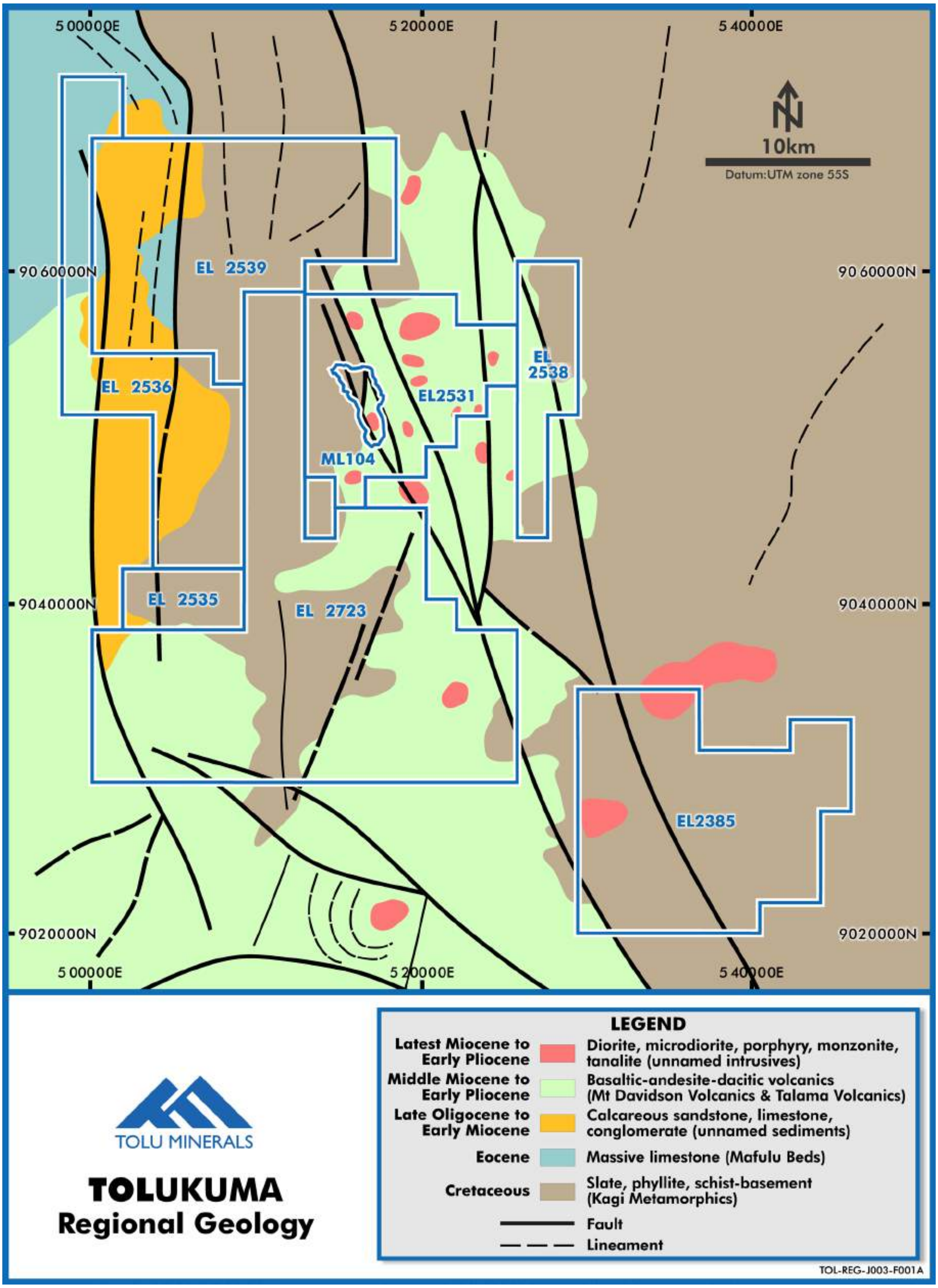
Source: D Hutchison 2022

4.1.2 Geological Formation

The regional geology of the Tolukuma area is shown on the Buna (SC/55-7) 1:250,000 published geology sheet and described in Pieters (1978). A summary of the mapped geological units, from oldest to youngest, based on the above map and report is provided (Figure 4.2) and in Table 4.1. Figure 4.2 is a regional geology map of the area adapted from a map produced by TGM.

Cretaceous to Eocene metamorphic basement (Kagi Metamorphics): Metamorphic basement rocks up 10 km thick underlie all other geological units. They are exposed in the western part of the area, immediately west of the Tolukuma Vein, and are composed predominantly of greenschist grade metasediments including slate, phyllite, schist, quartz-feldspar-mica schist, minor metabasite and minor massive quartzite. Minor amphibolite-grade garnet-mica schist is present locally. The mineral assemblage, including quartz, albite, muscovite, chlorite, minor epidote, graphite, biotite, garnet and local andalusite and lawsonite, suggests initial high-pressure metamorphism.

Figure 4.2 Regional geology map of the Tolukuma area



Source: TML. Projection: AGD66 AMG55S

Middle Miocene to Early Pliocene subaerial volcanics (Talama Volcanics & Mt. Davidson Volcanics): A sequence of subaerial volcanics of Middle Miocene to Early Pliocene age unconformably overlies the metamorphic basement. The volcanics are divided into two units: (i) the 1500 m thick Talama Volcanics (Middle to Late Miocene based on K-Ar dates of 7.19 Ma and 5.34 Ma) and the 600 m thick Mt. Davidson Volcanics (Latest Miocene to Early Pliocene based on K-Ar dates of 5.85 Ma to 4.8 Ma). Both volcanic units are highly faulted and eroded but the younger Mt. Davidson Volcanics retain vestiges of volcanic landforms particularly in the Mt. Cameron Range to the south of the Property.

The Mt. Davidson Volcanics (which host the gold deposits in the Tolukuma area) comprise mainly crystal, lithic and lapilli tuffs with subordinate agglomerates, coarse breccias and andesitic lavas with minor intercalated volcaniclastic / epiclastic conglomerate, sandstone and minor mudstone. Local areas of well bedded lacustrine siltstone have been mapped in places. Local intrusions of narrow andesitic to basaltic dykes or small sub-volcanic stocks of andesite porphyry intrude the volcanics and are of roughly coeval age. Much of the unit has been subjected to regional propylitic alteration.

A photogeological study by Newmont in 1987 (Langmead, 1991) identified "the possible presence of an east-north-east trending graben containing several caldera-like centres."

Based on satellite imagery, TGM interpreted a large caldera-like volcanic structure with dimensions of 30 km (east-west) by 24 km (north-south), centred north of Tolukuma (shown by blue lines in Figure 4.6). This feature is called the Boundary Volcano.

Table 4.1 Mapped geological units in the Tolukuma area

Unit	Age	Thickness	Description
Alluvium	Holocene	<10 m	Clay, sand, silt, gravel, soil and colluvium.
Unnamed intrusives	Latest Miocene to Early Pliocene	-	Diorite, porphyritic microdiorite, hornblende-feldspar porphyry, monzonite, and granodiorite; small stocks 1-5 km.
Mt. Davidson Volcanics	Latest Miocene to Early Pliocene	600 m	Basaltic to andesitic agglomerate, tuff, lava and lava breccia; intercalated volcaniclastic conglomerate and coarse sandstone; paraconformable on Talama Volcanics.
Talama Volcanics	Middle to Late Miocene	1,500 m	Andesitic to basaltic pyroclastics, including massive coarse agglomerate, with subordinate lava; locally reworked as volcaniclastic conglomerate.
Kagi Metamorphics	Cretaceous to Eocene	~10 km	Phyllite, schist, quartz-feldspar-mica schist; local garnet-mica schist; predominantly psammitic metasediment.

Latest Miocene to Early Pliocene intrusive rocks (unnamed, informally known as Tolukuma Intrusive Complex): Small steep-sided stocks, 1 km to 5 km across, of diorite, porphyritic microdiorite, hornblende-feldspar porphyry, monzonite and granodiorite have been mapped (or interpreted from aerial photographs) intruding the metamorphic and volcanic units. These intrusive rocks are thought to be coeval with the Mt. Davidson Volcanics. Their age is based partly on one Early Pliocene K-Ar date from drill core at Kone Prospect. A sample of hornblende andesite from upper Dilava River (south of Tolukuma) was K-Ar dated by Newmont at 4.8 Ma, Early Pliocene (Langmead, 1991). Examples from core are shown in Figure 4.3.

The mapped intrusive rocks are commonly magnetic, and a regional airborne magnetic survey flown by TGM in 1998 delineated a 4 km wide northeast-trending magnetic high anomaly extending for about 20 km from south of Tolukuma almost to Woitape (Figure 4.6). This anomaly was interpreted by TGM to outline a predominantly sub-surface magnetic intrusive complex they informally named the Tolukuma Intrusive Complex. The Tolukuma deposit is located on the NW flank of this body (Figure 4.7).

Holocene alluvium: Recent alluvial deposits are located along the present-day drainage systems.

Figure 4.3 Photographs of lithology specimen examples

4.1.3 Mineralisation

The paragenetic sequence of sulphides and other ore phases at Tolukuma is best described by Corbett et al. (1994). The main stages of mineralisation development are:

- Stage 1: Breccias, diatreme fluidised pyritic
- Stage 2: Banded quartz-adularia, bladed calcite
- Stage 3: Banded quartz-carbonate-clay
- Stage 4: Chalcedony-kaolinite-siderite

Figure 4.4 Photographs of mineralisation specimen examples (pt 1)

Source: R Carlson 2011

Figure 4.5 Photographs of mineralisation specimen examples (part 2)

Source: R Carlson 2011

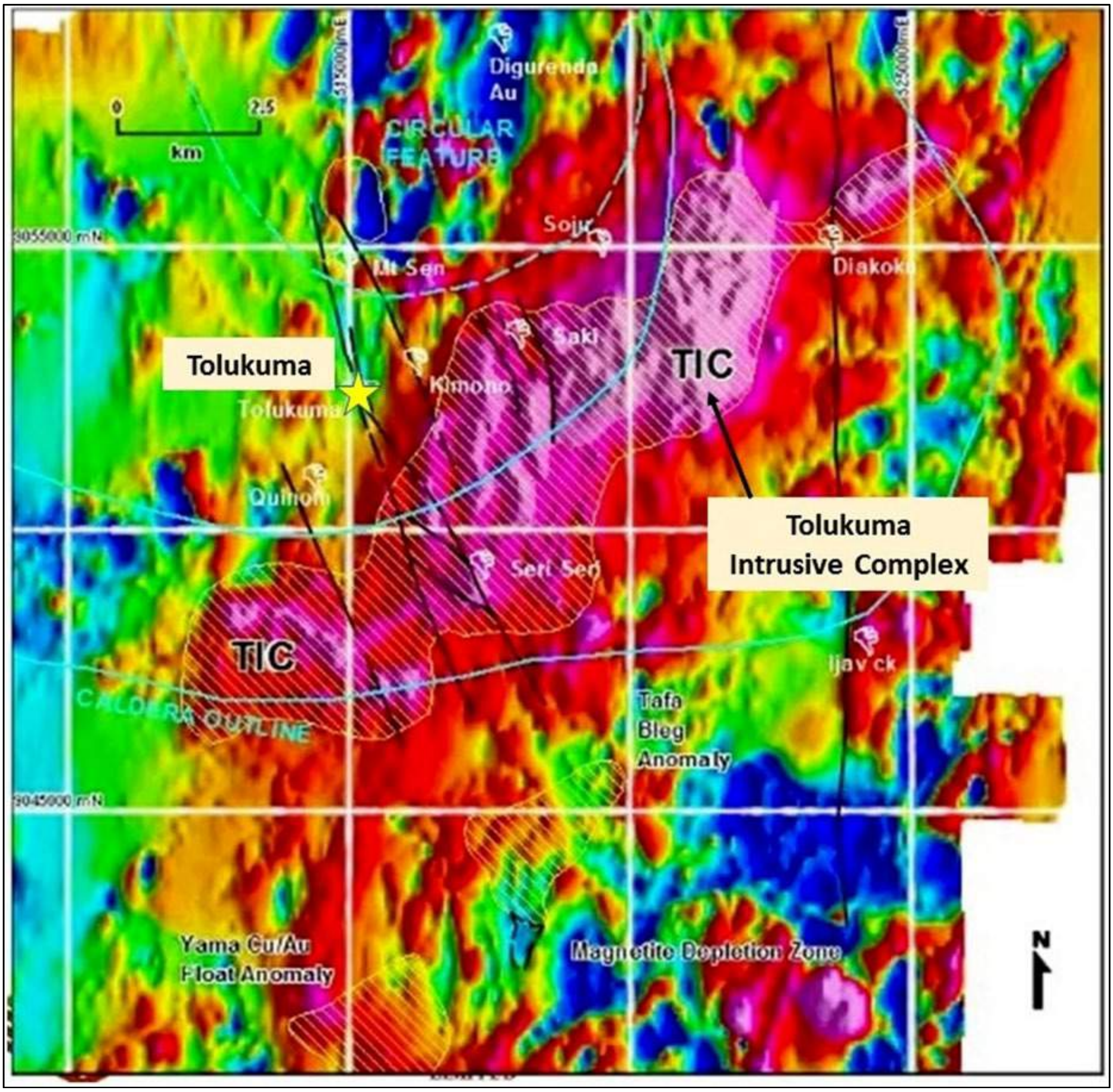
4.2 Major Structures

The regional structure of the area is dominated by a series of sub-vertical north to north-northwest-trending sub-parallel faults, shown on the published 1:250,000 geology map and visible in Figure 4.6 and Figure 4.7, that were named the Goilala fault system. These faults may represent deep-seated basement structures that were reactivated during uplift of the Owen Stanley Range and were propagated into the overlying volcanics. They have played a key role in focussing mineralising fluids and controlling the location of gold-mineralised fissure veins in the Tolukuma area.

The main fault structures identified by TGM include the Tolukuma Fault, Kimono Fault and Saki Fault which control, respectively, the location of the Tolukuma, Kimono and Saki gold systems.

Shallow dipping thrust or detachment faults are present within the metamorphic basement which may represent nappes or thrust sheets separating different lithostratigraphic horizons. These structures may also have played a role in localising gold mineralisation in the Tolukuma area.

Figure 4.6 RTP aeromagnetic image showing the location of the Tolukuma property in relation to the interpreted sub-surface Tolukuma Intrusive Complex.

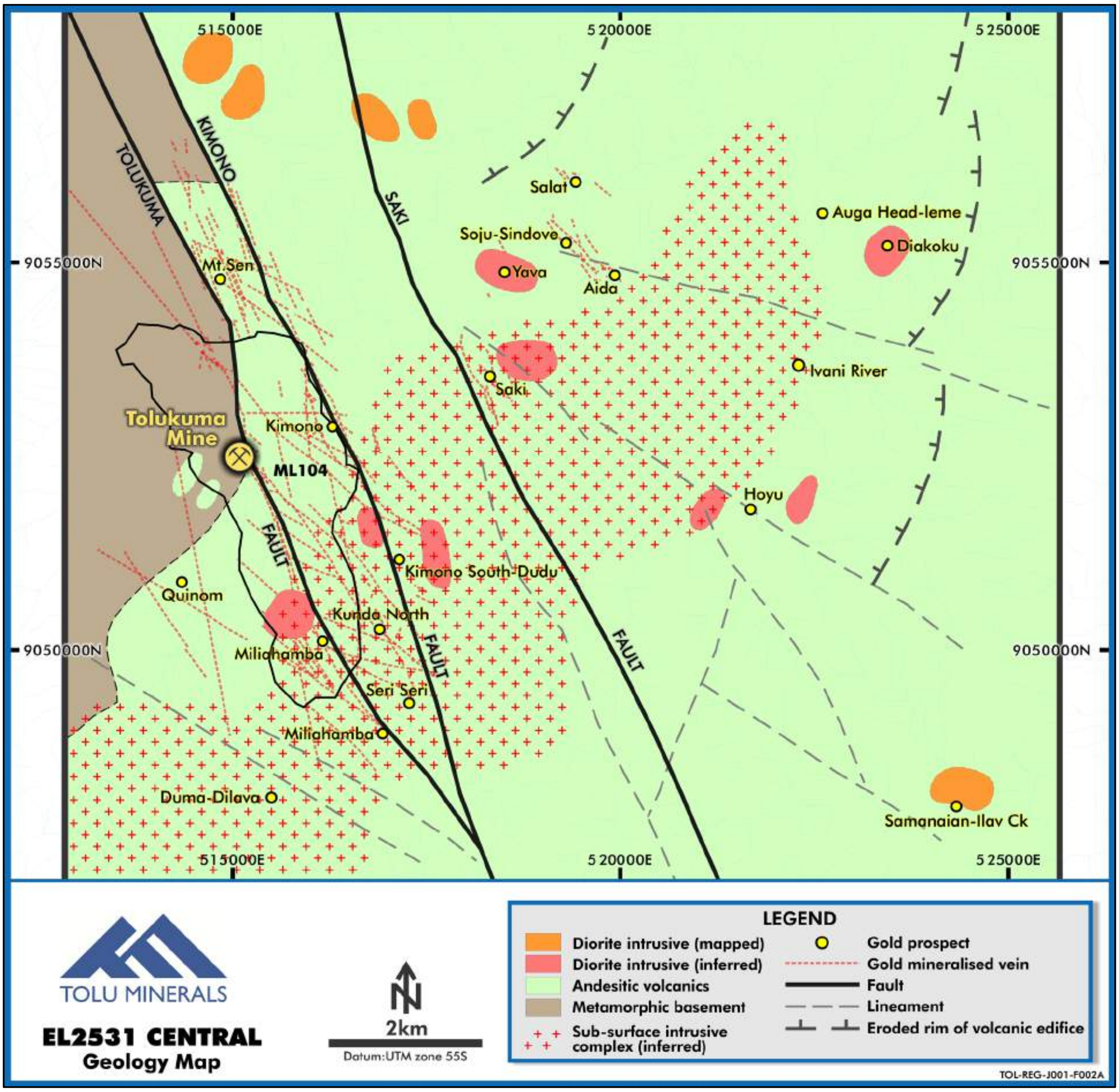


Source: Modified from a TGM image. Source: TML. Projection: AGD66 AMG55S

4.3 Mineral deposit types

The gold-silver vein deposits in the Tolukuma-Saki-Mt Tafa area are scattered over a roughly 100 km^2 area. However, most of the better developed vein systems occur within a northeast-trending 12 km by 6 km belt that is roughly coincident with the inferred sub-surface Tolukuma Intrusive Complex (Figure 4.7). Important vein systems that lie outside ML 104 - and have the potential to contribute feed to the Tolukuma plant - include Taula, Kimono, Saki, Soju-Yava and Mt. Sen.

Figure 4.7 Epithermal gold-silver prospects located near Tolukuma



Source: TML. Projection: AGD66 AMG55S

All the known deposits are high level fissure veins formed in a classic epithermal-porphyry environment, mainly classified as low sulphidation style epithermal systems. Some systems display in part intermediate sulphidation characteristics and TGM classified Diakoku Prospect, located in adjacent EL 2531 at the North-Eastern end of the prospective zone, as a high sulphidation system.

The veins are predominantly controlled by major northwest to north-northwest-trending structures, including the Tolukuma, Kimono and Saki faults identified by TGM, which commonly dip steeply to the southwest or northeast. Vein widths typically range from roughly 0.5 m to 2.0 m but pinch and swell and can bulge out to widths of 10 m to 20 m at the intersections of the main fissures with cross structures or splay veins. These "bulge out" zones are commonly of higher grade as is seen at Tolukuma and, for example, at Kimono Prospect located immediately east of the ML boundary in EL 2531.

Typically, the mineralised fissures include massive quartz and quartz-sulphide veins, silicification, fault gouge, sheeted veins, stockworks, stringers and breccia zones. Breccias include structural, hydrothermal, and fluidised crackle varieties. Quartz textures include colloform, crustiform, comb, dogtooth, botryoidal, rosette, drusy, vuggy and massive crystalline; all are typical of the upper levels of a low sulfidation epithermal system.

The gold mineralisation is dominantly associated with a pyrite-marcasite-arsenopyrite-stibnite sulphide assemblage that is commonly strongly oxidised at surface with goethite-limonite-manganese staining. Copper, lead, and zinc sulphides occur in deeper parts of the systems. Fine visible gold is commonly observed at surface in oxidised veins.

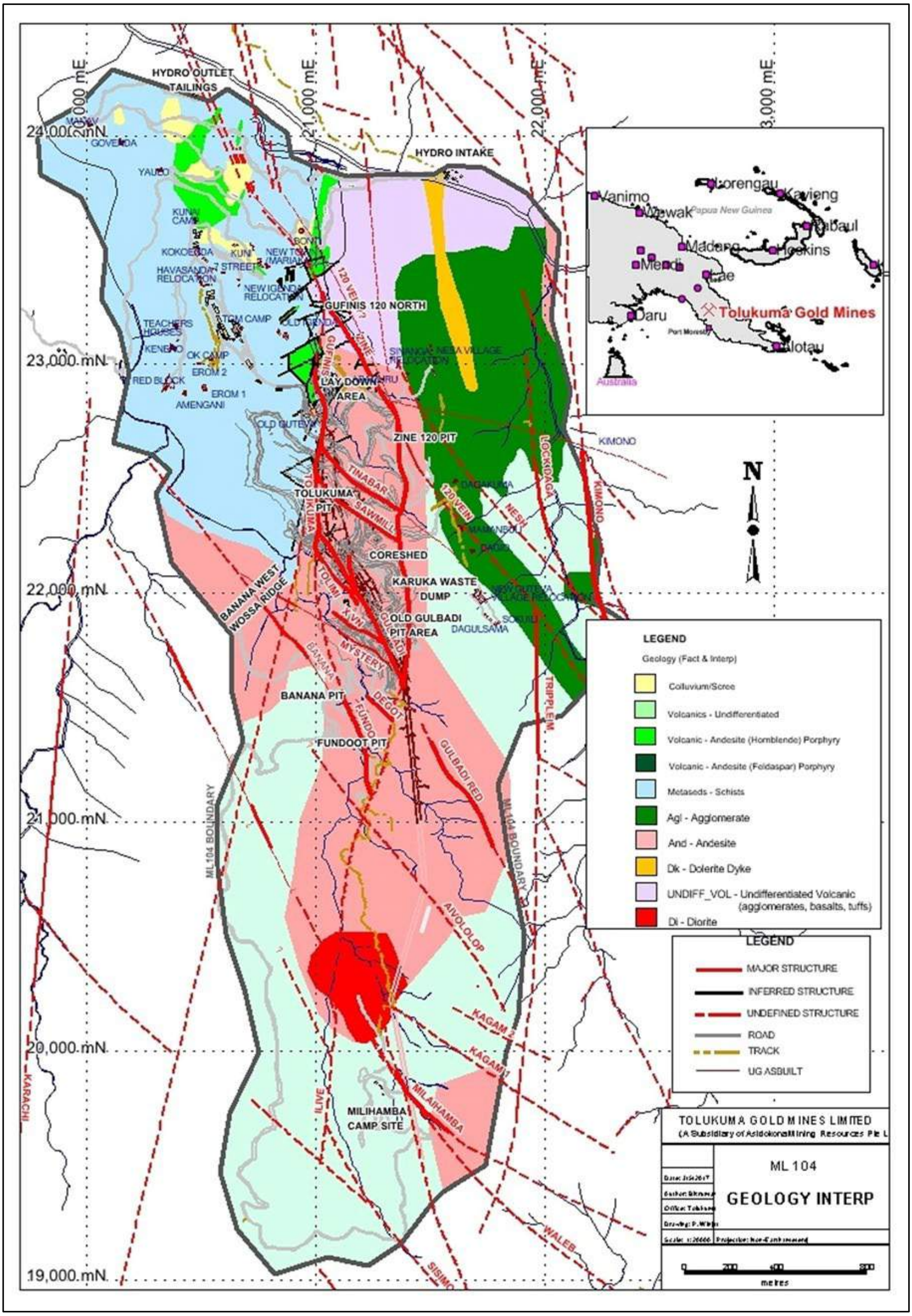
The veins are closely associated with narrow envelopes of silicification and phyllic-argillic alteration that overprint and are superimposed on the early pre-mineral phase of regional propylitic alteration. These phases are all overprinted locally by a supergene clay-oxide assemblage, including hematite, goethite, limonite, and manganese oxides.

4.4 Geology of ML 104

Tolukuma is a structurally controlled low sulphidation style epithermal Au-Ag deposit, hosted by terrestrial volcanic rocks. The hosting structures are north-northwest to northwest-trending narrow fissure veins averaging 1.0 m to 1.5 m in width and usually dipping steeply at 70° to 85°. Figure 4.8 is a geology map of the deposit.

The mineralisation is hosted by north-northwest to northwest-trending narrow fissure veins in Pliocene-age terrestrial volcanic rocks of the Mt. Davidson Volcanics. These comprise mainly fine to coarse tuffaceous and fragmental rocks with minor lavas, of andesitic to basaltic composition. The volcanics unconformably overlie a metamorphic basement sequence of the Kagi Metamorphics (Cretaceous to Eocene age).

Figure 4.8 Geological map of Tolukuma ML 104



Source: TGM from 2017. Projection: TGM Local Grid

Intermediate to basic pyroclastics (fine ash flow, crystal and crystal-lithic tuff, agglomerate, and breccia) with subordinate andesitic and basaltic lavas, of the Mt. Davidson Volcanics, are the dominant host rocks. These are widely intruded by late narrow dykes of porphyritic andesite, basalt, and dolerite, and locally intruded by small diorite intrusive bodies. The underlying Kagi Metamorphic basement is exposed to the west of the vein system and consists of meta-pelitic rocks including phyllites and carbonaceous or sericitic shales with metamorphic quartz boudins; the contact is partly unconformable and partly faulted.

Alteration of the host volcanics is extensive with a pre-mineral phase of regional propylitic alteration overprinted by later silicification and phyllic-argillic (clay-pyrite) assemblages usually structurally controlled and closely associated with the mineralisation. XRD and fluid inclusion analysis by KRTA for Newmont indicated:

- alteration by near-neutral fluids at >230°.
- deposition at depths of 340 m to 480 m below the paleo water table.
- boiling occurring over a minimum 140 m vertical interval (Langmead, 1988).

4.5 Targets in Tolukuma regional tenure

Several well-defined mineralised vein systems, that may have potential to provide additional resources as feed for the Tolukuma mill, are located nearby in the adjacent EL 2531 and the regional tenements, which surround ML 104.

These systems include Saki, Kimono and Taula located south of the Auga River, and Soju-Yava and Mt. Sen located north of the Auga River (Figure 4.7). All are located within 5 km or less of the mine site. Mt. Sen was discovered and explored by TGM, the others were discovered by Newmont and explored by Newmont, TGM and, in some cases, Petromin. Duma-Dilava is an additional less advanced target located immediately south of ML 104 where little historical work has been completed.

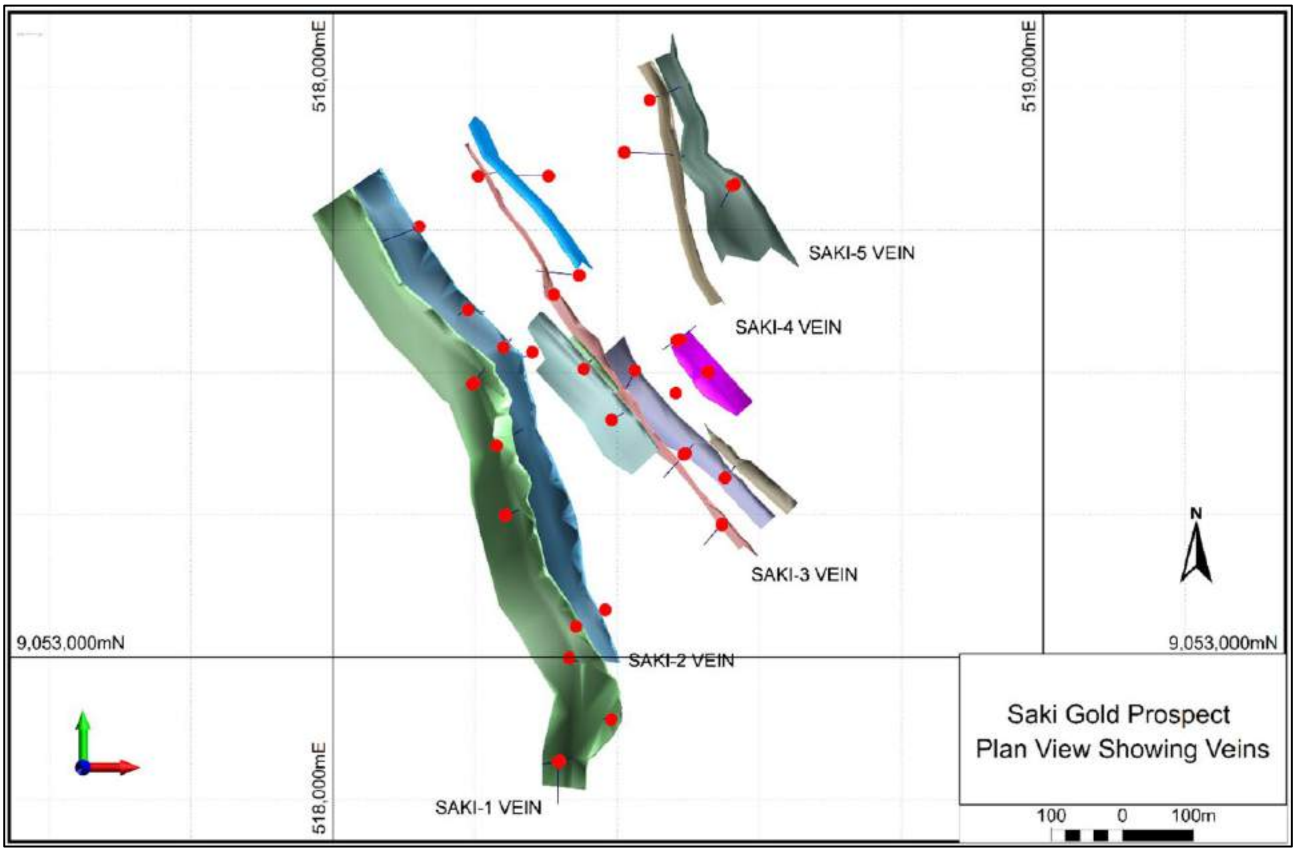
The following target summaries are based largely on Newmont, TGM and Petromin historical reports which are listed in the References section. For work carried out by Frontier, the sources are Moore (2022), Frontier ASX releases (Frontier 2019a & b; 2020a-2020i; 2021a-2021p; and 2022a) which are also listed in the References section and sample spreadsheets made available to the author.

4.5.1 Saki Prospect

Saki contains multiple north-west to north-northwest trending Au-Ag veins within a 1500 m by 600 m vein swarm: individual veins up to 1500 m long, widths of 0.3 m to 16.0 m (average about 1.5 m). Rock chip sampling indicated widespread moderate to high grade Au-Ag. Trenching defined envelopes of plus 1.0 g/t Au up to 16.0 m wide, enclosing narrow (0.5 m to 5 m) high grade Au-Ag zones, up to 535 g/t Au and 303 g/t Ag. Drilling (3 phases) intersected numerous intervals of >1.0 g/t Au (up to 26.0 g/t Au) over drillhole widths of 0.2 m to 13.2 m, to depths up to 125.8 m. Initial geotechnical surveys completed a road access route to Tolukuma and potential hydro power sites in the Auga River.

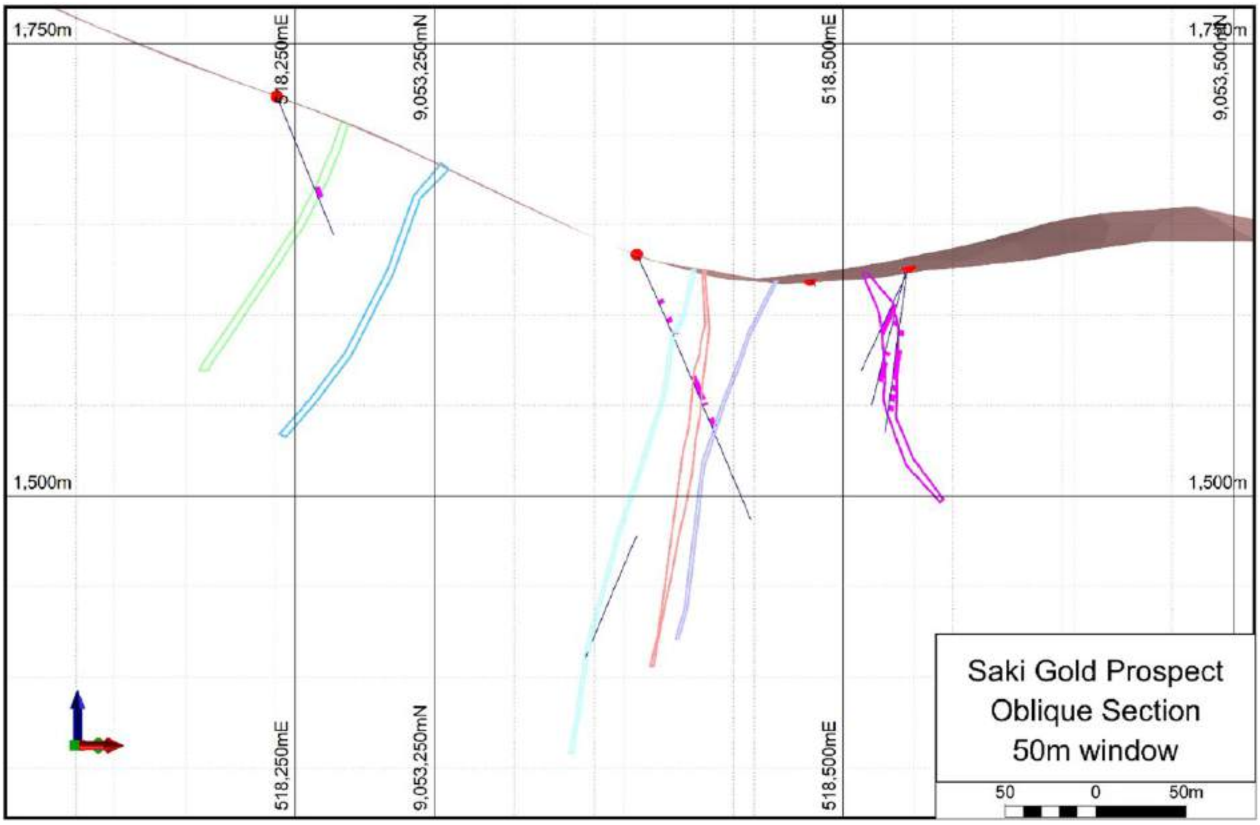
Saki has a previously reported Mineral Resource reported in accordance with the JORC Code (2012) by Frontier Resources Limited (now Lanthanein Resources Limited) in 2022 (https://wcsecure.weblink.com.au/pdf/FNT/02492922.pdf). The resource is tabled as 2.0 Mt at 2.0 g/t gold for 128,000 ounces Au (using a 1 g/t Au cut-off). AMC considers the resource needs additional drilling to confirm and improve confidence in the resource (Figure 4.9 and Figure 4.10).

Figure 4.9 Saki Mineral Resource wireframes and drilling



Source: Frontier, 2022a. Projection: AGD66 AMG55S

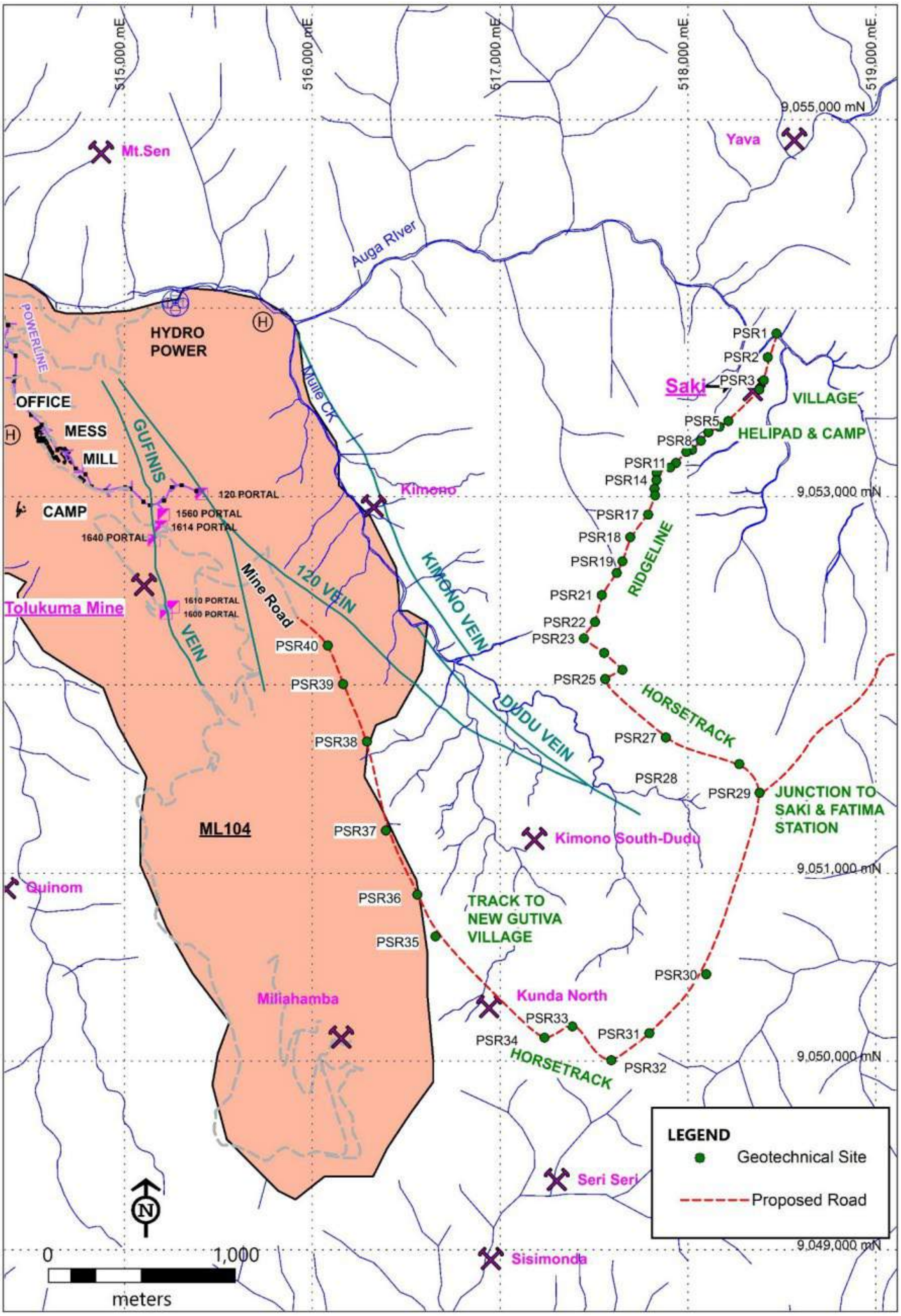
Figure 4.10 Saki modelled veins oblique section



Source: Frontier, 2022a. Projection: AGD66 AMG55S

Reasonable prospects of eventual economic extraction were examined with a geotechnical survey of an overland route from Saki to Tolukuma (Figure 4.11).

Figure 4.11 Surveyed proposed route access from Saki to Tolukuma Mine



Source: Frontier, 2022a. Projection: AGD66 AMG55S

Comments:

- Saki is the most advanced target in terms of completed work and resource definition.
- Multiple mineralized veins mapped and tested by extensive trenching and drilling.
- However, due to lower average grade (2.0 g/t Au) than Kimono & Taula and distance from Tolukuma, Saki is ranked below Taula.
- Further drilling is required to firm up continuity confidence and locate, if possible, higher grade zones. Two main follow up drill targets identified: 50 m by 750 m (Saki Veins I-II) and 300 m by 750 m (Saki Veins III-VI); system is open to north-west and south-east and at depth. Saki is proposed to have immediate follow up.

4.5.2 Kimono Prospect

Kimono prospect is a 0.2 m to 10.0 m wide north-west to north-northwest fissure vein/structure; with approximately 2.5 km of strike length (open to the south). It is intersected by north-west trending veins extending from ML 104, including Heineken Vein and 120 Vein. The highest gold grades occur in dilational vein/stockwork/breccia zones at structural intersections. The central 360 m of higher grades (flexure zone) is defined as a priority follow up target. Rock chips from this area include grades up to 101 g/t Au and up to 470 g/t Ag. Trenching of this zone exposed narrow high grade Au-Ag zones in lower grade envelopes (e.g.: 1.0 m at 148 g/t Au, 413 g/t Ag; 7.0 m at 13.25 g/t Au and 15.0 m at 13.89 g/t Au. Drilling includes two historical holes; both of which missed the target; unfortunately, no logs or assay data are available.

Comments:

- Central zone has potential to provide early drill success.
- The mineralisation is open to the north-northwest and south-southeast.
- Untested by drilling and is planned for immediate follow up.

4.5.3 Taula Prospect:

The Taula prospect is a north-west to north-northwest structure, 750 m long, open to north-west and south-southeast; 1 m to 8 m wide; offset by splays and cross structures. TGM reported intermittent dilational zones up to 2.0 m wide over strike lengths of 200 m to 300 m. Rock chip sampling indicates high grades, up to 332 g/t Au and 184 g/t Ag. Trenching confirmed high grade potential, e.g. 0.5m at 198.8 g/t Au and 1.2m at 1,041.2 g/t Au, (along structure); highest silver was 100 g/t Ag. Drilling (one phase) tested the structure over 300 m of strike to maximum depth of 90.4 m. Mineralization was intersected at depth along the full 300 m zone, with greater than 3.0 g/t Au intersected over drill widths up to 6.0 m at depths of 18.5 m to 76.5 m. Best results were: 3.0 m at 16.19 g/t Au and 1.8m at 18.8 g/t Au.

Comments:

- Drill tested zone is open to the north-northwest and south-southeast along 750 m Taula Structure.
- Due to high gold and silver grades in historical and Frontier samples, potential strike length and proximity to the mine site, Taula is rated as the highest priority for follow up.
- Taula is drill ready for next stage of drilling.

4.5.4 Kunda North Prospect

Kunda North is a 0.1 m to 4.0 m wide vein, trending northwest; now known to be a separate structure to Taula Vein. Rock chips of discovery outcrop included 10% of 122 samples with >1.0 g/t Au with grades up to 332 g/t Au. No historical trenching or drilling reported. No work by Frontier due to denial of access by local landowners.

Comments:

- Follow up is justified due to highly anomalous gold values in initial rock chip sampling and proximity to Tolukuma.

- Follow up mapping, rock chip sampling and hand trenching required to define targets for initial drill testing.

4.5.5 Mt Sen Prospect

Mt Sen has two north-northwest mineralized structures, Tumbu and Emaloun, 700 m apart. Tumbu is probably a northern extension of the Kimono structure; visible gold has been observed in both structures. Geochemical results include up to 44.0 g/t Au and 443.0 g/t Ag in soil and widespread anomalous Au in rock chips, up to 34.8 g/t Au. Trenching exposed narrow very high-grade zones at Emaloun of 0.3 m at 431.5 g/t Au and 2.0 m at 164 g/t Au; and 7.62 g/t Au at Tumbu (width not reported). Three scout diamond holes to a maximum depth 140.8 m targeted high trench values on the Emaloun Structure with a best intersection of 1.15m at 6.4 g/t Au (from 125.9 m), including 0.63 m at 7.89g/t Au.

Comments:

- Mineralized structures are on trend from the Kimono and possibly Tolukuma veins.
- Only limited surface programs completed; limited drill testing - three scout holes only.
- Follow up mapping, rock chip sampling and trenching are justified to define drill targets.
- Ranked higher than Soju-Yava because of potential for high grades and close proximity to Tolukuma.

4.5.6 Soju-Yava Prospect

Historical mapping, stream sediment, soil & rock chip sampling, trenching and scout diamond drilling completed has been completed at the Soju-Yava prospect. Three sets of northwest veins – Soju, Yava and Salat; are collectively called the Soju-Yava Prospect. Most historical work targeted Soju and Yava veins. At Soju three main veins and at least eight additional veins within 300 m wide north-west trending corridor with 0.5 m to 2.0 m widths (average 1.0 m) and strike lengths of 20 m to 600 m.

