Kalia limited

ACN 118 758 946

ASX Announcement
11 March 2019

Kalia Limited is exploring for copper, gold and energy metals in the Mt Tore region on Bougainville Island and Australia

Directors
Chairman
Hon. David Johnston
Managing Director
Mr Terry Larkan
Technical Director
Mr Peter Batten
Non-Executive Director
Mr Sean O'Brien

Operations
CFO & Company Secretary
Mr Phillip Hartog

Issued Capital
Ordinary Shares
2,514,347,391
Unlisted Options
144,500,000
Adviser Options
250,000,000

Share Price – 8 March 2019
$0.002

ASX Code
KLH

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Geophysical Interpretation Complete

Kalia Limited (ASX: KLH), ("Kalia" or "the Company") is pleased to announce the successful completion of filtering and modelling of the airborne survey data collected over its Tore Joint Venture ("TJV") properties on Bougainville Island, PNG during Q3 and Q4 2018.

Summary

- First airborne geophysical survey conducted in Bougainville since 1987
- Survey covers 100% of the 1,704km^2 license areas EL03 and EL04
- Independent data analysis confirms the intrusive complex is larger than previously thought, with multiple shallower cupolas thrown up from the main dome
- **64 porphyry and epithermal targets identified across the area including 12 Priority 1 targets**
- First time geophysical targets have been generated in the west Tore area including two Priority 1 targets
- Independent correlation between geophysics and geochemistry highlights the robustness of the modelling and high prospectivity of the region
- Clear geoscientific path to ground follow-up and commencement of drilling in Q2 2019

Exploration Overview

Filtering and modelling of the airborne magnetic and radiometric data acquired over EL03 and EL04 during the second half of 2018 is complete; with the final report received from Fathom Geophysics (http://www.fathomgeophysics.com/) ("Fathom"), an independent organisation that has been providing geophysical and geoscience data processing and targeting services to the minerals and petroleum exploration industries, from the regional scale through to the near-mine deposit scale since 2008.

In the final report, Fathom has provided a set of deliverables that will be used for geological interpretation and exploration, including drilling and further surface geochemistry surveys.

Fathom has run a suite of unconstrained 3D magnetic inversions, produced a structural framework interpretation and generated a set of 64 ranked geophysical targets, importantly 12 being categorised as Priority 1.