At Yava north-northwest striking quartz-sulphide breccia-veins up to 2.0 m wide with dilational zones up to 4.0 m. Highest gold values are associated with base metal sulphides. Rock chips indicate potential for very high grades, up to 1,750 g/t Au in float, with 1.0 g/t Au to 30.0 g/t Au in outcrop and up to 200 g/t Au and 292 g/t Ag in a trench grab. Trenching exposed narrow high-grade zones including 0.7 m at 62.2 g/t Au; 0.9 m at 30.5 g/t Au and 1.0 m at 22.3 g/t Au in several different veins.

At Soju seven drillholes several structures were intersected up to a maximum strike of 240 m. Gold assays are generally low but with some high silver grades. 11 intersections of >1.0 g/t Au over 0.3 m to 1.1 m. There are only two intersections >5.0 g/t Au: 0.15 m at 25.2 g/t Au, 239 g/t Ag and 0.3 m at 6.13 g/t Au, 339 g/t Ag. High base metal values include up to 1.35% Pb, 4.45% Cu and 9.4% Zn with visible gold in two samples. The six drillholes are inclined parallel to vein orientation (probably due to terrain).

Comments:

- The local geology is complex. Elevated base metals at Soju suggest exposure at deep level, possibly below main gold depositing zone. Elevated gold values in surface samples likely due to supergene enrichment.
- Widespread Au-Ag mineralisation with very high Au values and very limited drill testing, indicate more work is required.
- Due to possible deep level of exposure, distance from Tolukuma and location on north side of Auga River, Soju-Yava is lower priority.

4.6 Data sources

4.6.1 Topography

The topography as generated for the Mineral Resource estimates is dominantly generated from a topography file taken from the mine surveyors in 2013. The local Mine Grid oriented file, in AutoCAD DWG format, was imported as points into Leapfrog, as the direct import to lines and points did not have correct connections. The point cloud was then manually edited to remove points that overlapped vertically, and to manually correct elevations to below the recorded Pit samples where present. The points covered some but not all of the surrounding area (mostly along existing tracks). The Mineral Resource topography is in Mine Grid and is not appropriate for use as a regional topography.

TML commissioned a WorldView-3 satellite topography scene from Geoimage Pty Ltd (Geoimage, 2021) in December 2021. The 1 m resolution digital surface model (DSM) was generated from a WorldView-3 stereo pair acquired 16 February 2020.

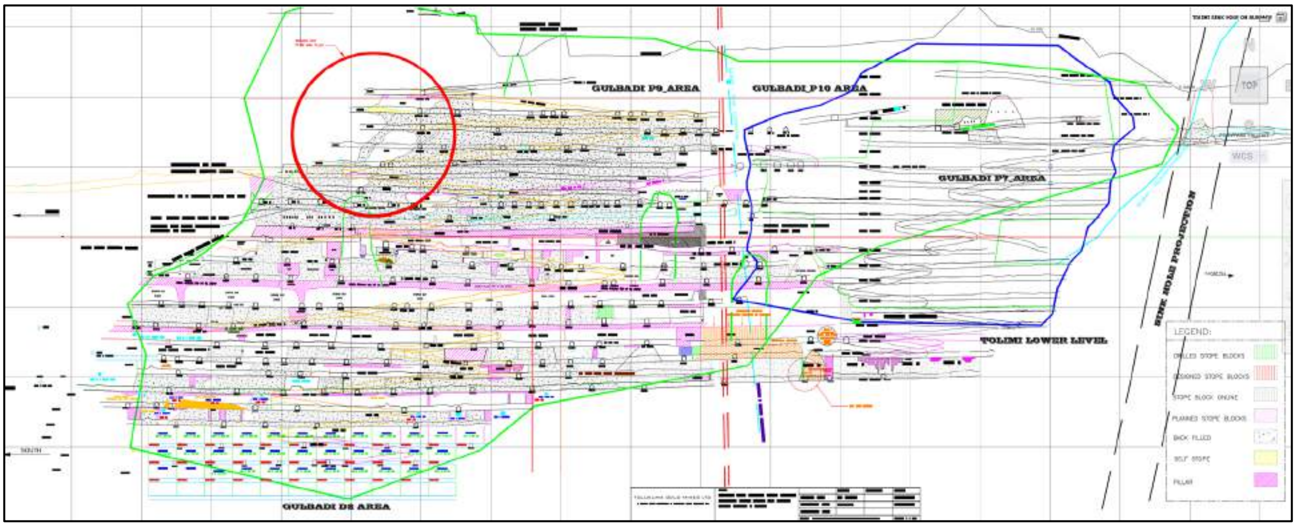
4.6.2 Mine development

Mine development data was provided in Surpac format digital files from 2013. The data included surveyed development and some but not all mine stoped areas. These along with the face sampling locations were used to guide the outlines of the depletions cookie cut out of the Mineral Resource. The files may not be complete to the end of mine life as some mining did occur post data collection. It is noted that the depletions have been conservatively applied in application to ensure the risk of reporting previously mined material is minimal.

4.6.3 Mine stopes

A global exclusion of all areas with development within the veins has been applied in the MRE. Mine personnel utilised AutoCAD based long section files that defined the stope and pillar arrangements, as well as forecast block grades. AMC has access to electronic dated versions of Tolukuma, Gulbadi, Tinabar and Zine veins variously from 2012 to 2014 (example of Gulbadi shown in Figure 4.12).

Figure 4.12 Gulbadi long section example

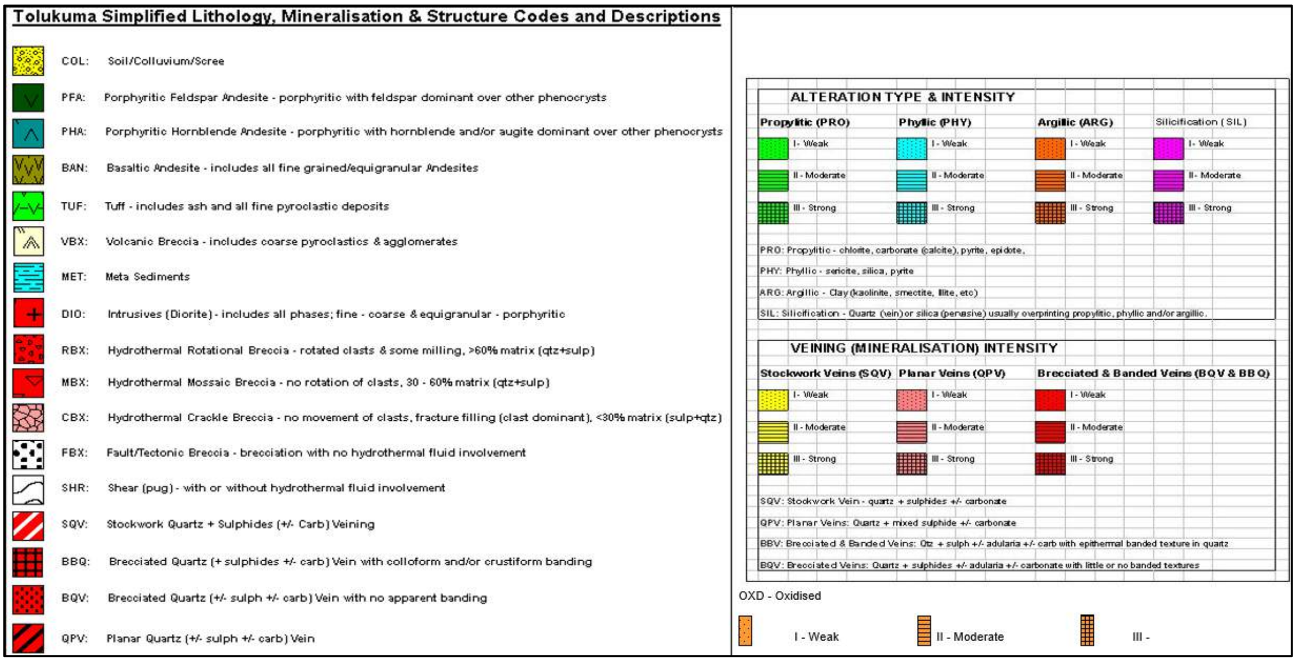


Source: AMC from GULBADI_LSEX_20.08.13.dwg

4.6.4 Drilling

The Tolukuma Mine owned five drill rigs which included three surface and two underground. The surface rigs were man-portable DT250P and DT600P and one Longyear 44. The underground rigs were a conventional Boart Longyear LMA90 and a LM75. The Longyear 44 is capable of drilling to depths of 600 m.

Figure 4.13 Tolukuma simplified geological logging codes



4.6.5 Face sample

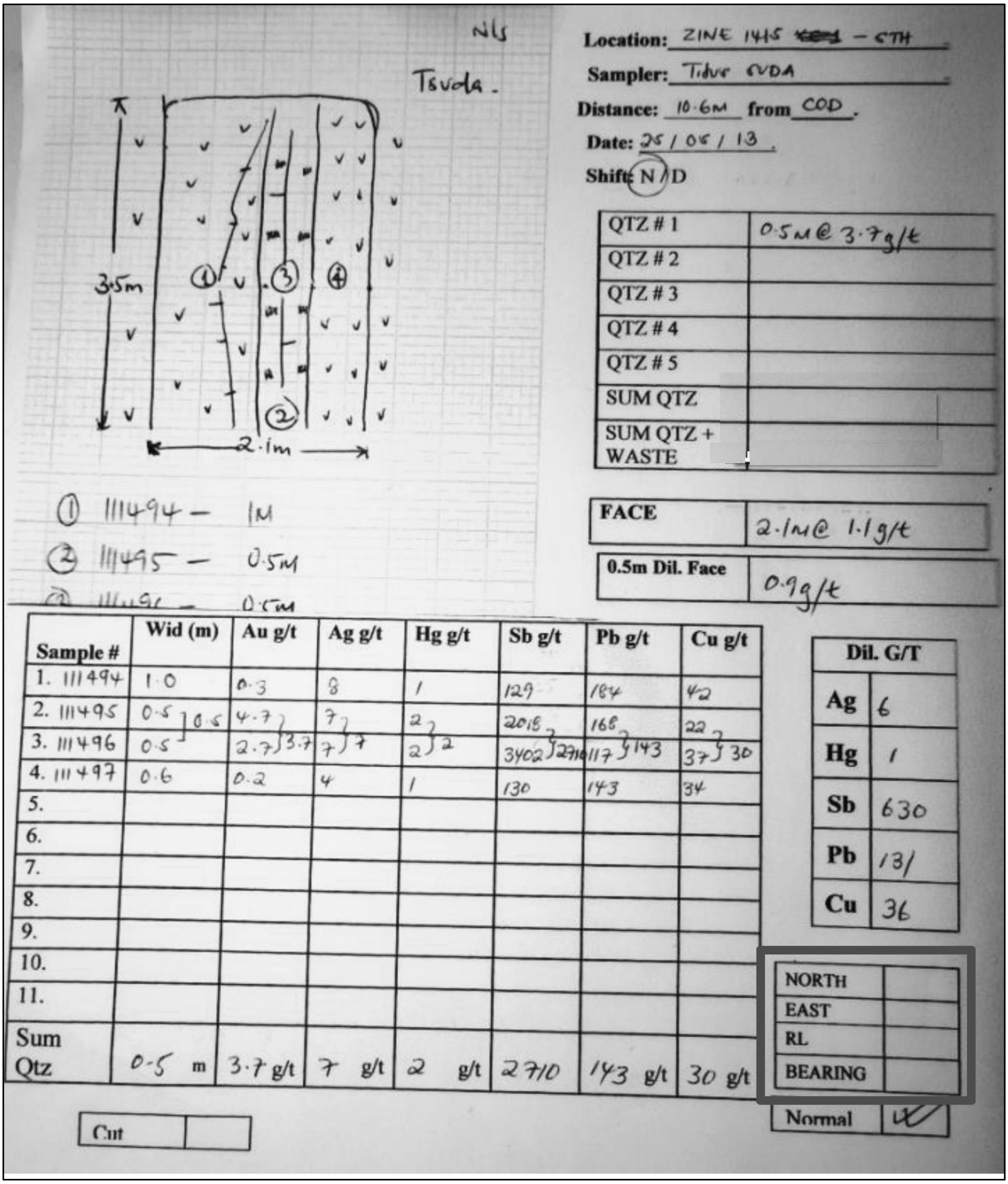
Face samples were collected by the underground geological personnel using traditional chainage from survey point measurements in a development drive. Survey then provided centre point coordinates for each face and as-built wireframes. The current database includes face samples as a pseudo-drillhole, with the collar being the start point of the hangingwall sample, with an assumed horizontal dip, a sample length for each sample being the downhole component. An example of the face sample record sheet is shown in Figure 4.14. It was set up to record an x,y,z (location) and bearing of the face. This data is critical in the database to locate the "face collar" and azimuth, from which the grades and thicknesses can be attributed. In 2013, external checks were conducted by Snowden (2013) and showed that not all records had survey information. Snowden undertook a major data validation of the then recorded 16,623 face samples.

4.6.6 Open Pit sampling

Samples coded as "pit" were recovered from the mine face sample database. The samples have an unknown quality, but given the horizontal nature are assumed to be grade control samples from small trenches or equivalent. These samples were critical to understanding the likely hard rock surface topography as previously provided mine topography included areas of backfill that did not represent the as-mined topography.

The Open Pit sampling was utilised in the estimate but are largely irrelevant as they are above the topographic surface and consequently not selected as being within the vein wireframe.

Figure 4.14 Tolukuma mine face sample record sheet



Nls

Tsvda.

3.5m

2.1m

① 111494 — 1M
② 111495 — 0.5M

Location: ZINE 1415 – 5TH
Sampler: Tidur SVDA
Distance: 10.6M from COD.
Date: 25 / 05 / 13
Shift: N / D

QTZ # 1	0.5M @ 3.7 g/t
QTZ # 2	
QTZ # 3	
QTZ # 4	
QTZ # 5	
SUM QTZ	
SUM QTZ + WASTE	

FACE	2.1M @ 1.1 g/t
0.5m Dil. Face	0.9 g/t

Sample #	Wid (m)	Au g/t	Ag g/t	Hg g/t	Sb g/t	Pb g/t	Cu g/t
1. 111494	1.0	0.3	8	1	129	184	42
2. 111495	0.5 } 0.5	4.7 } 3.7	7 } 7	2 } 2	2018 } 2710	168 } 143	22 } 30
3. 111496	0.5	2.7	7	2	3402	117	37
4. 111497	0.6	0.2	4	1	130	143	34
5.							
6.							
7.							
8.							
9.							
10.							
11.							
Sum Qtz	0.5 m	3.7 g/t	7 g/t	2 g/t	2710	143 g/t	30 g/t

Dil. G/T	
Ag	6
Hg	1
Sb	630
Pb	131
Cu	36

NORTH	
EAST	
RL	
BEARING	
Normal	✓

Cut	

4.6.7 Quality Assurance Quality Control (QAQC)

There are no recorded QAQC data for the face, pit or drill samples at Tolukuma.

4.7 Tolukuma Drilling

4.7.1 Drilling

The Tolukuma Mine owned five drill rigs which included three surface and two underground. The surface rigs were man portable DT250P and DT600P and one Longyear 44 for surface work. The underground rigs were a conventional Boart Longyear LMA90 and a LM75. The Longyear 44 is capable of drilling to depths of 600 m.

Unfortunately, much of the detailed logging of diamond core has been lost in systems not recovered by AMC or is unknown to AMC at this time. A LYNX software package hosted the data originally. Original extracts into excel files and or access databases were provided to AMC in 2011.

The Competent Person (R Carlson) conducted a site visit in 2013 where physical hardcopy records of all drilling were examined in filing cabinets in the Tolukuma Mine office. A comprehensive review of all the downhole survey records was conducted, and databases updated to correct missing or invalid measurements. The downhole survey data was generated from single shot cameras and were collected at a variety of intervals of the period of the drilling.

A selection of drillholes was also checked for the hardcopy assay laboratory record sheets against the digital records. No significant errors were noted at the time.

The currently available data compiled from a Microsoft Access (MSAccess) file originally supplied in 2011 (2011tolukuma.mdb) and updated by AMC in 2013 and 2016 (mlex_database_final_v1_09092016.mdb) to include updated face samples, DD drilling and trenching completed after the validation and corrections done in 2011.

4.7.2 Drill type

Drilling is exclusively DD drilling. The DD drillholes at Tolukuma were collared in HQ / HQ3 (63.5 / 61.1 mm core diameter) and reducing to NQ / NQ3 (47.6 or / 45.1 mm core diameter) at depth. The triple tube drilling was in place from at least 2007 (Bateleur, 2007).

The database does not record the core size.

4.7.3 Collar survey

Underground DD drilling collar coordinates and azimuths are marked out by the mine surveyors as soon as drillholes were designed and signed off by the Mine Engineering and Geology management. Either side of walls are marked in the underground and pegging used for surface drillhole azimuth alignment.

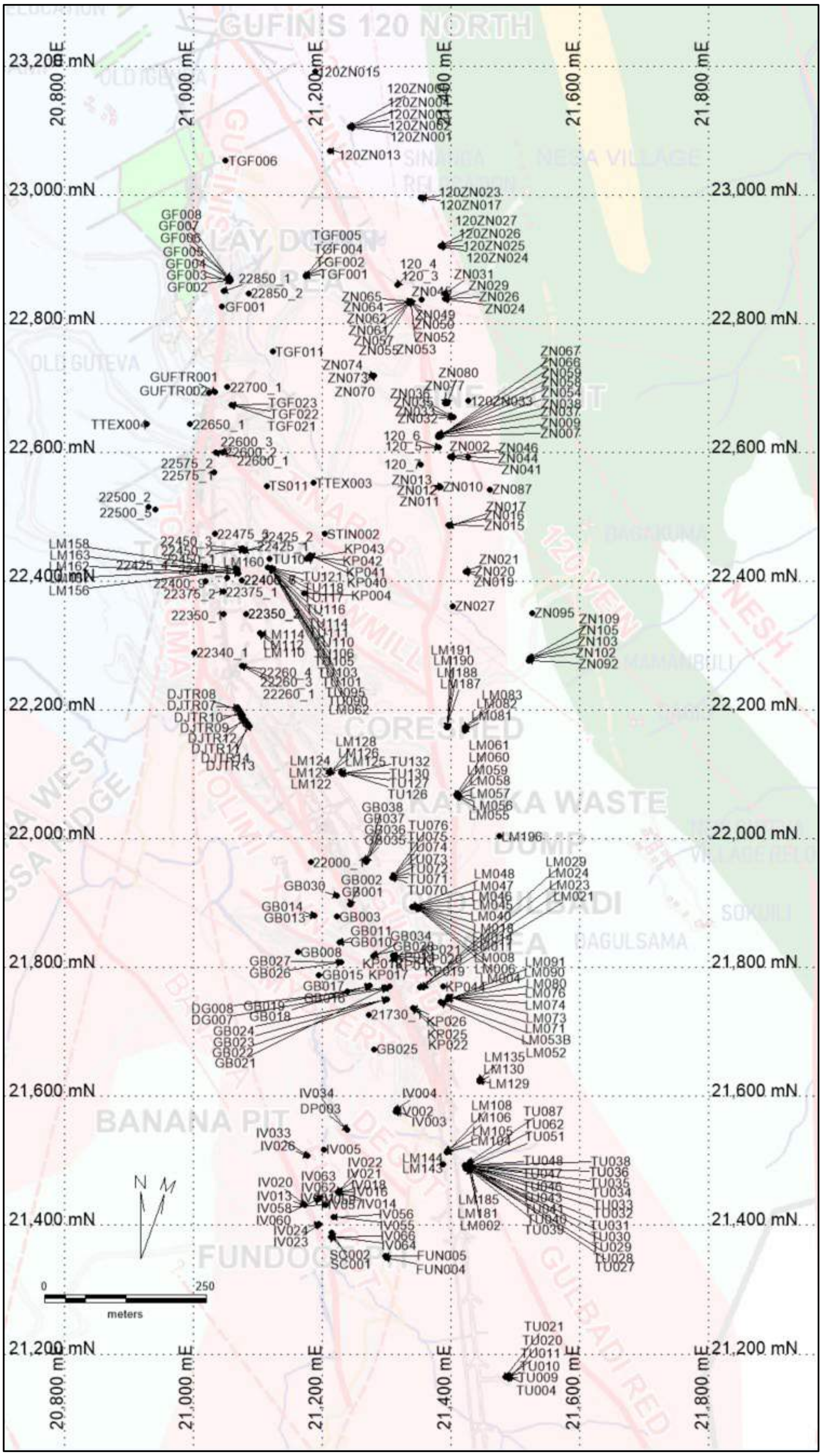
A Sokkia SET 530R - Total Station (Theodolite) is used by the qualified Mine surveyors to mark up the proposed collar position. The azimuths are indicated by using spray paints. All point pickups within the ML 104 are in local Mine Grid and those outside of the ML 104 are in Australian Metric Grid (AMG 66; AGD 55). Conversion from AMG to Mine grid is plus 20° degrees in history.

For the surface drillholes, the collar positions, azimuth and dip are measured using a tape and compass method surveyed by the geologist and / or field supervisor. After the completion of the drillhole, a proper theodolite survey is done, and the results compared with those obtained from the earlier tape and compass survey. Significant differences between the two readings are addressed and a re-survey is done if required.

The as drilled underground drillholes are surveyed by the underground mine surveyors.

The collar locations for the drilling (surface and underground) included in the Tolukuma Mineral Resource are shown in Figure 4.15.

Figure 4.15 Tolukuma drillhole locations included in the Mineral Resource estimate



Note: Tolukuma Mine Grid. Generated by AMC.

4.7.4 Downhole surveys

A Sperry Sun Single Shot Camera was used to take all downhole surveys on the drillholes. Shots are taken every 50 m down the drillhole and the films processed on site. A repeat run is immediately done if the film is poorly developed. Deviation in azimuth and dip is read and recorded by the geologist, the film disc is then placed in an envelope with details of azimuth, dip and drillhole depth and safely stored in a folder containing all other downhole information for that particular drillhole.

A comprehensive review of all the downhole survey records was conducted by Snowden in 2013, and databases updated to correct missing or invalid measurements. The downhole survey data was generated from single shot cameras and were collected at a variety of intervals of the period of the drilling.

4.7.5 Core orientation

There was no oriented core collected at Tolukuma.

4.7.6 Core recovery

Core recovery for Tolukuma DD drilling is a big challenge in two areas:

- the incompetent and deeply weathered and oxidized top zone (down to 40 m).
- the often-soft clay altered and friable nature of the volcanic rocks that host all epithermal vein mineralization at Tolukuma. The clay zones normally host some free gold mineralization.

The soft clays associated with the mineralisation within the epithermal veins are normally washed out and the more competent quartz drops back into the drillhole and end up been re-drilled. However, since 2003, a number of corrective steps were taken to improve core recovery. When drilling through the incompetent oxidized zone including heavily altered and mineralized zones the following controls were applied:

- More mud and polymer were applied to increase fluid viscosity.
- Shift down hole water pump / pressure to low gear.
- Not pushing the drill head, instead applying moderate hydraulic pressure or use of rod weight to penetrate.
- Reduce rotation on rods and go slowly.
- Do short core runs – never full tube.

When close to the expected target structure, the site Geologist advised the driller and the above measures were taken immediately.

Core recovery within competent country rock is excellent.

Core recovery data have not always been recorded in the database. The recorded global core recovery mean in the vein material is 92%. This comes from 6,650 core recovery values in the database of 92,827 DD intervals (total data approximately 78,501 assays). 296 data records are less than 2% and so appear to have been recorded as decimals rather than percentages and so there is some uncertainty in the data. A total of approximately 7% of the diamond core sampling has had the recovery recorded and entered. The core recovery histogram is shown in Figure 4.16 and the recovery to grade relationship shown in Figure 4.17. There is no apparent recovery to grade relationship.

Figure 4.16 Histogram of core recovery

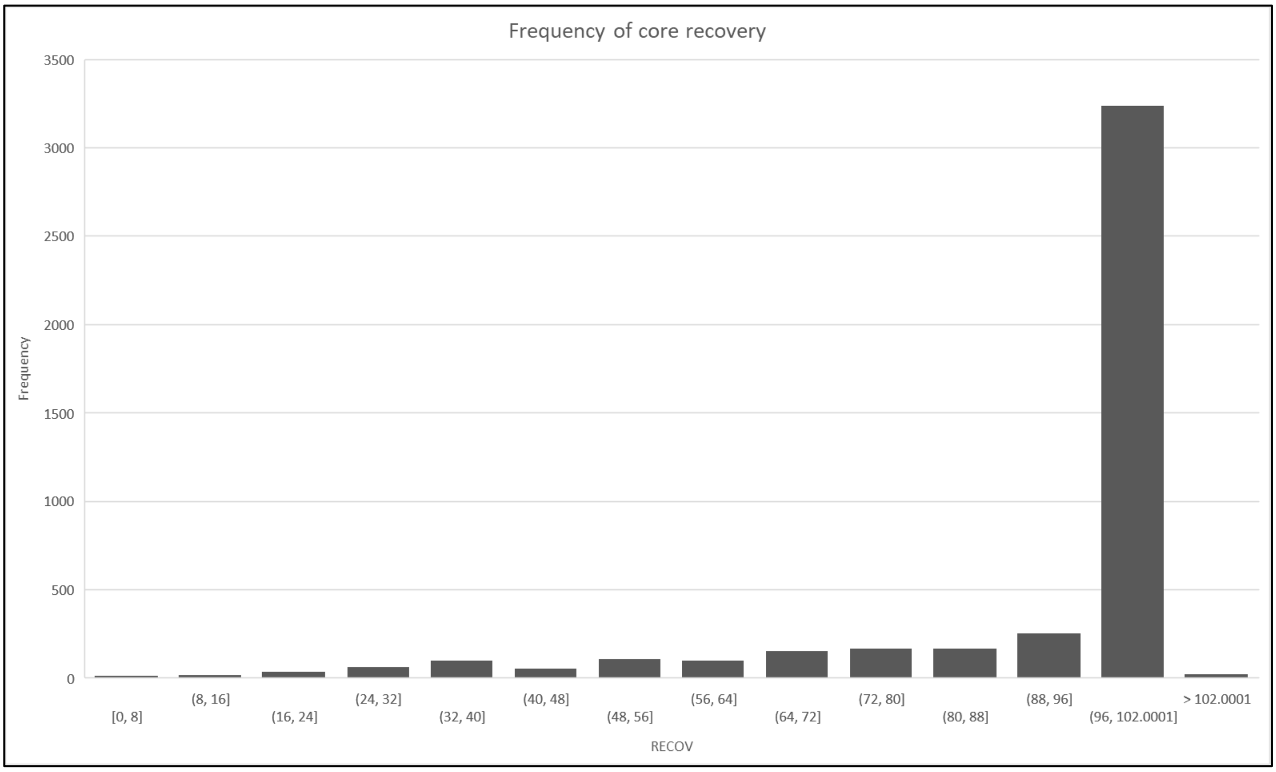
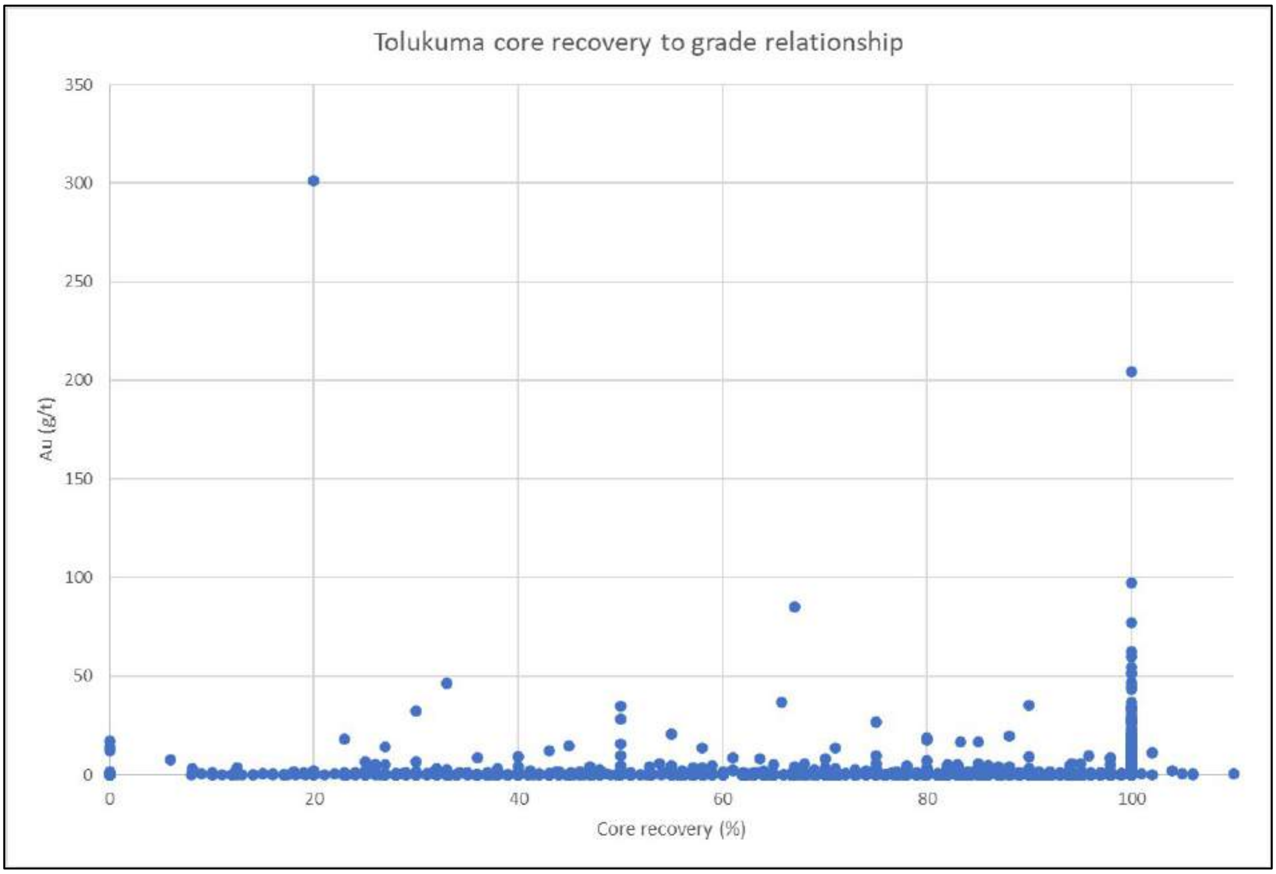


Figure 4.17 Scatterplot of recovery to gold grade



4.7.7 Drillhole spacing

Drillhole spacing is highly varied across the deposit as a whole. In general, drillholes are targeted at spacings of approximately 60 m by 60 m as a first pass along strike and down dip to test extensions. Follow-up drilling in to 30 m by 30 m is used where increased confidence is required. Historically, there are areas of the mine (e.g. Tolimi) where no drilling at all preceded mining. The miners followed the vein in the face and used face samples to predict the stope grades.

Later underground drilling had multiple drillholes drilled from single underground cuddies.

4.7.8 Core logging

Core logging includes codes for each vein, percentages for recovery and by the amount of core in sticks greater than 10 cm in length for RQD. The database contains irregular and old codes and requires a detailed re-assessment and re-compilation from scratch using the original logs wherever they still exist.

The database structure was very basic with tables for collar, survey, assay, lithology, and lode (Table 4.2).

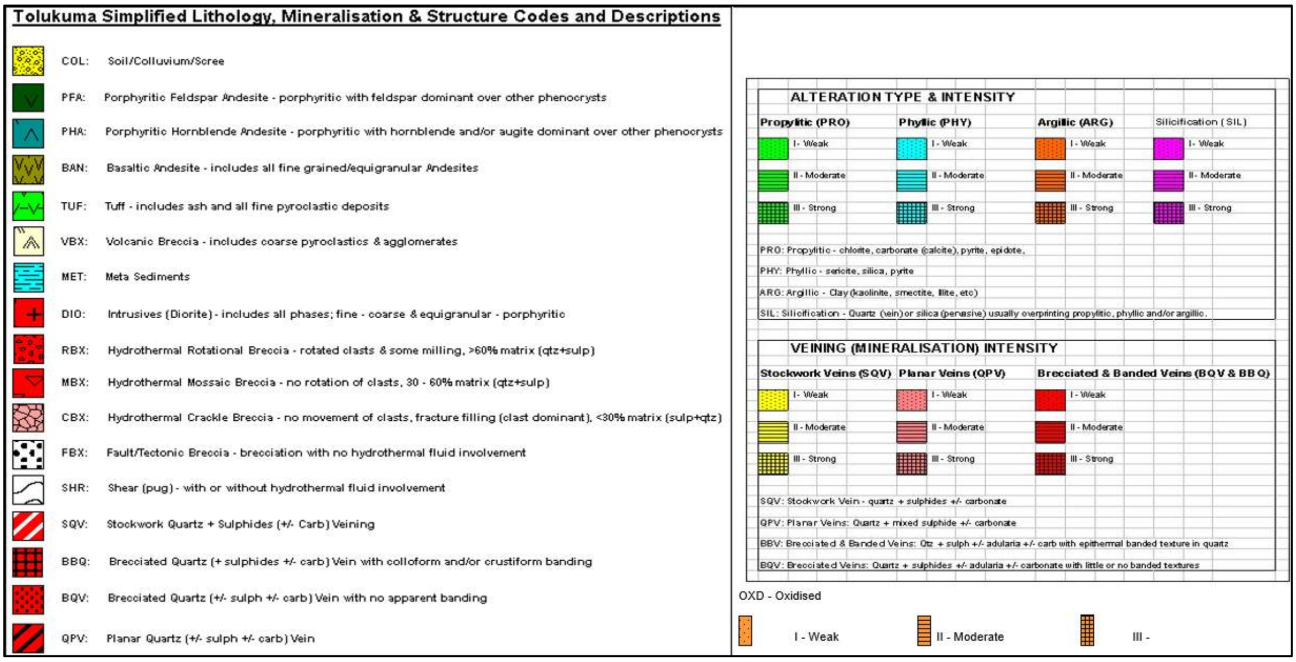
Table 4.2 Tolukuma database structure

Table	Fields
Collar	Drillhole identifier (Hole_ID), east, north, RL, drill type, maximum depth, date and remarks
Survey	Hole_ID, depth, dip, azimuth
Assay	Hole_ID, from, to, sample ID, sample width, true width, calc width, recovery, vein id, vein name, code, category, core angle, dip angle, dip direction, domain, flag, lithology, mineralisation, alteration, gold, silver, antimony, mercury, copper, lead, zinc
Lithology	Hole_ID, from, to, sample ID, lith code, lith number
Lode	Hole_ID, from, to, sample ID, category, vein name

Lithological codes used in the database are shown in Figure 4.18, although in practice many variations of this and other codes are present in the database provided. The rock types described are included as photographs in Figure 4.3, Figure 4.4, and Figure 4.5.

Unfortunately, the database as provided in 2011, and subsequent file updates, was based on generally very poorly maintained data. Many fields contained data with mixed information where data had been imported into MSAccess or Excel incorrectly. Many fields contained no data or inconsistently recorded data. The key field of the vein name was not consistently recorded and contained many misclassified veins. AMC chose to use the vein names available in the assay table, and the recorded lithology to commence the flagging process for vein correlation. Data was loaded to Leapfrog and vein data validated, grade and lithology-based subsets were then used to identify intercepts not previously flagged.

Figure 4.18 Tolukuma simplified geological logging codes



4.7.9 Core sampling

All core sampling was based on lithology and vein intervals. There are some incorrectly coded sample intervals in the original dataset that indicated very large sample intervals. These were ignored as being invalid.

4.7.10 Potential bias factors

Diamond drill core recovery for Tolukuma drilling is recognised as poor in the following situations:

- Incompetent, deeply weathered and oxidized near surface zones (down to 40 m).
- Soft clay altered and friable zones of the volcanic rocks that host all epithermal vein mineralization at Tolukuma. The clay zones normally host some free gold mineralization.

Sample recovery was not recorded adequately or consistently based on the data

4.8 Sample preparation

All core samples at Tolukuma were prepared on-site. The sampled core was dried in batch ovens at 180° to 200° at the sample preparation shed or in the mine laboratory. Following drying a jaw crush (Essa unit) of 3 mm to 5 mm was completed. Following that the sample was split 50:50 in a Jones riffle until the primary sample was reduced to 300 g to 500 g. This spilt was then pulverised in a Labtechnics LM2 to 90% passing 75 µm (Figure 4.19). The pulp was tipped onto a rolling mat and scooped into a sealed envelope for analysis.

AMC notes that at the drying temperature used, mercury could evolve as a gas and the resulting analysis be biased low.

Figure 4.19 Photograph of sample preparation equipment in 2013

Source: Snowden, 2013

4.9 Sample assay

The Tolukuma mine laboratory is located adjacent to the Mill. It hosts small but well segregated areas for wet sizing, drying, wet chemistry and analysis. The laboratory was run by TGM personnel (Figure 4.20).

Gold was analysed by Aqua Regia digest with a di-iso butyl ketone (DIBK) organic solvent extraction phase prior to analysis on an Agilent 240 AA, Atomic Absorption Spectrophotometer (AAS)(in 2013) earlier readings were on a Varian Spectra AA. Silver, mercury, and antimony, and variably through time, copper, lead, and zinc are completed by reading the Aqua Regia digest (after boiling, drying, and making up to volume) in an AAS.

Duplicates, commercial Certified Reference Materials (CRM's), and internally prepared matrix matched standards (not independently certified) are used for internal laboratory control. However, no records to date have been discovered to verify the data.

No recorded verifiable internal or external QAQC is presently available for the drilling or face sample.

Round robin blind CRM assaying was conducted in 2006 (Conway-Mortimer, 2006a and 2006b).

There are recorded site visits to the laboratory by Roger Cooper (Bateleur, 2007) and the author in 2013. The author found the lab was well managed with clean areas, well documented protocols, and digital data capture from the Agilent AAS. AMC considers the laboratory whilst not having International Standards Organisation (ISO) qualification was of a high standard.

Figure 4.20 Photographs of Tolukuma mine laboratory weighing, wet chemistry digest areas and AAS equipment

Source: Bateleur (2007) and AMC (photos from 2013 site visit)

4.10 Density determination

AMC has no records of any density readings to be used for in-situ dry bulk density assignment. Historical density used at the mine for tonnage factors from production utilised 2.2 kg/m^3. AMC strongly recommends all future drilling includes measurements of bulk density of host rock and mineralisation on a regular basis.

4.11 Data verification

4.11.1 Data sources

The data sources used for the 2022 Tolukuma Mineral Resource are derived from a number of disparate areas. The majority of the data was derived from previous data held by AMC based on projects completed at Tolukuma for previous clients. AMC considers this data is of higher quality than data subsequently sourced from various computers based at the mine site, as the data had been previously validated for earlier estimates.

4.11.2 Grid coordinate system

The primary grid used in the Mineral Resource estimate is a local Tolukuma Mine grid. All drilling and underground workings data is based on this grid. The local grid has not been accurately tied to any global grid to AMC's knowledge. Based on the drill log header MINE grid azimuth should have -13 degrees subtracted to get AMG grid azimuth. As at 2005, magnetic to mine was +20 degrees.

The primary grid used for regional geophysical and exploration data is based on Australian Geodetic Datum 1966 (AGD66) and uses Transverse Mercator Australian Map Grid Zone 55 (TMAMG55) projections.

4.11.3 Face samples

The current database incorporates face samples in the estimate due to the lack of drilling in many locations. The face sample database was validated in 2013 (Snowden,2013) from a file called "tolukuma.mdb". The face sample database had not been validated previously and contained large numbers of duplicate and incorrectly coded face positions. The data following cleaning was incorporated into a single database by AMC. Not all face samples were able to be used (compared to hardcopy) due to a period late in the mine life (2013-2015) where surveyor positioning data was missing, additionally many located samples were missing assay information.

4.11.4 Drilling data

Unfortunately, much of the detailed logging of diamond core has been lost in systems not recovered by AMC or is unknown to AMC at this time. A LYNX software package hosted the data originally. Extracts into excel files and or access databases were provided to AMC.

The Competent Person (R Carlson) conducted a site visit in 2013 where physical hardcopy records of all drilling were examined in filing cabinets in the Tolukuma Mine office. A comprehensive review of all the downhole survey records was conducted, and databases updated to correct missing or invalid measurements. The downhole survey data was generated from single shot Eastman cameras and were collected at a variety of intervals of the period of the drilling.

A selection of drillholes was also checked for the hardcopy assay laboratory record sheets against the digital records. No significant errors were noted at the time.

4.11.5 Collar surveys

Collar surveys for all drilling were completed at mark out and final pickup stage by the Mine Surveyors. The information is historically recorded manually and later recorded digitally. Transfer of information to the Geology drilling database was by email or spreadsheet. The surveyors in late times used industry standard reflector-less high precision electronic theodolites for recording positions. AMC considers the collar position accuracy is low risk underground, but moderate risk in older surface drilling due to less accurate methods in use at the time. Many surface drilling locations would not be able to be validated due to open pit mining and waste dump locations.

Face samples were collected using distance chainage from survey point measurements in development drives. Survey then provided centre point coordinates for each face and as built wireframes.

4.11.6 Density

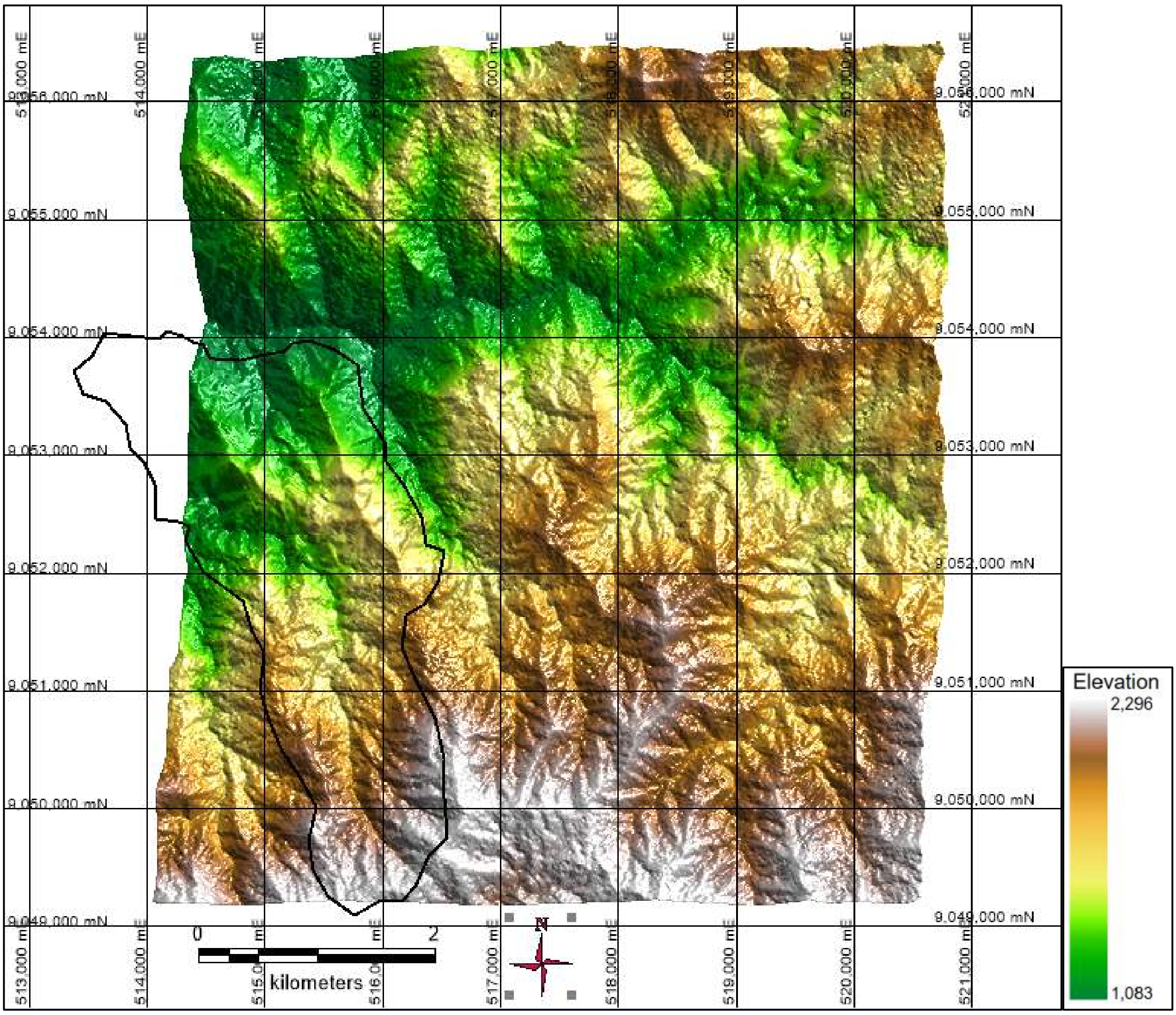
The assignment of in-situ dry bulk density is assumed. No data verification has been completed (see Section 4.10).

4.11.7 Topography

Topography for the hard rock surface used in the Mineral Resource estimate is based on Mine Surveyor pick-up in local mine grid using theodolite (unknown accuracy) modified by AMC to fit post-mining hard rock surfaces. The points used were available in a file called mine_surface2013.dwg collected from the mine in 2013 by AMC. The topographic points only covered parts of the mining lease area, mainly the pit, dump and road areas, with some other points. Some of the points were modified to create likely hard rock surfaces based on grade control trench samples showing the benched open pit mine locations. In locations such as Gufinis, Tolukuma and 120 vein open pits there is backfill or dumped material over the top that mask the original mined hard rock surface. The surface topography used in the resource estimate is not appropriate for use as a global topographic surface as it is only accurate in the areas picked up by the surveyors.

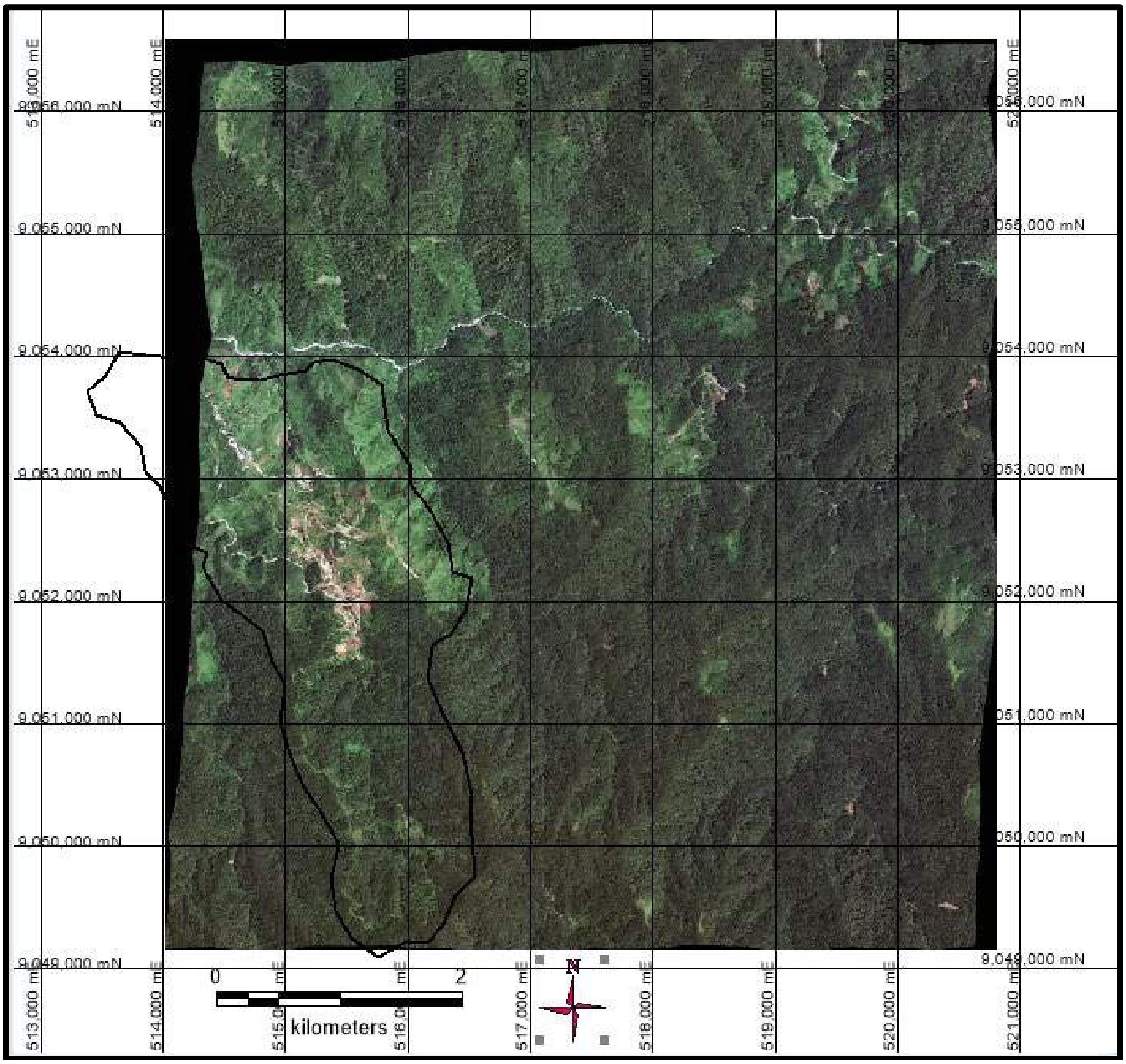
In addition, TML provided a satellite derived digital terrain model (DTM) and orthophoto generated by Geoimage Pty Ltd (Geoimage, 2021) in December 2021 from World View 3 satellite imagery. This data was provided in AGD66 TMAMG55 projection and has a stated resolution of 50 cm panchromatic and 2 m for the 4-band multi-spectral. The swath image was acquired on 16 February 2020 and covers the majority of ML 104 (Figure 4.21, Figure 4.22).

Figure 4.21 Tolukuma Worldview-3 topography elevation (false colour) showing ML 104 boundary



Source: AMC from Geoimage, 2021. Projection AGD66 TMAMG55

Figure 4.22 Tolukuma Worldview-3 orthophoto (false colour) showing ML 104 boundary



Source: AMC from Geoimage, 2021. Projection AGD66 TMAMG55

4.12 Quality assurance and quality control

4.12.1 Assay certificates

No Tolukuma drilling or face sampling has any recorded Independent International Standards Office (ISO) assay certificates. All analysis were conducted at the on-site minesite laboratory.

4.12.2 Certified Reference Materials

The laboratory used external standards to calibrate and validate in all sample batches. No record has been kept of these data.

4.12.3 Duplicates

No duplicates are recorded.

4.12.4 Blanks

No blanks are recorded.

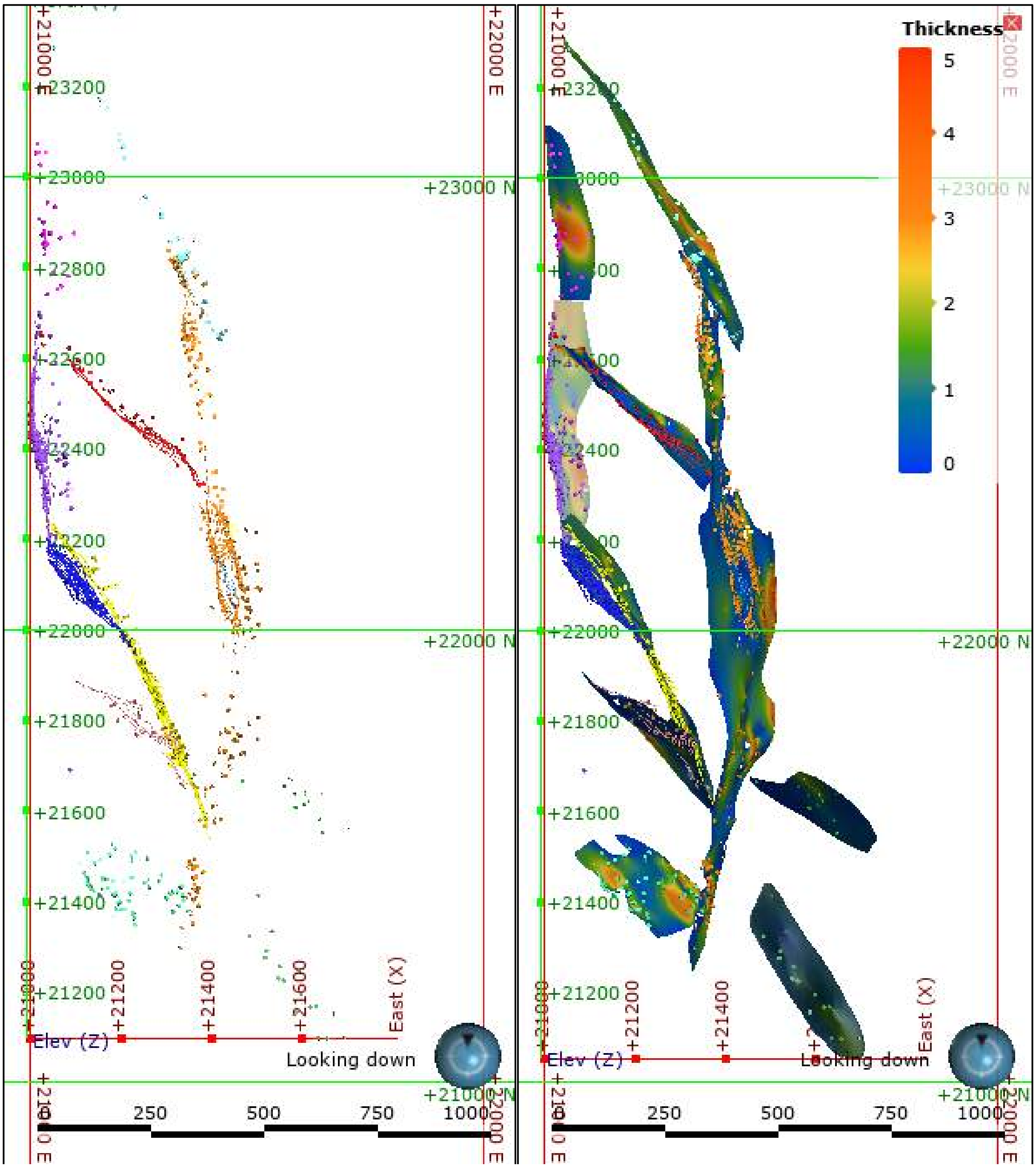
4.13 Interpretation

4.13.1 Modelling

The Tolukuma veins were modelled in Leapfrog™ software using vein options with snapping to drillholes. The vein samples were selected from vein flagging used by the mine, but significantly edited to correct mistakes, add intercepts where not flagged, and add intercepts based on new interpretations. The flagging of the face samples and drill intercepts was then used to guide the individual veins (Figure 4.23).

No geological interpretation was attempted due to the extremely large number of lithological codes and variation of logging used by the mine geologists over time.

Figure 4.23 Tolukuma vein intercepts coloured by vein and vein modelled thicknesses



Source: AMC. Note: Plan view

4.13.2 Lithological domains

No geological interpretation was attempted due to the extremely large number of lithological codes and variation of logging used by the mine geologists over time. All veins are currently hosted by volcanic rocks ranging from Andesites to Rhyolites. AMC recommends that an early priority would be to establish a 3D geological model to assist the interpretation and modelling of future estimates.

4.13.3 Mineralisation domains

The mineralisation domains are based on the historically mined veins both surface and underground, and extensions thereof. The major veins that have development to date include:

- Tolukuma
- Tolimi
- Gulbadi
- Gulbadi X
- Tinabar
- Zine
- 120
- Gufinis (minor open pit)

Other mineralisation domains interpreted from drilling or development that remain undeveloped include:

- Fundoot
- Gulbadi Red
- Mystery

Maximum extrapolation from drillhole or face sample composite varies in order to maintain the vein orientation and continuity, but a maximum of approximately 80 m is generally maintained. Maximum average distance for the block estimation is 126 m with a mean of 25 m.

The proportion of the resource that is based on extrapolated data is approximated 10%. The basis of the extrapolation is established vein continuity shown from mining at Tolukuma.

Figure 4.24 Extrapolation and Interpolation shapes for each vein (part 1)

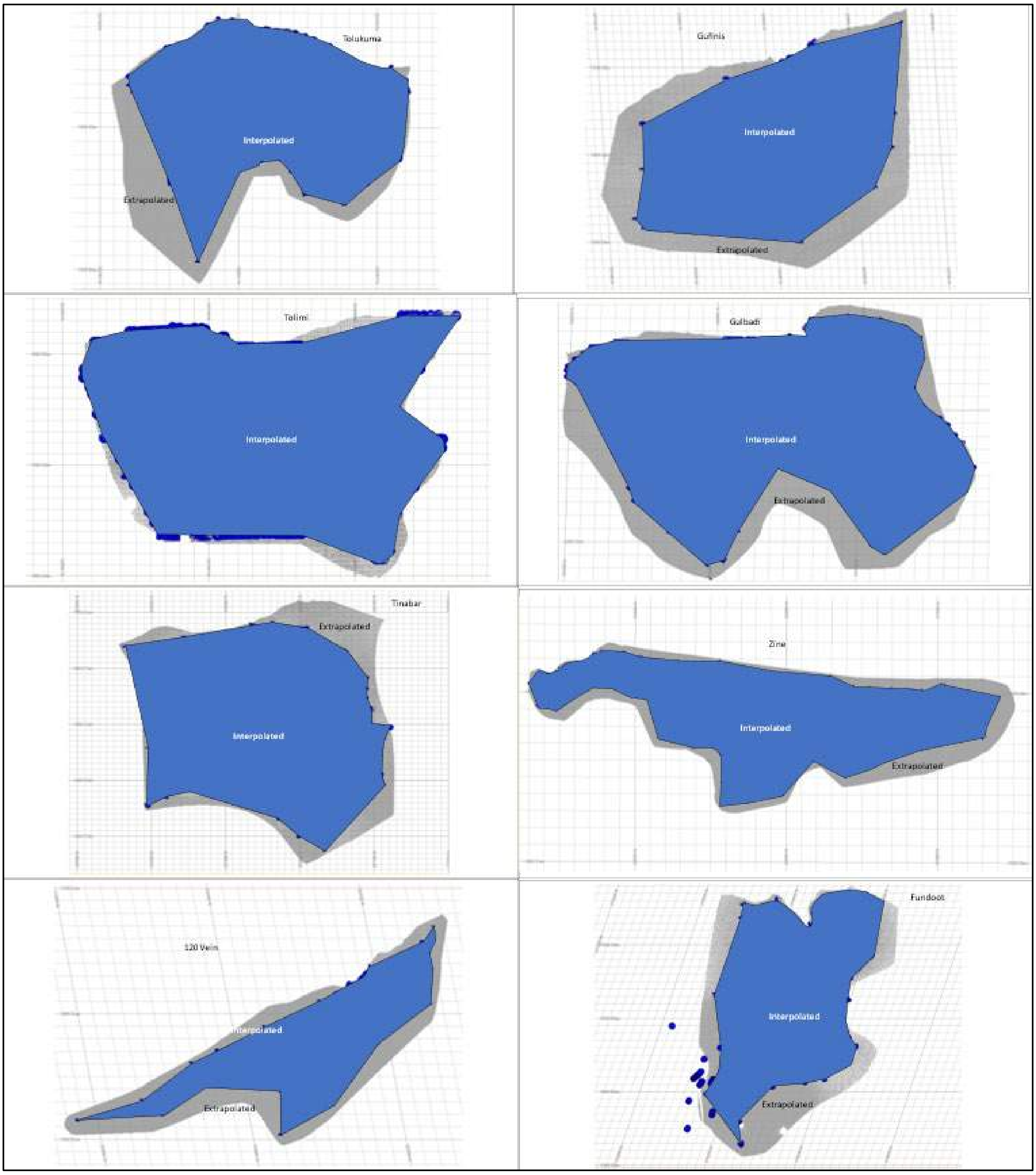
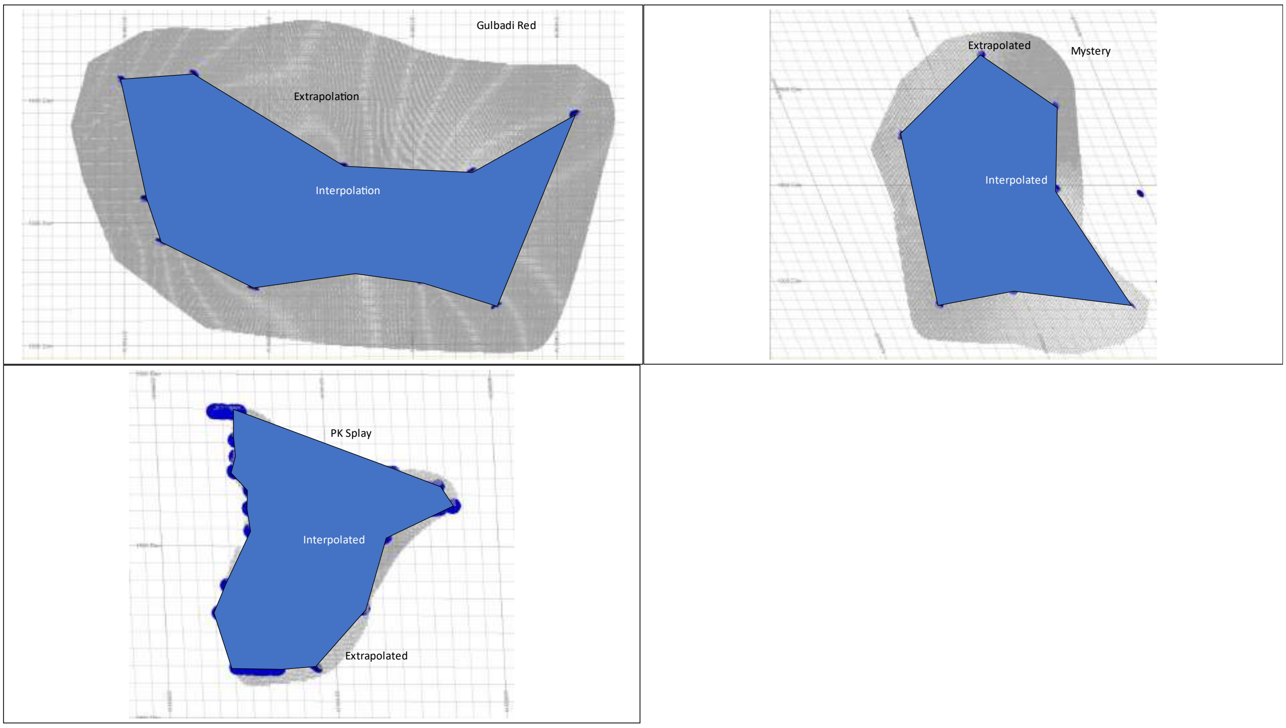


Figure 4.25 Extrapolation and Interpolation shapes for each vein (part 2)



4.14 Mineral Resource estimation

4.14.1 Introduction

Ordinary kriging was used to estimate vein widths and metal accumulations into parent cells in a 'two' dimensional block model of the veins. Inverse distance weighted and nearest neighbour estimates were also completed for comparative purposes but not used in the final estimations. The metal accumulation estimates were then divided by the vein width estimates to obtain the metal grade estimates. The grade estimates were then transformed to a three-dimensional block model constrained by wireframes of the veins and topography surface. The ore domain wireframes were created using Leapfrog Geo software (Leapfrog) from interval selections using the supplied drilling database. The initial prototype block model was created using Surpac mining software (Surpac) and all subsequent resource modelling and estimation processes were completed within Datamine Studio mining software (Datamine). AMC generated the resource estimates for deposits using the method as follows:

- Build geological vein ore domains from the supplied drilling database based on grade, historical vein identification and lithology.
- Validate geological wireframes.
- Select and create full-length composite samples within the vein domains.
- Create a 3D block model constrained by vein and topography wireframes in real space.
- Create a 2D single width block model of the veins for grade interpolation and transform all easting coordinates onto a single easting reference plane (21300 mE).
- Code the full-length composites with the true thickness determined from the vein domain wireframes.
- Project the full-length composite samples onto the single easting reference plane (21300 mE).
- Estimates of the metal accumulations and true thickness were generated into the 2D block model.
- Divide the metal accumulation estimates by the vein width estimates to get the metal grade estimates within 2D block model.

- Transform the estimated grade and thickness from the 2D block model back into the spatially correct 3D block model.
- Validate estimated grades.
- Deplete the 3D block model with previously mined areas, or areas with a high likelihood of inaccessibility or ground deterioration.
- Classify the 3D block model based on geological confidence, vein thickness, drill density and geostatistics.
- Final block model validation.
- AMC peer review and reporting.

4.14.2 Database

Section 4.11 and 4.12 describe the validity of the data used in the estimate.

AMC believes that the key issues likely to affect the reliability of the resource estimates are the reliability of the downhole surveys, selective sampling, assays, and the quality control of the database information. To avoid the use of invalid data in future, AMC recommends that TML conducts a thorough validation of the database and institutes a systematic QAQC process for all future data collection. This could involve a review and upgrade of the data entry and management systems.

4.14.3 Domaining

Each mineralised vein wireframe was created within Leapfrog using the flagged sample intervals. The vein model used the Vein Modelling option in Leapfrog with snapping to sample intervals. A combination of explicit and implicit wireframing was used to create 15 separate veins using interval selection listed below in Table 4.3. The vein intervals were based on grade, historical vein identification and lithology. The sampling used to inform the domains was a combination of diamond drilling and face sampling. For continuity purposes, a 1 g/t Au cut-off together with drillhole logging was used to help define the mineralised veins.

Table 4.3 List of the Tolukuma mineralised domains used in the MRE

Vein Name	Domain Number	Wireframe Description	Filename (Datamine format)	Date Created
Gulbadi Red	1	Vein wireframe	tol_vgulrpt / tol_vgulrtr	12/01/2022
Mystery	2	Vein Wireframe	tol_vmmzpt / tol_vmmztr	12/01/2022
Fundoot	3	Vein Wireframe	tol_vfunpt / tol_vfuntr	12/01/2022
Gulbadi X (Depleted)	4	Vein wireframe	tol_vgulxpt / tol_vgulxtr	12/01/2022
		Depletion	Vgulxdeplpt / vgulxdepltr	22/12/2021
Tolukuma	5	Vein Wireframe	tol_vtolpt / tol_vtoltr	12/01/2022
		Depletion	Vtlideplpt / vtlidepltr	21/12/2021
Tinabar	6	Vein Wireframe	tol_vtinpt / tol_vtintr	12/01/2022
		Depletion	Vtindeplpt / vtindepltr	07/01/2022
Sawmill (Not reported)	7	Vein Wireframe	tol_vsawpt / tol_vsawtr	12/01/2022
Tolimi (Depleted)	8	Vein Wireframe	tol_vtlupt / tol_vtlutr	12/01/2022
		Depletion	Vtludeplpt / vtludepltr	07/01/2022
Gulbadi	9	Vein Wireframe	tol_vgulpt / tol_vgultr	12/01/2022
		Depletion	Vguldeplpt / vguldepltr	07/01/2022
Zine PK	10	Vein Wireframe	tol_vpkpt / tol_vpktr	12/01/2022
		Depletion	Vpkdeplpt / vpkdepltr	21/12/2021
Gulfinis	11	Vein Wireframe	tol_vgufpt / tol_vguftr	12/01/2022
120	12	Vein Wireframe	tol_v120pt / tol_v120tr	12/01/2022
		Depletion	v120deplpt / v120depltr	18/01/2022

Vein Name	Domain Number	Wireframe Description	Filename (Datamine format)	Date Created
120 Footwall (Not reported)	13	Vein Wireframe	tol_v120fwpt / tol_v120fwtr	12/01/2022
Miliahama (Not reported)	14	Vein Wireframe	tol_vmvpt / tol_vmvtr	12/01/2022
Zine	15	Vein Wireframe	tol_vzinpt / tol_vzintr	12/01/2022
		Depletion	Vzindeplpt / vzindeplre	18/01/2022

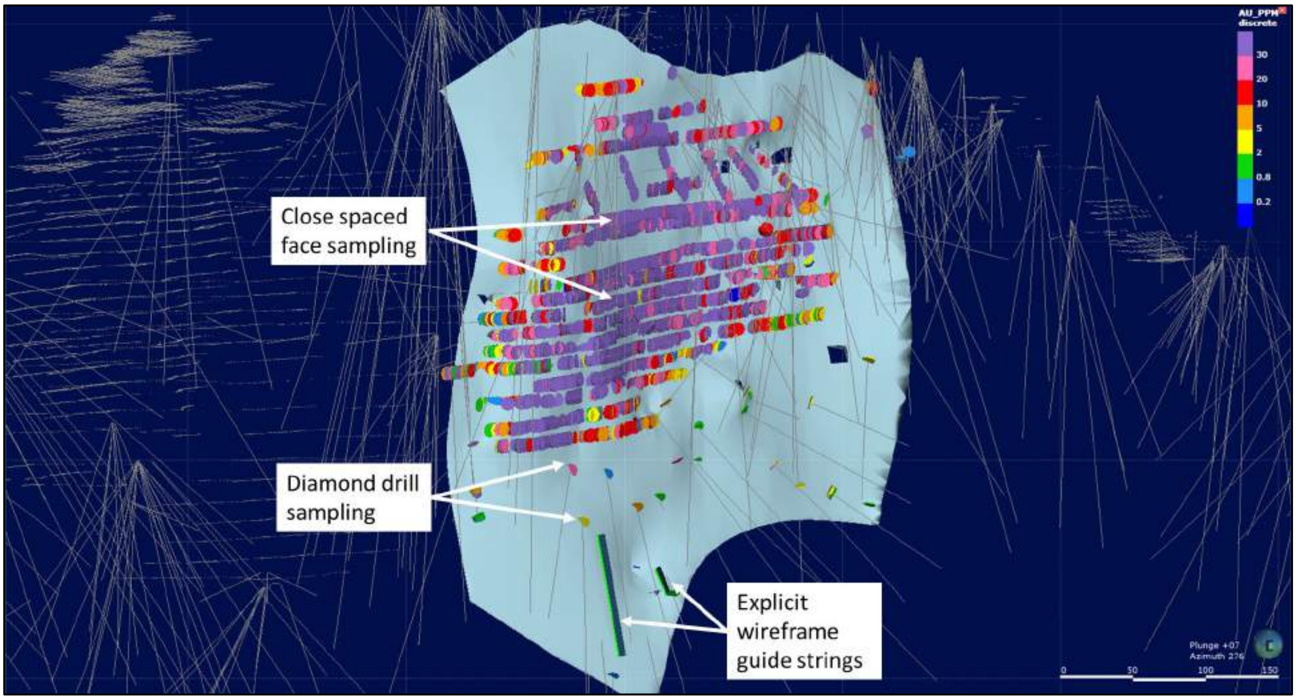
4.14.4 Compositing

The sample database was flagged with a vein code unique to each individual wireframe. Because the veins are thin in nature (typically <2 m true width) a full-length composite was used to reflect the lack of selectivity during mining, and to help reduce the downhole variance within drillholes.

4.14.5 Geological interpretation

The boundaries of the mineralised veins were interpreted using Leapfrog using both implicit and explicit wireframing to form a fully linked three-dimensional geological interpretation of the vein, using both geology and sample information from drillhole and face sample data. Intervals were selected based on lithology, grade, and historic identification to create a new vein field in the database. The new vein field was then categorically used to create vein shapes. The extents of the veins were manually created based on drill density and grade. Some drill intervals were excluded on a case-by-case basis with respect to geological continuity or lack of available sample data. An example is shown below in Figure 4.26.

Figure 4.26 Tinabar interval selection showing close spaced face sample interval selection in the upper regions, and diamond drill interval selection in the lower region.



4.14.6 Block modelling

A 3D prototype block model was built using Surpac that encompassed all the mineralisation wireframes, the dimensions are shown below in Table 4.4. The initial prototype block model was created to allow ease of importing and exporting across various mining software packages as requested by TML.

Table 4.4 3D block model prototype coordinates and dimensions

Coordinate	Minimum (m)	Maximum (m)	Parent Cell Size (m)	Subcell Size (m, minimum)
X (Easting)	20800	21800	5	0.15625
Y (Northing)	19500	23500	10	1.25
Z (Elevation)	1100	2100	10	1.25

The two-dimensional (2D) block model was used for grade interpolation. This block model was a transformed version of the prototype model in which all block X coordinates were manually set to 21300 mE. This method resulted in the parent cells being aligned onto the same easting plane (21300 mE) as the composite samples, which improved the searching of related samples during estimation. Final block model parameters are detailed below in Table 4.5.

Table 4.5 Final block model parameters

Field	Description
Domain	Domain field (same for all metals)
Mined	Depleted (as of end of 2021)
TOPO	Topography surface
Density	Assigned density (t/m^3)
AVDIST	Average distance of contributing composites of a gold block estimate
NSAM	Number of contributing composites of a gold block estimate
NoBHID	Number of contributing drillholes from which composites are drawn for a gold block estimate
PASS	Estimation pass (1,2 or 3) based on search neighbour scenario used to generate a gold block estimate
AUESTOK	Gold grade block estimate (g/t Au - AUTHKOK/THICK)
AGESTOK	Silver grade block estimate (g/t Ag)
CUESTOK	Copper grade block estimate (ppm Cu)
PBESTOK	Lead grade block estimate (ppm Pb)
ZNESTOK	Zinc grade block estimate (ppm Zn)
HGESTOK	Mercury grade block estimate (ppm Hg)
SBESTOK	Antimony grade block estimate (ppm Sb)
AUTHKOK	Gold metal accumulation block estimate (g/t Au)
THICK	True thickness block estimate
RESCAT	Mineral Resource category (classification)
THIN11	Unclassified thin volume - domain 11
THIN2	Unclassified thin volume - domain 2
THIN6	Unclassified thin volume - domain 6
THIN15	Unclassified thin volume - domain 15

4.14.7 Selection and treatment of data

The true thickness of the wireframes was determined using Datamine. The wireframes were imported from Leapfrog into Datamine, and the 'calculate wireframe volume' function was used to write the true thickness attribute into the triangulation file. A true thickness attribute was recorded for every triangle in each individual wireframe. This was the preferred method to better preserve wireframe geometry true thickness rather than rely on sample intercepts from faces or DD drilling that had varying levels of available data points to estimate from.

The triangulation true thickness was then assigned to the corresponding sample composite in the database using a nearest neighbour estimation. The metal accumulations for the intercepts were calculated for gold, silver, copper, lead, mercury, antimony, and zinc by multiplying the grade with the true thickness of the sample composite. Metal accumulations are additive irrespective of the sample length. The metal accumulations were therefore used for statistical and geostatistical analyses.

The metal accumulations and true thicknesses of the sample composites were interpolated, for each element, using up to three passes of ordinary kriging (OK) into the model parent blocks within the 2D model. The model blocks and composites were returned to their true positions prior to validation of the model.

The estimated metal grades for the blocks were then back calculated by dividing the estimated metal accumulations by the estimated true thickness.

Inverse distance squared (ID^2), nearest neighbour (NN) estimates were run concurrently as a validation check on the OK block grade estimates. Additional validation check estimates were also generated based on unweighted composite grades.

4.14.8 Variography

Experimental variograms were modelled for domains 5, 9 and 15 as they were representative domains with appropriate number of sample pairs available. Variography analysis was completed in Snowden Supervisor software (Supervisor) on the gold and silver metal accumulation (examples in Figure 4.27 and Figure 4.28). Domains with low sample counts used the same gold or silver variography as adjacent domains with a similar dip / strike and similar grade populations (Table 4.6).

Nugget values were determined from the directional variograms as the downhole variogram did not have enough data for useful analysis, the composites were full length.

A correlation matrix was created to compare the regression values between the secondary metals, copper, lead, zinc, mercury, and antimony. It was deemed appropriate to apply the gold variography to the secondary metals. Good correlation was difficult to determine because of the significantly lower number of assay results available for the secondary metals. Table 4.6 below shows the relationship between what domains were grouped, and what metals shared the gold variography.

Figure 4.27 Variogram fans for gold - domain 5 Tolukuma vein

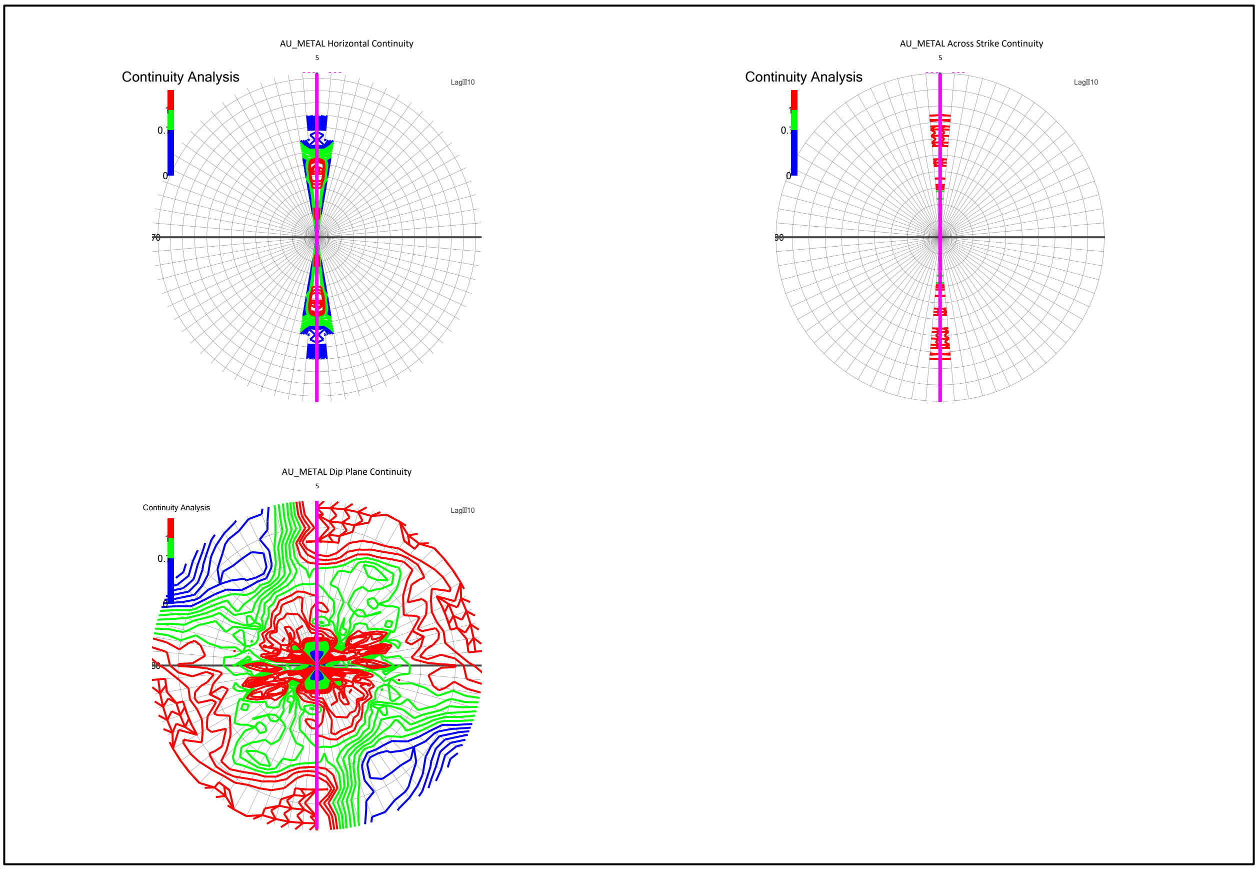


Figure 4.28 Variogram models for gold domain 5 - Tolukuma vein

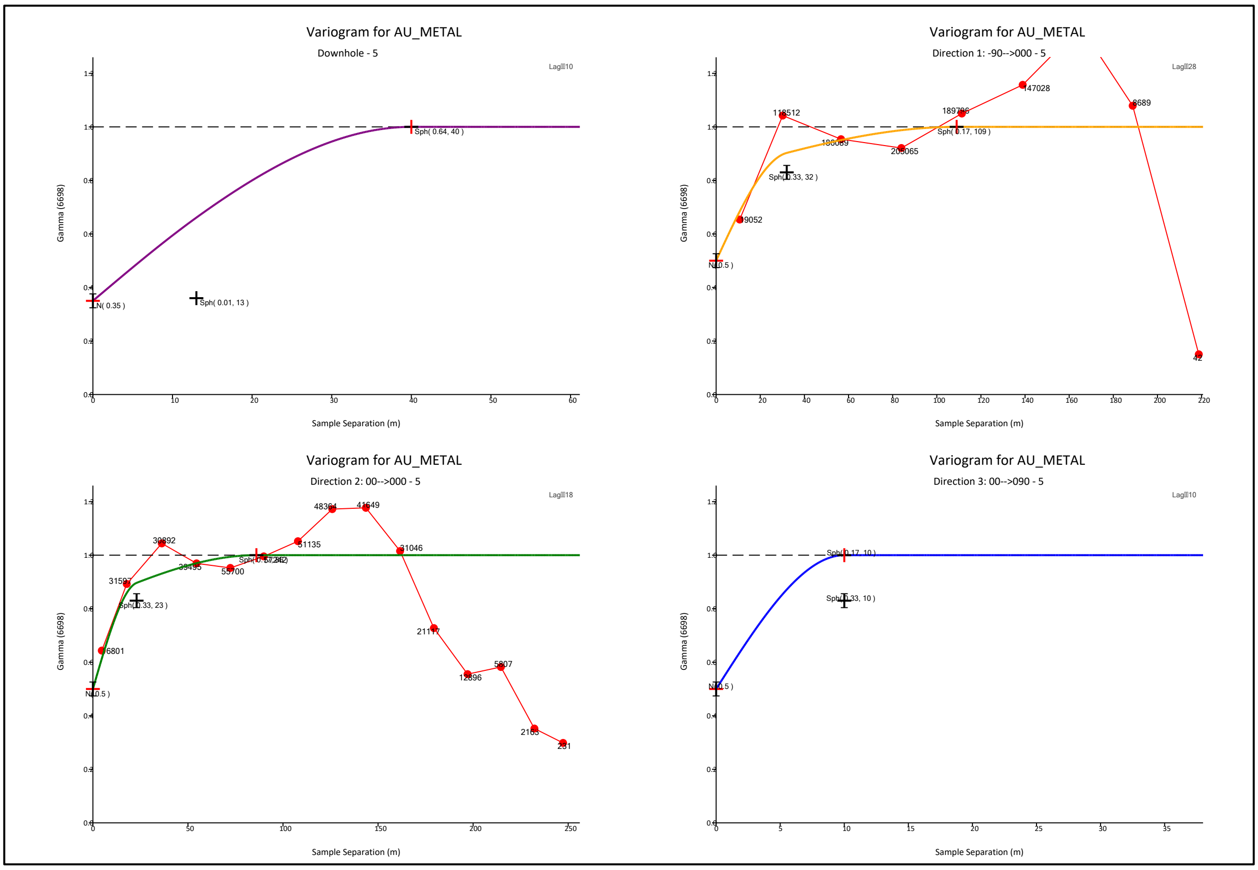


Table 4.6 Domain groupings with shared variography

Domains	Shared Variogram Groups
1, 2, 3, 4, **5**, 6, 7	Au, Cu, Hg, Pb, Sb, Zn, Thickness
8, 10, 11, **15**	Au, Cu, Hg, Pb, Sb, Zn, Thickness
9, 12, 13, 14	Au, Cu, Hg, Pb, Sb, Zn, Thickness
1, 2, 3, 4, 5, 6, 7, 8	Ag, Thickness
8, 10, 11, 15	Ag, Thickness
9, 12, 13, 14	Ag, Thickness

Bold domain numbers indicate the representative domain variography was completed on.

4.14.9 Resource estimation procedures

Ordinary kriging was used to estimate vein widths and metal accumulations into parent cells in a 2D block model of the veins. The metal accumulation estimates were then divided by the vein width estimates to obtain the metal grade estimates. Subsequently, the grade estimates were mapped to a three-dimensional block model constrained by wireframes of the veins.

The OK interpolation was done into a 2D block model to ensure that relevant composites are selected, and that the orientation of the search ellipsoid coincides with the orientation of the veins. The narrow widths coupled with the undulating geometry of the veins could pose difficulty in the orientation of a search ellipsoid in a 3Dblock model interpolation in that samples outside the vein boundaries could be selected.

The metal accumulation was used in the estimation because it is an additive variable irrespective of sample length, while metal grade is not an additive variable when sample lengths are variable. To obtain meaningful summary statistics and a valid grade interpolation, the variable used in the estimation must be additive. In order to obtain additive sample grades, the samples must be composited to equal length (to achieve uniform support).

As most of the samples have very small lengths, it is difficult to composite samples without sub-dividing the longer samples into composites smaller than the original sample lengths. Compositing samples below sample length will make the grade appear more continuous than it actually is. To overcome the difficulty associated with compositing narrow vein intersections into equal lengths, the sample intersections were composited across the full width of the vein. The vein thickness and grade accumulation, which is a product of grade and east-west horizontal width, were used for all estimation work.

The final model was comprised of two individual estimations, a general estimation that used a grade cap (top-cut), and a high-grade estimation that was spatially restricted without any grade cap. Where both models had estimated blocks, the high-grade estimation blocks took priority over the general estimation during the model merging.

4.14.10 Resource estimation parameters

The OK search parameters were adopted from the 2009 resource estimate. During model validation, some search parameters were adjusted to better reflect metal distribution compared to the sample information. Additionally, a high-grade restriction estimation and search was adopted to help represent local variability in grade. A summary of the estimation and search parameters is shown below in Table 4.7 and Table 4.8.

Table 4.7 General estimation and high-grade restriction estimation search parameters for gold

Variable	Domain	Distance (m)			Pass 1		Pass 2			Pass 3			Maximum number of composite from drillholes
					Composite Numbers		Search Ellipse Factor	Composite Numbers		Search Ellipse Factor	Composite Numbers		
		Z	X	Y	Minimum	Maximum		Minimum	Maximum		Minimum	Maximum	
AU_CUT	ALL	40	50	50	3	10	2	3	8	3	3	6	3

Table 4.8 High grade restriction block selection search parameters for gold

Variable	Domain	Distance (m)			Pass 1		Pass 2			Pass 3			Maximum number of composite from drillholes
					Composite Numbers		Search Ellipse Factor	Composite Numbers		Search Ellipse Factor	Composite Numbers		
		Z	X	Y	Minimum	Maximum		Minimum	Maximum		Minimum	Maximum	
AUTHICK	1, 2, 3, 4, 5, 7, 8, 9, 11, 12, 13, 14	20	20	20	1	2	-	-	-	-	-	-	999
AUTHICK	6, 10, 15	10	10	10	1	2	-	-	-	-	-	-	999

4.14.11 Extrapolation

Maximum extrapolation from drillhole or face sample composite varies in order to maintain the vein orientation and continuity, but a maximum of approximately 80 m is generally maintained. Maximum average distance for the block estimation is 126 m with a mean of 25 m.

The proportion of the resource that is based on extrapolated data is approximated 10%. The basis of the extrapolation is established vein continuity shown from mining at Tolukuma (Figure 4.24 and Figure 4.25).