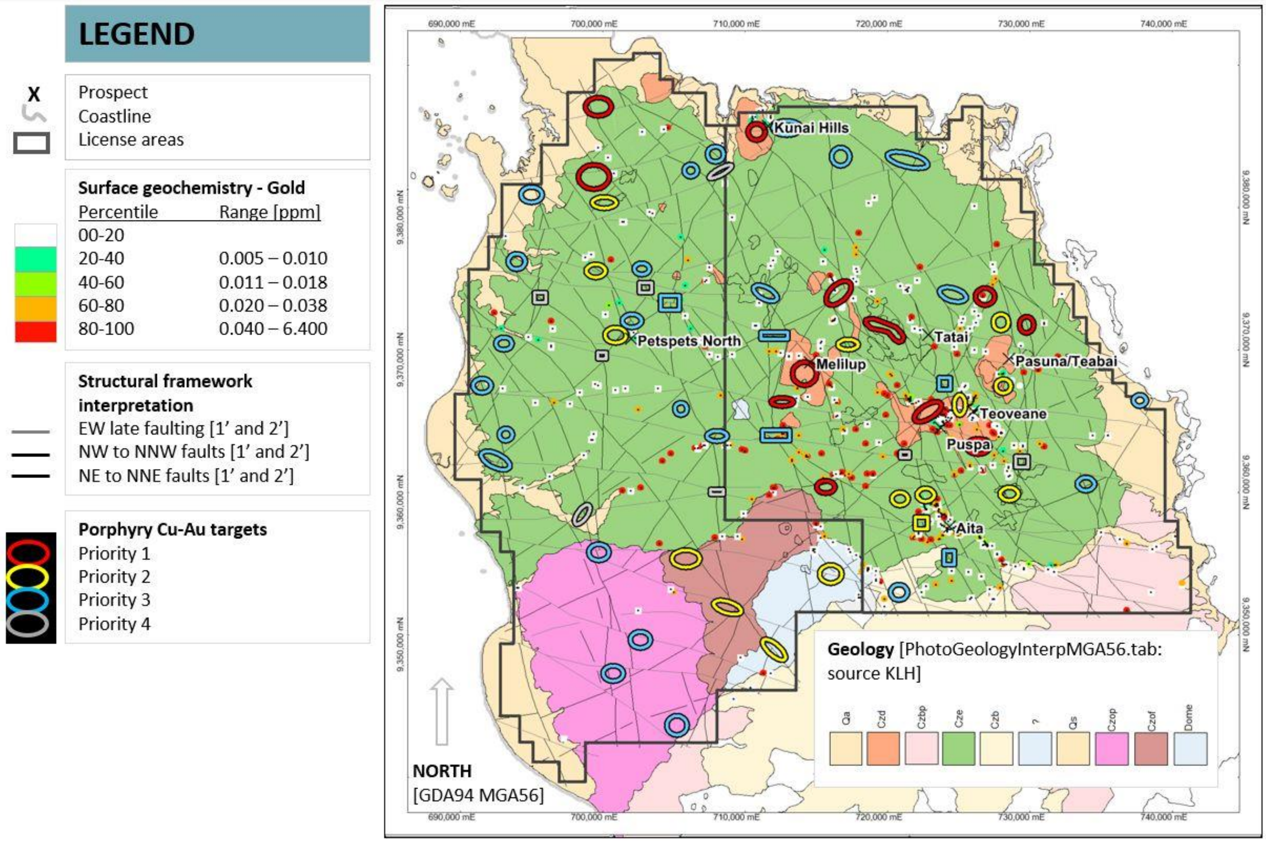

Figure 1: Porphyry Cu targets over photo-interpreted geology & elevated gold

This greatly exceeds the number derived by previous work and confirms the existing identified targets. The new work has changed prospectivity rankings. Melilup is now considered the top ranked target, a new location north east of Melilup is second and Rarie-Puspa is third.

Previously EL04 had no geophysics and now has 29 targets including two Priority 1 targets and seven Priority 2 targets. The first exploration expedition in EL04 following this work is planned for March 2019.

In addition, the structural analysis has highlighted potential dilation zones at structural intersections. This information greatly advances the geological understanding of the region and adds to the number of potential mineralized locations within the tenement areas.

Having a modern, consistent and high-resolution magnetic and radiometric dataset across the entire project area is an important milestone underpinning all future work in TJV's exploration programme.

The 1980's data gave a useful insight into the geology but was of limited coverage (40% of EL03 only) and low quality from which robust conclusions could not be drawn.

At Melilup, for example, only half of the magnetic anomaly was covered by the 1980s survey data. There was no ability to see any response from the western side of the target area, limiting any real understanding of Melilup's size, geometry and character. The area needed to be completely re-flown to give Kalia the baseline dataset it needed to optimize exploration and discovery.

Porphyry deposits are highly sought after globally because they boast some of the largest reserves of copper and gold. Considerable exploration has been carried out around the world looking for economic porphyry systems; and the key datasets to use prior to drilling are airborne magnetic and surface geochemistry data, sometimes ground induced polarization surveying. Kalia has now successfully acquired both datasets and is on track to refining and executing a more detailed ground exploration programme.

Data Analysis

There is a strong correlation between the topography and both the magnetic and radiometric responses across the survey area; particularly on the western side. It is not possible to predict the effect of severe topography on geophysical data. In some areas with very steep topography, the magnetic data flown does not exhibit anomalies that mimic the terrain, in other areas there is a clear correlation. In the Tore area, modelling of the topographic response led Fathom to conclude the effect observed in the magnetic data is mostly geological; with a magnetic unit present on ridges that has been eroded away in incised valleys. Prior to filtering and modelling this correlation was minimized by the removal of valley responses (for the radiometric data) and ridge responses (for the magnetic data).

Kalia is delighted with the new data available to assist with on-ground follow-up. To quote Fathom Geophysics, "*this new dataset provides an excellent insight into the geology and structural framework of the project area and will assist with optimizing on-ground target follow-up. The 2018 geophysical data will allow the team to more accurately plan for expeditions onto known targets and is especially important for EL04 where the complete lack of geophysical data has previously hampered effective exploration activities."*

Magnetic data

High resolution magnetic data allows us to reduce the search space for porphyries. While the geophysical and geochemical response of a porphyry can vary considerably depending on the level of erosion and alteration characteristics of the system; knowing whether you are in 'porphyry country' or not is an important first step. The magnetic data exhibits the character of good porphyry country – "busy" magnetic data with lots of discrete highs and lows.