4.14.12 Grade capping

The requirement for grade capping was analysed using Supervisor. Histograms, log probability plots and spatial distribution of high grades were checked, and appropriate grade capping was determined. The composited drillhole and face sample populations were statistically analysed to derive grade capping values using a combination of examination of coefficient of variation, cumulative probability plots and disintegration of the data in the populations. Gold was capped individually for each domain (Table 4.9). Silver, copper, lead, zinc, antimony, and mercury were capped at one value to suit all domains. This was deemed appropriate considering the lack of supporting assay numbers for the secondary metals. (Table 4.9)

Table 4.9 Gold grade caps

Domain	Gold Grade Caps (g/t Au)
1	12
2	22
3	80
4	110
5	260
6	260
7	13
8	125
9	185
10	55
11	10
12	10
13	N/A
14	N/A
15	80

Table 4.10 Secondary metals grade caps

Variable	Domain	Grade Caps
AG_CUT (silver)	All	600 g/t Ag
ZN_CUT (zinc)	All	1,600 ppm Zn
CU_CUT (copper)	All	750 ppm Cu
PB_CUT (lead)	All	5,000 ppm Pb
SB_CUT (antimony)	All	10,000 ppm Sb
HG_CUT (mercury)	All	2,000 ppm Hg

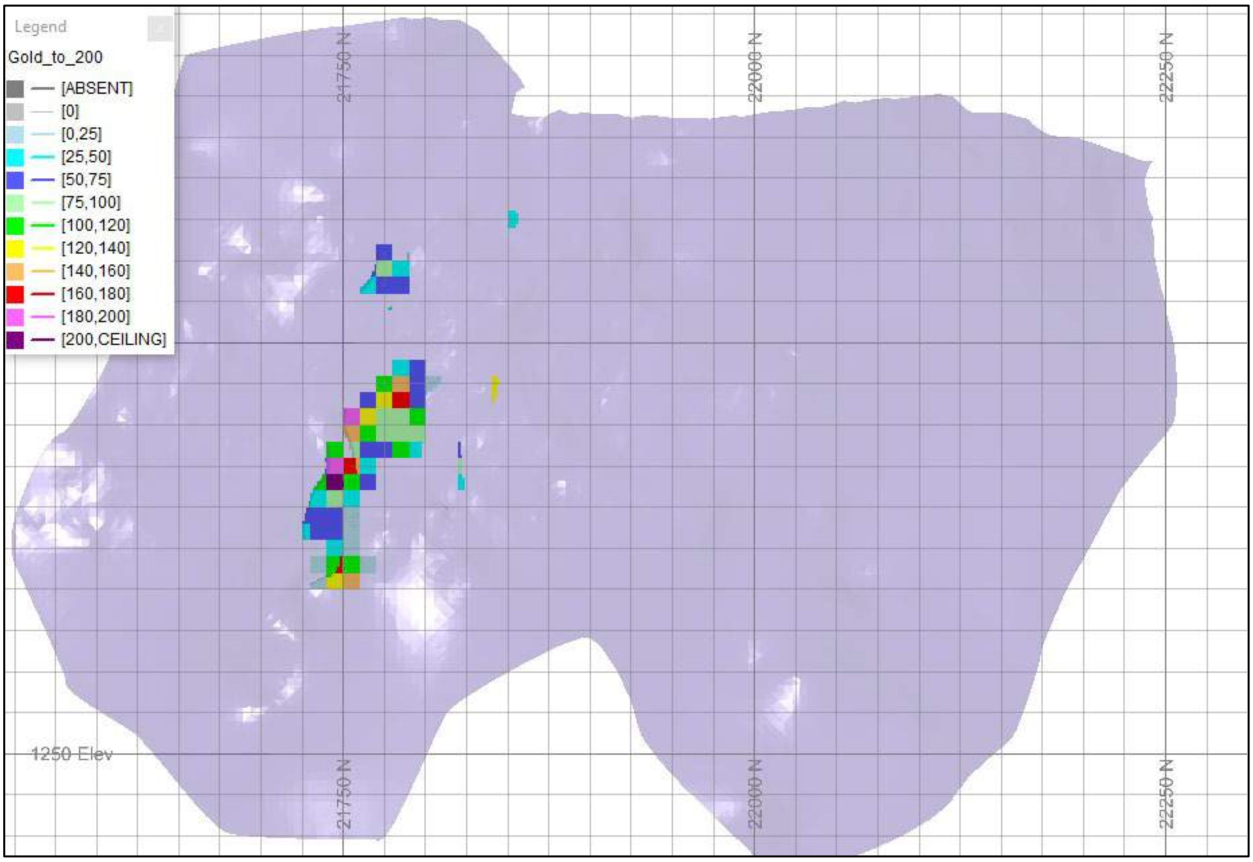
4.14.13 High-grade restriction

Two models were estimated and then combined, a general estimation which was all blocks, and a high-grade restriction estimation where blocks were above the general grade caps. The two models were then combined with the high-grade model overprinting the general estimation.

The high-grade restriction was implemented to help honour the high-grade deposit style and improve local grade estimation, but to reduce the spatial influence of any extreme outliers. A high-grade block model was created using a nearest neighbour method with independent search and estimation parameters (Table 4.8) that only estimated blocks with grades above the caps listed in Table 4.9 using restricted searching distances and reduced minimum and maximum samples.

The high-grade restriction model blocks were coded, and then estimated again using an OK method with standard estimation and search parameters (Table 4.7) but without any grade caps applied to the composite database.

Figure 4.29 Gold high-grade restriction model for Gulbadi



4.14.14 Absent values

The waste domain of zero (0) was initially coded but removed from the final estimations.

Absent values that were not estimated in any of the three estimation passes were manually coded into the block model. Gold and silver absent values were set to 0.5 ppm Au. Half the detection limit was not used because the absent values were within mineralisation domains, and while there was geological support for the existence of mineralisation, often missing assay data was the cause for un-estimated blocks rather than distance from drillholes. The un-estimated values will also be below reporting grade and will not effect the reportable evaluation.

For copper, lead, zinc, antimony, and mercury the absent block values throughout all domains were set to the same value for each metal – the 25th percentile metal grade for all domains averaged (Table 4.11).

Table 4.11 Absent values averaged for all domains at the 25th percentile

Variable	Domain	Absent value
ZN_CUT (zinc)	All	104 ppm Zn
CU_CUT	All	20 ppm Cu
PB_CUT	All	70 ppm Pb
SB_CUT	All	210 ppm Sb
HG_CUT	All	6 ppm Hg

4.14.15 Summary statistics

All metals were constrained by hard boundary mineralisation domains. The gold summary statistics are shown below in Table 4.12.

Table 4.12 Gold composite summary statistics

Variable	Domain	No. samples	Minimum	Maximum	Mean	Std Dev	CoV
AUESTOK	1	16	0.12	102.41	13.20	26.89	2.04
AUESTOK	2	12	0.06	35.60	9.40	11.08	1.18
AUESTOK	3	52	0.15	204.50	17.98	34.50	1.92
AUESTOK	4	601	0.01	1042.00	28.70	57.04	1.99
AUESTOK	5	2554	0.10	1292.00	47.27	56.32	1.19
AUESTOK	6	2185	0.00	775.85	47.81	64.35	1.35
AUESTOK	7	86	0.00	51.00	3.21	6.45	2.01
AUESTOK	8	1849	0.00	468.00	23.72	30.19	1.27
AUESTOK	9	4801	0.00	743.15	32.29	38.87	1.20
AUESTOK	10	290	0.10	687.70	45.37	87.82	1.94
AUESTOK	11	39	0.00	38.93	5.52	9.37	1.70
AUESTOK	12	50	0.07	50.20	3.76	7.94	2.11
AUESTOK	13	6	0.56	12.90	4.46	4.30	0.96
AUESTOK	14	31	0.01	1.09	0.32	0.32	0.99
AUESTOK	15	2824	0.00	1456.90	44.24	89.62	2.03

Std Dev = Standard deviation, CoV = Coefficient of variation

4.14.16 Validation

Validation of the global resource estimate was done by way of visual checks of block model estimates against the drillhole composites, comparison of domain composite means to block model means, and swath plots in northing, easting, and elevation. Visual checks confirmed that in general the block model reflects composite grade trends in the input data and block model grades correlate reasonably with the composite grades (Figure 4.30 and Figure 4.31). There is no obvious smearing of high grade, with areas of higher grade being well constrained locally around the drillhole intercepts.

In the swath plots, the overall trends between the block model estimates and composites show a good correlation with no significant bias noted between the sets of data. The plots indicate that in general the block model estimates are well-conditioned with respect to the supporting data. As an example, Figure 4.32 to Figure 4.34 show the global gold swath plots for northings, eastings, and elevations.

Figure 4.30 Zine vein gold cross section 21980mN with drillholes.

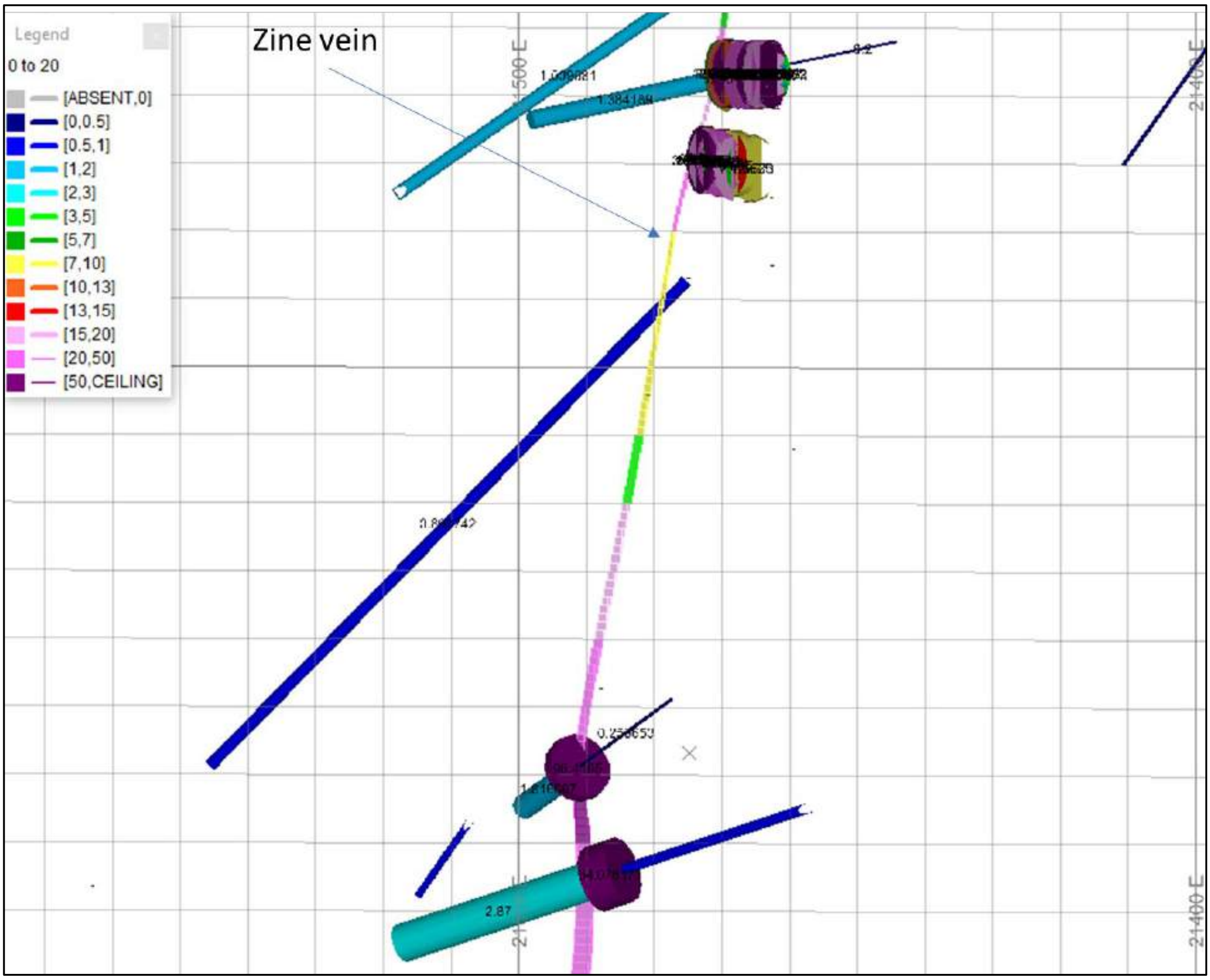


Figure 4.31 Fundoot vein gold long section with drillholes

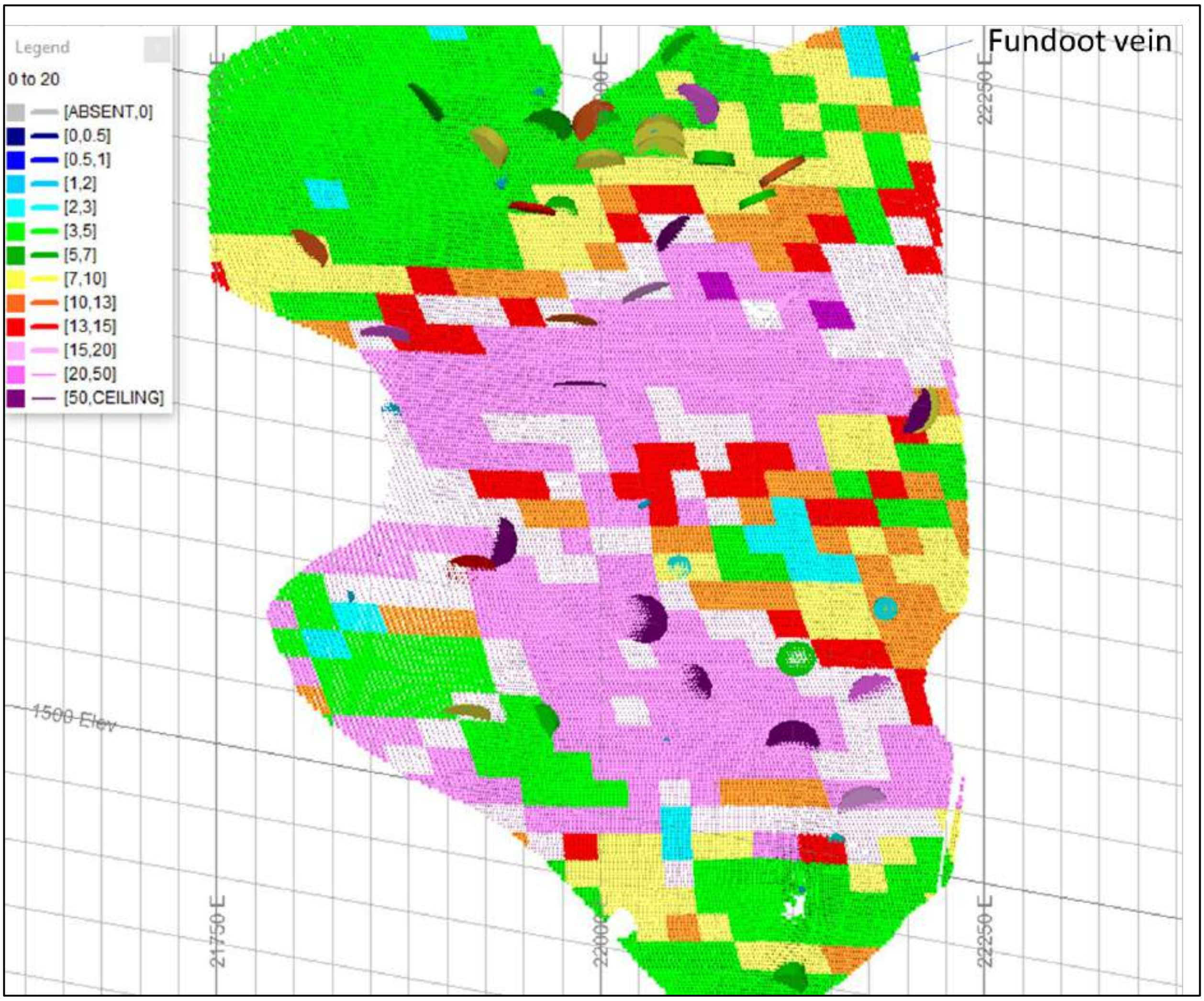


Figure 4.32 All domains gold northing swath plot

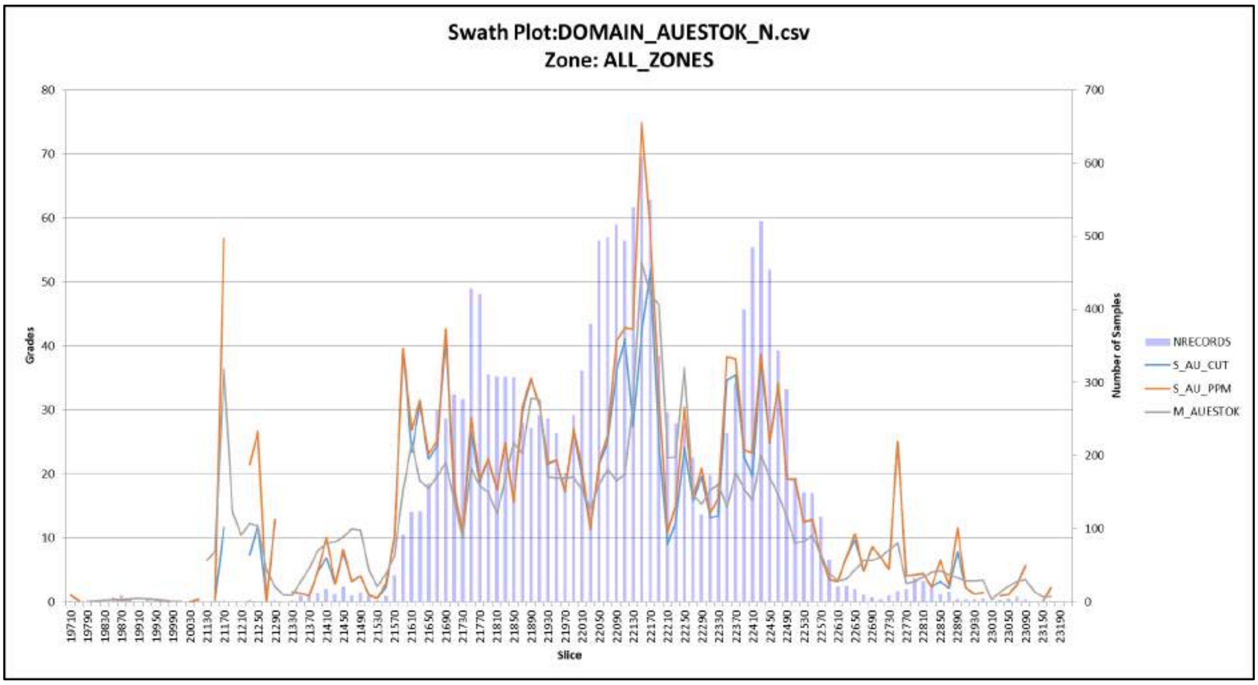


Figure 4.33 All domains gold easting swath plot

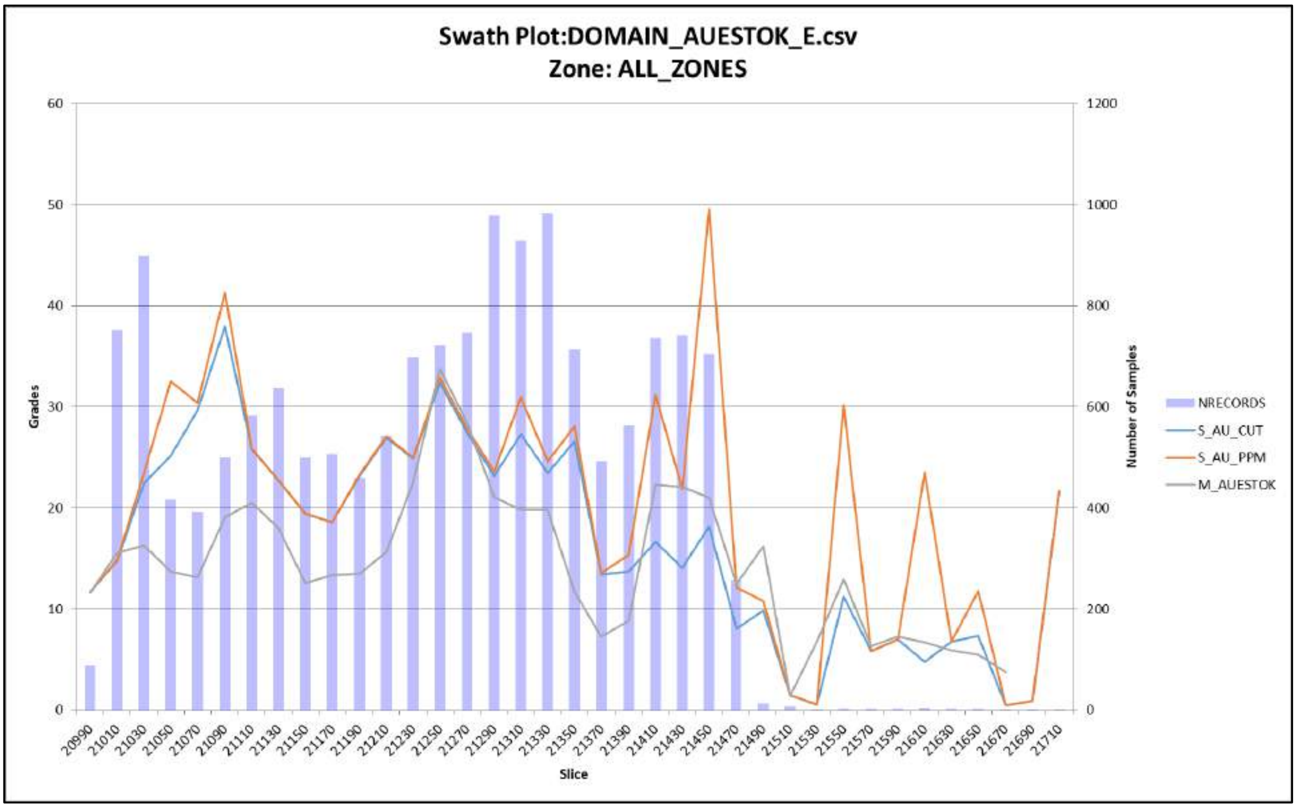
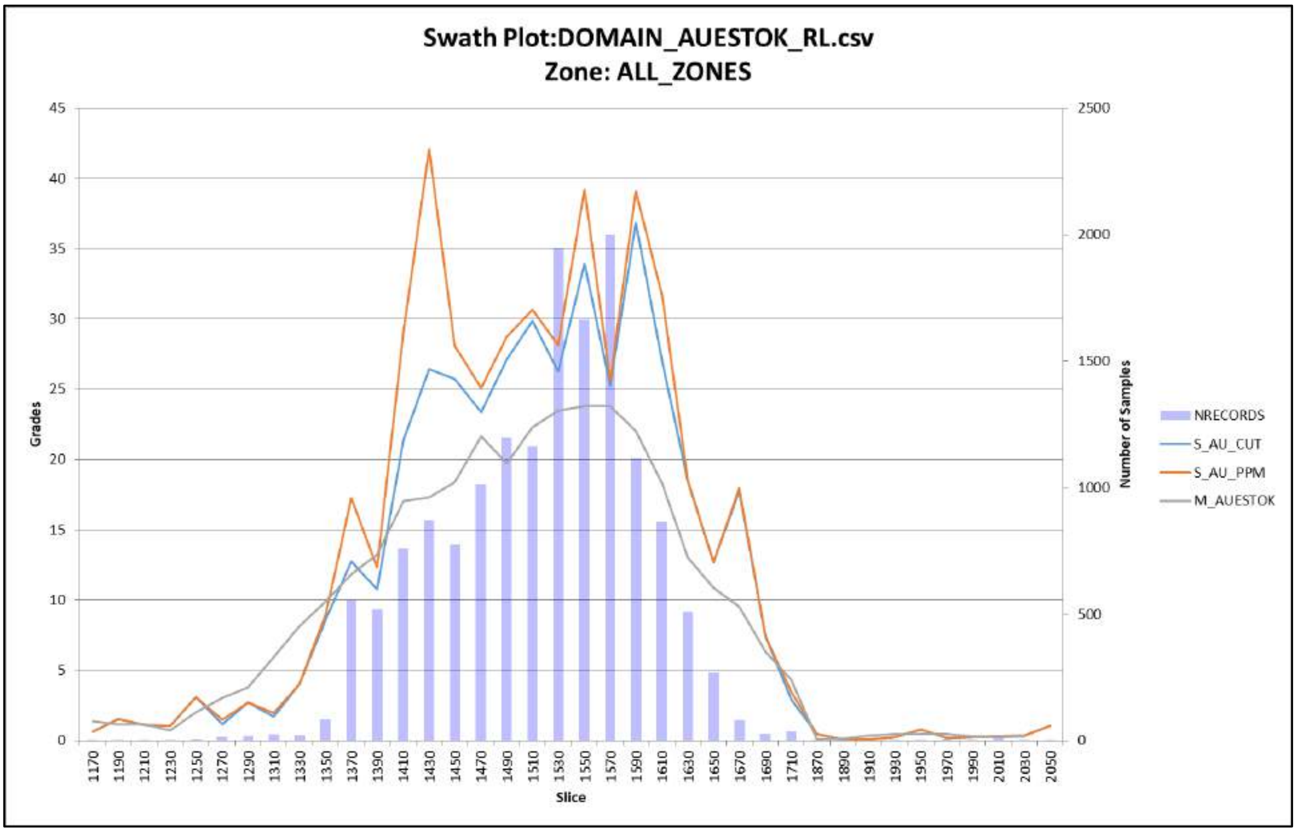


Figure 4.34 All domains gold RL swath plot



4.15 Mineral Resource classification

4.15.1 Classification

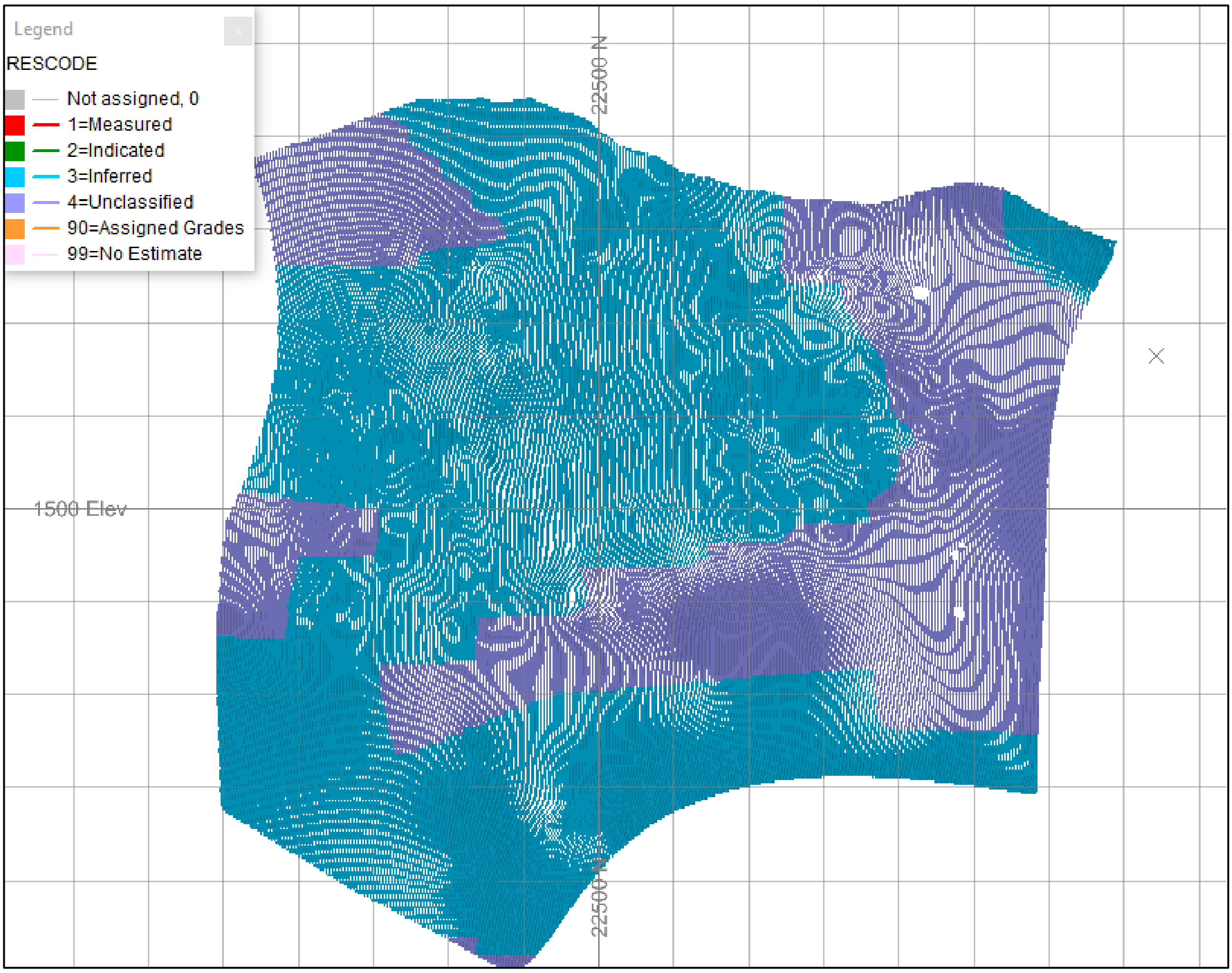
The Tolukuma Mineral Resource is classified Inferred in accordance with guidelines within the JORC Code 2012. Parameters considered included the data quality, distribution and orientation, confidence in interpreted geological continuity of the mineralised zones, and confidence in the resource block estimates.

In general, areas with a high drillhole density and low average distances (including face sampling) are depleted due to historical mining. In-situ material is all along strike or below the old workings and has a drillhole spacing of 30 m by 30 m or larger. As such, the resource has been assigned an Inferred classification.

Mineralised areas that are consistently less than approximately 0.8 m have been classified as "un-classified" and are not included in the reportable tonnages. Additionally, they are coded in the final model as "THIN" followed by the domain number e.g. THIN6 (Tinabar vein).

Depleted material was classified as Inferred and has a "mined" variable to exclude those tonnages from the reportable resource. Un-estimated blocks were not classified. An example is shown below in Figure 4.35.

Figure 4.35 Tinabar vein resource classification



4.16 Tolukuma Mineral Resources

4.16.1 Mineral Resource statement

The reported Inferred Mineral Resource of Tolukuma as of 18 August 2022 is 1.6 Mt at 10 g/t Au and 38 g/t Ag. This equates to contained metal of 500 Koz Au and 1.9 Moz of silver. Table 4.13 shows the breakdown of the Mineral Resource based on vein.

AMC also estimated antimony, copper, lead, zinc and mercury grades for each vein.

Table 4.13 Tolukuma Inferred Mineral Resource at a 3 g/t Au cut-off

Domain	Tonnage	Grade		Metal	
	(kt)	Gold (g/t Au)	Silver (g/t Ag)	Gold (Koz Au)	Silver (Koz Ag)
Zine	488	9	43	146	673
Zine PK Splay	7	35	145	8	33
Tolukuma	140	9	27	40	121
Tinabar	55	13	42	23	74
Gulbadi	343	10	27	114	294
Gulbadi Red	115	8	19	29	69
120 Vein	56	5	15	8	28
Fundoot	212	13	59	91	403
Gufinis	149	7	39	31	187
Mystery	45	9	46	13	67
Total	1,610	10	38	503	1,950

Notes: Totals may not add up due to rounding.

Other veins with historical production include Tolimi and Gulbadi X. These veins are considered to be depleted based on current information.

The JORC Table 1 for the Tolukuma MRE is included in Appendix F.

4.16.2 Cut-off grade

The cut-off grade for reporting of the Mineral Resource is based on a grade tonnage relationship, taking into account potential mining development costs and examples from similar mining operations. K92 Mining Inc. is currently quoting a 1.0 g/t cut-off for their Mineral Resource at Kora vein which has similar characteristics to Tolukuma (K92 Mining Inc. Reports Significant Resource Increase at High-Grade Kora Deposit | K92 Mining Inc.).

The cut-off grade utilised for the Tolukuma Mineral Resource statement is 3 g/t Au. This is taking into account the grade tonnage curve shown in Figure 4.36 and Table 4.14. The historical breakeven cut-off grades used for production varied largely due to changes in the PNG Kina to US Dollar exchange rates that strongly influenced the gold price in local terms. The operations were also hampered by a 25% overhead for helicopter support.

Figure 4.36 Tolukuma gold grade-tonnage curve

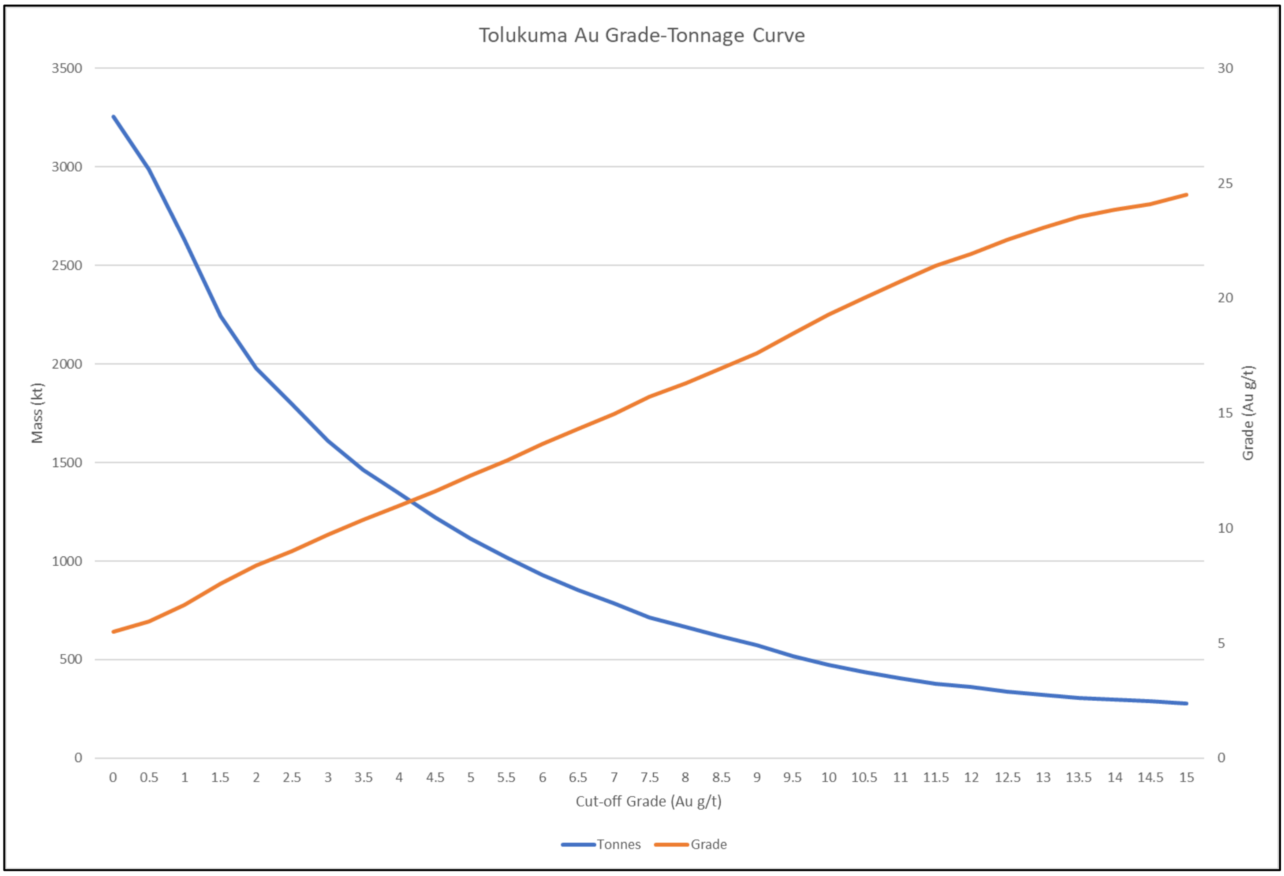


Table 4.14 Gold grade – tonnage tabulation

Cut-off Gold Grade (g/t Au)	Tonnage (kt)	Gold Grade (g/t Au)
0.0	3,254	5.49
0.5	2,986	5.95
1.0	2,629	6.65
1.5	2,241	7.59
2.0	1,977	8.37
2.5	1,798	8.99
3.0	1,610	9.72
3.5	1,464	10.37
4.0	1,342	10.97
4.5	1,223	11.62
5.0	1,113	12.30
5.5	1,018	12.96
6.0	929	13.65
6.5	852	14.32
7.0	786	14.95
7.5	715	15.73
8.0	667	16.29
8.5	617	16.95
9.0	572	17.60
9.5	518	18.46
10.0	474	19.28

Cut-off Gold Grade (g/t Au)	Tonnage (kt)	Gold Grade (g/t Au)
10.5	438	20.02
11.0	407	20.73
11.5	379	21.43
12.0	361	21.92
12.5	338	22.56
13.0	322	23.06
13.5	306	23.56
14.0	298	23.84
14.5	290	24.10
15.0	278	24.50

4.16.3 Density

A default density of 2.2 t/m^3 has been used by the mine for tonnage calculations and all previous estimates. AMC has not sighted or reviewed the supporting data for the density used. In 2007, Roger Cooper[5] reviewed 92 density measurements recorded for all veins combined and concluded that a universal density of 2.55 t/m^3 could be used to estimate the resource tonnage. This would imply that the density currently being used is conservative. If the density is conservative then, all other things being equal, the produced metal should be more than planned, however, this has not been the experience at Tolukuma. At this stage the basis of the density used is uncertain resulting in a residual uncertainty in the resource tonnage, and therefore the reported ounces. AMC recommends that samples are taken, and density measurements made to confirm the density values used for resource estimation.

4.16.4 Reconciliation of model with production

A reconciliation of mine to mill was estimated by Snowden (Snowden, 2013) for the period July 2011 to April 2013.

The data for Tolukuma mill production were summarized from the Mill Production spreadsheets supplied by TGM, and an estimate of tonnages and grade based on the differences between the July 2011 stope wireframes and the April 2013 stope wireframes. The areas were outlined, and the existing block model interrogated within the outlines. The production is summarized in Table 4.15.

Table 4.15 Tolukuma mill production statistics July 2011 to April 2013

Item	Value
Tonnes Milled	242,262 t
Av Reconciled head grade	6.05 g/t Au
Av Reconciled head grade	32.55 g/t Ag
Gold ounces	41,167 oz Au
Silver Ounces	92,294 oz Ag
Gold recovery	88%
Silver recovery	41%

Snowden calculated the tonnages and grade predicted by the block model based on a cookie cut of the stope shapes as shown in Table 4.16.

[5] Report on the Resources of the Tolukuma Gold Mine, Papua New Guinea, Bateleur Minerals, August 2007, Roger Cooper, internal report.

Table 4.16 Block model statistics for stoped areas: July 2011 to April 2013

Item	Values
Resource tonnes	51,573 t
Modelled grade gold	29.17 g/t Au
Modelled grade silver	61.43 g/t Ag
Modelled gold ounces	48,394 oz Au
Modelled silver ounces	101,853 oz Ag
Recoverable gold ounces	42,369 oz Au
Recoverable silver ounces	42,061 oz Ag
Back estimate Resource diluted head grade	6.23 g/t Au

Additional open pit and self-mining stope material was fed during the period. The records estimate all material movement from development stopes, self-mining areas and open pit sources.

The predicted gold ounces based on the mined Mineral Resource are within 3% of the Milled achieved ounces. This is an unusual outcome to be so close, a lot of factors have not been catered for in the 2013 year (e.g., feeding low grade stockpiles and self-mining stopes in the last couple of months).

The underground as-mined dilution was unrealistically large at 370% of resource tonnage. A review was recommended as surface stockpiles, open pit mining and self-mining stopes were also fed but not taken into account in the estimate of dilution.

An anomaly in silver grades to mill recovered silver was 219% higher than forecast in the block models. The diluted gold head grade was 21% of the resource estimate. Responses from TGM to this issue were that low grade gold, but high-grade silver were blended into the mill feed from Zine vein in order to blend out issues with high antimony grades.

4.17 Tolukuma Risk

4.17.1 Tolukuma Database

The Tolukuma database is a relatively low confidence dataset based on current standards that would not meet the current data quality reporting requirements if reporting on a Maiden Resource in a greenfield site. The risk is significantly mitigated by the presence of a mine that operated for 18 years and produced approximately 874,000 oz of gold.

The data quality suffers from the following areas of risk:

- Database maintenance
- Downhole survey imprecision due to wide spaced manual downhole surveys
- Lack of digital diamond core photography
- Comprehensive digital stope and pillar wireframes
- Full geological logging information

4.17.2 Tolukuma Mineral Resource

The interpretation methodology uses vein modelling in Leapfrog which at a global scale approaches reality, but at a local scale may vary from reality.

AMC has taken a conservative approach to depletions within the previously mined areas by excluding all metal within the boundaries of the outer limits of production drives, and in areas above the underground workings where many self-mining stopes are known to exist. However, AMC cannot rule out areas of mining that were not recorded outside of the depletion envelope.

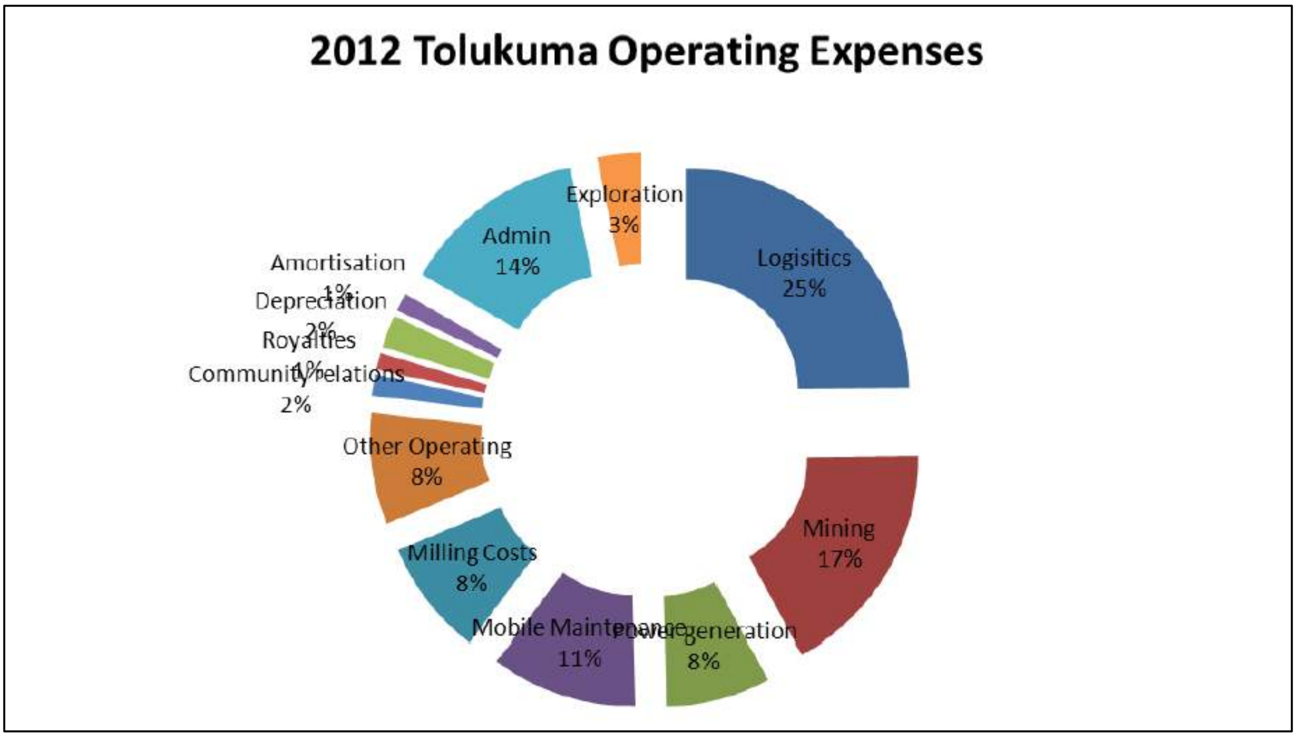
4.18 Tolukuma Reasonable Prospects

The aspects of reasonable prospects of eventual economic extraction (RPEEE) as per the reporting requirements of the JORC Code has been considered by AMC. The following sections describe the areas of key concern and proposed mitigation for any future development potential of the Tolukuma Mineral Resource.

4.18.1 Access

The profits and operations of previous mining at Tolukuma were heavily impacted by the necessity for helicopter support for all materials including fuel and personnel. Costs from helicopter support (logistics) in 2012 were 25% of total operating costs (Figure 4.37). This led in part to the economic failure of the mine to continue past 2013.

Figure 4.37 Tolukuma Mine operating expenses in 2012



Source: Snowden (2013)

AMC understands TML is planning to develop an access road between Bakoiudu Village and Tolukuma Mine (Figure 4.38). Previous operators Asidokona planned and partially completed this road in 2017. AMC has sighted documentation from the PNG Government Department of Works and Implementation from March 2022 where an agreement to develop the road under a public-private partnership between the Government and TML has been agreed to under the “Connect PNG Programme”. Based on this proposed development, AMC is able to accept that traditional road transport of goods and fuel would be possible, and therefore remove the major overhead the helicopter support would otherwise impose.