The magnetic response of economic porphyries within south east Asia is known and can be used as a targeting guide. There are many tier 1 economic porphyry systems, for example Grasberg and Batu Hijau, that are associated with magnetic intrusive complexes. The Batu Hijau example in Figure 2 is a reference for the signature of an oxidized intrusion-related mineral resource that often occurs as discrete magnetic highs.

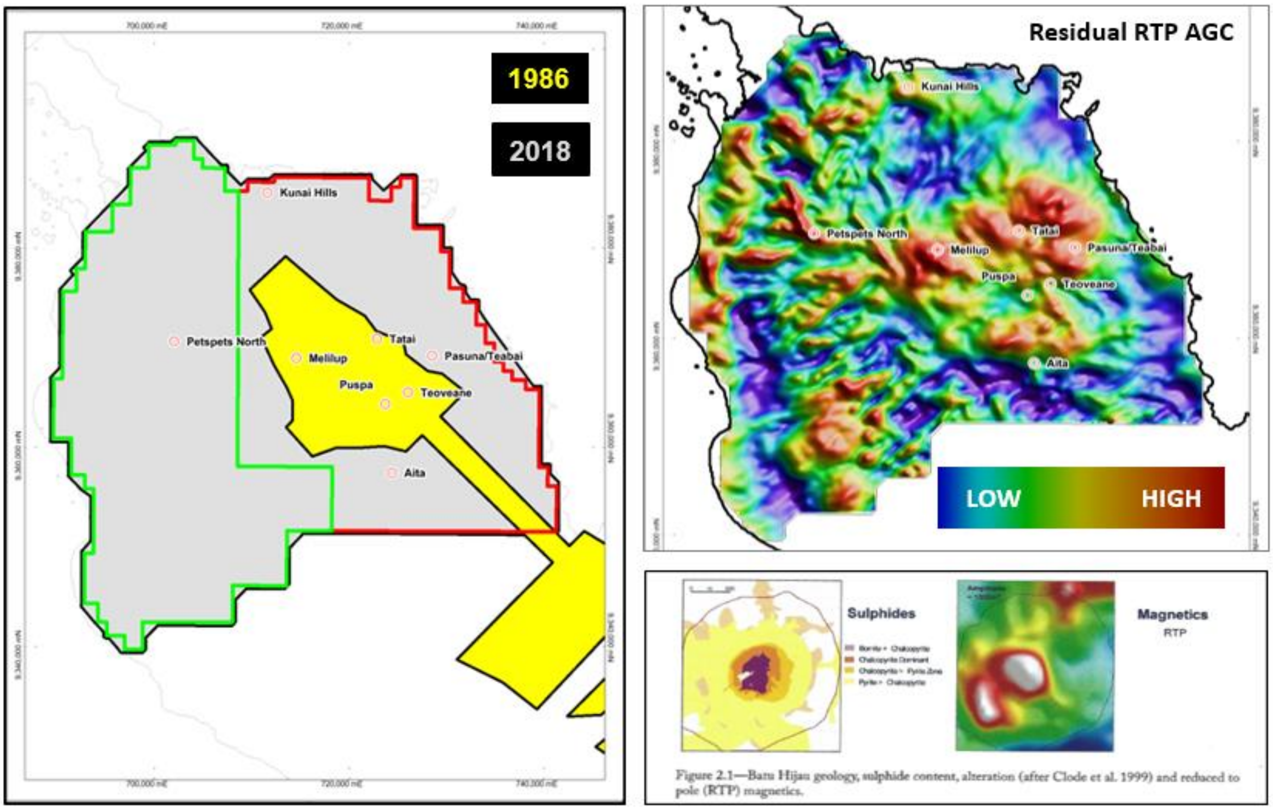

Figure 2: Survey coverage old and new [LEFT], one of the filtered magnetic images [top RIGHT]. The magnetic data has been filtered in the following way: 1) Ridge masked RTP 2) Residual 400-10k [shallow high frequency response removed] 3) Automatic gain control filter to normalize amplitudes [give subtle anomalies a chance]. The RTP magnetic response of Batu Hijau is shown [bottom RIGHT]; taken from Koschke 2011.

Magnetic data can be manipulated to estimate responses at different depths. We cannot perfectly separate sources, but we can estimate what is likely to be happening sub-surface quite well. In porphyry exploration, we use the magnetic data to estimate where deep batholiths are likely to be [assuming they are magnetic], where shallower stocks or cupolas may sit above the batholith [once again assuming they are magnetic], and where significant edges of magnetic units exist – indicating fracture structures and discontinuities which may represent important hydrothermal fluid and possibly magma pathways

Fathom applied a range of filters to the magnetic data with the goal of understanding the structural framework and distribution of magnetic intrusions across the project area. See the examples shown in Figure 4 [LEFT] of the course magnetic edges defining the broad boundaries of the deeper part of the intrusive complex as well as the first order structures. Figure 4 [RIGHT] also shows one of the structural intersection density results considered in the targeting process.

Almost all mineral deposits have some degree of structural control and the objective mapping of the structural framework for an area is an important stage in exploration.

Structures occur at various scales across all terranes, and it is useful to separate these structures into several sets so that the interpreter can more readily determine which faults are fundamental (crustal scale faults may provide pathways for mineralized fluids, scale 800) and which are more localized (providing a focussing mechanism for mineralization, scale 200). The scale number refers to the minimum size [in metres] of the filter used, a small number (200 for example) will detect high frequency (shallow) edges and a larger number (800 for example) will detect longer wavelength (deeper tapping]) edges.

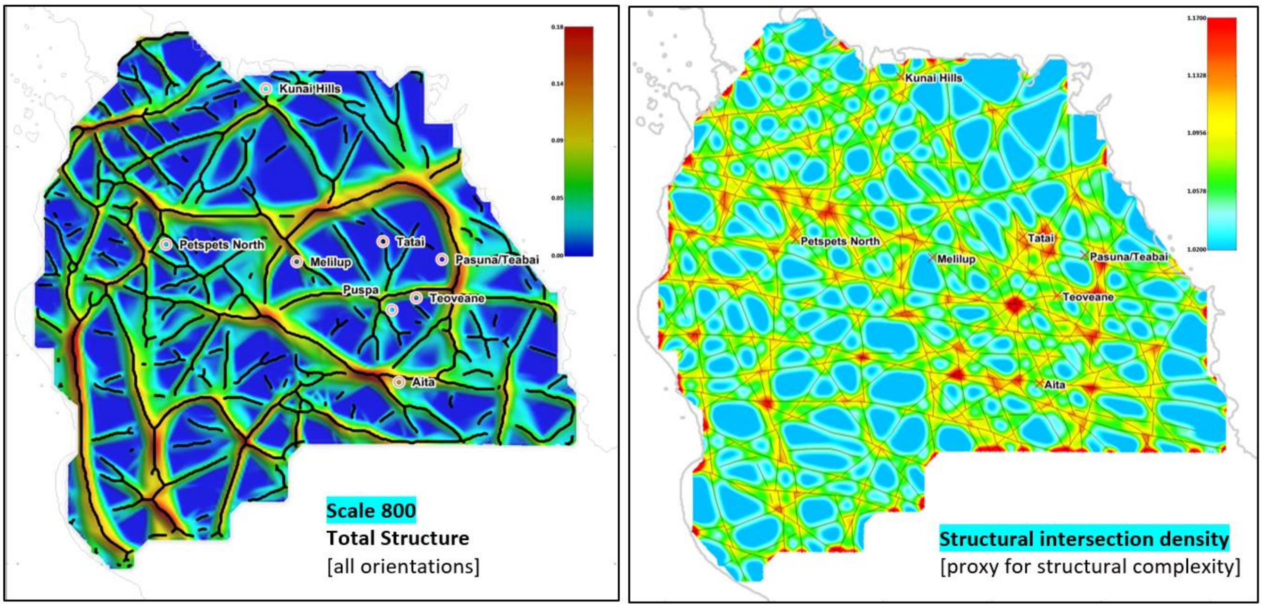

Figure 3: Developing the structural framework using magnetic data. LEFT: Coarse magnetic edges [scale 800 Fathom structure detection results using all orientations, input grid = RTP AGC]. RIGHT = The structural intersection density image, used as a proxy for structural complexity. The structural framework layers were combined and rasterized, then a gaussian smoothing filter applied [size 61, standard deviation 9].