Figure 4.38 Planned road access route from Bakoiudu Village and Tolukuma

Source: TML

4.18.2 Water

The mine is currently filled with water to the level of the lowest portal at 1556 mRL. The lowest known development is at approximately 1336 mRL in the Zine vein. The mine has open access to rainfall in some areas due to old self mining stopes that developed through to surface. Dewatering from top down would be lengthy and require considerable time and effort. The contained water has not yet been tested for potential environmental risks.

TML has proposed to develop a twin incline access from the base of the range close to the Auga River north of the mine to facilitate dewatering of the mine. The conceptual incline needs to be approximately 1.3 km long to reach the lower parts of the Tolimi vein. AMC considers that a focussed drilling programme will be required to test the geotechnical conditions along the path of the incline prior to development.

4.18.3 Environmental, Social, Governance

Historically, the Tolukuma mine waste was used as rock backfill, dumped into old open pits, or dumped on the slopes to the north of the portal and workshops. Tailings were disposed of in the Auga River following processing through a cyanide recovery circuit (sulphidisation, acidification, recycling and thickening - SART).

AMC has sighted a letter from the Conservation and Environmental Protection Authority in PNG from the Managing Director – Gunther Joku dated 24 January 2022. The letter states "…I hereby confirm that it is my intention to transfer the environment permit EL-L3 (19) on registration of ML 104 to TML, subject to TML completing the requirements under the Environmental Act 2000 and Regulations including baseline environmental impact assessment report and other requirements within 6-12 months".

AMC understands that TML has engaged BMT Commercial Australia Pty Ltd an environmental consulting firm with relevant Tolukuma experience to undertake the requirements of the baseline study and permitting issues.

In terms of social licence to mine, TML is a PNG firm with strong links to national development and is led by local mining entrepreneur Howard Lole. AMC understands that all local communities have taken part in the legal processes associated with the granting of the transfer of licence. Approval was requested and given by local communities at the Warden meetings with unanimous support (Tenement summary notes update_211201.pdf).

4.19 Tolukuma recommendations

AMC recommends that TML undertake a full re-compilation of the Tolukuma drilling database starting by using hard copy records available in the mine office. Re-building and validating as much as possible the geological information for the key areas that have future potential.

Dewatering should commence as soon as practical to allow refurbishment of access decline through to the areas of the mine planned for development. Underground drilling should then commence as a matter of priority to in-fill drill those areas of highest potential development to increase the grade and thickness confidence.

Testing by drilling and other methods such as geophysical methods should be used to examine the likely conditions to be met in the dewatering drive incline to affirm possible zones of poor ground that should be avoided.

Regional exploration is a key to future mine expansion and should have a segregated budget to drive exploration efforts in surround prospects and regional exploration licences.

5 Mt Penck Project

5.1 Geology

5.1.1 Regional Geology

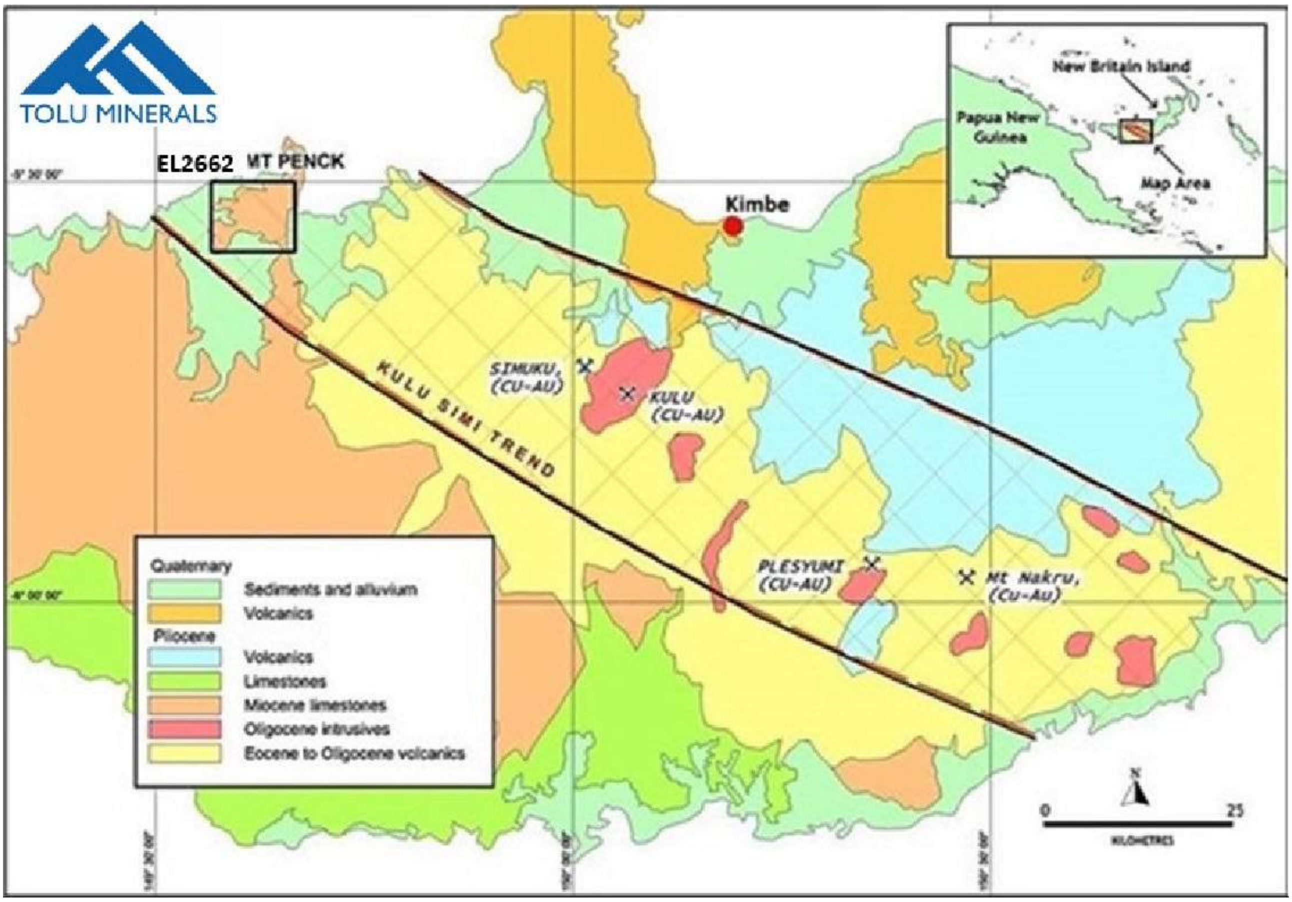
Systematic regional mapping of New Britain was undertaken by the Australian Bureau of Mineral Resources in the late 1960s. The regional geology of the Mt Penck area is shown on the 1:250,000 scale Geological Series, Cape Raoult / Arawe (SB/55-8 & SB/55-12).

New Britain Island is underlain by a Lower Tertiary basement of island arc volcanics and volcanogenic sediments, Baining Volcanics (upper Eocene) and Kapuluk Volcanics (upper Oligocene), and a series of unnamed intrusives of mainly Oligocene age. Widespread massive limestones were deposited over the basement in the Miocene, followed by intrusion of acid to intermediate volcanics and high level intrusives of Plio-Pleistocene age. In the Mt Penck area, the older basement volcanics are locally overlain by the Yalam Limestone (Miocene), which is exposed near the base of the Mt Penck volcanic edifice. These units are in turn overlain by the Mt Penck volcanics (Plio-Pleistocene). Figure 5.1 shows the regional geology of central New Britain.

Mt Penck is located at the north-western end of a major northwest trending structural corridor (the Kulu-Simi Corridor), an extensional zone that localised the emplacement of Oligocene-age intrusions and the deposition of Eocene-Oligocene volcanics. The corridor transects the island and hosts the Simuku porphyry copper-molybdenum-gold project and the Mt Nakru copper-gold breccia / volcanic hosted massive sulphide (VHMS) deposit (Figure 5.1).

Simuku, located 55 km southeast of Mount Penck, has an Inferred Mineral Resource of 200 Mt at 0.36 % Cu, 61 ppm Mo and 0.06 g/t Au, demonstrating the potential for the Kulu-Simi corridor to host significantly mineralized systems (Exploration Alliance, 2010).

Figure 5.1 Structural setting and regional geology of central New Britain



Source: Adapted from Swiridiuk (2009). Projection Latitude / Longitude.

5.1.2 Property Geology

5.1.2.1 Lithology

The volcanic sequence at Mt Penck consists of andesitic to dacitic lavas and pyroclastics, volcanic breccias, diatreme breccias and andesitic dykes, intruded by andesitic to dacitic porphyry intrusions. There are some discrepancies in reports by different workers in classifying certain rock types as either lavas or high level intrusives, a common problem in sub-volcanic / volcanic environments. In some instances, rocks initially mapped as porphyritic lavas were later re-interpreted as intrusive porphyries.

The lavas are generally massive to blocky, porphyritic with hornblende, feldspar, and minor quartz phenocrysts, and locally jointed, fractured and brecciated where intersected by structures. Pyroclastic / epiclastic rocks including coarse volcanic breccias and lava breccias were mapped at Kavola. Bedding in the volcanic sequence has a consistent SW-NE strike (220-240°) and dips NW at 35-50° west of Kavola, steepening to 60-70° towards the central Kavola zone (Malagun, 2005).

Diatreme breccia was mapped at Kavola and was described as comprising sub-rounded to rounded polymictic clasts in a matrix of milled rock. The clasts range in size and comprise propylitic and argillic altered porphyritic lava, volcanic breccia, and mineralised quartz fragments. Disseminated pyrite and rare chalcopyrite occur in the matrix.

The lithologies that dominantly host the alteration and mineralisation are porphyritic lavas, volcanic breccias, diatreme breccia and porphyry intrusives. Hornblende andesite porphyries or lavas are the most competent rock types and strongly magnetic hornblende porphyry intrusives have been intersected in drilling. Medium to fine dacite porphyry intrusives have been described at Kavola, Koibua and Peni Creek. Angular matrix-supported heterolithic volcanic breccias crop out in several places (Malagun, 2005; Bucher, 2008).

5.1.2.2 Alteration

Three main styles of alteration have been noted, propylitic, argillic, and phyllic, with local development of silica alteration. Weak to strong propylitic alteration is widespread, dominantly within the hornblende porphyry unit, and is overprinted locally by argillic (illite / smectite + kaolinite +/- silica) alteration, associated with silica veining and silicification. A central zone of strong phyllic alteration forms the core of the system and argillic alteration is strongly developed at all the main gold prospects. Advanced argillic alteration has also been mapped. Away from the main central Kavola zone, argillic alteration is confined to linear zones controlled mainly by NE-trending structures.

Propylitic alteration rarely carries more than 0.20 g/t gold whereas argillic-phyllic alteration zones typically carry higher values of gold (>0.20 g/t Au) and arsenic and host the gold-bearing quartz veins. In addition, the gold mineralisation is a controlled by structures that focus the gold-bearing fluids within the broader alteration zone (Jensen et. al, 1996).

The known gold prospects are located peripheral to the central zone of intense phyllic alteration which is coincident with a clearly defined magnetic-low / potassium-high geophysical anomaly with dimensions of 600 m by 300 m (Swiridiuk, 2004; Lindley, 2005). The central alteration zone may overlie a high-level intrusive plug that was the main heat engine and fluid source of the mineralization.

5.2 Structure

The structure is complex with several phases of faulting. Through going north-west trending, possibly deep-seated, structures paralleling the Kulu-Simi trend transect the system, locally cut by east-west possibly compressional fractures. North-south structures are also present. A prominent north north-easterly trending high-angle extensional fault (Lumni Fault) divides the project area into two distinct blocks, a western block dominated by deeper-level phyllic (porphyry-style) alteration, and an eastern block characterised by higher-level epithermal stockworking and brittle fracturing (Swiridiuk, 2009). The Lumni Fault may represent a deep-seated, fundamental crustal fracture upon which prospect-scale, mineral-controlling structures are superimposed. At Kavola, the mineralisation is controlled by NE-trending dilational structures.

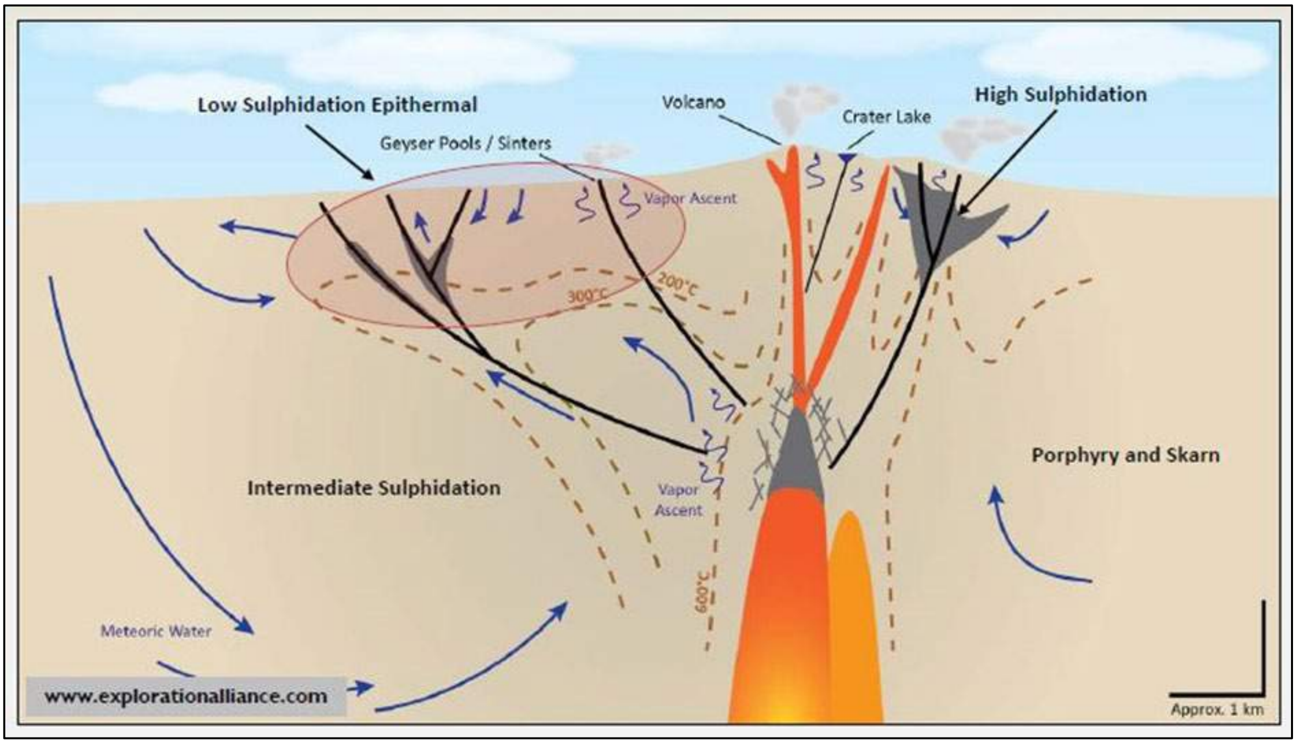
This structural complexity is reflected in the five main structural sets that were mapped by geologists onsite (Malagun, 2005; Bucher, 2008). The NE-SW trending set of structures are believed to be dilational and the main structural trend controlling the mineralisation.

5.3 Mineral deposit types

The gold mineralisation at Mt Penck has characteristics of both intermediate sulphidation and high sulphidation epithermal deposits. Epithermal deposits represent the uppermost parts of intrusion-related hydrothermal systems, generally forming within 500 metres of surface as shown in the generalized model provided in Figure 5.2. Mt Penck is classified as a dominantly high sulphidation style deposit located above an intrusive source at depth. However, the mineral assemblage, alteration style, strong structural control, sulphide mineral assemblage and spatial association with the volcanic centre of Mt Penck, suggest Mt Penck is dominantly a high sulphidation (or acid-sulphate) style deposit (Exploration Alliance, 2010).

Epithermal deposits are classified as high, low or intermediate sulphidation based on their mineral assemblage and the Ph / Eh of the mineralising fluids (Exploration Alliance, 2013). They may overlie or be spatially related to deeper porphyry systems as shown in Figure 5.2. Metals are deposited at temperatures below 250°C through processes of fluid boiling, fluid mixing and vapour release. Where these systems break through to the surface, they form geysers, sinter terraces, and thermal mud pools. Modern day examples include Yellowstone National Park in the USA and Rotorua in New Zealand.

Figure 5.2 Idealized model of a porphyry-epithermal system



(From Wilson & Tunningley, 2013.)

High sulphidation systems are characterised by (Exploration Alliance, 2010):

- Zoned alteration comprising a core of vuggy silica which passes outwards through quartz-alunite (advanced argillic) to illite-kaolinite (argillic).
- The highest gold grades are associated with vuggy silica and quartz-alunite zones which may be localised, discontinuous and poddy.
- An extensive halo of disseminated low grade gold usually surrounds the high-grade silica and quartz-alunite zones.
- Feeder zones and vuggy silica zones can be very high grade, and it is common for the majority of the contained gold to be hosted in a relatively small percentage of the total resource tonnage.

Mt Penck shares similarities with the acid-sulphate deposits at Goldfield, Nevada, Red Mountain, Nevada, Summitville, Colorado and Cerro Rico, Bolivia. These deposits typically have pipe-like and lenticular brecciated veins with a leached vuggy quartz-kaolinite cores, zoning outwards into argillic and finally into barren propylitic alteration. The gold mineralization is strongly structurally controlled.

Because of the large, irregular low grade gold envelope and alteration halo, and the irregular and discontinuous nature of the narrow higher-grade zones, exploration of high sulphidation systems usually require sustained drilling. The presence of significantly mineralised porphyry systems (e.g. Simuku) within the Kulu-Simi structural corridor indicates that Mt Penck may be also be prospective for porphyry style mineralization (Exploration Alliance, 2010).

The alteration and gold mineralisation at Mt Penck are controlled by structure and lithology. Two principal styles of mineralisation have been delineated; (i) broad near surface zones (10 m to plus 50 m wide) of lower grade (1.0-3.0 g/t Au) generally within the upper 50 m, and (ii) narrow zones (0.5-3.0 m wide) of much higher grade, plus 10.0 g/t Au, often intersected at deeper levels by drilling. The broad, lower grade zones preferentially occur in favourable horizons in the volcanic sequence and the narrow higher-grade zones are interpreted to be the feeder structures that channelled the mineralising fluids. The mineralisation is commonly associated with quartz or quartz-limonite veins, stockwork, mineralised breccias, faults and fractures within zones of intense argillic alteration-phyllic and brecciation.

The main host rocks are the impermeable porphyry and lava units which display brittle fracturing, crackle brecciation and quartz-limonite veins / stockwork where they have been intersected by throughgoing structures. By contrast the porous pyroclastic / epiclastic units have weak development of brittle fracturing and are characterised by pervasive argillic alteration due to dispersion of the mineralizing fluids (Jensen et.al, 1996). Gold values are typically highest in the porphyritic andesite lava horizons associated with quartz-carbonate-hematite stockwork and lower in the "heterolithic epiclastic units" (Caira, 2013). The structural feeder zones are considered prospective at depth, possibly with bonanza grades, due to focussing of the mineralising fluids within the narrower conduits.

Five main mineralised zones have been identified, Kavola East, Kavola, Koibua, Peni Creek and Peni Creek South. This report focusses mainly on the Kavola prospects where the majority of historical exploration work has been focussed. The following summary of the Kavola mineralisation is based mainly on Exploration Alliance (2010) and Caira (2013).

The mineralisation occurs in veins, stockworks and breccias spatially related to zones of intense argillic (or advanced argillic) alteration. The highest gold values are related to intense argillic alteration, silicification and various breccias as well as quartz-carbonate-sulphide stockwork in or near lithological contacts between quartz andesite / dacite porphyry, diorite, and hornblende andesite lithologies. A possible diatreme breccia pipe has been described. Drilling has defined a well-developed gold oxide enrichment blanket within the upper 30 meters. Gold values increase and the silver to gold ratios decrease at higher elevations.

The sulphide mineral assemblage includes pyrite, galena, sphalerite, tetrahedrite and chalcopyrite in a gangue of quartz-carbonate-(anhydrite-gypsum). Covellite and enargite have also been recognized. A close association between hematite and gold mineralisation including (i) fine veinlets and stockwork of hematitic quartz, (ii) veinlets of hematite overprinting pervasive argillic alteration, and (iii) wide intervals of low-grade mineralisation (<1.0 g/t Au) associated with pervasive hematite staining/alteration (Lindley, 2005).

The highest gold values occur in mineralised shoots, identified as possible feeder zones. The mineralised shoots have a strong association with vuggy silica occurring as irregular pipes and elongate lenticular pods and veins, composed primarily of quartz and pyrite, enclosed by alteration zones grading outward from quartz-(alunite) to quartz-kaolinite-montmorillonite to distal propylitic alteration.

Fine disseminated pyrite is ubiquitous and covellite and enargite have been recognized within the vuggy quartz-(alunite)-kaolin alteration zones. Distinct quartz-pyrite-arsenopyrite veins with epithermal textures locally increase the gold grades.

Mineralised shoots at Kavola, identified as zones in drill core with anomalous gold assay results, have the following characteristics:

- Associated with breccias, crackle breccias and shearing.
- Enveloped by a strongly bleached, acid-leached, kaolin-rich phyllic-argillic alteration zone.
- Centre of mineralised shoot typically has high quartz (quartz veins, veinlets or silica alteration) with open vugs and vuggy cores of quartz veins lined with drusy quartz and euhedral sulphides.
- High gold to silver ratios.
- Gold-rich sections in ore shoots are generally 2 m to 3 m wide.
- Sulphide assemblage of pyrite>arsenopyrite>sphalerite>galena>enargite.

5.4 Sampling methods and sample quality

5.4.1 Sampling and assay methodology

Since its discovery in 1985, Mt Penck has been explored by several different companies using different methodologies and a variety of techniques, some more effective than others. The historical sampling and assaying methodologies used in past programs are in most reports not well described. The following summary of historical procedures are based on brief descriptions provided by Hall (2004, 2006), Bucher (2008) and Swiridiuk (2009).

5.4.1.1 BHP-UTAH procedures

BHP-UTAH collected rock channel samples from hand dug and bulldozer trenches and exposed outcrop in drainage systems. Sample intervals ranged from 1.0 m to 8.0 m, with 4.0 m the most common interval for chip-channel samples. Usually, a sample in excess of 3 kg of broken rock was collected and sent to Pilbara Laboratories in Lae for fire assay gold and hydride generation arsenic analysis.

A total of 230 soil samples were collected in 1988 along ridges and spurs within the Kavola River catchments using a 25 m sample spacing. The sample depth was not described but BHP recommended future "C" horizon auger soil sampling to help further delineate the auriferous zones at surface. The soil samples were also analysed for gold and arsenic.

5.4.1.2 Indo Pacific procedures

Indo Pacific Mining (PNG) Pty Ltd collected channel samples at 5 m intervals which were analysed for gold and arsenic. Grid soil sampling was completed in the Koibua and Kavola East areas. Samples were collected at 25 m spacing from the base of the humic layer and assayed for gold and arsenic.

Indo Pacific collected 706 PQ and HQ core size samples from DD drillholes DDH001 to DDH007. The cores were sampled selectively: 1.0 m samples were taken in argillic altered or silicified zones and elsewhere 2.0 m intervals were sampled. All DD cores were logged and photographed on site and split in half by diamond saw. Half of the recovered DD core was sent to Analabs for assay and the other half was stored at the core shed on site. Analytic techniques used were 50 g fire assay for Au and AAS for Cu, Pb, Zn, Ag and As.

5.4.1.3 Kanon Resources procedures

Trench sampling: After first clearing vegetation and overburden, trenches were chip-channel sampled over 1.0 m, 2.0 m, 3.0 m or 5.0 m widths depending on the type of alteration or structure. Surface weathering was avoided if possible. An equal amount of rock (continuous sampling) was collected throughout the whole channel length resulting in a sample of 1.5 kg to 2 kg weight, with some exceptions (Bucher, 2008).

<u>Panned concentrate sampling</u>: In 2007, panned concentrate sampling of Peni Creek trenches was undertaken. "All panned out samples came from the same costean channel as the correspondent costean channel samples sent to the laboratory. After the first panned dish was done, if any visible gold was found it was noted and the next sample was panned. If on the first panned dish no gold was found, a second dish was panned to confirm the first results. Very often dust was confirmed on the 2nd panned out dish" (Bucher, 2008). Larger channel samples of 7 kg to 10 kg were collected from some zones as a precaution if coarse spotty gold was present.

<u>DD core sampling</u>: DD core samples were collected from half cut DD core generally at 1.0 m intervals although wider zones were selected based on geology.

<u>Soil sampling</u>: During the 2006 grid soil survey, samples were collected at 25 m spacing from the B-horizon at depths of 0.4 m to 1.3 m using a hand auger.

All Kanon rock, soil and core samples were shipped either to ALS Chemex in Brisbane, Australia, or to the Intertek laboratory in Lae, PNG for analysis. At ALS Chemex, gold analysis was carried out by atomic absorption spectroscopy (AAS) following an initial aqua regia digestion. After heating for 2 hours at 220°C to satisfy quarantine requirements, the samples were pulverized to >85% passing 75 microns. A 25 g split was weighed for analysis by aqua regia digest followed by solvent extraction and final reading by AAS. This method (Au-AA41) has a detection range of 0.01-100 ppm Au. ICP-AES (inductively coupled plasma atomic emission spectrometry) followed by aqua regia digestion was also used for some samples (probably for base metals and other elements).

At Intertek in Lae, samples were dried, crushed (jaw crusher), split and pulverized. Gold analysis was by 50 g fire assay with AAS finish. Another method used was ICP-OES (inductively coupled plasma optical emission spectrometry) following aqua regia digest (for base metals and other elements).

5.5 Data verification

5.5.1 Data sources

As the most recent work carried out on the property was in 2011, this report relies entirely on the use of historical data as described in Section 3.3. Because of the 10-year time interval between cessation of work and preparation of this report, it is not possible to validate any of the historical data for the property. However, the writer has undertaken a review of the available historical data and has no reason to doubt the reliability or accuracy of the data provided and reviewed.

The JORC Table 1 for all Mt Penck exploration is included in Appendix G.

In 2003-2004, Kanon carried out check assaying of trench samples with high gold values from the initial aqua regia / AAS analysis at ALS laboratory in Brisbane (Hall, 2004). For the original assays a 25 g aliquot was analysed by aqua regia digest followed by solvent extraction and AAS reading (AU-AA41). The samples were check assayed by 50 g fire assay. A comparison of the results is provided in Table 5.1.

Table 5.1 Comparison of check assays from aqua regia digest and fire assay

Trench No	Sample No	Au (ppm) AR/AAS	Au (ppm) FA/AAS	Sample Interval (m)	Trench No	Sample No	Au (ppm) AR/AAS	Au (ppm) FA/AAS	Sample Interval (m)
1	MPT33	1.07	1.20	3	4	MPT99	2.20	2.59	2
1	MPT32	1.57	1.47	3	4	MPT100	4.50	4.32	2
1	MPT31	0.47	0.51	3	4	MPT101	3.07	3.37	2
1	MPT30	4.16	3.96	3	4	MPT102	9.22	10.40	2
1	MPTTR1	6.31	5.83	2					
1	MPTTR2	9.20	9.47	2	5	MPT187	7.47	7.28	1
1	MPTTR3	3.71	3.24	2	5	MPT188	5.19	5.34	1
1	MPTTR4	7.47	6.47	2	5	MPT189	7.24	7.44	1
1	MPTTR5	8.86	8.20	2	5	MPT190	5.63	5.48	1
1	MPTTR6	13.00	12.50	2					
1	MPTTR7	1.55	1.37	2	11	MPT281	2.17	2.17	4
1	MPTTR8	56.00	54.30	2	11	MPT282	3.29	3.46	4
1	MPTTR9	4.69	3.94	2	11	MPT283	9.36	9.05	4
					11	MPT284	0.89	0.89	4
4	MPT129	39.00	36.70	2					
4	MPT128	0.49	0.54	2	11	MPT292	2.34	2.28	4
4	MPT127	0.56	0.60	2	11	MPT293	15.00	19.00	4

4	MPT126	0.62	0.56	2	11	MPT294	1.97	1.81	4
4	MPT125	0.97	0.93	2					
4	MPT124	16.30	17.40	2					
4	MPT123	6.24	6.25	2					

Source: Hall, 2004.

The two sets of assays correlate well. Kanon concluded that the gold is neither coarsely particulate nor contained in quartz and that aqua regia digestion of a 30 g sample provided reliable assay results.

5.5.2 Grid coordinate system

The primary grid used for regional geophysical and exploration data is based on Australian Geodetic Datum 1966 (AGD66) and uses Transverse Mercator Australian Map Grid Zone 55 (TMAMG55) projections.

5.5.3 Drilling data

A total of 115 historical drillholes, comprising 82 DD drillholes totalling 11,038.6 m and 33 RAC drillholes totalling 1,140 m, have been completed between 1968 and 2011, as summarised in Table 3.4.

5.5.3.1 Collar locations

Collar locations are based on information provided in historic reports. No independent validation of collar locations has been conducted by the Authors. All Mt Penck collar location data is included in Appendix 1.

5.5.3.2 Downhole survey

Downhole survey data are based on information provided in historic reports. No independent validation of downhole survey data has been conducted by the Authors.

5.5.3.3 Sampling

Sampling as reported is included in Section 5.4. No independent validation of results other than that previously reported has been conducted.

5.5.3.4 Density

No information on DD core density measurement is available.

5.5.3.5 Topography

No digital topography is currently in use.

5.5.3.6 Data exclusions

No data has been excluded from exploration reporting.

6 Exploration Budgets

Exploration Program and Budget

The Tolukuma tenement package has current annual rents of PGK 19,499 (AUD 7,991) and minimum expenditures of PGK 3,000,000 (AUD 1,229,508). The Mt Penck tenement package has current annual rents of PGK 5,400 (AUD 2,213) and minimum expenditures of PGK 100,000 (AUD 40,984).

The exploration planned for the Mining Lease includes re-establishing access to areas of the historic mine that will allow for diamond drilling and sampling. This includes re-establishing road, power, ventilation and dewatering systems to allow underground access. The drilling will target the areas of highest grade and thickness in the known veins to improve resource confidence. 200 metres of underground development accessing and extending the Milihamba Drive is planned to access drill platforms to test vein extensions.

Regional exploration expenditure on the Tolukuma and Mt Penck tenements is planned to include geophysical surveys, access (roads and helicopter), mapping, sampling, and trenching to develop prioritised targets. The planned use of funds is summarised in Table 6.1.

Table 6.1 Planned use of funds raised for minimum and maximum capital raise

Uses of Funds	$15M Minimum Capital Raise (AUD)	$20M Maximum Capital Raise (AUD)
Pilot Access Road	1,800	1,800
General Mobilisation	1,130	1,553
Site Roads	216	216
Hydroelectric Refurbishment	0	212
Electrical Refurbishment	1,374	2,082
Underground Access	1,380	1,380
Underground Works	283	283
Bulk Sampling Gravity Circuit	0	1,347
Milihamba Exploration Drive and Diamond Drilling	1,131	1,630
Mineral Resource Development	737	737
Resource Conversion	52	52
Tolukuma Regional Exploration	738	738
Mt Penck Exploration	98	98
TMF Studies	107	107
Off Site	540	540
Acquisition of Frontier	500	500
Consultants	450	900
Working Capital	2,561	3,622
Cost of the Offer	1,500	1,800
Cost of Legal Services	403	403
Total	**15,000**	**20,000**

AMC considers that the Company has a reasonable proposed exploration budget over eighteen months consistent with its stated objectives and that this program is warranted and justified on the basis of the historical exploration activity and demonstrated potential for discovery of mineralisation.

7 Conclusions and recommendations

The Tolukuma property has a long history of production. A lack of modern exploration methods and adequate exploration budgets were the main reason the mine failed to continue to operate. There are significant known resources, that with limited additional drilling could deliver improved confidence resulting in classification upgrades. The regional Tolukuma tenure has a large number of drill ready targets for assessment and development in prospective geological units.

Mt Penck has an extensive history of previous exploration carried out between 1968 and 2011. Extensive programs of mapping, rock and soil sampling, hand trenching, bulldozer costeaning, geophysical surveying and drilling were completed. The historical exploration results justify further drilling and trenching at all three defined prospects. In addition, geophysical and geochemical anomalies exist outside the area of detailed historical work which require follow up.

AMC recommends that a structured plan to access the historical mine workings to allow drilling to commence in the Fundoot and other areas where safe access can be obtained would provide the highest likelihood of developing future options.

AMC recommends that the highest priority Tolukuma regional targets as well as near mine targets are assessed by a dedicated regional geological team. The Saki Mineral Resource requires infill drilling to upgrade confidence before conducting a Scoping Study. Serious consideration of using modern geophysical methods such as magnetotellurics and induced polarisation could aid in mapping potential mineralisation and aid in geological modelling.

Mt Penck has an expenditure plan to cover first pass exploration and minimum requirements to maintain lease currency. Further, on-going exploration should be weighed up against all TML prospect potentials.

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Frontier 2021i: Activities Report to ASX for Quarter Ending 30 June 2021 (Kimono), 29 July 2021.

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Frontier 2021p: ASX release dated 1 December 2021 (Taula).

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Frontier 2022b: Activities Report to ASX for Quarter Ending 31 December 2021, 28 January 2022.

Appendix A
Tolukuma Drillhole Location Data

Table A1 Tolukuma Drillhole Location Data

Drillhole Name	East (m)	North (m)	RL (m)	Total Depth (m)	Azimuth	Dip
120_2	21269.50	22978.00	1502.50	79.0	215.0	-45.00
120_3	21317.00	22860.00	1540.00	42.5	239.0	-55.00
120_4	21317.00	22860.00	1540.00	60.0	241.0	-80.00
120_5	21381.56	22608.57	1709.14	93.1	44.5	-35.00
120_6	21381.00	22608.00	1709.10	141.2	48.0	-50.00
120_7	21353.50	22581.37	1681.52	145.6	43.5	-42.00
120_8	21353.50	22581.40	1681.50	214.8	43.5	-55.00
120ZN001	21242.40	23106.80	1474.40	115.0	240.0	-55.00
120ZN002	21242.40	23106.80	1474.40	160.0	240.0	-64.00
120ZN003	21242.40	23106.80	1474.40	118.5	255.0	-50.00
120ZN004	21242.40	23106.80	1474.40	116.0	222.0	-53.00
120ZN005	21242.40	23106.80	1474.40	149.1	222.0	-66.00
120ZN006	21242.40	23106.80	1474.40	148.5	255.0	-66.00
120ZN009	21123.60	23283.90	1358.30	158.3	270.0	-45.00
120ZN012	21212.00	23069.00	1469.00	96.7	238.0	-55.00
120ZN013	21212.00	23069.00	1469.00	68.5	192.0	-55.00
120ZN014	21212.00	23069.00	1469.00	93.6	280.0	-60.00
120ZN015	21189.00	23192.00	1416.00	157.8	238.0	-65.00
120ZN016	21189.00	23192.00	1416.00	135.1	209.0	-70.00
120ZN017	21352.92	22996.15	1548.00	319.4	215.0	-40.00
120ZN018	21352.92	22996.15	1548.00	259.7	215.0	-50.00
120ZN019	21352.92	22996.15	1548.00	293.1	215.0	-60.00
120ZN020B	21352.92	22996.15	1548.00	244.6	234.5	-45.52
120ZN021	21352.92	22996.15	1548.00	220.7	235.0	-55.00
120ZN022	21353.64	22996.92	1548.15	341.6	235.0	-65.00
120ZN023	21355.10	22996.61	1548.53	341.1	235.8	-74.15
120ZN024	21383.46	22920.73	1555.12	190.1	201.0	-45.00
120ZN025	21383.46	22920.73	1555.12	302.0	201.0	-60.00
120ZN026	21383.46	22920.73	1555.12	341.2	201.0	-75.00
120ZN027	21383.46	22920.73	1555.12	256.6	225.4	-49.26
120ZN028	21383.46	22920.73	1555.10	207.6	227.0	-65.00
120ZN029	21383.46	22920.73	1555.12	332.0	227.0	-75.00
120ZN030	21426.25	22679.39	1670.21	101.6	201.5	-35.09
120ZN031	21425.49	22677.84	1669.59	142.9	204.0	-59.00
120ZN032	21426.05	22679.69	1670.53	78.5	230.0	-44.77
120ZN033	21426.85	22680.26	1670.51	180.6	230.0	-64.00
21640_1	21313.94	21642.96	1670.90	200.1	82.3	-50.50
21730_1	21271.90	21727.40	1647.40	148.8	80.3	-48.00
21800_1	21233.24	21806.17	1630.40	163.2	80.3	-61.00
21800_2	21151.50	21792.50	1600.00	311.0	80.0	-54.50

Drillhole Name	East (m)	North (m)	RL (m)	Total Depth (m)	Azimuth	Dip
22000_1	21181.96	21963.91	1595.40	128.9	70.3	-60.00
22000_3	21142.90	21950.58	1566.15	180.0	70.3	-64.00
22260_1	21076.00	22269.50	1656.50	119.9	207.0	-45.00
22260_2	20997.35	22180.55	1589.40	166.1	67.3	-61.00
22260_3	21075.00	22269.50	1656.50	141.7	206.0	-55.00
22260_4	21075.00	22268.50	1656.50	139.3	206.0	-65.00
22340_1	21000.90	22289.50	1628.30	156.0	50.0	-55.00
22340_3	21018.30	22300.30	1630.30	50.7	48.0	-45.00
22340_4	21071.50	22347.00	1657.10	175.0	228.0	-72.50
22340_5	21071.50	22347.00	1657.10	156.1	210.0	-62.50
22350_1	21047.70	22349.00	1656.30	52.0	270.0	-61.00
22350_2	21081.50	22349.40	1657.20	126.1	270.0	-60.00
22350_3	21081.50	22349.40	1657.20	165.4	275.0	-71.00
22375_1	21047.00	22384.00	1670.00	58.1	270.0	-45.00
22375_2	21047.00	22384.00	1670.00	83.5	270.0	-65.00
22400_1	21052.74	22405.39	1693.22	120.0	270.0	-45.00
22400_5	21167.00	22406.80	1715.50	326.0	270.0	-60.00
22400_6	21074.90	22402.10	1689.80	159.4	270.0	-70.00
22400_7	21074.90	22402.10	1689.80	115.7	270.0	-50.00
22400_9	21019.00	22400.00	1690.00	34.9	255.0	-65.00
22425_1	21079.70	22447.40	1724.90	164.6	250.0	-55.00
22425_2	21079.70	22447.40	1724.90	126.5	250.0	-45.00
22425_4	21019.00	22423.00	1689.00	37.4	255.0	-65.00
22450_1	21076.70	22450.80	1725.00	141.9	270.0	-52.00
22450_2	21078.60	22449.20	1724.80	163.9	270.0	-60.00
22450_3	21078.60	22449.20	1724.80	198.0	270.0	-67.50
22475_3	21033.00	22474.00	1745.50	142.0	270.0	-70.00
22500_2	20930.30	22515.80	1733.10	159.9	101.5	-55.00
22500_4	21199.10	22500.80	1662.00	353.0	270.0	-58.00
22500_5	20941.70	22512.30	1735.10	114.2	95.0	-45.00
22550_1	21033.06	22550.52	1703.90	77.3	270.5	-55.00
22550_2	21060.87	22552.50	1705.84	150.0	260.5	-63.50
22550_3	21127.00	22554.40	1656.50	200.2	270.0	-50.00
22550_5	21196.00	22547.00	1632.00	337.8	269.5	-48.70
22575_1	21032.00	22570.00	1687.00	50.3	253.0	-50.00
22575_2	21032.00	22570.00	1687.00	94.4	253.0	-70.00
22600_1	21034.90	22600.50	1665.70	49.4	270.0	-49.00
22600_2	21045.50	22599.80	1664.10	76.3	270.0	-62.00
22600_3	21045.50	22599.80	1664.10	66.6	270.0	-50.00
22650_1	20995.22	22644.34	1633.60	92.5	81.5	-55.00
22650_3	21054.80	22654.90	1628.20	71.5	270.0	-45.00

Drillhole Name	East (m)	North (m)	RL (m)	Total Depth (m)	Azimuth	Dip
22700_1	21052.90	22702.20	1592.70	50.9	250.0	-45.00
22730_1	21028.10	22746.40	1562.00	50.0	130.0	-45.00
22850_1	21046.88	22850.58	1541.70	89.3	270.5	-63.00
22850_2	21085.83	22847.50	1516.96	114.8	275.0	-58.00
22950_1	21029.25	22950.42	1495.93	93.2	270.0	-45.00
DG002	21241.00	21633.00	1637.00	237.6	207.0	-45.00
DG004	21241.00	21633.00	1637.00	192.8	74.0	-57.00
DG006	21299.57	21768.22	1658.33	24.9	42.0	-45.00
DG007	21299.57	21768.22	1658.33	61.4	104.0	-45.00
DG008	21299.57	21768.22	1658.33	67.8	127.0	-45.00
DG010	21318.40	21665.42	1676.37	113.0	73.8	-44.20
DG012	21308.45	21722.75	1667.66	84.7	86.7	-47.95
DG013	21305.00	21723.50	1670.00	100.0	55.0	-45.00
DJTR07	21068.80	22204.80	1621.90	24.2	230.5	0.00
DJTR08	21071.80	22200.50	1621.90	24.6	237.3	0.00
DJTR09	21073.90	22196.10	1622.10	24.6	242.3	0.00
DJTR10	21076.60	22192.00	1622.30	25.3	242.6	0.00
DJTR11	21078.50	22187.60	1622.40	25.3	245.1	0.00
DJTR12	21081.20	22183.80	1622.70	26.7	246.4	0.00
DJTR13	21084.70	22179.20	1622.70	28.3	249.4	0.00
DJTR14	21087.20	22175.30	1622.80	29.0	252.0	0.00
DP003	21238.00	21550.00	1630.00	180.0	170.0	-45.00
DP004	21238.00	21550.00	1630.00	204.8	170.0	-70.00
FUN004	21299.00	21350.00	1533.00	0.6	273.0	0.00
FUN005	21298.00	21353.00	1533.00	0.6	273.0	0.00
GB001	21243.79	21898.78	1648.97	42.5	69.3	-48.00
GB002	21243.20	21898.53	1649.07	49.0	69.3	-66.00
GB003	21222.53	21879.21	1647.40	72.6	47.3	-45.00
GB004	21221.53	21878.21	1647.40	104.8	47.3	-65.00
GB005	21219.53	21878.22	1647.40	194.0	47.0	-77.50
GB007	21255.08	21862.89	1682.04	68.0	67.3	-65.00
GB008	21162.03	21824.48	1599.08	174.5	65.0	-47.00
GB009	21161.36	21824.11	1598.90	246.7	67.0	-60.00
GB010	21227.24	21839.68	1659.81	99.0	60.3	-44.50
GB011	21226.92	21839.51	1659.62	112.9	60.3	-57.00
GB012	21226.56	21839.33	1659.73	150.6	55.0	-65.00
GB013	21187.63	21880.88	1650.17	121.0	47.3	-45.00
GB014	21187.32	21880.51	1650.17	138.0	46.3	-57.00
GB015	21195.14	21788.55	1628.97	193.4	77.0	-46.00
GB016	21239.55	21763.46	1648.48	130.5	73.3	-45.00
GB017	21239.10	21763.30	1648.45	152.5	75.0	-55.00