The crustal scale faults are essential for locating potential pathways for magmatic intrusion to follow. The scale 800 structures outlined in Figure 3 clearly indicate that the circular feature interpreted as the intrusive complex, at Melilup, is a crustal scale structure and the subsequent scale 400 and 200 images follow this feature to shallower depths.

The structure detection algorithm extracts magnetic edges at different scales and different orientations. Overlaying the various results can show the structural intersections and highlight potential movement along these structures. Host rock deformation and dilation control the fluid flow (epithermal fluids) and subsequent mineralization in many world-class mineral deposits. The intersections and movement are indicators of potential dilation zones caused by the upthrust of a batholith or pluton.

Dilation zones represent an important way to generate fluid flow conduits for more effective fluid flow and mixing. Dilation occurs at fault intersections and jogs, where epithermal fluids are focused and mixed. These are potential sites for high quartz, sulphide and metal precipitation.

Finding discrete (circular-like, isolated) anomalies in magnetic data is useful in exploration for many types of deposits. Filtering the data can detect discrete alteration zones or intrusive bodies controlling intrusion related mineralization. Discrete magnetic bodies are a mappable criterion for various targeting models.

Radially symmetric bodies of varying diameter ranges were extracted from the Kalia magnetic data. The mean diameters of investigation chosen for the Kalia dataset are as follows: 1200m, 2400m & 4800m. The hypothesis is that the 1200m diameter responses represent the 'small discrete highs' or cupolas that are targets within the larger intrusive complex; and that the 4800m diameter responses represent the deeper intrusive cores or source plutons. A cupola is simply a spike/-shaped projection from the top of a large dome-shaped intrusion (for illustrative diagram see insert in Figure 4).