Drillhole Name	East (m)	North (m)	RL (m)	Total Depth (m)	Azimuth	Dip
GB018	21273.21	21771.92	1665.57	71.0	66.3	-45.00
GB019	21272.61	21771.57	1665.46	106.2	68.0	-60.00
GB020	21306.00	21771.00	1683.00	50.6	70.3	-52.00
GB021	21305.00	21771.00	1683.00	67.6	73.3	-72.00
GB022	21299.64	21750.63	1667.81	113.0	68.3	-60.00
GB023	21298.96	21750.26	1668.00	101.3	66.3	-45.00
GB024	21300.17	21750.76	1668.21	50.0	67.3	-35.00
GB025	21280.55	21673.14	1665.07	139.6	53.3	-38.00
GB026	21228.73	21808.46	1630.20	107.1	60.3	-45.00
GB027	21229.63	21808.84	1630.36	105.0	60.3	-30.00
GB028	21280.89	21818.70	1648.90	63.6	50.3	-45.00
GB030	21223.25	21912.18	1661.92	80.0	60.3	-62.00
GB031	21323.68	21709.39	1689.07	109.9	60.3	-61.00
GB032	21324.86	21710.09	1689.17	109.3	56.3	-30.00
GB033	21331.69	21661.38	1680.87	81.7	60.3	-30.00
GB034	21278.99	21817.68	1648.91	98.1	26.3	-74.50
GB035	21267.74	21966.52	1683.95	100.0	281.7	-55.41
GB036	21268.17	21966.51	1683.95	134.0	281.7	-63.00
GB037	21268.35	21964.35	1683.85	84.0	246.6	-53.76
GB038	21268.68	21964.52	1683.86	118.0	248.4	-63.34
GBY005	21128.10	21872.50	1605.00	277.9	104.0	-45.00
GF001	21045.00	22827.00	1538.20	53.0	276.0	-45.00
GF002	21056.42	22868.40	1532.51	70.3	277.0	-42.00
GF003	21057.64	22868.11	1532.64	80.8	275.0	-62.50
GF004	21057.00	22866.50	1532.65	87.4	230.0	-55.00
GF005	21056.89	22869.97	1532.39	97.9	313.7	-54.00
GF006	21056.25	22871.59	1532.33	122.0	313.0	-39.00
GF007	21056.48	22869.21	1532.59	66.8	294.0	-51.00
GF008	21057.29	22867.53	1532.58	74.8	244.7	-59.50
GF009	21051.75	22932.55	1513.17	80.0	287.0	-51.00
GP001	21326.77	21653.04	1678.01	87.4	90.0	-44.49
GP002	21325.74	21653.04	1678.03	101.3	90.0	-60.23
GP004	21308.55	21716.87	1668.37	87.3	88.1	-39.41
GP005	21307.65	21716.88	1668.26	111.7	90.0	-58.19
GP006	21302.10	21745.51	1662.01	79.1	90.0	-60.00
GP007	21302.10	21745.51	1662.01	103.8	90.0	-45.00
IV002	21314.65	21576.46	1691.00	346.8	231.4	-58.50
IV003	21314.30	21576.30	1691.00	539.0	231.4	-67.50
IV004	21315.48	21580.54	1690.82	400.0	43.9	-69.56
IV005	21202.23	21517.52	1633.99	460.5	72.6	-51.10
IV006	21277.27	19911.27	2017.85	280.2	81.2	-43.64

Drillhole Name	East (m)	North (m)	RL (m)	Total Depth (m)	Azimuth	Dip
IV013	21172.80	21431.70	1686.40	71.1	245.0	-73.50
IV014	21224.70	21451.50	1644.80	102.6	245.0	-45.00
IV016	21225.00	21451.70	1644.80	164.3	245.0	-75.00
IV018	21225.30	21451.90	1644.80	147.1	245.0	-88.00
IV020	21172.00	21432.60	1686.40	102.5	304.0	-45.00
IV021	21224.70	21451.50	1644.80	132.3	189.0	-45.00
IV022	21224.70	21451.50	1644.80	120.0	189.0	-64.00
IV023	21194.50	21401.30	1678.40	74.3	194.0	-45.00
IV024	21195.00	21401.80	1678.50	79.3	194.0	-83.00
IV025	21195.30	21403.30	1678.50	43.6	198.0	-35.00
IV026	21177.90	21507.60	1637.80	139.7	236.0	-70.00
IV027	21177.50	21507.90	1638.00	71.0	236.0	-45.00
IV028	21240.50	21348.30	1676.60	71.3	265.0	-61.00
IV029	21178.80	21508.50	1636.20	110.0	236.0	-85.00
IV033	21177.50	21507.90	1638.00	119.6	270.0	-45.00
IV034	21238.50	21548.70	1633.00	210.5	236.0	-54.00
IV037	21241.50	21349.00	1676.60	113.1	270.0	-80.00
IV055	21216.97	21412.31	1652.64	67.4	232.0	-45.00
IV056	21216.90	21412.30	1652.60	72.6	232.0	-55.00
IV057	21205.30	21431.60	1661.40	53.7	232.0	-45.00
IV058	21205.30	21431.60	1661.40	74.0	232.0	-61.00
IV059	21194.40	21440.90	1661.40	90.1	285.0	-45.00
IV060	21194.50	21440.90	1661.50	81.9	285.0	-60.00
IV061	21194.50	21440.90	1661.50	90.4	285.0	-75.00
IV062	21194.40	21441.00	1661.50	82.5	204.0	-45.00
IV063	21194.40	21441.00	1661.50	87.3	249.0	-50.00
IV064	21213.26	21382.39	1655.54	52.0	270.0	-50.00
IV065	21214.13	21382.44	1655.57	89.2	270.0	-70.00
IV066	21214.52	21382.45	1655.62	122.3	270.0	-85.74
KD002	21323.71	19917.67	2018.74	54.6	73.5	-62.80
KD003	21322.44	19919.43	2019.00	87.8	20.7	-60.50
KD004	21324.51	19915.23	2018.77	68.1	127.4	-44.50
KD006	21368.14	19868.76	2034.10	35.2	242.1	-66.90
KD007	21368.80	19867.61	2034.25	47.1	187.2	-50.70
KD012	21402.43	19749.26	2088.30	100.0	66.6	-58.60
KD014	21484.13	19700.04	2084.42	50.4	44.9	-67.00
KD016	21304.00	19936.00	2011.70	73.0	80.0	-48.00
KD017	21304.00	19936.00	2011.70	118.9	80.0	-62.00
KD019	21297.00	19870.00	2044.00	190.4	100.0	-55.00
KD020	21297.00	19870.00	2044.00	184.6	100.0	-45.00
KD021A	21335.00	19795.00	2040.00	110.1	50.0	-40.00

Drillhole Name	East (m)	North (m)	RL (m)	Total Depth (m)	Azimuth	Dip
KD021B	21335.00	19795.00	2040.00	178.6	50.0	-40.00
KD022	21297.00	19870.00	2044.00	166.7	75.0	-45.00
KD023	21297.00	19870.00	2044.00	185.4	75.0	-60.00
KD024	21335.00	19795.00	2040.00	188.4	50.0	-58.00
KD025	21297.00	19870.00	2044.00	159.6	45.0	-45.00
KD026	21335.00	19795.00	2040.00	147.0	80.0	-45.00
KD027	21335.00	19795.00	2040.00	180.8	80.0	-55.00
KD028	21297.00	19870.00	2044.00	194.3	45.0	-60.00
KD029	21335.00	19795.00	2040.00	195.7	100.0	-45.00
KD030	21297.00	19870.00	2044.00	200.3	25.0	-55.00
KD031	21297.00	19870.00	2044.00	206.1	25.0	-50.00
KD033	21275.00	19912.00	2020.00	190.3	43.0	-45.00
KD034	21275.00	19912.00	2020.00	200.0	22.0	-45.00
KD035	21372.04	19874.63	2029.39	126.8	295.0	-65.00
KD036	21372.04	19874.63	2029.39	234.8	295.0	-75.00
KD037	21372.04	19874.63	2029.39	125.0	255.0	-60.00
KD038	21372.04	19874.63	2029.00	98.1	255.0	-75.00
KD039	21372.04	19874.63	2029.39	129.6	212.0	-55.00
KD041	21359.65	19875.70	2029.36	120.6	175.0	-70.00
KD042	21359.65	19875.70	2029.36	175.9	175.0	-55.00
KP002	21172.00	22381.50	1553.90	150.0	34.0	-45.00
KP004	21172.20	22381.30	1553.90	181.5	34.0	-52.00
KP007	21172.60	22381.00	1553.90	169.0	54.0	-45.00
KP009	21389.10	21611.10	1451.00	130.0	135.0	-35.00
KP010	21389.10	21611.10	1451.00	90.0	100.0	-45.00
KP013	21309.60	21819.00	1408.00	83.2	300.0	-15.00
KP014	21309.90	21817.60	1408.00	50.6	242.0	-10.00
KP015	21309.90	21817.60	1408.00	69.5	245.0	-45.00
KP016	21310.80	21815.10	1408.00	66.0	195.0	-23.00
KP017	21310.80	21815.10	1408.00	75.4	195.0	-45.00
KP018	21309.60	21819.00	1408.00	110.0	300.0	-37.00
KP019	21309.60	21817.60	1408.00	53.9	245.0	-58.00
KP020	21309.90	21817.60	1408.00	102.0	230.4	-69.00
KP021	21309.90	21817.60	1408.00	110.0	296.0	-70.00
KP022	21342.00	21736.50	1410.40	112.0	219.3	-70.00
KP023	21342.00	21736.50	1410.00	128.1	219.3	-66.00
KP024	21340.00	21734.30	1410.00	120.8	219.0	-50.00
KP025	21340.80	21737.60	1410.00	115.8	245.0	-63.00
KP026	21340.80	21737.60	1410.00	51.4	245.0	-50.00
KP027	21340.80	21737.60	1410.00	121.3	245.0	-60.00
KP040	21181.00	22441.00	1526.99	158.4	241.0	-14.00

Drillhole Name	East (m)	North (m)	RL (m)	Total Depth (m)	Azimuth	Dip
KP041	21181.00	22441.00	1526.99	196.6	256.0	-15.00
KP042	21177.80	22437.10	1526.99	155.4	275.0	-28.00
KP043	21175.30	22434.80	1526.99	193.9	225.0	-21.00
KP044	21387.70	21770.40	1539.00	68.1	81.0	35.00
KP046	21388.10	21769.30	1539.60	88.6	146.0	20.00
LM001	21341.00	21779.00	1436.00	204.9	75.0	-3.00
LM002	21429.40	21497.70	1532.00	400.1	40.0	-33.00
LM003	21346.40	21893.90	1467.00	122.8	113.4	-1.00
LM004	21346.40	21893.90	1467.00	152.9	113.4	-20.00
LM005	21346.60	21894.00	1467.00	148.8	84.2	-1.00
LM006	21346.60	21894.00	1467.00	161.9	84.2	-22.00
LM007	21346.60	21894.00	1467.00	155.0	84.2	33.00
LM008	21346.40	21893.90	1467.00	153.9	113.4	30.00
LM009	21346.40	21893.90	1466.70	266.4	113.4	-34.00
LM011	21346.40	21893.90	1466.80	392.6	113.4	-28.00
LM012	21346.40	21893.90	1467.00	158.0	113.4	5.00
LM013	21346.50	21895.00	1467.00	185.4	61.0	11.00
LM014	21346.50	21895.00	1467.00	176.5	61.0	-9.00
LM015	21346.60	21894.00	1467.00	304.7	84.0	-37.00
LM016	21346.60	21894.00	1466.50	358.4	84.0	-44.00
LM017	21346.60	21894.00	1466.50	167.9	129.0	-3.00
LM018	21347.00	21894.00	1466.50	161.4	129.0	27.00
LM019	21347.00	21894.00	1466.50	151.0	129.0	29.00
LM020	21357.20	21769.30	1521.90	419.7	91.0	-1.00
LM021	21357.20	21769.30	1521.90	261.7	91.0	-45.00
LM022	21357.20	21769.30	1521.90	215.8	91.0	-60.00
LM023	21351.50	21769.50	1521.50	197.8	116.0	-1.00
LM024	21351.50	21769.50	1521.50	197.7	117.0	-4.50
LM026	21351.50	21769.50	1521.50	251.6	118.0	-45.00
LM027	21351.50	21769.50	1521.50	200.9	160.0	-10.00
LM028	21351.50	21769.50	1521.50	239.8	140.0	-12.00
LM029	21357.00	21769.30	1521.90	225.0	99.0	-54.00
LM030	21341.00	21779.00	1436.00	168.3	96.0	22.00
LM031	21341.00	21779.00	1436.00	186.6	130.0	16.00
LM032	21341.00	21779.00	1436.00	190.1	121.0	0.00
LM033	21341.00	21779.00	1436.00	235.2	121.0	-20.00
LM035	21341.00	21894.00	1465.00	257.8	306.0	-55.00
LM040	21340.00	21894.00	1465.00	309.1	306.0	-45.00
LM041	21340.00	21894.00	1465.00	276.3	296.0	-53.00
LM043	21341.00	21894.00	1465.00	280.1	316.0	-45.00
LM044	21341.00	21894.00	1465.00	334.3	316.0	-55.00

Drillhole Name	East (m)	North (m)	RL (m)	Total Depth (m)	Azimuth	Dip
LM045	21341.00	21894.00	1465.00	362.8	316.0	-63.00
LM046	21341.00	21894.00	1466.00	304.3	316.0	-20.00
LM047	21341.00	21894.00	1465.00	200.8	306.0	-33.00
LM048	21341.00	21894.00	1465.00	288.8	313.0	-30.00
LM049	21341.00	21894.00	1465.00	257.2	313.0	-45.00
LM050	21385.00	21745.00	1365.00	139.8	255.0	-35.00
LM051	21385.00	21745.00	1365.00	161.0	255.0	-45.00
LM052	21385.00	21745.00	1365.00	208.0	255.0	-55.00
LM053B	21384.51	21746.39	1364.91	189.8	232.0	-58.00
LM054	21384.51	21746.39	1364.91	197.5	232.0	-49.00
LM055	21409.04	22065.95	1465.28	185.6	120.0	-50.00
LM056	21409.43	22066.81	1465.11	176.7	103.0	-61.00
LM057	21409.58	22066.77	1465.10	161.7	103.0	-56.00
LM058	21409.72	22067.03	1465.09	166.4	83.0	-61.00
LM059	21409.72	22067.03	1465.33	182.6	83.0	-52.00
LM060	21409.98	22067.86	1465.31	197.7	70.0	-64.00
LM061	21408.16	22068.69	1464.79	233.1	41.0	-62.00
LM062	21119.00	22420.70	1491.40	161.6	217.0	-16.00
LM063	21119.00	22420.70	1491.40	72.7	217.0	-29.00
LM064	21119.00	22420.70	1491.40	263.6	217.0	-32.00
LM065	21119.00	22420.70	1491.40	193.3	217.0	-43.00
LM066	21119.00	22420.70	1491.40	178.5	217.0	-51.00
LM067	21119.00	22420.70	1491.40	140.6	231.0	-19.00
LM068	21119.00	22420.70	1491.40	124.4	231.0	-34.00
LM069	21119.00	22420.70	1491.40	137.8	231.0	-50.00
LM070	21119.00	22420.70	1491.40	207.4	231.0	-60.00
LM071	21395.30	21754.30	1365.91	140.5	58.0	20.00
LM072	21395.30	21754.30	1365.91	140.7	58.0	-4.00
LM073	21395.30	21754.30	1365.91	174.0	58.0	-25.00
LM074	21396.14	21752.92	1366.30	166.4	58.0	-36.89
LM075B	21395.75	21752.09	95.54	62.7	95.5	23.00
LM076	21395.97	21752.07	1367.15	116.7	82.0	-6.00
LM077	21395.30	21754.30	1365.91	140.6	82.0	-34.00
LM078	21395.98	21752.02	1366.49	185.9	87.5	-36.44
LM079	21395.60	21751.60	1368.26	118.4	122.3	23.00
LM080	21395.68	21751.57	1367.21	80.0	110.0	-6.00
LM081	21421.78	22168.49	1362.16	69.2	134.0	-11.00
LM082	21421.23	22172.25	1361.64	50.0	94.0	-17.00
LM083	21421.26	22173.62	1361.83	48.6	49.7	-14.11
LM084	21395.30	21754.30	1365.91	94.4	110.0	-33.00
LM085	21395.30	21754.30	1365.91	129.1	110.0	-45.00

Drillhole Name	East (m)	North (m)	RL (m)	Total Depth (m)	Azimuth	Dip
LM086	21395.13	21751.26	1368.13	95.7	144.5	18.27
LM087	21395.24	21751.17	1367.19	107.9	138.0	-8.00
LM088	21395.20	21751.14	1366.85	111.1	145.1	-23.15
LM089	21395.17	21751.22	1366.56	154.5	140.3	-39.26
LM090	21394.79	21751.05	1367.91	141.0	155.7	14.47
LM091	21394.92	21750.77	1366.85	181.4	155.2	-22.00
LM092	21395.03	21750.77	1366.58	182.8	154.0	-28.22
LM093	21394.95	21750.71	1366.33	176.7	154.7	-42.56
LM095	22216.20	22112.65	1413.21	319.8	70.0	-20.00
LM100	21105.60	22581.52	1567.42	316.7	99.1	10.00
LM103	21394.04	21514.25	1457.17	201.9	198.7	10.86
LM104	21393.76	21513.39	1456.48	131.3	198.2	-11.76
LM105	21393.87	21513.32	1456.56	149.5	189.3	-14.60
LM106	21394.60	21516.00	1456.80	151.7	197.0	-25.00
LM107	21393.95	21513.59	1455.59	137.4	188.5	-41.59
LM108	21394.04	21514.06	1455.31	118.7	194.7	-57.52
LM110	21104.57	22319.10	1484.02	136.4	199.3	-52.77
LM112	21103.48	22319.69	1483.84	125.3	229.5	-68.75
LM113	21103.85	22320.04	1483.74	180.9	221.0	-82.00
LM114	21103.09	22320.34	1483.83	89.6	239.8	-49.77
LM115	21105.32	22321.68	1483.98	132.4	240.0	-67.00
LM116	21103.66	22320.69	1483.59	131.9	131.9	-76.43
LM117	21103.36	22322.04	1483.84	139.5	139.5	-67.59
LM118	21103.65	22321.96	1483.90	126.0	271.8	-78.84
LM119	21212.00	22102.52	1412.37	116.8	212.1	-49.68
LM120	21212.34	22102.95	1412.25	172.3	214.7	-70.21
LM121	21212.47	22103.11	1412.24	240.1	214.2	-76.15
LM122	21212.56	22103.19	1411.89	112.6	254.2	-52.96
LM123	21213.37	22103.44	1412.23	161.9	256.2	-72.13
LM124	21212.37	22103.11	1413.37	201.3	256.0	-81.00
LM125	21211.12	22103.69	1413.02	134.9	295.0	-24.55
LM126	21211.71	22103.45	1412.71	137.9	296.8	-46.64
LM127	21211.43	22103.88	1412.73	146.9	307.3	-34.73
LM128	21212.37	22103.11	1413.37	135.0	307.0	-47.00
LM129	21444.07	21623.67	1453.74	269.8	102.9	-0.29
LM130	21444.07	21623.67	1453.74	293.0	102.9	-20.00
LM135	21444.39	21625.45	1453.08	308.6	85.5	-23.60
LM136	21443.91	21625.00	1452.35	176.8	86.0	0.00
MILAMB01	21385.90	21650.00	1545.00	0.6	272.0	0.00
SC001	21214.42	21388.01	1655.55	248.9	143.0	-68.71
SC002	21214.00	21382.44	1655.57	221.6	144.7	-58.80

Drillhole Name	East (m)	North (m)	RL (m)	Total Depth (m)	Azimuth	Dip
SC003	21214.60	21387.76	1655.65	517.6	143.1	-57.90
SM001	21094.00	22469.00	1708.00	131.0	232.0	-70.00
SM002	21159.00	22458.00	1699.00	128.0	220.0	-45.00
SM003	21094.00	22469.00	1708.00	99.0	232.0	-48.00
SM004	21159.00	22457.00	1699.00	200.0	200.0	-45.00
SM005	21094.00	22469.00	1708.00	130.0	232.0	-58.00
SM006	21098.00	22448.00	1708.00	100.0	169.0	-48.00
SM007	21098.00	22448.00	1708.00	147.0	170.0	-61.00
SM008	21098.00	22448.00	1708.00	149.0	169.0	-55.00
SM009	21128.00	22418.00	1712.00	64.0	238.0	-60.00
SM010	21128.00	22418.00	1712.00	150.0	238.0	-65.00
SM013	21172.50	22318.00	1712.00	204.3	39.0	-83.00
STIN002	21203.60	22473.60	1676.50	0.7	45.0	0.00
TD23200_1	21201.00	23207.00	1427.00	450.2	250.0	-55.00
TGF001	21174.10	22875.00	1563.90	255.9	270.0	-45.00
TGF002	21174.10	22875.00	1563.90	258.5	270.0	-61.00
TGF003	21174.10	22875.00	1563.90	314.7	270.0	-72.00
TGF004	21174.10	22874.10	1564.00	258.2	296.0	-45.00
TGF005	21174.10	22874.10	1564.00	273.3	296.0	-57.00
TGF006	21050.40	23053.20	1507.00	247.2	270.0	-61.00
TGF007	21123.00	22757.00	1561.00	170.5	270.0	-62.00
TGF008	21050.40	23053.20	1507.00	261.7	270.0	-76.00
TGF009	21123.00	22757.00	1561.00	235.9	270.0	-70.00
TGF010	21050.40	23053.20	1507.00	255.8	270.0	-84.00
TGF011	21123.00	22757.00	1561.00	235.5	300.0	-59.00
TGF012	21050.40	23053.20	1507.50	198.8	230.0	-64.00
TGF013	21050.40	23053.20	1507.00	217.7	230.0	-80.00
TGF014	21123.00	22757.00	1561.00	240.1	300.0	-76.00
TGF016	21123.00	22757.00	1561.00	203.9	315.0	-60.00
TGF017	21050.00	23053.00	1507.00	204.7	297.0	-82.00
TL001	21061.00	22140.00	1620.00	221.1	260.0	-50.00
TL002	21061.00	22140.00	1620.00	320.0	228.0	-50.00
TS001	21202.01	22473.88	1677.58	108.7	44.9	-40.06
TS002	21201.99	22474.94	1678.93	94.6	359.3	-49.73
TS003	21202.00	22474.67	1678.93	117.7	0.0	-55.00
TS005	21115.32	22547.49	1666.27	70.8	24.9	-51.15
TS006	21115.09	22547.42	1666.42	60.8	6.0	-45.00
TS007	21114.05	22548.59	1666.18	67.5	352.4	-45.16
TS008	21114.18	22548.72	1664.95	70.9	352.6	-56.75
TS009	21113.86	22549.22	1664.66	77.6	342.5	-43.54
TS010	21113.33	22549.13	1664.66	99.5	328.5	-45.00

Drillhole Name	East (m)	North (m)	RL (m)	Total Depth (m)	Azimuth	Dip
TS011	21113.89	22548.30	1664.99	78.5	332.0	-60.00
TTEX001	21186.00	22553.00	1624.00	224.5	285.0	-45.00
TTEX002	21186.00	22553.00	1624.00	250.3	285.0	-57.00
TTEX003	21186.00	22553.00	1624.00	378.3	285.0	-77.00
TTEX004	20928.11	22645.03	1651.65	360.4	99.0	-49.41
TTEX005	20927.80	22645.09	1651.52	286.2	88.9	-51.75
TTEX006	20928.11	22645.03	1651.65	340.2	99.0	-60.00
TU004	21487.20	21165.30	1536.00	299.6	90.0	-55.00
TU005	21489.70	21161.00	1536.40	475.3	90.0	-32.00
TU006	21489.10	21161.00	1535.70	392.6	90.0	-70.00
TU007	21489.10	21163.50	1535.80	278.5	49.0	-58.00
TU009	21488.90	21163.40	1535.80	410.5	49.0	-69.00
TU010	21488.40	21164.00	1535.60	343.6	42.0	-72.00
TU011	21486.70	21164.30	1535.50	530.0	35.0	-64.00
TU013	21485.00	21164.30	1535.30	346.9	16.0	-67.50
TU014	21484.90	21164.50	1535.40	334.2	16.0	-64.00
TU019	21485.20	21164.70	1535.40	302.6	16.0	-48.00
TU020	21489.40	21162.00	1535.70	333.0	88.0	-61.00
TU021	21484.90	21164.10	1535.40	398.6	359.0	-62.00
TU022	21423.50	21498.00	1532.00	150.6	315.0	-63.50
TU023	21420.00	21495.00	1532.00	173.7	278.0	-66.00
TU024	21420.00	21495.00	1532.00	172.7	278.0	-54.00
TU025	21421.50	21491.50	1532.00	160.1	236.5	-54.00
TU026	21421.50	21491.50	1532.00	131.2	236.5	-34.00
TU027	21425.00	21492.00	1532.00	198.9	214.0	-56.00
TU028	21423.90	21491.80	1532.00	214.4	214.0	-44.00
TU029	21427.00	21495.00	1532.00	398.7	56.0	-40.00
TU030	21421.00	21491.50	1532.00	209.4	223.0	-49.00
TU031	21421.50	21491.50	1532.00	194.1	255.0	-57.00
TU032	21422.00	21492.00	1532.00	240.4	236.5	-62.00
TU033	21421.50	21492.00	1532.00	322.5	228.0	-51.00
TU034	21421.30	21492.30	1532.00	251.1	234.0	-55.00
TU035	21421.50	21492.50	1532.00	203.4	236.5	-40.00
TU036	21421.50	21492.50	1532.00	235.7	236.5	-28.00
TU037	21421.50	21492.50	1532.00	235.6	236.5	-36.00
TU038	21422.00	21492.00	1532.00	239.3	223.0	-24.00
TU039	21422.00	21492.00	1532.00	220.0	223.0	-24.00
TU040	21421.50	21492.50	1532.00	230.1	255.0	-31.00
TU041	21421.50	21492.50	1532.00	199.7	255.0	-39.00
TU042	21422.50	21491.50	1532.00	220.0	255.0	-13.00
TU043	21422.00	21492.00	1532.00	191.8	255.0	-19.00

Drillhole Name	East (m)	North (m)	RL (m)	Total Depth (m)	Azimuth	Dip
TU045	21422.00	21493.00	1532.00	166.7	260.0	-22.00
TU046	21422.00	21493.00	1532.00	202.3	270.0	-33.00
TU047	21422.00	21493.00	1532.00	237.6	270.0	-15.00
TU048	21422.00	21493.00	1532.00	270.0	277.0	-18.00
TU050	21422.62	21488.08	1532.26	232.1	211.9	-30.00
TU051	21422.71	21488.19	1531.82	252.1	208.1	-42.00
TU053	21420.44	21494.36	1533.00	240.0	264.9	-19.90
TU058	21432.00	21295.00	1528.00	300.0	31.0	-45.00
TU060	21427.00	21495.00	1532.00	584.6	56.0	-19.00
TU061	21427.00	21495.00	1533.00	371.4	56.0	3.00
TU062	21427.00	21495.00	1532.00	490.3	56.0	-51.00
TU063	21428.60	21494.60	1533.00	155.8	350.0	-57.00
TU064	21428.60	21494.60	1533.00	227.6	337.0	-74.00
TU066	21455.00	21089.00	1536.00	422.4	88.0	-45.00
TU067	21455.00	21088.50	1536.00	401.0	85.0	-54.00
TU068	21455.00	21088.50	1536.00	323.0	88.0	-26.00
TU072	21308.90	21939.90	1573.00	175.0	40.0	18.00
TU073	21308.90	21939.90	1573.00	323.6	40.0	-40.00
TU074	21308.90	21939.90	1575.00	284.4	60.0	-27.00
TU075	21308.90	21939.90	1573.00	280.0	60.0	-38.00
TU076	21308.90	21939.90	1573.00	359.6	60.0	-48.00
TU085	21308.90	21939.90	1573.00	344.1	88.0	-40.00
TU086	21429.00	21498.00	1532.00	356.5	40.0	-14.00
TU089	21122.40	22419.40	1490.90	417.1	72.0	-20.00
TU091	21122.40	22419.40	1491.90	276.0	72.0	-46.00
TU092	21119.90	22419.80	1491.90	390.0	90.0	-25.00
TU094	21122.40	22419.40	1491.90	353.0	90.0	-44.00
TU095	21122.30	22420.40	1491.90	413.3	97.2	-20.00
TU096	21122.30	22420.40	1491.90	522.0	97.2	-35.00
TU099	21119.90	22420.70	1491.90	449.8	83.0	-30.00
TU106	21119.90	22420.70	1491.90	293.9	15.0	-30.00
TU110	21119.90	22420.70	1491.90	266.7	27.0	-25.00
TU111	21119.00	22420.70	1491.40	204.5	252.0	-22.00
TU112	21119.00	22420.70	1491.40	218.5	252.0	-38.00
TU113	21116.29	22419.79	1491.71	169.7	252.0	-56.00
TU114	21119.00	22420.70	1491.10	131.0	252.1	20.80
TU115	21119.00	22420.70	1491.40	143.7	248.6	-4.34
TU116	21119.00	22420.70	1491.40	99.9	279.8	17.53
TU117	21119.00	22420.70	1491.40	198.0	277.1	-38.42
TU118	21115.59	22421.50	1493.09	258.0	283.9	-3.79
TU119B	21116.01	22422.39	1493.86	204.0	301.2	19.26

Drillhole Name	East (m)	North (m)	RL (m)	Total Depth (m)	Azimuth	Dip
TU120	21115.85	22422.49	1491.90	198.0	302.0	-8.00
TU121	21115.89	22422.48	1492.57	129.0	302.0	-18.00
TU122	21115.28	22422.81	1492.76	121.4	302.0	-37.00
TU123	21116.07	22423.26	1492.52	134.9	310.0	-16.00
TU124	21115.98	22423.29	1491.89	165.0	308.2	-35.85
TU125	21229.84	22103.33	1413.16	350.6	67.3	-29.06
TU126	21229.70	22103.32	1412.89	400.6	66.5	-39.12
TU127	21230.02	22102.77	1413.24	338.2	81.1	-25.69
TU128	21229.82	22102.73	1412.89	336.4	81.4	-39.39
TU129	21229.90	22102.71	1412.77	421.0	85.6	-43.11
TU130	21229.08	22101.98	1413.77	345.9	108.4	-23.85
TU131	21229.94	22101.88	1412.95	400.6	101.3	-31.50
TU132	21230.56	22101.00	1413.82	323.7	111.2	-15.06
ZGC007	21424.70	22230.40	1765.40	270.0	259.0	-69.00
ZGC009	21426.50	21855.50	1708.00	170.0	270.0	-83.00
ZN002	21427.12	22594.07	1725.12	131.0	270.0	-50.00
ZN004	21380.91	22628.15	1708.04	136.1	298.9	-71.20
ZN005	21380.38	22627.66	1708.09	126.4	270.0	-80.00
ZN007	21380.20	22625.22	1708.13	74.1	250.0	-54.00
ZN008	21381.08	22625.88	1708.12	150.5	233.0	-77.00
ZN009	21381.70	22628.21	1708.13	111.6	280.5	-77.00
ZN010	21383.86	22547.28	1690.53	107.4	270.5	-78.00
ZN011	21382.96	22547.98	1690.43	61.9	292.2	-48.40
ZN012	21382.96	22547.98	1690.43	58.9	250.0	-47.50
ZN013	21384.54	22546.63	1690.54	115.0	230.3	-76.82
ZN014	21396.53	22487.13	1683.34	83.1	267.3	-54.06
ZN015	21396.61	22487.57	1683.39	91.7	288.2	-54.88
ZN016	21397.34	22487.25	1683.38	138.6	310.2	-77.80
ZN017	21396.69	22486.88	1683.37	56.1	248.1	-53.53
ZN018	21397.41	22486.97	1683.35	159.6	230.9	-77.85
ZN019	21422.90	22415.00	1699.40	111.0	267.4	-54.24
ZN020	21422.90	22415.00	1699.40	165.6	267.4	-71.65
ZN021	21423.00	22415.00	1699.30	113.1	250.0	-57.00
ZN022	21423.00	22415.00	1699.40	150.5	200.0	-51.00
ZN024	21390.99	22838.62	1571.91	127.4	194.5	-51.50
ZN026	21390.99	22838.62	1571.91	156.8	216.0	-64.00
ZN027	21402.87	22362.03	1719.59	123.7	269.4	-49.08
ZN028	21402.87	22362.03	1719.59	152.1	266.0	-68.00
ZN029	21390.99	22838.62	1571.91	122.1	251.0	-50.00
ZN030	21411.00	22395.00	1718.00	183.1	265.0	-72.00
ZN031	21390.00	22847.00	1567.00	142.6	252.0	-63.00

Drillhole Name	East (m)	North (m)	RL (m)	Total Depth (m)	Azimuth	Dip
ZN032	21404.00	22655.00	1704.00	122.0	282.0	-59.00
ZN033	21404.00	22655.00	1704.00	147.1	280.0	-73.00
ZN034	21408.77	22857.17	1571.94	343.5	287.0	-51.00
ZN035	21401.39	22654.80	1702.32	104.2	232.0	-55.00
ZN036	21402.84	22654.84	1702.39	150.7	253.0	-75.00
ZN037	21381.00	22628.00	1708.00	122.2	228.0	-65.00
ZN038	21381.00	22628.00	1708.00	100.0	251.0	-65.00
ZN039	21398.00	22593.00	1708.00	100.0	253.0	-56.00
ZN040	21390.00	22847.00	1567.00	250.0	265.0	-63.00
ZN041	21398.00	22593.00	1708.00	100.0	245.0	-65.00
ZN042	21398.00	22593.00	1707.00	147.7	245.0	-79.00
ZN044	21398.00	22593.00	1709.00	104.0	275.0	-72.00
ZN045	21354.00	22838.00	1558.84	71.3	245.0	-48.00
ZN046	21398.00	22593.00	1709.00	135.5	279.0	-79.00
ZN047	21354.00	22838.66	1558.84	139.7	238.0	-86.00
ZN048	21398.00	22593.00	1708.00	134.1	298.0	-69.00
ZN050	21337.47	22834.66	1558.84	96.5	229.0	-78.00
ZN051	21398.00	22593.00	1709.00	146.0	299.0	-80.00
ZN052	21337.47	22834.66	1558.84	54.1	218.0	-45.00
ZN053	21337.47	22834.66	1558.84	76.1	218.0	-67.00
ZN054	21381.64	22626.49	1708.28	92.0	292.0	-65.00
ZN055	21337.47	22834.66	1558.84	49.6	206.0	-42.00
ZN057	21337.47	22834.66	1558.84	73.5	206.0	-68.00
ZN058	21381.64	22626.49	1708.28	95.0	305.0	-62.00
ZN059	21337.47	22834.66	1558.84	109.6	229.0	-78.00
ZN061	21338.17	22835.40	1557.09	59.0	192.0	-38.00
ZN062	21338.17	22835.40	1557.09	68.2	191.0	-61.00
ZN063	21381.64	22626.49	1708.28	171.6	308.0	-85.00
ZN064	21338.17	22835.40	1557.09	87.0	191.0	-73.00
ZN065	21338.17	22835.40	1557.09	70.7	192.0	-57.00
ZN069	21398.00	22524.00	1692.00	72.4	270.0	-57.00
ZN083	21498.00	22470.00	1730.00	407.0	270.0	-67.00
ZN084	21498.00	22470.00	1730.00	319.5	270.0	-66.00
ZN086	21460.00	22543.00	1730.00	298.8	294.0	-68.00
ZN087	21460.00	22543.00	1730.00	280.8	249.0	-68.00
ZN088	21445.80	22543.08	1726.32	302.0	249.0	-73.00
ZN089	21484.00	22353.00	1763.00	367.2	265.0	-72.00
ZN090	21521.18	22276.46	1773.88	425.3	270.0	-73.00
ZN091	21521.18	22276.46	1773.88	450.5	267.0	-70.00
ZN092	21521.18	22276.46	1773.88	468.7	238.0	-69.00
ZN095	21525.50	22351.11	1782.44	423.0	270.0	-70.00

Drillhole Name	East (m)	North (m)	RL (m)	Total Depth (m)	Azimuth	Dip
ZN099	21521.60	22276.50	1774.45	471.4	232.0	-77.00
ZN101	21522.19	22280.31	1774.30	455.0	268.0	-69.00
ZN102	21522.19	22280.31	1774.30	401.3	270.0	-73.50
ZN103	21522.19	22280.31	1774.30	449.0	285.0	-68.50
ZN104	21523.47	22280.56	1773.83	368.8	284.0	-63.50
ZN105	21522.29	22281.21	1773.68	401.2	282.0	-67.00
ZN106	21523.60	22281.40	1774.34	378.8	284.0	-64.00
ZN107	21522.20	22280.30	1744.00	482.2	277.0	-67.50
ZN108	21522.70	22280.31	1744.00	430.8	284.0	-76.00
ZN109	21522.70	22280.31	1744.00	417.3	247.0	-75.00
ZNP01	21426.66	22680.39	1670.20	60.0	204.0	-35.00
ZNP02	21426.66	22680.39	1670.20	65.0	204.0	-59.00
ZNP03	21426.66	22680.39	1670.20	55.0	230.0	-43.00
ZNP04	21426.66	22680.39	1670.20	60.0	230.0	-64.00

Appendix B
Tolukuma Drill Intercepts

Table B1 Tolukuma Drill Intercepts

Drillhole Name	From (m)	To (m)	Interval (m)	Domain	Au (g/t)	Ag (g/t)	Sb (ppm)
DG007	36.30	38.60	2.30	Gulbadi X	8.23	20.7	13
DG008	59.50	62.00	2.50	Gulbadi	36.48	132.4	88
DJTR07	2.00	2.60	0.60	Gulbadi	13.6	10	350
DJTR08	1.50	2.60	1.10	Gulbadi	19.7	14	220
DJTR09	0.80	1.70	0.90	Gulbadi	18.1	12	830
DJTR10	0.50	2.00	1.50	Gulbadi	17.7	12	1380
DJTR11	0.00	1.00	1.00	Gulbadi	10.9	10	365
DJTR12	0.00	1.30	1.30	Gulbadi	21.5	16	400
DJTR13	0.40	1.30	0.90	Gulbadi	23	25	3720
DJTR14	0.00	0.90	0.90	Gulbadi	26.9	20	725
DP003	171.20	173.20	2.00	Fundoot	1.46	29.3	7
FUN004	0.00	0.60	0.60	Fundoot	8.6		
FUN005	0.00	0.60	0.60	Fundoot	50		
GB001	25.50	27.50	2.00	Gulbadi	30.3	260.5	
GB002	33.50	37.70	4.20	Gulbadi	52.1	436.1	
GB003	55.90	58.50	2.60	Gulbadi	34.63	191.9	
GB008	159.70	161.40	1.70	Gulbadi	23.62	78.8	
GB010	73.50	77.00	3.50	Gulbadi	22.98	112.3	
GB011	96.20	99.50	3.30	Gulbadi	15.23	35.9	
GB013	101.60	103.60	2.00	Gulbadi	27.25	514	
GB014	124.40	127.40	3.00	Gulbadi	9.55	53.5	
GB015	155.40	157.40	2.00	Gulbadi	1.21	7	
GB016	108.10	109.90	1.80	Gulbadi	19.11	85	
GB017	57.30	58.80	1.50	Gulbadi X	13.27	55.3	
GB017	132.30	135.90	3.60	Gulbadi	26.19	75.4	
GB018	62.00	63.80	1.80	Gulbadi	7.52	39.4	
GB019	85.30	86.80	1.50	Gulbadi	34.4	150	
GB021	49.90	53.60	3.70	Gulbadi	1.44	196.2	
GB022	59.30	62.80	3.50	Gulbadi	9.3	33.5	
GB023	45.70	46.70	1.00	Gulbadi	2.53	5	
GB024	36.80	39.00	2.20	Gulbadi	10.01	18.4	
GB025	96.60	99.00	2.40	Gulbadi	10.43	9.8	
GB026	91.90	93.90	2.00	Gulbadi	48.95	152.5	
GB027	12.40	12.70	0.30	Gulbadi X	25.8	96	
GB027	77.10	79.20	2.10	Gulbadi	36.77	244.6	
GB028	23.10	25.80	2.70	Gulbadi	18.58	76.9	
GB030	50.70	56.80	6.10	Gulbadi	11.9	64.6	
GB034	78.20	85.30	7.10	Gulbadi	24.64	95.1	
GB035	70.00	72.40	2.40	Gulbadi	14	32.8	
GB036	118.00	123.60	5.60	Gulbadi	1.9	11	
GB036	128.70	134.00	5.30	Tolimi	38.96	287.4	
GB037	64.00	66.60	2.60	Gulbadi	4.22	61.8	
GB037	70.70	72.70	2.00	Tolimi	11.25	25	
GB038	91.50	101.50	10.00	Gulbadi	6.39	20.2	
GB038	101.50	109.40	7.90	Gulbadi	5.42	31.4	

Drillhole Name	From (m)	To (m)	Interval (m)	Domain	Au (g/t)	Ag (g/t)	Sb (ppm)
GF001	18.00	19.70	1.70	Gufinis	4.43	9.6	
GF002	33.20	35.30	2.10	Gufinis	12.21	106.7	
GF003	61.09	69.39	8.30	Gufinis	6.25	18.7	
GF004	56.59	60.29	3.70	Gufinis	38.93	329.9	
GF005	64.79	74.89	10.10	Gufinis	9.12	17.9	
GF006	64.79	68.59	3.80	Gufinis	9.16	17.3	
GF007	43.90	46.80	2.90	Gufinis	18.92	40.2	
GF008	57.39	61.49	4.10	Gufinis	7.5	27.4	
GP006	68.50	73.90	5.40	Gulbadi	28.38	40.5	49
GUFTR001	13.00	16.00	3.00	Tolukuma	1.22	4.5	41
GUFTR002	3.00	6.00	3.00	Tolukuma	25.42	20.8	104
IV002	248.30	248.50	0.20	Fundoot	13.5	102	
IV003	290.50	290.90	0.40	Fundoot	8.09	13	
IV004	221.40	224.80	3.40	Gulbadi	29.96	118.1	
IV005	340.90	341.70	0.80	Gulbadi	10.7	11.9	
IV013	43.20	47.70	4.50	Fundoot	1.3	18.5	18
IV014	60.50	62.00	1.50	Fundoot	3.28	39.6	16
IV016	86.20	86.80	0.60	Fundoot	11.76	97	19
IV018	104.20	105.20	1.00	Fundoot	65.55	83.4	38
IV020	67.30	68.60	1.30	Fundoot	5.1	14.6	17
IV021	72.70	73.20	0.50	Fundoot	204.5	178	105
IV022	81.00	81.50	0.50	Fundoot	19.5	73.3	37
IV023	29.60	30.60	1.00	Fundoot	4.39	61.5	42
IV024	41.70	51.20	9.50	Fundoot	1.68	15.3	29
IV026	88.30	89.00	0.70	Fundoot	27.32	52.1	25
IV033	73.95	75.00	1.05	Fundoot	10.21	165.5	27
IV034	129.30	131.50	2.20	Fundoot	1.88	27.3	17
IV055	32.10	39.60	7.50	Fundoot	8.08	60.4	10
IV056	39.60	41.10	1.50	Fundoot	7.89	345.2	21
IV057	40.70	43.55	2.85	Fundoot	4.16	36.9	11
IV058	48.85	51.67	2.82	Fundoot	7.15	67.4	9
IV059	50.40	55.00	4.60	Fundoot	7.63	38	8
IV060	53.73	60.50	6.77	Fundoot	1.22	106.3	182
IV061	61.35	63.30	1.95	Fundoot	14.76	228.5	17
IV062	39.60	43.80	4.20	Fundoot	10.73	750.6	4
IV063	40.64	42.30	1.66	Fundoot	5.01	16.9	5
IV064	20.76	23.20	2.44	Fundoot	22.63	243.9	40
IV066	34.73	39.35	4.62	Fundoot	4.03	83.9	15
KD014	25.80	31.00	5.20	120 FW Vein	1.03	26.5	2
KD022	115.00	123.02	8.02	120 FW Vein	1.09	29.6	18
LM081	50.70	59.60	8.90	Zine	9.82	14.9	420
LM082	31.34	34.29	2.95	Zine	17.73	25.9	727
LM083	33.85	37.46	3.61	Zine	1.38	5.5	316
LM090	83.04	83.88	0.84	Zine	15.77	56.6	563
LM091	77.90	78.63	0.73	Zine	13.74	17.8	23

Drillhole Name	From (m)	To (m)	Interval (m)	Domain	Au (g/t)	Ag (g/t)	Sb (ppm)
KP004	180.60	181.50	0.90	Tinabar	30		
KP014	26.40	27.20	0.80	Gulbadi	1.18	6.3	32
KP015	30.70	36.90	6.20	Gulbadi	7.55	6.3	229
KP017	61.70	71.90	10.20	Gulbadi	4.3	86.1	33
KP018	45.30	48.90	3.60	Gulbadi	3.96	16.9	1627
KP019	38.30	45.80	7.50	Gulbadi	5.5	56	55
KP020	61.00	65.30	4.30	Gulbadi	20.1	8	44
KP021	45.00	57.50	12.50	Gulbadi	11.8	51.8	625
KP022	104.80	107.00	2.20	Gulbadi	9	13	220
KP025	51.70	54.60	2.90	Gulbadi	1.7	27.7	102
KP026	36.00	38.00	2.00	Gulbadi	12.25		
KP040	77.40	77.70	0.30	Sawmill	4.9	74	49
KP041	87.60	89.00	1.40	Sawmill	1.7	42	240
KP042	137.40	137.90	0.50	Sawmill	21	47	84
KP042	144.80	146.50	1.70	Tolukuma	2.8	11	120
KP043	67.70	68.10	0.40	Sawmill	1.4	18	5
KP043	183.10	185.80	2.70	Tolukuma	14	18	25
KP044	51.50	54.40	2.90	Zine	10.64	20.8	72
LM002	247.00	247.20	0.20	Mystery	17.01	150	
LM004	117.20	117.50	0.30	Zine	1.22	3	1820
LM006	119.30	120.80	1.50	Zine	1.06	5.9	1
LM008	117.50	119.70	2.20	Zine	9.81	21.4	15
LM011	126.20	127.70	1.50	Zine	2.63	25.8	
LM014	145.60	146.00	0.40	Zine	8.93	9.1	
LM018	125.60	128.00	2.40	Zine	19.99	218.8	77
LM021	116.70	121.70	5.00	Zine	3.1	18	64
LM023	69.60	71.80	2.20	Zine	3.41	10.4	20
LM024	70.60	73.50	2.90	Zine	16.55	122.9	
LM029	156.00	166.00	10.00	Zine	1.91	7.5	168
LM029	166.00	174.00	8.00	Zine	2.57	11.6	104
LM040	229.30	236.70	7.40	Gulbadi	2.45	15	249
LM045	291.80	303.30	11.50	Gulbadi	1.02	14.2	17
LM046	261.30	269.50	8.20	Gulbadi	6.71	54.3	5077
LM047	188.40	196.30	7.90	Gulbadi	1.87	52.7	35
LM048	234.70	239.20	4.50	Gulbadi	1.36	4.8	4713
LM052	147.87	150.85	2.98	Gulbadi	4.24	39.4	660
LM053B	163.18	165.53	2.35	Gulbadi	2.08	171.3	3762
LM055	122.40	131.56	9.16	Zine	8.46	15	686
LM056	142.96	154.80	11.84	Zine	2.98	17.9	672
LM057	120.59	126.40	5.81	Zine	10.52	61.5	374
LM058	137.96	143.74	5.78	Zine	3.25	17	1739
LM059	95.15	100.47	5.32	Zine	5.24	23.8	5304
LM060	161.70	167.39	5.69	Zine	6.04	11.1	1962
LM061	198.00	202.80	4.80	Zine	5.88	13.2	431
LM062	16.61	17.62	1.01	Sawmill	1.99	14.3	3
LM071	62.50	65.28	2.78	Zine	1.38	31.7	604

Drillhole Name	From (m)	To (m)	Interval (m)	Domain	Au (g/t)	Ag (g/t)	Sb (ppm)
LM073	99.76	101.78	2.02	Zine	2.07	8.8	145
LM074	149.44	155.31	5.87	Zine	1.14	2.7	641
LM076	65.00	66.23	1.23	Zine	1.25	11.2	23
LM080	71.80	77.80	6.00	Zine	6.86	20.2	1989
TS011	32.52	32.80	0.28	Tinabar	3.19	19.7	38
TTEX003	249.70	250.40	0.70	Tinabar	2.98	32	232
TTEX003	369.10	371.30	2.20	Tolukuma	1.88	19.8	232
TTEX004	248.65	249.65	1.00	Tinabar	4.24	6.2	190
TU004	259.00	261.70	2.70	Gulbadi Red	11.26	15.9	6
TU009	259.90	262.15	2.25	Gulbadi Red	9.64	34.2	77
TU010	284.40	285.24	0.84	Gulbadi Red	54.15	36	10
TU011	254.50	255.36	0.86	Gulbadi Red	26.65	30	9
LM104	105.00	115.00	10.00	Zine	1.28	3.4	14
LM104	115.00	120.98	5.98	Zine	7.29	12	40
LM105	111.60	122.10	10.50	Zine	1.37	17.3	145
LM106	98.02	108.02	10.00	Zine	2.56	8	161
LM106	108.02	113.75	5.73	Zine	8.05	7.4	223
LM108	95.24	98.42	3.18	Zine	2.97	2.7	360
LM110	94.58	99.60	5.02	Tolukuma	5.75	14.2	3995
LM112	92.45	93.65	1.20	Tolukuma	4.46	7.1	68
LM114	60.07	64.13	4.06	Tolukuma	21.29	19.3	971
LM122	81.40	84.51	3.11	Gulbadi	3.41	11.5	874
LM123	122.34	124.40	2.06	Gulbadi	17.07	9.5	875
LM124	148.90	153.67	4.77	Gulbadi	1.44	6	144
LM125	83.00	88.37	5.37	Gulbadi	4.33	8.2	449
LM126	99.92	104.10	4.18	Gulbadi	2.71	16.8	29980
LM128	119.38	124.57	5.19	Gulbadi	1.92	5.9	4612
LM129	264.80	266.50	1.70	Mystery	21.65	188.4	3800
LM130	218.36	219.49	1.13	Mystery	11.07	32.7	780
LM135	150.89	151.22	0.33	Mystery	18.74	70.3	46
LM143	48.28	49.27	0.99	Zine	1.58	4	260
LM144	47.50	48.20	0.70	Zine	26.43	73.1	77
LM144	150.30	153.30	3.00	Fundoot	2.32	32.7	47
LM156	31.00	34.00	3.00	Tolukuma	2.51	8.2	190
LM157	33.60	36.80	3.20	Tolukuma	2.99	17.8	354
LM158	25.00	30.00	5.00	Tolukuma	3.43	9.1	544
LM160	24.60	28.60	4.00	Tolukuma	3.84	10.9	
LM162	26.50	28.30	1.80	Tolukuma	1.38	23	
LM163	27.00	28.65	1.65	Tolukuma	6.82	44.4	
LM181	218.50	221.80	3.30	Zine	13.29	9.8	195
LM185	244.50	250.00	5.50	Zine	1.28	4.5	588
LM187	239.00	245.60	6.60	Zine	2.44	11.4	841
LM188	197.00	211.30	14.30	Zine	2.16	5	47
LM190	120.40	121.60	1.20	Zine	1.5	5.7	1176
LM191	101.30	102.90	1.60	Zine	2.1	15.1	48
LM196	28.30	30.30	2.00	Zine	96.42	44.9	276

Drillhole Name	From (m)	To (m)	Interval (m)	Domain	Au (g/t)	Ag (g/t)	Sb (ppm)
SC001	52.96	55.89	2.93	Fundoot	3.86	14.9	2
SC002	46.28	49.28	3.00	Fundoot	11.21	66	18
SM002	92.30	93.40	1.10	Sawmill	8.1		
SM005	85.10	86.10	1.00	Sawmill	1.5		
STIN002	0.00	0.70	0.70	Tinabar	101	93	
TGF001	187.10	193.20	6.10	Gufinis	16.72	28.7	1030
TGF002	231.00	236.30	5.30	Gufinis	2.02	29.7	1339
TGF004	219.40	221.30	1.90	Gufinis	2.97	2.3	19
TGF005	252.30	255.20	2.90	Gufinis	1.53	13.1	871
TGF006	80.80	83.00	2.20	Gufinis	1.56	4.9	288
TGF011	150.70	151.70	1.00	Gufinis	1.76	13	145
TGF021	64.40	67.40	3.00	Tolukuma	8.9	44.3	60
TGF022	55.00	59.00	4.00	Tolukuma	13.59	33.9	94
TGF023	71.70	72.70	1.00	Tolukuma	21.9	15.6	165
TU027	173.40	185.20	11.80	Zine	1.3	3.4	99
TU028	147.00	153.30	6.30	Zine	1.89	9.7	
TU029	277.80	279.20	1.40	Mystery	5.44	20.7	24
TU030	186.60	188.60	2.00	Fundoot	18	13.5	84
TU031	100.30	102.00	1.70	Zine	2.73	8	7
TU032	226.20	234.50	8.30	Fundoot	3.74	4.6	60
TU033	191.80	194.30	2.50	Fundoot	2.02	10	104
TU034	210.50	211.50	1.00	Fundoot	1.3	5.6	157
TU035	180.40	181.40	1.00	Fundoot	80		
TU036	171.55	174.70	3.15	Fundoot	3.79	60	53
TU038	171.60	174.60	3.00	Fundoot	46.4	100	40
TU039	168.90	176.40	7.50	Fundoot	2.32	16.2	4
TU040	173.60	175.70	2.10	Fundoot	55.19	84.1	
TU041	180.80	181.90	1.10	Fundoot	1.04	5.2	100
TU043	183.50	184.00	0.50	Fundoot	110	165	54
TU046	196.30	199.40	3.10	Fundoot	3.76		
TU047	203.00	204.00	1.00	Fundoot	54.3	84.8	55
TU048	254.20	255.30	1.10	Fundoot	1.3	9	
TU020	262.90	265.10	2.20	Gulbadi Red	102.41	30.1	797
TU021	337.30	338.60	1.30	Gulbadi Red	2.61	6.8	20
TU116	87.55	91.95	4.40	Tolukuma	12.67	33.1	134
TU117	74.00	75.00	1.00	Tolukuma	3.41	3.8	75
TU118	73.30	78.49	5.19	Tolukuma	7.05	17.2	627
TU121	86.27	89.00	2.73	Tolukuma	1.88	8.7	181
TU126	383.59	384.08	0.49	Zine	1.19	11.7	81
TU127	270.75	271.39	0.64	Zine	9.52	21.4	270
TU130	287.38	290.70	3.32	Zine	4.71	26.4	559
TU132	285.15	290.06	4.91	Zine	64.08	58.1	521
120ZN002	127.70	139.10	11.40	120 FW Vein	3.32		
120ZN003	102.40	103.70	1.30	120 FW Vein	12.9		
120ZN004	94.10	96.80	2.70	120 Vein	5.31		

Drillhole Name	From (m)	To (m)	Interval (m)	Domain	Au (g/t)	Ag (g/t)	Sb (ppm)
120ZN004	105.40	108.90	3.50	120 FW Vein	2.56		
120ZN005	126.70	127.70	1.00	120 Vein	2.4		
120ZN013	47.50	52.00	4.50	120 Vein	1.41	50.4	839
120ZN015	95.20	97.00	1.80	120 Vein	2.25	33.3	523
TU051	150.50	160.50	10.00	Zine	1.32	2.2	8
TU062	313.60	313.90	0.30	Mystery	2.11	6.6	1500
TU070	196.90	201.20	4.30	Zine	1.48		
TU071	170.50	172.90	2.40	Zine	40.19	17	0
TU072	145.50	148.00	2.50	Zine	2.94	4.2	9
TU073	313.90	320.30	6.40	Zine	1.96	8.4	197
TU074	181.30	182.30	1.00	Zine	1.03	11.6	18
TU075	237.50	239.60	2.10	Zine	2.89	12.4	166
TU076	324.10	327.15	3.05	Zine	1.97	12.8	
TU087	340.20	341.20	1.00	Mystery	35.6	25.1	14
TU090	167.00	168.00	1.00	Tinabar	1.87	20.7	
TU092	297.25	297.55	0.30	Zine	20.46	50.7	
TU095	208.40	209.30	0.90	Tinabar	20.9	97.7	373
TU101	122.70	125.70	3.00	Tinabar	1.48	12.1	340
TU103	208.60	212.60	4.00	Tinabar	5.31	22.8	178
TU104	153.70	154.60	0.90	Tinabar	3.93	13	70
TU105	240.60	244.20	3.60	Tolukuma	2.28	15.6	158
TU106	162.90	163.50	0.60	Tinabar	5.29	24.9	9155
TU110	127.60	130.04	2.44	Tinabar	4.4	10.4	86
TU111	19.49	19.93	0.44	Sawmill	1.58	22	230
TU114	89.50	93.90	4.40	Tolukuma	1.86	24.9	605
T1438U03	0.40	0.90	0.50	Zine	202.5	98	15000
T1438U04	0.00	2.00	2.00	Zine	12.5	21	16000
T1438U05	0.00	2.00	2.00	Zine	23.3	22	30000
T1438U06	0.00	2.00	2.00	Zine	27	21	330
ZN002	117.00	119.70	2.70	Zine	1.82	12.9	23
ZN007	65.30	65.80	0.50	Zine	3.28	15.2	34
ZN009	104.70	105.70	1.00	Zine	2.65	47	1470
ZN010	87.50	89.90	2.40	Zine	23.83	6.8	84
ZN011	48.30	51.27	2.97	Zine	6.35	13.6	8
ZN012	45.80	47.50	1.70	Zine	1.01	1.6	3
ZN013	95.50	99.15	3.65	Zine	4.82	22.3	77
ZN015	47.00	50.60	3.60	Zine	11.95	55.4	26
ZN016	119.70	122.70	3.00	Zine	8.97	65	144
ZN017	44.50	45.60	1.10	Zine	10.11	35.1	59
ZN019	87.60	89.20	1.60	Zine	2.07	14.5	14
ZN020	152.80	156.40	3.60	Zine	8.48	85.1	47
ZN021	95.20	96.60	1.40	Zine	1.9	8.4	45
ZN024	105.00	110.20	5.20	Zine	1.15	19	84
ZN026	135.20	138.70	3.50	Zine	6.12	6.8	2433
ZN027	116.90	117.70	0.80	Tinabar	3.03	12.1	22
ZN029	82.40	84.00	1.60	120 Vein	1.82	23	278

Drillhole Name	From (m)	To (m)	Interval (m)	Domain	Au (g/t)	Ag (g/t)	Sb (ppm)
ZN029	106.30	107.80	1.50	Zine	1.41	20.9	451
ZN031	134.00	138.00	4.00	Zine	1.07	16.5	166
ZN032	111.90	112.50	0.60	Zine	4.98	24.3	109
ZN033	140.60	142.00	1.40	Zine	4.21	31.3	2186
ZN035	99.60	102.20	2.60	Zine	3.05	20.2	166
ZN036	145.60	147.50	1.90	Zine	5.41	17.5	341
ZN037	90.00	93.00	3.00	Zine	2.09	19.1	30
ZN038	80.30	82.00	1.70	Zine	7.41	48.6	26
ZN041	90.90	92.20	1.30	Zine	6.78	66.4	39
ZN044	98.40	99.90	1.50	Zine	2.71	19.1	116
ZN045	41.70	42.60	0.90	120 Vein	1.27	3	260
ZN046	118.60	121.00	2.40	Zine	3.89	37.7	91
ZN049	22.25	24.30	2.05	120 Vein	4.5	7.6	34
ZN049	40.65	42.95	2.30	Zine	11.2	152.9	2130
ZN050	39.90	41.30	1.40	120 Vein	6.36	5.4	87
ZN050	81.96	83.30	1.34	Zine	6.09	81.9	5288
ZN052	23.20	25.10	1.90	120 Vein	3.53	10.3	227
ZN052	42.60	45.20	2.60	Zine	14.22	28	384
ZN053	62.90	64.90	2.00	Zine	3.02	57.3	625
ZN054	84.50	85.90	1.40	Zine	4.25	180.9	55
ZN055	24.80	25.80	1.00	120 Vein	10.4	50.9	78
ZN055	43.60	46.40	2.80	Zine	4.58	81.7	906
ZN057	34.00	35.10	1.10	120 Vein	8.58	8.9	308
ZN058	88.90	91.10	2.20	Zine	1.7	4.9	58
ZN059	96.70	99.60	2.90	Zine	3.06	69.7	434
ZN061	26.70	28.00	1.30	120 Vein	5.07	5.8	215
ZN061	46.50	49.10	2.60	Zine	6.16	41	96
ZN062	31.80	33.80	2.00	120 Vein	4.07	24.5	590
ZN064	41.00	42.90	1.90	120 Vein	28.03	34.4	302
ZN065	57.00	59.10	2.10	Zine	19.5	43.1	10550
ZN066	123.80	125.60	1.80	Zine	1.02		
ZN067	165.30	167.30	2.00	Zine	2.49	28.5	2554
ZN070	142.70	149.00	6.30	120 Vein	4.56	10.2	82
ZN073	166.70	168.40	1.70	Zine	10.12	34.5	101
ZN074	223.90	225.50	1.60	120 Vein	3.15	2.1	850
ZN077	102.40	103.50	1.10	Zine	3.9		
ZN080	76.70	77.60	0.90	Zine	14.8	10.5	7
ZN087	184.40	187.80	3.40	Zine	2.39	11.8	37
ZN092	332.30	334.00	1.70	Zine	4.23	37.9	
ZN095	331.30	332.10	0.80	Zine	2.36	2.4	
ZN102	377.30	379.70	2.40	Zine	2.25	12.1	528
ZN103	406.20	410.50	4.30	Tinabar	1.28	10.9	1073
ZN105	390.70	396.40	5.70	Tinabar	17.35	107.7	31084
ZN109	411.13	416.10	4.97	Zine	5.98	15.3	3827
120ZN001	92.70	94.50	1.80	120 Vein	1.35		
120ZN001	101.20	106.80	5.60	120 FW Vein	6.76		

Drillhole Name	From (m)	To (m)	Interval (m)	Domain	Au (g/t)	Ag (g/t)	Sb (ppm)
120ZN017	142.14	145.40	3.26	120 Vein	1.5	6.1	930
120ZN023	304.70	308.70	4.00	120 Vein	2.31	10.8	443
120ZN024	150.90	157.30	6.40	Zine	1.02	6.5	106
120ZN025	196.95	199.67	2.72	120 Vein	1.63	7.2	552
120ZN026	242.95	249.20	6.25	120 Vein	1.32	24.2	1955
120ZN027	122.16	123.92	1.76	120 Vein	2.26	5.6	134
120ZN033	149.00	152.30	3.30	Zine	1.7	4	47
120_3	16.50	17.50	1.00	120 Vein	1.9	7	
120_4	28.50	30.60	2.10	120 Vein	2.36	6.2	
120_5	56.60	57.00	0.40	120 Vein	50.2	66.6	
120_6	78.00	79.50	1.50	120 Vein	2.23	94	
120_7	135.70	137.50	1.80	120 Vein	2.23	13.4	
21730_1	93.00	94.70	1.70	Gulbadi X	2.88	50.2	26
21730_1	97.50	101.00	3.50	Gulbadi	6.68	5.5	16
21800_1	141.30	143.30	2.00	Gulbadi	1.09	5	
22000_1	62.30	63.20	0.90	Tolimi	1.32		
22000_1	66.40	69.70	3.30	Gulbadi	33.04		
22260_1	79.00	80.40	1.40	Gulbadi	7.74		
22260_3	121.00	122.50	1.50	Tolukuma	4.1		
22260_4	113.50	116.50	3.00	Gulbadi	8.25		
22260_4	131.10	132.10	1.00	Tolukuma	3.55		
22340_1	60.50	67.50	7.00	Tolukuma	36.78		
22340_3	15.60	17.15	1.55	Tolukuma	2		
22350_1	43.50	48.50	5.00	Tolukuma	10.16	30.4	
22350_2	113.60	114.60	1.00	Tolukuma	32.2	65	
22350_3	143.50	145.50	2.00	Tolukuma	1.22	484	
22375_1	44.80	49.35	4.55	Tolukuma	25.9	49	
22375_2	65.45	72.70	7.25	Tolukuma	15.24	44.8	
22400_1	58.60	63.40	4.80	Tolukuma	26.44		
22400_6	146.50	148.00	1.50	Tolukuma	23.1	347	
22400_7	98.50	102.30	3.80	Tolukuma	25.6	115.1	
22400_9	23.80	28.90	5.10	Tolukuma	25.55	33.5	
22425_1	141.30	144.90	3.60	Tolukuma	40.28	95.4	
22425_2	108.30	116.30	8.00	Tolukuma	19.25	107.5	
22425_4	25.20	36.10	10.90	Tolukuma	23.25	102.2	
22450_1	120.00	124.90	4.90	Tolukuma	13.32	63.2	
22450_2	151.70	158.70	7.00	Tolukuma	18.97	64.6	
22450_3	56.00	66.00	10.00	Sawmill	1.11	8.8	
22450_3	66.00	73.70	7.70	Sawmill	1.61	9.8	
22450_3	189.70	192.70	3.00	Tolukuma	1.11	33.6	
22475_3	76.90	79.40	2.50	Tolukuma	23.6	87.2	
22500_2	127.70	132.05	4.35	Tolukuma	4.63		
22500_5	80.40	87.90	7.50	Tolukuma	7.28	26.2	
22550_1	43.50	45.40	1.90	Tolukuma	33.32		
22550_2	122.40	123.40	1.00	Tolukuma	3.4		
22550_3	169.00	170.80	1.80	Tolukuma	11.26		

Drillhole Name	From (m)	To (m)	Interval (m)	Domain	Au (g/t)	Ag (g/t)	Sb (ppm)
22550_5	231.10	232.25	1.15	Tolukuma	3.66	106.7	
22575_1	39.70	40.70	1.00	Tolukuma	8.02		
22575_2	83.70	88.20	4.50	Tolukuma	27.97	34.7	
22600_1	31.15	37.35	6.20	Tolukuma	15.43		
22600_2	72.40	73.50	1.10	Tolukuma	9.66	7	
22600_3	56.20	58.20	2.00	Tolukuma	7.16	11	
22650_1	26.90	30.75	3.85	Tolukuma	12.31		
22700_1	45.00	49.00	4.00	Tolukuma	4.65	54.5	
22850_1	30.35	40.35	10.00	Gufinis	8.22		
22850_2	91.30	93.20	1.90	Gufinis	3.41		

Appendix C
Mt Penck DD Drillhole Location Data

Table C1 Mt Penck DD drillhole location data

Drillhole ID	Date Drilled	Prospect	Easting (mE)	Northing (mN)	Elevation (mRL)	Azimuth Magnetic Degree	Dip Degree	Depth (m)
MPD-001	04-Aug-04	Kavola East	790747	9388512	232	120	-47	88.4
MPD-002	04-Aug-04	Kavola East	790747	9388512	232	120	-65	153.4
MPD-003	12-Aug-04	Kavola East	790777	9388594	243	120	-45	174.4
MPD-004	15-Aug-04	Kavola East	790706	9388472	237	120	-45	150.3
MPD-005	22-Aug-04	Kavola East	790670	9388423	224	120	-45	174.3
MPD-006	04-Sep-04	Kavola East	790804	9388552	253	210	-45	135.2
MPD-007	14-Sep-04	Kavola East	790772	9388505	254	210	-45	123
MPD-008	10-May-06	Kavola East	790808	9388556	253	135	-45	190.5
MPD-009	21-May-06	Kavola East	790846	9388501	278	135	-45	103
MPD-010	09-Jun-06	Kavola East	790874	9388456	301	135	-45	100.5
MPD-011	15-Jun-06	Kavola East	790933	9388376	300	135	-45	108
MPD-012	28-Jun-06	Kavola East	790671	9388278	235	97	-45	199.5
MPD-013	07-Jul-06	Kavola East	790828	9388468	278	135	-46	100.5
MPD-014	14-Jul-06	Kavola East	790685	9388387	213	120	-45	100.5
MPD-015	19-Jul-06	Kavola East	790750	9388446	260	120	-45	100.5
MPD-016	26-Jul-06	Kavola East	790706	9388472	237	300	-45	158.9
MPD-017	27-Jul-06	Kavola East	790685	9388387	213	300	-45	135
MPD-018	01-Aug-06	Kavola East	790801	9388523	249	300	-45	111
MPD-019	08-Aug-06	Kavola East	790801	9388524	249	120	-45	109.7
MPD-020	13-Aug-06	Kavola East	790609	9388482	186	120	-45	157.5
MPD-021	17-Aug-06	Kavola East	790737	9388576	233	300	-45	123.1
MPD-022	18-Aug-06	Kavola East	790623	9388533	196	120	-45	111
MPD-023	22-Aug-06	Kavola East	790750	9388477	250	120	-45	100.6
MPD-024	25-Aug-06	Kavola East	790623	9388533	196	300	-60	150.1
MPD-025	01-Sep-06	Kavola East	790726	9388496	228	120	-45	171
MPD-026	01-Sep-06	Kavola East	790699	9388540	220	120	-45	106.6
MPD-027	05-Sep-06	Kavola East	790699	9388540	220	300	-60	31.1
MPD-028	10-Sep-06	Kavola East	790747	9388512	232	300	-60	111.1
MPD-029	14-Sep-06	Kavola East	790711	9388552	199	120	-45	103.5
MPD-030	25-Sep-06	Kavola East	790672	9388581	202	300	-20	148.7
MPD-031	26-Sep-06	Kavola East	790711	9388552	199	300	-60	90.3
MPD-032	07-Oct-06	Kavola East	790834	9388525	269	135	-60	91.5
MPD-033	14-Oct-06	Kavola East	790807	9388558	253	30	-60	99
MPD-034	08-Nov-06	Kavola East	790780	9388587	243	300	-50	153
MPD-035	15-Nov-06	Kavola East	790619	9388580	187	300	-60	169.5
MPD-036	22-Nov-06	Peni Creek	790447	9388474	194	335	-60	51.1
MPD-037	28-Nov-06	Peni Creek	790447	9388474	194	30	-45	88.5
MPD-038	4-Dec-06	South Kavola	790925	9388219	338	97	-45	66
MPD-039	28-Apr-09	Kavola East	790759	9388516	243	90	-90	101.1
MPD-040	3-May-09	Kavola East	790774	9388534	255	90	-90	116.4
MPD-041	3-May-09	Kavola East	790641	9388518	200	90	-90	75
MPD-042	8-May-09	Kavola East	790774	9388534	255	210	-60	150
MPD-043	9-May-09	Kavola East	790591	9388522	205	120	-60	130.5
MPD-044	13-May-09	Kavola East	790774	9388504	252	300	-60	121.5

Drillhole ID	Date Drilled	Prospect	Easting (mE)	Northing (mN)	Elevation (mRL)	Azimuth Magnetic Degree	Dip Degree	Depth (m)
MPD-045	14-May-09	Kavola East	790574	9388470	193	120	-70	91.5
MPD-046	17-May-09	Kavola East	790717	9388431	244	120	-75	109.7
MPD-047	25-May-09	Kavola East	790748	9388562	244	245	-50	119.5
MPD-048	22-May-09	Kavola East	790778	7388480	250	90	-50	179.9
MPD-049	28-May-09	Kavola East	790575	9388469	193	145	-60	120
MPD-050	3-Jun-09	Central Kavola	790703	9388784	210	151	-50	153.5
MPD-051	3-Jun-09	Central Kavola	790655	9388800	234	151	-50	120
MPD-052	9-Jun-09	Central Kavola	790647	9388817	233	151	-50	156
MPD-053	9-Jun-09	Central Kavola	790676	9388767	221	151	-50	120
MPD-054	17-Jun-09	Central Kavola	790662	9388755	227	151	-50	141
MPD-055	18-Jun-09	Central Kavola	790613	9388699	210	151	-50	156
MPD-056	24-Jun-09	Central Kavola	790565	9388646	184	245	-50	90.2
MPD-057	28-Jun-09	Central Kavola	790624	9388702	218	151	-50	159.1
MPD-058	29-Jun-09	Koibua South	790536	9388897	228	294	-50	140.8
MPD-059	14-Jul-09	Central Kavola	790624	9388702	218	61	-60	241.5
MPD-060	5-Jul-09	Koibua	790382	9389135	208	230	-50	81
MPD-061	13-Jul-09	Big Bend	790524	9388768	165	209	-50	154
MPD-062	17-Jul-09	Peni Creek	790390	9388793	149	209	-50	87
MPD-063	20-Jul-09	South Kavola	790704	9388222	251	179	-60	87
MPD-064	17-Jul-09	Peni Creek	790067	9388756	122	150	-50	66
MPD-065	25-Jul-09	Peni Creek	790035	9388780	127	224	-50	99
MPD-066	25-Jul-09	South Kavola	790987	9388260	327	309	-50	98
MPD-067	30-Jul-09	Peni Creek	790073	9388740	119	250	-50	94.5
MPD-068	30-Jul-09	South Kavola	790935	9388212	345	309	-50	101
MPD-069	3-Aug-09	South Kavola	790647	9388333	150	24	-50	182
MPD-070	3-Aug-09	Peni Creek	790260	9388476	208	250	-50	102
MPD-071	5-Aug-09	Peni Creek	790238	9388504	202	24	-50	99
MPD-072	9-Aug-09	Koibua	790601	9389322	208	209	-50	164.5

(From Swiridiuk, 2009)

Appendix D
Summary of Kanon Phase 1 & Phase 2 DD Drilling Results

Table D1 Summary of Kanon Phase 1 and Phase 2 DD drilling results

Drillhole Number	From (m)	To (m)	Intercept (m)	Above Lower Gold Cut-off Grade 0.5 g/t Au
MPD001	32	34	2	0.87
	50	52	2	1.01
MPD002	70	80	10	1.99
incl.	72	74	2	3.33
	152	153.4	1.4	1.10
MPD003	96	100	4	0.68
	106	108	2	0.82
	128	133	5	0.59
	163	173	10	2.18
incl.	168	169	1	3.17
incl.	169	170	1	9.89
MPD004	0	3	3	1.49
	4	5	1	4.61
	5	6	1	13.30
	10	11	1	1.56
	112	114	2	0.67
	119	121	2	0.55
MPD005	0	2	2	1.13
	114	118	4	0.81
	131	132	1	0.95
	138	140	2	0.65
	154	167	13	3.06
incl.	157	158	1	18.25
incl.	158	159	1	12.45
	168	169	1	0.64
	172	173	1	0.53
MPD006	0	4	4	3.01
incl.	0	1	1	5.78
	7	17	10	1.25
incl.	13	14	1	3.27
	23	66	43	2.35
incl.	23	24	1	4.10
incl.	32	33	1	3.52
incl.	33	34	1	4.92
incl.	37	38	1	3.57
incl.	43	44	1	6.11
incl.	45	46	1	5.76
incl.	46	47	1	4.13
incl.	51	52	1	6.66
incl.	63	64	1	13.60
	75	77	2	1.28
	83	85	2	0.74
MPD007	0	14	14	2.83

Drillhole Number	From (m)	To (m)	Intercept (m)	Above Lower Gold Cut-off Grade 0.5 g/t Au
incl.	0	2	2	4.62
incl.	6	8	2	6.30
	18	24	6	0.66
	28	32	4	0.55
	40	46	6	0.87
	66	68	2	0.67
	68	70	2	36.70
	72	74	2	0.56
MPD008	0	23	23	2.29
incl.	6	7	1	11.70
incl.	14	15	1	5.66
incl.	17	18	1	3,47
	29	32	3	0.64
	52	56	4	2.54
incl.	54	55	1	7.57
	60	61	1	3.71
	69	70	1	3.98
	140	142	2	0.95
	162	164	2	0.62
	170	174	4	1.07
MPD009	60	62	2	0.64
	69	71	2	1.58
	96	100	4	4.04
incl.	96	97	1	4.37
incl.	97	98	1	9.94
MPD010	24	25	1	2.34
	40	41	1	3.82
	45	46	1	2.70
	53	57	4	2.25
incl.	53	54	1	4.30
	89	91	2	0.52
MPD011	67	70	3	4.30
incl.	68	69	1	7.20
incl.	69	70	1	3.07
	74	75	1	0.54
	75	76	1	16.20
MPD012	21	23	2	1.40
	36	40	4	0.90
MPD013	4	6	2	1.70
	8	10	2	0.50
	27	28	1	0.50
	46	47	1	0.60
	48	55	7	1.20
MPD014	20	21	1	0.60
	30	32	2	0.60

Drillhole Number	From (m)	To (m)	Intercept (m)	Above Lower Gold Cut-off Grade 0.5 g/t Au
MPD015	0	3	3	0.70
	5	12	7	2.30
incl.	9	10	1	4.28
	13	24	11	1.10
	36	37	1	2.10
	89	90	1	0.60
MPD016	0	1	1	1.60
	4	5	1	1.00
	95.9	97.4	1.5	1.50
MPD017	24	27	3	1.79
incl.	25	26	1	3.10
	61	64	3	1.40
	70	71	1	1.70
MPD018	10	23	13	2.10
incl.	12	13	1	5.45
incl.	18	19	1	3.34
	27	33	6	1.90
incl.	27	28	1	3.02
	37	39	2	4.50
	48	53	5	2.50
incl.	50	51	1	5.81
	61	62	1	1.00
	96	101	5	1.30
	107	109	2	1.00
MPD019	17.2	19.2	2.3	2.90
incl.	17.2	18.3	1.1	3.23
	35.3	37.4	1.1	1.20
	39.3	41.4	2.1	2.60
	77.9	78.5	0.8	0.90
MPD020	4	5	1	0.60
	7	8	1	0.50
	10	14	4	0.90
	15	18	3	1.80
incl.	16	17	1	3.75
	20	22	2	3.20
	43	48	5	2.90
incl.	46	47	1	3.07
incl.	47	48	1	8.47
	55	58	3	0.70
	65	69	4	0.70
	77	81	4	0.50
	141	142	1	0.70
	146	148	2	0.80
MPD021	45	47	2	1.03
MPD022	27	29	2	2.10

Drillhole Number	From (m)	To (m)	Intercept (m)	Above Lower Gold Cut-off Grade 0.5 g/t Au
	33.7	42	8.3	1.70
	44	46	2	0.60
	48	52	4	7.50
incl.	49	50	1	9.95
incl.	50	51	1	16.35
	57	60	3	0.91
	64	67	3	2.10
incl.	65	66	1	5.27
	87	96	9	6.40
incl.	89	90	1	4.28
incl.	91	92	1	17.10
MPD022	continued			
incl.	92	93	1	21.00
incl.	93	94	1	6.72
	97	98	1	1.00
	99	100	1	1.40
	104	106	2	0.90
MPD023	18	119	1	1.30
	20	26	6	1.40
	30	31	1	2.60
	92	93	1	1.00
MPD024	0	1	1	4.50
	2	3	1	0.60
	29	30	1	2.20
	49	51	2	1.40
	52	54	2	1.00
	66	68	2	1.70
	128	130	2	1.50
MPD025	0	3	3	1.40
	13	14	1	0.50
	17	18	1	0.80
	21	22	1	0.80
	94	96	2	1.40
	98	99	1	0.60
MPD026	4	5	1	1.80
	6	7	1	1.80
	9	13	4	3.70
incl.	9	10	1	3.46
incl.	10	11	1	7.43
incl.	11	12	1	3.15
	74	81	7	2.10
incl.	79	80	1	3.76
	92	94	2	0.50
	98	100	2	1.30

Drillhole Number	From (m)	To (m)	Intercept (m)	Above Lower Gold Cut-off Grade 0.5 g/t Au
MPD027	No significant	results		
MPD028	19	20	1	1.21
	24	30	6	1.43
	36	38	2	0.60
	77	81	4	1.94
incl.	77	78	1	3.55
	90	91	1	1.83
MPD029	13	14	1	3.33
	90	96	6	0.90
MPD030	19	21	2	0.99
	125	126	1	1.56
	130	132	2	1.01
MPD031	67	68	1	1.20
	70	71	1	1.01
MPD032	8	16	8	1.41
incl.	8	10	2	3.32
	34	36	2	1.08
MPD033	0	10	10	2.20
incl.	4	5	1	5.28
incl.	5	6	1	3.69
incl.	6	7	1	3.95
incl.	7	8	1	4.36
	24	26	2	0.66
MPD033	continued			
	62	64	2	0.55
	80	84	4	0.85
MPD034	0	3	3	0.70
	58	60	2	1.08
	88	89	1	3.34
	113	117	4	0.85
	124	126	2	2.80
MPD035	No significant	results		
MPD036	22	26	4	5.70
incl.	24	25	1	13.30
incl.	25	26	1	6.86
	30	32	2	0.76
	46	48	2	2.77
MPD037	0	4	4	0.74
	43	44	1	0.84
	66	68	2	2.85
MPD038	0	2	2	0.66
	44	48	2	1.13

(0.5 g/t Au cut-off) (From Bucher, 2008)

Appendix E
Summary of Kanon Phase 3 DD Drilling Results

Table E1 Summary of Kanon Phase 3 Diamond Drilling Results

(All intervals are drill widths) (*From Swiridiuk, 2009*)

Hole No.	From (m)	To (m)	Length (m)	Gold (g/t)	Silver (g/t)	Cut-off grade (gold g/t)
MPD039	0.0	25.7	25.7	2.43	5.09	0.2
including	0.8	10.8	10.0	3.24	6.38	1.0
including	11.9	25.7	13.8	2.14	3.54	0.5
including	24.3	25.7	1.4	5.45	2.90	5.0
	27.2	36.2	9.0	1.05	1.94	0.2
including	28.1	30.2	2.1	2.68	4.61	2.0
	37.2	69.5	32.3	1.57	1.55	0.2
including	37.2	39.6	2.4	2.24	1.58	0.5
including	40.4	45.6	5.2	2.06	1.39	0.5
including	40.9	44.3	3.4	2.71	1.74	2.0
including	47.5	49.3	1.8	2.48	4.15	2.0
including	57.5	63.6	6.1	3.37	3.14	1.0
including	58.3	60.3	2.0	5.63	2.70	5.0
MPD040	2.0	23.0	21.0	3.13	10.83	0.4
including	6.0	7.0	1.0	5.26	8.90	3.5
including	20.0	22.0	2.0	10.01	45.60	6.0
	29.0	31.0	2.0	0.88	1.00	0.2
including	30.0	31.0	1.0	1.25	1.10	1.0
	35.0	38.0	3.0	0.35	0.57	0.2
	45.0	55.0	10.0	0.73	1.06	0.2
including	51.0	52.0	1.0	2.70	1.80	2.5
MPD041	no assays greater than 0.2g/t					
MPD042	0.0	4.0	4.0	1.05	5.63	0.2
	5.0	52.0	47.0	2.06	3.71	0.2
including	5.0	19.9	14.9	2.96	8.17	1.0
including	16.0	18.0	2.0	6.27	22.10	5.0
including	21.0	22.0	1.0	1.45	1.70	1.0
including	24.2	30.0	5.8	2.05	1.94	1.0
including	33.0	36.0	3.0	3.18	1.90	1.5
including	40.0	42.0	2.0	2.88	3.05	2.0
including	46.4	48.0	1.6	5.92	6.29	4.0
	55.0	74.0	19.0	1.64	1.88	0.2
including	57.0	61.0	4.0	3.39	4.10	2.5
including	62.0	65.0	3.0	3.63	3.23	2.0
	75.0	94.0	19.0	1.17	1.61	0.2
including	77.0	79.5	2.5	3.25	1.58	1.5
including	84.0	85.0	1.0	2.76	0.20	2.5
	95.0	98.0	3.0	2.77	0.70	0.2
including	95.0	96.0	1.0	7.35	1.50	7.0
	99.0	103.5	4.5	1.65	5.82	0.2
including	99.0	102.0	3.0	2.06	7.19	1.0
	105.5	108.0	2.5	0.25	0.36	0.2
	110.0	114.0	4.0	0.24	0.40	0.2
	115.0	122.0	7.0	1.81	3.84	0.2

Hole No.	From (m)	To (m)	Length (m)	Gold (g/t)	Silver (g/t)	Cut-off grade (gold g/t)
including	116.0	121.0	5.0	2.41	5.10	1.0
	123.0	133.0	10.0	3.14	16.73	0.2
including	125.0	133.0	8.0	3.85	20.85	0.5
including	127.5	130.5	3.0	8.09	52.50	5.0
including	128.5	129.5	1.0	13.25	101.00	13.0
MPD043	3.0	8.0	5.0	0.41	3.12	0.2
including	7.0	8.0	1.0	0.66	3.90	0.5
	9.0	12.0	3.0	0.34	1.73	0.2
	23.0	28.0	5.0	1.45	6.38	0.5
including	25.0	28.0	3.0	1.92	8.53	1.0
including	27.0	28.0	1.0	2.62	14.30	2.0
	54.0	59.0	5.0	0.60	2.62	0.2
including	54.0	56.0	2.0	1.09	5.85	0.5
	62.0	64.0	2.0	0.71	1.10	0.2
including	62.0	63.0	1.0	0.98	1.40	0.5
	82.5	83.15	0.6	0.57	1.60	0.5
MPD044	7.0	28.0	21.0	1.85	4.30	0.2
including	7.0	26.0	19.0	2.00	4.69	0.5
including	11.0	13.0	2.0	5.29	7.45	5.0
	29.0	37.0	8.0	1.52	1.18	0.2
including	33.0	37.0	4.0	2.75	2.00	1.0
	59.0	60.0	1.0	0.56	0.30	0.5
	61.0	63.1	2.1	0.48	2.60	0.2
including	62.1	63.1	1.0	0.74	4.90	0.5
	92.3	93.0	0.7	2.34	9.00	2.0
MPD045	0.0	11.0	11.0	1.06	4.54	0.2
including	0.0	1.5	1.5	1.07	6.00	1.0
including	5.0	7.0	2.0	1.06	7.65	0.5
including	9.0	11.0	2.0	3.19	10.25	2.5
	14.0	30.0	16.0	3.72	20.37	0.2
including	14.0	16.0	2.0	2.19	5.70	1.5
including	17.0	26.0	9.0	5.94	34.43	0.5
including	18.0	19.0	1.0	7.75	8.70	7.0
including	20.0	22.0	2.0	13.36	102.40	8.0
including	23.0	24.0	1.0	13.55	80.00	13.0
MPD046	15.0	17.0	2.0	1.00	0.40	0.5
	18.0	19.0	1.0	3.35	22.30	3.0
	20.0	22.0	2.0	1.20	0.25	0.5
including	20.0	21.0	1.0	1.67	0.30	1.0
	32.0	33.0	1.0	0.58	<0.20	0.5
	38.0	41.0	3.0	0.55	<0.20	0.3
	48.0	59.0	11.0	0.76	0.42	0.2
including	49.0	52.0	3.0	0.92	0.37	0.5
including	49.0	50.0	1.0	1.09	0.40	1.0
including	54.0	56.0	2.0	1.84	0.85	0.5
including	54.0	55.0	1.0	3.08	0.90	3.0

Hole No.	From (m)	To (m)	Length (m)	Gold (g/t)	Silver (g/t)	Cut-off grade (gold g/t)
	63.0	64.0	1.0	0.57	0.30	0.5
	66.0	67.0	1.0	0.60	0.50	0.5
	73.0	74.3	1.3	0.67	0.50	0.5
MPD047	3.5	4.5	1.0	0.92	0.70	0.5
	7.7	8.2	0.5	0.50	0.60	0.5
	76.0	77.0	1.0	0.59	1.30	0.5
	98.0	99.0	1.0	1.37	5.60	1.0
MPD048	0.0	8.0	8.0	3.28	4.34	0.5
including	1.8	7.0	7.0	3.49	4.45	1.0
including	1.8	5.0	3.2	6.67	8.76	3.0
including	3.5	4.2	0.7	16.50	25.00	15.0
	14.0	23.0	9.0	0.57	0.24	0.2
including	15.0	16.0	1.0	1.01	0.30	1.0
	26.0	28.0	2.0	0.93	0.35	0.5
	54.5	55.5	1.0	1.59	0.40	1.0
	65.0	67.0	2.0	0.72	0.10	0.5
	148.0	149.0	1.0	0.87	2.30	0.5
	164.0	165.0	1.0	0.57	1.10	0.5
MPD049	0.0	6.0	6.0	0.59	3.14	0.2
including	1.1	2.0	0.9	1.48	4.60	1.0
	11.0	12.0	1.0	0.56	3.90	0.5
	34.0	36.0	2.0	1.22	3.15	0.5
	75.0	76.0	1.0	0.71	0.30	0.5
MPD050	145.0	148.0	3.0	1.24	1.87	0.5
	151.0	153.5	2.5	0.86	4.74	0.5
MPD051	No assays greater than 0.5 g/t					
MPD052	15.0	16.0	1.0	1.15	3.10	1.0
	103.0	104.0	1.0	0.78	1.90	0.5
	153.6	154.5	0.9	15.45	24.20	15.0
MPD053	95.0	97.0	2.0	1.39	22.40	1.0
MPD054	7.0	9.0	2.0	0.59	0.70	0.5
	13.7	14.6	0.7	1.13	0.50	1.0
	51.0	52.0	1.0	0.64	0.20	0.5
	123.0	126.0	3.0	1.49	8.23	0.5
including	123.0	125.0	2.0	1.90	9.40	1.5
MPD055	62.0	64.0	2.0	0.67	0.50	0.5
	67.0	68.4	1.4	2.57	3.10	2.0
	98.5	99.5	1.0	1.04	7.90	1.0
	101.5	103.5	2.0	1.30	0.65	0.5
including	102.5	103.5	1.0	2.09	0.80	2.0
	113.5	115.4	1.9	4.99	3.16	3.0
	116.4	120.0	3.6	0.65	0.24	0.5
MPD056	3.0	4.0	1.0	1.01	0.50	1.0