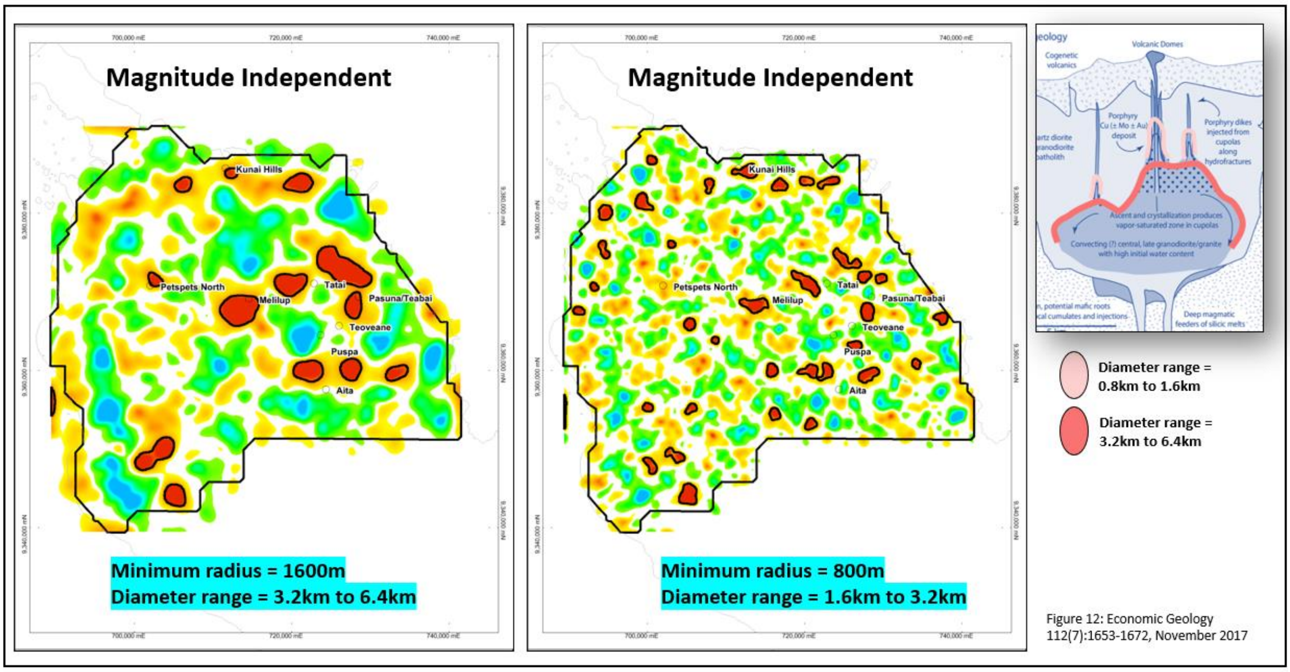

Figure 4: Radial symmetry results. LEFT = magnitude dependent radially symmetric HIGHS and LOWS [only highs polygonised] with a mean diameter of 4800m. RIGHT = magnitude dependent radially symmetric HIGHS and LOWS [only highs polygonised] with a mean diameter of 2400m. The far RIGHT shows a illustrative schematic from an economic geology paper [reference shown] with the 'batholith and cupola' idea annotated.

The magnetic data was used to determine possible subsurface geometries via 3D unconstrained inversion. There are many distributions of sub-surface susceptibility that can give rise to the magnetic response measured above the surface. The goal is to find one that both fits the data and is geologically feasible. Geological knowledge can be used to constrain the interpretation but often this information is not available.

Ideally, the physical property model generated has features which correlate with various interpreted geological boundaries and rock units and can be used to refine the geological model in areas of limited outcrop or poor geological exposure.

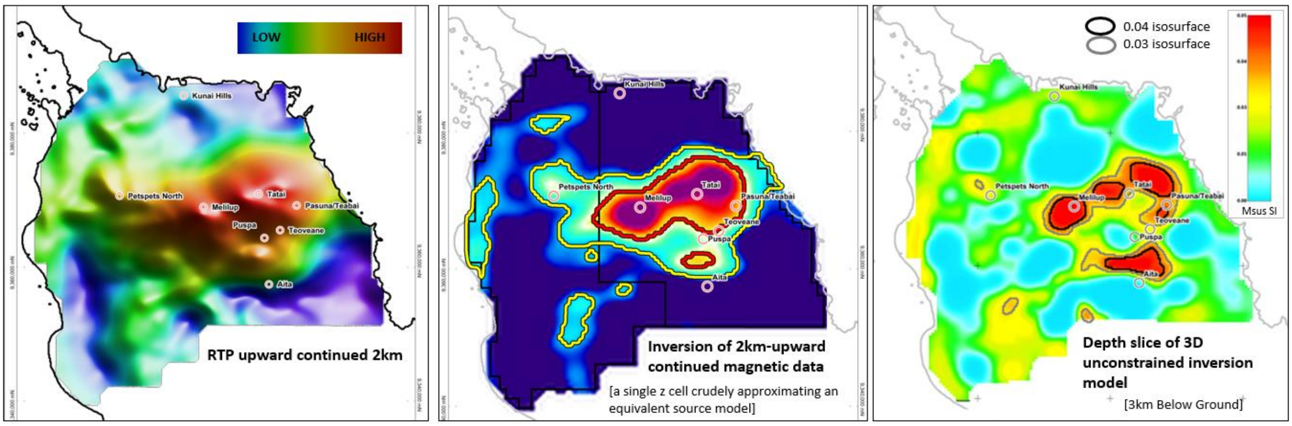

Figure 5: 3D magnetic inversion results. LEFT: the RTP data upward continued 2km. MIDDLE: a coarse inversion model using the data on the LEFT as input. This is a good [albeit crude] estimate of the deep intrusive cores/plutons having eliminated any topographic response in the input data. RIGHT: a depth slice [below ground] through the final 3D magnetic inversion model, cut at 3kms below ground [supporting the presence of a magnetic core well below the shallower target zones], with polygons of elevated susceptibility overlain and annotated. The input data was the corrected RTP but the results are similar to the 'crude inversion' shown MIDDLE. This similarity lends weight to the model.

Deep cores are necessary as the parental magma or pathway for subsequent (much shallower) porphyry stocks/phases and potential porphyry and epithermal vein mineralisation. The inversion model produced (Figure 5) clearly defines the intrusion complex, centred around Melilup, and to the west, possible pathways of deep vertical accretive structures.

The 3D iso-surfaces using four levels of intensity (magnetic susceptibility) have been used to represent the model, in Figure 6. The grey is the lowest level and encompasses the greatest volume, the small red shape, located north west of Petspets, has the highest intensity. The red zone represents the strongest magnetic response exhibited in the model. Economic porphyry deposits often occur within these strong discrete magnetic volumes; or on the gradients of these bodies (at Panguna and Tampakan for example).