Hole No.	From (m)	To (m)	Length (m)	Gold (g/t)	Silver (g/t)	Cut-off grade (gold g/t)
	8.0	10.0	2.0	0.56	0.50	0.5
	35.2	36.7	1.5	0.75	1.30	0.5
	51.0	52.5	1.5	0.66	0.20	0.5
MPD057	40.0	41.0	1.0	0.99	0.80	0.5
	158.0	159.0	1.0	0.81	5.80	0.5
MPD058	98.0	100.0	2.0	0.68	1.50	0.5
	136.0	137.4	1.4	3.72	16.70	3.0
	138.5	140.8	2.3	0.51	2.60	0.5
MPD059	46.0	47.0	1.0	0.62	<0.20	0.5
	208.0	209.0	1.0	0.82	8.90	0.5
MPD060	No assays greater than 0.5 g/t					
MPD061	2.0	7.5	5.5	1.80	0.81	0.5
including	2.0	6.0	4.0	2.19	1.00	1.0
	32.2	35.0	2.8	2.86	4.48	0.5
including	32.2	34.4	2.2	3.39	5.59	1.0
including	33.0	33.7	0.7	5.80	8.50	5.0
MPD 062	45.0	46.0	1.0	0.65	0.50	0.5
MPD 063	4.0	5.0	1.0	0.55	0.30	0.5
	7.0	8.0	1.0	0.99	0.30	0.5
	9.0	11.0	2.0	1.99	0.60	0.5
including	10.0	11.0	1.0	3.44	0.70	1.0
	29.3	30.0	0.7	0.51	<0.20	0.5
MPD 064	No assays greater than 0.5 g/t					
MPD 065	No assays greater than 0.5 g/t					
MPD 066	3.0	4.0	1.0	2.17	<0.20	2.0
	46.0	47.0	1.0	1.32	0.40	1.0
	54.6	55.5	0.9	4.05	32.20	4.0
	56.5	60.0	3.5	1.46	2.77	0.5
including	57.9	60.0	2.1	2.06	1.50	1.0
	66.4	67.5	1.1	0.69	0.60	0.5
	77.0	78.0	1.0	0.77	1.10	0.5
MPD 067	No assays greater than 0.5 g/t					
MPD 068	0.0	3.0	3.0	1.85	1.13	0.5
including	0.0	1.0	1.0	2.76	1.20	2.0
including	2.0	3.0	1.0	2.06	0.00	2.0
	96.0	97.0	1.0	0.58	6.90	0.5
	98.0	99.0	1.0	0.63	1.90	0.5
MPD 069	2.0	7.5	5.5	0.17	0.48	0.5
	10.7	15.0	4.3	1.21	5.50	0.5
	17.0	18.0	1.0	0.74	0.70	0.5
	21.0	38.0	17.0	1.06	3.40	0.5
including	21.9	25.0	3.1	1.71	14.59	1.0
including	28.0	29.0	1.0	1.73	3.80	1.0
including	30.0	33.0	3.0	2.03	5.00	1.0
including	37.0	38.0	1.0	1.41	2.60	1.0

Hole No.	From (m)	To (m)	Length (m)	Gold (g/t)	Silver (g/t)	Cut-off grade (gold g/t)
	42.0	43.0	1.0	1.35	3.20	1.0
	45.0	47.0	2.0	2.09	1.75	0.5
including	46.0	47.0	1.0	3.29	2.50	3.0
	51.0	52.0	1.0	0.74	1.20	0.5
	55.0	56.0	1.0	0.51	2.20	0.5
	62.0	63.0	1.0	1.11	1.30	1.0
	71.0	72.0	1.0	0.52	1.70	0.5
MPD 070	0.0	2.0	2.0	0.47	0.35	0.5
	3.0	5.0	2.0	0.28	0.35	0.5
	10.0	11.0	1.0	0.67	0.30	0.5
	32.0	34.0	2.0	1.04	0.50	1.0
	60.0	61.0	1.0	0.68	0.60	0.5
MPD 071	23.0	27.0	4.0	1.89	0.75	1.0
	32.0	33.5	1.5	1.47	0.50	1.0
MPD 072	16.7	18.0	1.3	1.08	2.10	1.0
	45.5	47.5	2.0	1.04	2.45	0.5
including	46.5	47.5	1.0	1.12	3.70	1.0
	62.0	64.0	2.0	0.52	0.60	0.5
	66.0	69.0	3.0	2.19	3.47	0.5
including	66.0	68.0	2.0	3.28	5.20	3.0
	90.0	91.5	1.5	1.92	1.40	1.0
	102.0	104.0	2.0	2.42	2.30	2.0
	106.5	108.0	1.5	1.37	1.60	1.0
	120.0	121.5	1.5	0.75	1.00	0.5
	122.7	123.9	1.2	2.15	1.80	2.0

Appendix F
Tolukuma JORC 2012 Table 1

Tolukuma Mineral Resource Estimate

JORC Code, 2012 Edition

Table F1 Section 1 Sampling techniques and data

(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Sampling techniques	Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as downhole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.	Trench samples were collected according to a SOP document and overseen by employees of Tolukuma Gold Mine (TGM). Sample sites were cleaned to expose fresh rock faces using an excavator. Horizontal or near horizontal sample intervals of 1 m were marked with spray paint using a 50 m measuring tape. Each interval was identified by a unique sample identifier. The beginning of each sample was located using Mine Survey theodolite system. Channel sample sites were mapped and photographed and each sample was weighed prior to despatch. The samples produced was despatched to the Tolukuma Mine Site Assay Laboratory for sample preparation and analysis. Face samples were aimed to collected on every production drive face. Samples were collected by trained technicians by chip sampling host rock and vein samples separately. Vein thickness was mapped and sample locations denoted. All samples were submitted to Tolukuma Mine Site Assay Laboratory. Diamond drill core samples Sample preparation comprised drying and crushing each sample down to a 500 g sample which was pulverised to 95% passing 75 microns, delivering a 250 g split for analysis. The analysis technique comprised aqua regia digest of the pulp followed by and assay using the Atomic Absorption Spectrometry (AAS) analytical method.
Drilling techniques	Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	Drilling is exclusively diamond drilling. The diamond drill holes at Tolukuma were collared in HQ/HQ3 (63.5/61.1 mm core diameter) and reducing to NQ/NQ3 (47.6/45.1 mm core diameter) at depth. The triple tube drilling was in place from at least 2007. The currently available database does not record hole diameters. No oriented core was collected. The database records the following totals by sample/drill type **Data type** | **Number** | **Meters** Diamond drill | 1,024 | 178,560.82 Face | 16,619 | 34,802.30 Pit | 1,586 | 16,612.51 Other | 66 |

Criteria	JORC Code explanation	Commentary
		Total (including minor unused) 19,295
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the samples. 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.	Diamond core sample lengths were measured, recorded, and recovery calculated as an integral part of the logging procedure. To maximise core recovery, the diamond core drilling method used large diameter HQ size where possible. This approach helped to preserve core in place. Drilling recovery averages 92% across all lithologies. No relationship was detected between elemental abundances and core recovery.
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. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged.	Drillholes were logged on geological intervals for characteristics including lithology, quartz veining and vein to core axis orientation. Diamond drill core was photographed before sampling but these records were not available in retained datasets. Rock quality designation (RQD) was recorded but not retained in current datasets. The observations were collected as hard copy logs and transcribed into digital files. Currently available fields include lithology and vein name
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken. If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique. Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. 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. Whether sample sizes are appropriate to the grain size of the material being sampled.	Diamond drill core was marked with sampling intervals by geologists according to geological boundaries and pre-determined sampling lengths. On average core was sampled at approximately 1 m intervals through potentially mineralised zones. Not all core was assayed, only core with indications of shearing and or veining. The core was generally cut into halves using a diamond saw. Soft core, for example the near surface soil material, was manually segregated. Samples were placed into numbered calico bags, with an internal tag, for delivery to the laboratory. Sample preparation was completed at Tolukuma Gold Mine preparation facilities. Sample preparation comprised drying and crushing each sample down to a 500 g sample which was pulverised to 95% passing 75 microns, delivering a 250 g split for analysis To ensure samples taken were representative, experienced geologists have undertaken tasks and advised and trained other field staff. Documented operating procedures for drill supervision, core logging, core cutting and density measurement were followed in obtaining samples. AMC considers sampling followed usual industry practices and appropriate for obtaining assays suitable for resource estimation.
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.	In 2007 it was reported that check samples were taken and analysed, with blanks and standards included in every batch but not recorded in the database. Problems were reported with attempts to match duplicates. A small number (98) of samples able to be matched with gold assays between TGM and external results from Genalysis Laboratories in Perth showed good correlation. It is reported in

Criteria	JORC Code explanation	Commentary
	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. Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	2006 that the Tolukuma Mine Laboratory took part in Geostats Pty Ltd round robin blind testing with the performance of the laboratory in both reports for that year being satisfactory. In 2013 onwards it is reported the QA/QC programme included the insertion of blind blanks and CRMs into submitted sample batches. Of the CRMs, gold standards were purchased from a reputable supplier and supplied as small sealed packages. Field duplicates were not included in these QA/QC programmes but have been in previous programmes. Internal laboratory repeat assays and introduced CRMs were monitored. Unfortunately, no record of QAQC was maintained in the database. For drilling and trenching in 2017 sample pulps were sent by the preparing facility at TGM to Intertek (ITS) Lae for analysis. All prepared pulps were submitted for gold determination by fire assay/atomic absorption spectrophotometry (FA/AAS) (Intertek Lab Code FA50); for copper, iron, zinc (4A/OE (4-acid/ICP-OES)); silver, lead, antimony (4A/MS (4-acid ICP-MS)) and mercury (AR01/MS (Vapour hydride/AAS)). The rate of insertion was 1 in 30 for blanks, 1 in 20 for CRM, and 1 in 50 for field duplicates (for historic drilling). AMC considers the lack of QAQC consistently recording quality of assays lowers the confidence in the overall MRE. However, based on limited recording and on the inspection of the laboratory in 2011 that the available data is adequate for the grade estimation of gold and silver resources. Laboratory procedures used at TGM are typical industry practice, well-documented, and supervised, and the technique is considered total. AMC considers the captured data can be used for resource estimation..
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data.	All data in the database is loaded from digital files provided by the laboratories, with random checking of hardcopy printouts against database results. No drillholes have been twinned to date. At times several drillholes were collared from the same site, with different orientation. Therefore, the top few metres of each of these holes represent close-spaced drillholes, similar to twinned holes. Comparison of such intervals suggests no obvious errors. TGM geologists inspected intervals of substantial mineralisation as part of the validation and verification of sampled intervals. Primary data was recorded on paper and/or entered digitally into the logging templates then captured into the database as defined in documented procedures. Data was validated by field and office staff. Unfortunately, over time and with changes in companies and personnel much of the originally recorded data has not survived to current times. AMC considers this decreases confidence in the overall resource estimate. No adjustment to assay data has been made
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. Specification of the grid system used. Quality and adequacy of topographic control.	Drillholes were located using total station surveying. The survey was completed in Tolukuma Mine Grid datum. This is a local grid with local permanent survey markers. It has not to date been tied to global grid coordinate systems. The rotation from magnetic north in early years is reported to be approximately 20 degrees west Downhole surveys were completed on the drillholes and were nominally surveyed at 25 m to 5 m intervals downhole using a digital single shot 'Pathfinder' downhole camera and a manual Eastman downhole camera.

Criteria	JORC Code explanation	Commentary
		The topographic survey was completed using Total Station in a local mine grid by Mine Surveyors updated in 2014. The collar positions of some drillholes lie above this surface as historic surface mining continued post- drilling and channel sampling. AMC considers the accuracy of locations of surface drilling is adequate, and underground is good for resource estimation.
Data spacing and distribution	Data spacing for reporting of Exploration Results. Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. Whether sample compositing has been applied.	The nominal drillhole spacing is 30 m along east-west oriented drill sections which are 30 m apart but in many locations closer spaced holes are located where close to surface workings or from underground drill cuddies. . AMC considers the data spacing is appropriate for the purpose of 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. 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.	Diamond drilling is designed where possible to intersect the mineralisation at a high angle approaching normal. The intercepts in angled drillholes do not always equate to true width. Mineralisation is narrow 1-4 m in thickness. Drillhole intervals in potentially mineralised horizons are nominally 1 m providing strong control on mineralisation dimensions and variability. Drilling locations in the underground are limited and, in some situations, result in exaggerated apparent thicknesses due to low angles to vein orientation. There is no evidence at this stage or reason to believe that sampling is biased. Face samples by their nature are biased. The use of face samples is warranted by the use of high grade restrictions and in the depletion of all resources with areas of workings. Thus the face samples only inform limited along strike and depth extensions of the veins.
Sample security	The measures taken to ensure sample security.	All drilling was undertaken on the mine site. All core was processed in a dedicated exploration logging and sampling facilities by TGM employees. Access to the facilities is kept locked when not is use and no reports of break-in or theft were recorded during the drilling programme. Security guards are employed by TGM to monitor the buildings. Once samples were delivered to Intertek Lae, all sample preparation and analysis was undertaken by Intertek Lae. AMC considers sample security was adequate and appropriate for the mineralisation style and location.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Audits of data, drilling, sampling and assay methods are recorded in reports from 2007, 2013, 2015 and 2017.

Section 2 Reporting of exploration results

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

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,	The Tolukuma Gold mine is located 100 km north of Port Moresby, located on land administered by the Woitape Local Level Government. On 2 July 2021, the Tolukuma Gold Mine tenement package was acquired by Tolu Minerals Ltd from the Liquidator. The current status of tenements is as follows:

Criteria	JORC Code explanation	Commentary
	native title interests, historical sites, wilderness or national park and environmental settings. The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	Tenement / Owner / Status / Appl. Date / Grant Date / Expiry Date / Area ML104 Tolu Active 01/10/93 29/08/22 28/08/32 771 Ha EL2385 TGM Active 02/06/15 26/05/16 25/05/22[+] 58 sub blocks EL2531 Frontier Active 04/05/17 25/02/19 24/02/23 ~66 sub blocks EL2535 Tolu Active 30/05/17 24/01/22 25/01/24 75 sub blocks EL2536 Tolu Active 30/05/17 24/01/22 25/01/24 37 sub blocks EL2538 TGM Active 13/06/17 24/01/22 25/01/24 30 sub blocks EL2539 TGM Active 13/06/17 24/01/22 25/01/24 58 sub blocks ELA2723 Tolu Appl 09/08/21 108 sub blocks NOTE: [+] Request for extension lodged and is subject to statutory holding over pursuant to an undecided renewal application. *Appl. are applications made on areas with earlier applications. This may mean they are not granted.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Exploration and mining at Tolukuma has been conducted by many companies over the years including by Newmont Proprietary Limited, Dome Resources, Emperor Mines Pty Ltd-Durban Roodeport Deep (DRD) Ltd, Petromin (PNG) Holdings Ltd, Asidokona Mining Resources Pte. Ltd. Mining commenced in 1995 by Dome Resources after initial exploration discovery in 1986 by Newmont Proprietary Limited. Discovery was by stream sediment and ridge and spur sampling methods.
Geology	Deposit type, geological setting and style of mineralisation.	The primary host rocks to the mineralised veins are the Miocene to Pliocene Mount Davidson Volcanics, although some mineralisation occurs within the Jurassic-Cretaceous Kagi Metamorphics which predominantly lie to the west of the main Tolukuma Fault. The volcanics comprise basaltic and andesitic tuffs, agglomerates, and breccias which are extensively altered and have been intruded by diorites and porphyries. The Kagi Metamorphics consist of slate, phyllite schist and minor gneiss. Gold mineralisation at Tolukuma occurs within a series of steeply-dipping, relatively narrow, fault-controlled quartz—adularia epithermal veins, within a north—south-trending structural corridor. The principal controlling structure is the sinistral strike-slip Tolukuma fault. Mineralisation has been defined over a north—south strike of 1-2 km, but the major structures have been mapped for several kilometres, principally to the south of the mine area. Approximately 400 m to the east of the Tolukuma fault is the sub-parallel north—south-striking Zine fault and splays. Southeast-striking tension fractures have developed between the major faults and splays and also carry mineralisation; the principal structures from north to south are the Tolukuma, Zine, Tinabar, Sawmill, Gulbadi, Tolimi, Gulbadi X, Degot, Fundoot and Aivilolop veins. East of the Zine vein additional mineralised splays have been identified, including the Gulbadi Red and Mystery vein. The bulk of the known mineralised veins lie to the east of the Tolukuma fault, but some splays have been identified striking off to the northwest, notably the Banana structure. The known width of the mineralised corridor ranges from 200-500 m. The mineralised veins pinch and swell, and range in width from 0.5-4.5 m. The strike extent of the mineralised lodes varies but can typically range from 100-300 m along the southeast-striking tension fractures, to 500 m or more along the more continuous north—south-trending shears. Veins comprise quartz, adularia, pyrite and marcasite, with lesser pyrargyrite and stibnite. Gold grades in the veins are variable, averaging 10-40 g/t Au, but can reach bonanza grades.

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. If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	All material drill hole locations related to this MRE are included in Attachments A summary of the vein targets of all drilling in the database grouped by drillhole prefix are shown below:

Drillhole ID from	to	Era drilled	Target vein area	Surface/Underground	Type
120_1	120_8	Newmont	Zine-120	Surface	DDH
120ZN001	120ZN033	unknown	120 Zine North	Surface	DDH
21640_1	23200_1	Newmont	Tolukuma-Gulbadi	Surface	DDH
BAV001	BAV011	unknown	Degot-Illive	Surface	DDH
BN001	BN034	unknown	Banana	Surface	DDH
BNW001	BNW006	unknown	Banana West	Surface	DDH
DG001	DG016	unknown	Degot-Gulbadi-Zine	Surface	DDH
DP001	DP011	unknown	Degot	Surface	DDH
FN001	FN011	unknown	Fundoot North	Surface	DDH
FS001	FS017	unknown	Fundoot South	Surface	DDH
GB001	GB039	unknown	Gulbadi	Surface	DDH
GBY001	GBY007	unknown	Gulbadi Y	Surface	DDH
GF001	GF009	unknown	Gufinis	Surface	DDH
GP001	GP007	unknown	Degot-Gulbadi-Zine	Surface	DDH
GUFTR001	GUFTR008	unknown	Gufinis	Surface	Trench
IV001	IV009	Newmont	Illive	Surface	DDH
IV010	IV066	unknown	Fundoot-Ivololop	Surface	DDH
KD001	KD044	unknown	Kunda/Milihamba	Surface	DDH
KP001	KP027	unknown	Tinabar & Gulbadi	Underground	DDH
LC001	LC024	unknown	Lock Dagakuma	Surface	DDH
LM001	LM200	unknown	All TGM veins	Underground	DDH
MSDH001	MSDH003	unknown	Mt Sen	Surface	DDH
MYV001	MYV006	unknown	Mystery	Surface	DDH
SC001	SC003	unknown	Fundoot-Ivololop	Surface	DDH
SK001	SK045	unknown	Saki	Surface	DDH
SM001	SM015	unknown	Sawmill	Surface	DDH

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td>SSD001</td><td>SSD018</td><td>unknown</td><td>Seriseri</td><td>Surface</td><td>DDH</td></tr>
<tr><td>TFW001</td><td>TFW014</td><td>unknown</td><td>Tolukuma FW</td><td>Underground</td><td>DDH</td></tr>
<tr><td>TGF001</td><td>TGF020</td><td>unknown</td><td>Gufinis</td><td>Surface</td><td>DDH</td></tr>
<tr><td>TGF021</td><td>TGF023</td><td>unknown</td><td>Tolukuma-Gufinis</td><td>Surface</td><td>DDH</td></tr>
<tr><td>TL001</td><td>TL002</td><td>Newmont</td><td>Tolimi</td><td>Surface</td><td>DDH</td></tr>
<tr><td>TS001</td><td>TS016</td><td>unknown</td><td>Tinabar</td><td>Surface</td><td>DDH</td></tr>
<tr><td>TTEX001</td><td>TTEX006</td><td>unknown</td><td>Tinabar-Tolukuma Extn</td><td>Underground</td><td>DDH</td></tr>
<tr><td>TU002</td><td>TU132</td><td>unknown</td><td>All TGM veins</td><td>Underground</td><td>DDH</td></tr>
<tr><td>WD001</td><td>WD024</td><td>unknown</td><td>Tolukuma Waste dump</td><td>Surface</td><td>DDH</td></tr>
<tr><td>ZGC001</td><td>ZGC016</td><td>unknown</td><td>Zine_Tinabar_Gulbad i</td><td>Surface</td><td>DDH</td></tr>
<tr><td>ZN001</td><td>ZN124</td><td>unknown</td><td>Zine</td><td>Surface</td><td>DDH</td></tr>
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</td></tr>
<tr><td>Data aggregation methods</td><td>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.
Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.
The assumptions used for any reporting of metal equivalent values should be clearly stated.</td><td>All material vein intercepts for this MRE are included in Attachments based on a cut-off of 1 g/t Au.
Note drilling was only sampled where alteration or veining of the host rock was logged.
Metal equivalents have not been used in any reporting.</td></tr>
<tr><td>Relationship between mineralisation widths and intercept lengths</td><td>These relationships are particularly important in the reporting of Exploration Results.
If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.
If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg ‘down hole length, true width not known’).</td><td>Diamond drilling is designed where possible to intersect the mineralisation at a high angle approaching normal. The intercepts in angled drillholes do not always equate to true width. Mineralisation is narrow 1-4 m in thickness. Drillhole intervals in potentially mineralised horizons are nominally 1 m providing strong control on mineralisation dimensions and variability.
Drilling locations in the underground are limited and, in some situations, result in exaggerated apparent thicknesses due to low angles to vein orientation.
All intercepts quoted in the attachments are down hole length.</td></tr>
</table>

Criteria	JORC Code explanation	Commentary
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.	Plans of drilling locations and types are included in the body of the report. Example cross sections are also provided in the body of the report.
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.	Comprehensive reporting of trench samples and drillholes is not practical, but summary details of the data are provided in the report and attachments, and numerous diagrams are included showing results of selected drilling. This is a summary MRE report and includes a large amount of historic data that does include drilling with low grades
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.	Historic drilling exploration is recorded in the mine exploration database. The Tolukuma Gold Mine has been in semi-continuous operation since 1994. Bulk density was historically recorded, but is currently lost. An assumed density of 2.2 g/cm3 has been applied consistently in previous estimates and during production. AMC believes there is a risk that this density is likely to be lower than reality in lower (fresh rock) parts of the resource. Current recovery methods for gold are by gravity and conventional carbon-in-leach (CIL) with silver recovery using the Merrill Crowe process. The mineralisation has variable levels of antimony that can reduce gold recovery if not blended appropriately. The highest levels of antimony are currently recognised in the deepest parts of the Zine orebody.
Further work	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	AMC has provided recommendations for further drill assessments especially in the areas planned for future development such as Fundoot and Gulbadi Red.

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

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 validation procedures used.*	Much of the detailed logging of diamond core has been lost in systems not recovered by AMC or is unknown to AMC at this time. A LYNX software package hosted the data during ownership by DRD. The original Excel files and or MSAccess databases used by AMC in resource estimates in 2011 were provided by the Mine Geology team at the time.

Criteria	JORC Code explanation	Commentary
		The Competent Person (R. Carlson) conducted a site visit in 2013 where physical hardcopy records of all drilling were examined in filing cabinets in the Tolukuma Mine office. A comprehensive review of all the downhole survey records was conducted, and databases updated to correct missing or invalid measurements. A selection of holes was also checked for the hardcopy assay laboratory record sheets against the digital records. No significant errors were noted at the time. The currently available data is compiled from a Microsoft Access (MSAccess) file originally supplied in 2011 (2011tolukuma.mdb) and updated by AMC in 2013 and 2016 (mlex_database_final_v1_09092016.mdb) to include updated face samples, diamond drilling and trenching completed after the validation and corrections done in 2011. AMC validated the supplied data by checking for: • Duplicate drillhole collar coordinates • Drillhole collar elevation for underground drilling was checked against underground development wireframes. Surface drilling collars were not validated due to poor topographic surface quality and changes in topography due to mining and backfilling. • Duplicate downhole survey depths • Excessive azimuth / dip deviations • Azimuth / dip measurements outside expected values, • Overlapping intervals in assay data • Assay values outside expected limits. 5 diamond drillholes were excluded from the Tolukuma dataset due to unreasonable uncertainty in the position of the drillhole collars, no geology, or no/dubious downhole survey.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	Mr Roderick Carlson (Competent Person) completed site visits to the Tolukuma Project in 2013 and 2015. The initial site visit was to validate the inputs to the Mineral Resource data used in the Tolukuma 2012 estimate. In addition, he reviewed exploration protocols, assessed results, collected information and discussed the ongoing activities with site personnel. During subsequent visits the focus shifted on to technical aspects of the program and future planning.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.*	• Gold mineralisation occurs within a series of steeply dipping, and narrow fault-controlled quartz-adularia epithermal veins within a north-south trending structural corridor. The mineralisation has been defined over a north-south strike length of 1 - 2 km, but major structures have been mapped for several kilometres. • From the data available (drillhole logs, historic face samples and assays) development of 15 discrete mineralisation domains was completed. The new interpretation was based on drilling and face sample data, and based on historical mining stopes and development drive. Generally, the veins were selected using a cut-off grade

Criteria	JORC Code explanation	Commentary
	• *The factors affecting continuity both of grade and geology.*	of greater than 3 g/t Au with veining logged in lithology. Some poorly drilled areas were joined with gold grades less than 3 g/t Au with veining logged in lithology for continuity purposes. • The vein domain thickness is interpolated based on the sampled interval. Data point spacing varies but is generally within 30 m, but in areas with face samples is every cut. • The Competent Person is confident in the geological interpretation and, given the historic mining and underground development, considers there to be low risk of alternate geological interpretations that would result in any material changes.
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 strike length of the mineralised veins varies from 100 m to 300m along the south-east tension fractures, to over 500 m along the north-south trending shears. The mineralised veins pinch and swell along strike and down dip. Vein widths vary from 0.1 m to 4.0 m. From the drilling to date, mineralisation is observed to be continuous down to 500 m below the surface in the major domains, however more commonly, mineralisation extends to approximately 300 m below the surface.
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.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.*	• Resource estimation was carried out using Datamine Studio RM software (version 1.10.100.0). The initial domain block model was created in Surpac prior to import into Datamine due to sub celling differences in the software. • Ordinary Kriging (OK) was used to estimate Gold (Au), Silver (Ag), Copper (Cu), Lead (Pb), Mercury (Hg), Antimony (Sb) and Zinc (Zn) into parent blocks using an accumulation method. The parent block dimensions were 10 m along strike (northing), 5 m across strike (easting) and 10 m down dip (elevation). The typical vein thickness is less than 5 m wide, and so a parent block of 5 m in the across strike direction essentially created a one block estimate to aid in reducing the eventual mining grade variation. The parent blocks were transformed into a two dimensional (2D) block model set to the 21,300 mE and the full length composites were also set to the 21300 mE. This improved the searching of related samples during estimation. The model was later re-transformed back into the real three dimensional (3D) space. • The block size was selected based on the drill hole spacing and variability in grades within the gold metal. Blocks were sub-celled down to 0.15625 mE by 1.25 mN by 1.25 mRL to accommodate changes in the geometry of the mineralisation and to allow the model file to be used in Surpac effectively. • The triangulation true thickness was estimated for each domain. This was done by calculating the true thickness for every triangle within each domain, using a nearest neighbour estimation and assigning it to the nearest full length composite. The metal accumulations were calculated based on assays multiplied by length of true thickness that had been assigned to the composite. The metal accumulations were

Criteria	JORC Code explanation	Commentary
	• *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	interpolated and then the grades were determined by dividing the metal accumulations by the true thickness. • Experimental variograms were modelled for all domains with an appropriate number of sample pairs available in Snowden Supervisor on the gold and silver metal accumulation. Domains with low sample counts used the same gold or silver variography as adjacent domains with a similar dip/strike and similar grade populations. A correlation matrix was created to compare the regression values between the secondary metals, copper, lead, zinc, mercury and antimony. It was deemed appropriate to apply the gold variography to the secondary metals. Good correlation was difficult to determine because of the significantly lower number of samples available for the secondary metals. • The final model was comprised of two individual estimations, a general estimation that used a grade top-cut, and a high-grade estimation that was spatially restricted without any top-cutting. Where both models had estimated blocks, the high-grade estimation blocks took priority over the general estimation during the model merging. • Typically pass one involved a search ellipse with a major, semi-major and minor range of approximately 50 m, 40 m and 50 m respectively. The number of samples was the same for all metals. Pass 1 required a minimum of 3 samples and a maximum of 10 samples. Pass 2 had a search expansion of 2 and the maximum required samples was reduced to 8 samples. Pass 3 had a search expansion factor of 3 and the maximum required samples was reduced to 6. • Cell discretisation divided blocks into a grid of 3 (X) by 3 (Y) by 1 (Z) (total of 9 points). • Un estimated blocks for Gold and Silver were assigned at 0.5 ppm so they were kept under the reportable grades. For all other metals, the average median value for the 25th percentile for each domain was used. These metals will not be reported. Only Gold and Silver are reported. • The estimation approach is considered appropriate for the style of mineralisation, the thickness of the veins and the variability of the gold grades. • The grade estimates within each domain were validated visually by comparing drillhole composite grades to estimated grades in section, plan, and long-section. The mean, top-cut composite grade was compared to the mean estimated grade within each domain. Swath plots of drillhole composite grades against estimated grades were also developed and used to validate the block grade estimates. The swath plots showed the composite grade trends have been replicated by the grade estimates.

Criteria	JORC Code explanation	Commentary
		• Historical mining records for Tolukuma are not appropriate to use as a comparison as there is no way to verify all the material mined and processed exactly.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnage was estimated on a dry basis.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• The Mineral Resource estimate (MRE) for the Tolukuma Gold deposit as of 18 August 2022 is shown in Table 4.13 of this report. At the date of this report, the 2022 Tolukuma Mineral Resource is based on Inferred classified material. • The MRE is reported under the assumption of mining by an underground method (not fully assessed). Only blocks at or above 3 g/t Au have been reported.
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.*	• The Tolukuma resource estimate is a high-grade epithermal Gold + Silver metal deposit with good continuity and grades that are comparable to other Gold deposits around the world. • It is assumed that Tolukuma will be mined similarly to the historical method used previously, with the full vein width extraction and minor dilution where possible using a stope and pillar method. The material will be processed on site. • In the Competent Person's opinion, these factors indicate that the Mineral Resource has reasonable prospects of eventual economic extraction.
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.*	• The historical mining at Tolukuma had to consider impacts of antimony through the presence of stibnite in the ore feed. Antimony sulphide minerals decompose to some extent in alkaline cyanide solutions to form complex reducing compounds which retard or prevent gold dissolution. Higher grades of stibnite occur in the lower parts of the historical mining areas, especially in the Zine vein. The mill was required to blend the ore to maintain adequate gold recovery rates. • There has been no recent metallurgical testwork carried out for ore processing. • It is assumed that the planned processing of gold onsite will be similar to the historical processing that was conducted at Tolukuma. Over 800 koz of gold has been historically mined and processed.
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*	• It has been approved that waste rock from the underground mine will be backfilled in the mine. • Processing will take place at the Tolukuma site. • The processed tailings have been approved for riverine disposal following cyanide recovery. • Planned dewatering of the mine will occur through riverine disposal following assessment of all environmental potential contaminations.

Criteria	JORC Code explanation	Commentary
	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.	
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.* • *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.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Historically, 2.2 g/cm^3 has been used as an assigned dry bulk density value for all domains within the deposit. No bulk density data was available to AMC in the database. Previous reports of 93 historic density measurements indicated the mineralised rock dry bulk density is 2.55 g/cm^3, however the reconciled dry bulk density from the processing plant indicates the value to be closer to 2.2 g/cm^3. • AMC has not validated the historic density data and cannot confirm which method was used to determine the dry bulk density measurements. AMC considers the 2.2 g/cm^3 is likely to result in an under call of tonnes achieved in future mining due to most of the resource being in fresh rock.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie 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).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• The Tolukuma Mineral Resource is classified as Inferred in accordance with guidelines within the JORC Code 2012. Parameters considered included the data quality, distribution and orientation of drill data, confidence in interpreted geological continuity of the mineralised zones, confidence in the density, and confidence in the resource block estimates. • In general, areas with a high drill hole density and low average distances (including face sampling) are all depleted. The in situ material is all along strike or below the old workings and has a drill hole spacing of 30 m by 30 m or larger. As such, the resource has an Inferred classification. • Mineralised areas that have veining consistently less than approximately 0.8 m have been classified as "un-classified" and are not included in the reportable tonnes. • Depleted material was classified as Inferred, and flagged with a cookie cut area "mined" variable to exclude those tonnes from the reportable resource. Un-estimated blocks were not classified. • A cut-off grade of 3 g/t Au was used to report the Mineral Resource. • Given the data quality, drillhole spacing, and observed continuity of mineralisation the Competent Person considers the Inferred classification appropriately reflects the level of confidence in the reported Mineral Resource.

Criteria	JORC Code explanation	Commentary
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• The Mineral Resource estimate has been subject to peer review by AMC. No external independent review was carried out.
Discussion of relative accuracy/ confidence	• *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 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.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• The Competent Person considers that the classification is appropriate for the global resource. The estimate is constrained to interpretated mineralisation domains. The domains exhibit good continuity of mineralisation, whilst maintaining the orientation and geometry of observed geological features such as lithology and alteration. The location of the mineralised zones as observed in the drillholes and historic development mining are reasonably predictable at the global vein length, but thickness and grade can vary significantly at local scales. Local scale variations are consistent with the style of mineralisation but are not expected to have a material impact on the global resource estimate. Infill drilling will be required prior to any development planning to assure minimum vein thickness and grades are achieved. • The Mineral Resource grades are those associated with the mineralised structures and will be diluted by host rock material in minimum mining width operations.

Appendix G
Mt Penck JORC 2012 Table 1

Table G1 Mt Penck exploration

JORC Code, 2012 Edition

Section 1 Sampling techniques and data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• All sample data referred to in the report are historic, dating from 1968 to 2011. To the best of the Author's knowledge, no work has been carried out since 2011. Historic sampling was carried out by Placer, BHP, Nord Resources, Indo Pacific Resources and Kanon Resources. • The Issuer has undertaken no sampling on the Property. • Historic sampling methodology included stream sediment sampling, spade and auger soil sampling, rock grab and rock chip sampling of float and outcrop, chip-channel/continuous chip sampling of creek outcrops and hand dug or bulldozer trench faces, aircore drill sampling and diamond drill core sampling. • Trench sample intervals and sample size were: BHP- 1.0-8.0m, 3kg; Indo Pacific - 5.0m, (?)kg; and Kanon - 1.0-5.0m, 1.5-2.0kg (larger if coarse gold expected). • Diamond core sampling was half core: 1.0m or 2.0m PQ & HQ (Indo Pacific), mostly 1.0m NQ & HQ (Kanon). • No data are available on measures taken to verify historic sample representivity. • No independent sampling to verify sample representivity has been undertaken by the Issuer or the Author. • Drill samples from the 2006-07 Kanon diamond drilling were collected from half NQ or HQ core split lengthwise with a core saw; half core sent for assay & half retained in tray. • The historic data are considered to be on the whole reliable and of sufficient quality based on a review of the available literature and brief site visits to the Property by the Author in 2006-07.
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• Historic shallow aircore drilling, mostly <50m, by BHP and triple tube diamond drilling by Indo Pacific and Kanon. • Aircore drilling is a form of reverse circulation drilling where the sample is collected at the face and returned inside the inner tube using compressed air. • No information is available regarding core orientation measurements.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.*	• Exploration drilling only has been completed on the Property. • No details are available regarding methods of recording and assessing sample recovery or measures taken to ensure representative sampling for the historic BHP aircore or Indo Pacific diamond drilling.

Criteria	JORC Code explanation	Commentary
	• *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.*	• Historic Kanon diamond drill logs in most cases do not record core loss and no details are available of Kanon's methods for assessing core recovery or measures taken to ensure representative sampling. • No data are available regarding possible sample bias.
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.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• No Mineral Resource estimation, mining studies or metallurgical studies have been completed. • No historic drill logs or data are available for the BHP and Indo Pacific drilling. • Historic Kanon drill logs show that in most cases qualitative logging was completed for the total length of each hole.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *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.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• No data are available on historic aircore drill sampling, • Indo Pacific and Kanon diamond drilling used half core for sampling, with one half retained in the core tray. • Historic samples were assayed in reputable laboratories indicating preparation techniques would have followed standard industry best practice. • No data are available on QAQC procedures or measures taken to ensure representivity of historic sampling. • The reported historic sample sizes are considered to be appropriate for the grain size of the material being sampled, except for the specific instance of coarse spotty gold at Peni Creek noted by Kanon and referred to in the report.
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.* • *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.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• Historic assays were carried out by Pilbara Laboratories, fire assay Au (BHP); Analabs, 50g fire assay Au (Indo Pacific); ALS Chemex, AAS/aqua regia Au or Intertek, Lae, 50g fire assay Au (Kanon). AAS/aqua regia is a partial digestion technique and fire assay is a total technique. These are appropriate assay techniques for the type of mineralisation and exploration samples. • No geophysical or hand-held instruments were used for analysis. • No data are available on historic QA/QC procedures.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• No data are available on verification of significant intersections. • No twinned holes are reported in the historic database. • In 2006-07 Kanon primary field data were recorded in field notebooks, on field maps and on drill log sheets and entered into a digital database on laptop computers in the field camp.

Criteria	JORC Code explanation	Commentary
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• No data are available on surveying of historic BHP or Indo Pacific drill collars. • In 2006-07 Kanon used hand-held GPS for initial surveying of drill collar locations. No data are available on alternative surveying techniques.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• The historic exploration sample spacing is considered appropriate for the style of mineralisation. • No Mineral Resource or Reserve estimates have been completed. • Compositing of some exploration trench samples was undertaken by Kanon.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• The orientation of historic trenches and drill holes is considered appropriate to achieve unbiased sampling of the mapped structures and mineralised zones. • The Author is not aware of any sampling bias.
Sample security	• *The measures taken to ensure sample security.*	• No historic data available.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No historic data available.

Section 2 Reporting of Exploration Results

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

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.* • *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.*	• Mt Penck comprises a single exploration licence, EL 2662, totalling 208.48 km^2 located 55km west of Kimbe in West New Britain Province, Papua New Guinea. The licence is 100% owned by Lole Mining Limited. The PNG Government may purchase up to 30% equity in any mining project arising from the licence. More details are provided in the report. • The licence was granted on 26/10/2021 for a term of 2 years and is in good standing.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• All exploration data reported here is historic from work carried out by Placer, BHP, Nord Resources, Indo Pacific Resources and Kanon Resources between 1968 and 2011.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Mt Penck is a low to high sulphidation epithermal gold deposit hosted by Plio-Pleistocene island arc volcanics; located within a NW-trending structural corridor. • Gold-(silver-base metal) mineralisation is controlled by favourable horizons

Criteria	JORC Code explanation	Commentary
		in the host volcanic sequence or by NE-trending or NW-trending, steeply dipping to sub-vertical dilational structures.
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.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• The historic exploration drilling results available in the database and considered to be Material are listed in various tables and appendices in the report.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Historic trench and drill intercepts are reported as length-weighted average grades. • Cut-off grades are used in some tables in the report and these are clearly designated as such. • Some Kanon trench intercepts in lower grade peripheral material have been aggregated. • 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 (eg 'down hole length, true width not known').*	• The mineralisation is controlled either by shallow to moderately dipping lithological horizons or steeply dipping to sub-vertical structures. The structures trend NE or NW. The location, orientation and length of most drill holes are appropriate to intersect the targeted zones. • Unless otherwise stated all reported drill intercepts are drill widths or down hole lengths.
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.*	• Suitable maps and sections from the historic database are included in the report as deemed appropriate.
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.*	• In most cases the exploration results are summarised and representative reporting is used.
Other substantive	• *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,*	• In addition to the reported trench and drill sample data, the historic database includes stream sediment, soil and rock geochemical data, airborne magnetic/radiometric data, ground 3D-IP geophysical data and remote sensing data. Results from this work are included in the report

Criteria	JORC Code explanation	Commentary
exploration data	*geotechnical and rock characteristics; potential deleterious or contaminating substances.*	where deemed appropriate. • No metallurgical testing data are reported.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Future exploration work planned by Lole will include follow up trenching and drilling aimed at defining a Maiden Inferred Resource. • Other targets outside the area of detailed historic work, defined by historic geochemical and geophysical data, will also be followed up.

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

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 validation procedures used.*	• No Mineral Resource or Reserve estimates have been completed.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• No Mineral Resource or Reserve estimates have been completed.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• No Mineral Resource or Reserve estimates have been completed.
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.*	• No Mineral Resource or Reserve estimates have been completed.
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.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.*	• No Mineral Resource or Reserve estimates have been completed.

Criteria	JORC Code explanation	Commentary
	• *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• No Mineral Resource or Reserve estimates have been completed.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• No Mineral Resource or Reserve estimates have been completed.
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 Mineral Resource or Reserve estimates have been completed.
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 Mineral Resource or Reserve estimates have been completed.
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 Mineral Resource or Reserve estimates have been completed.
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.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and*	• No Mineral Resource or Reserve estimates have been completed.

Criteria	JORC Code explanation	Commentary
	differences between rock and alteration zones within the deposit. • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie 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).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• No Mineral Resource or Reserve estimates have been completed.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• No Mineral Resource or Reserve estimates have been completed.
Discussion of relative accuracy/ confidence	• *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 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.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• No Mineral Resource or Reserve estimates have been completed.

Our offices

Australia

Adelaide
Level 1, 12 Pirie Street
Adelaide SA 5000 Australia
T +61 8 8201 1800
E adelaide@amcconsultants.com

Brisbane
Level 15, 100 Creek Street
Brisbane Qld 4000 Australia
T +61 7 3230 9000
E brisbane@amcconsultants.com

Melbourne
Level 29, 140 William Street
Melbourne Vic 3000 Australia
T +61 3 8601 3300
E melbourne@amcconsultants.com

Perth
Level 1, 1100 Hay Street
West Perth WA 6005 Australia
T +61 8 6330 1100
E perth@amcconsultants.com

Canada

Toronto
140 Yonge Street, Suite 200
Toronto ON M5C 1X6 Canada
T +1 647 953 9730
E toronto@amcconsultants.com

Vancouver
200 Granville Street, Suite 202
Vancouver BC V6C 1S4 Canada
T +1 604 669 0044
E vancouver@amcconsultants.com

Singapore

Singapore
9 Straits View
#05-07 Marina One (West Tower)
Singapore 018937
T +65 3157 9130
E singapore@amcconsultants.com

United Kingdom

Maidenhead
Registered in England and Wales
Company No. 3688365
Building 3, 1st Floor
Concorde Park, Concorde Road
Maidenhead SL6 4BY United Kingdom
T +44 1628 778 256
E maidenhead@amcconsultants.com

Registered Office:
The Kinetic Centre
Theobald Street
Elstree
Hertfordshire WD6 4PG United Kingdom