The iso-surfaces are less accurate at depth but show clearly where the magnetic intensity is centred. As the layers become shallower, they define potential pathways from underlying batholiths; and at the shallowest depths (pink to red zones) locate potential cupolas and obvious locations for field-oriented exploration.

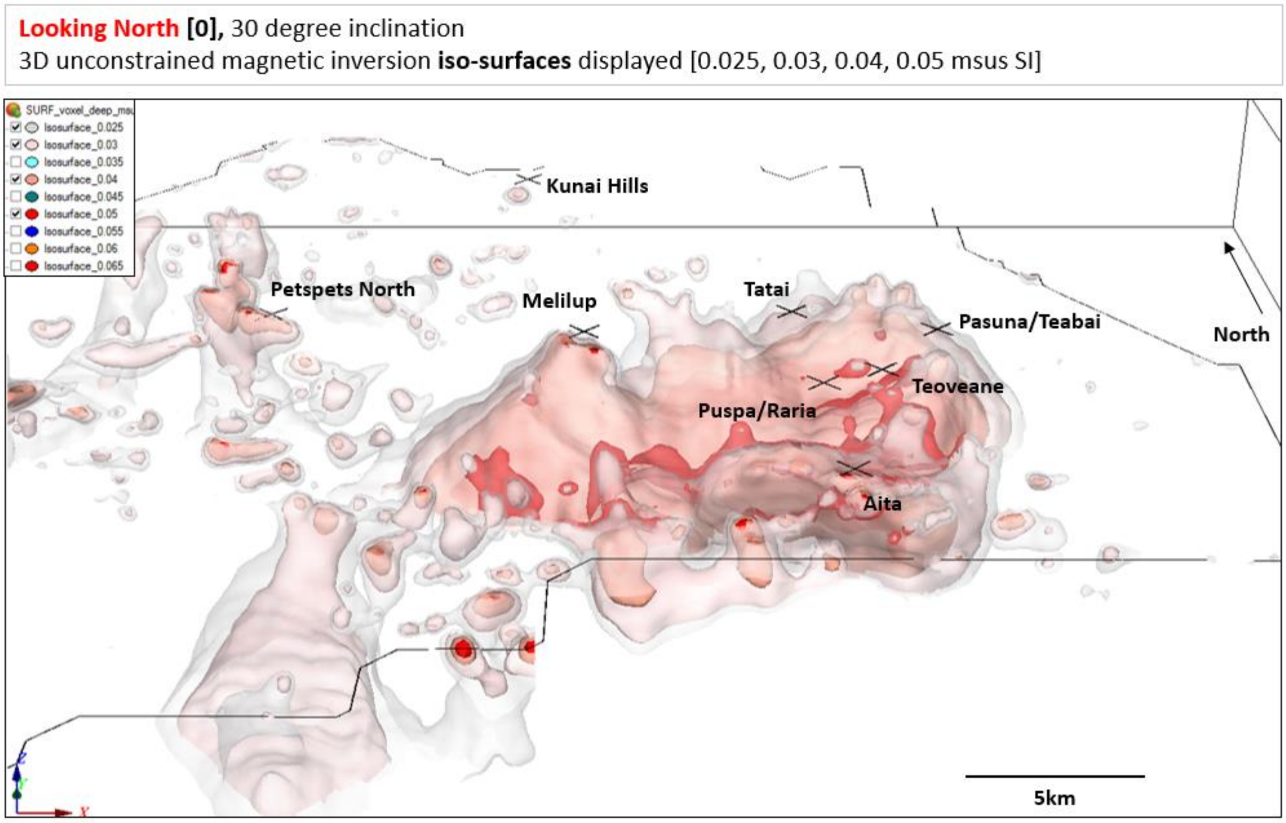

Figure 6:3D unconstrained magnetic inversion results. Iso-surfaces [as annotated]

Radiometric data

Figure 7 shows the key results from the radiometric data processing. Zones of elevated Potassium (alone) and elevated Potassium over Thorium are highlighted across the survey area. The key prospects of Melilup, Aita (the wider area) and Teoveane exhibit strong Potassium over Thorium anomalies.

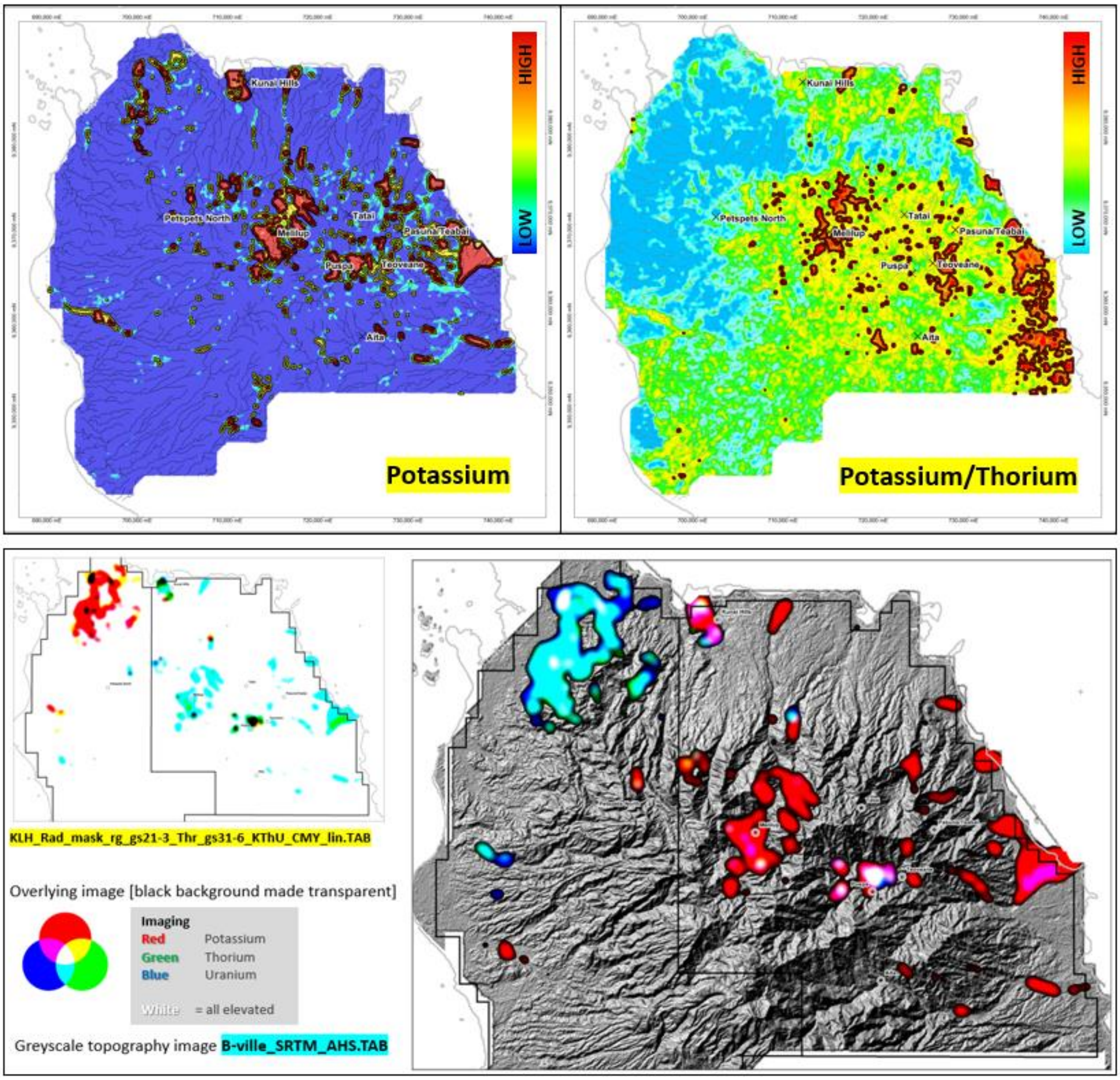

Figure 7: Radiometric data. TOP LEFT: Elevated potassium [K mask re-gridded with Gaussian smoothing], polygons overlaid - threshold 70 (yellow) & 80 (red) channels. TOP RIGHT: Elevated Potassium over Thorium [K/Th mask re-gridded with Gaussian smoothing], polygons overlaid – threshold 9. BOTTOM LEFT: the combined ternary display of Potassium-Thorium-Uranium using a CMY colour scheme. BOTTOM RIGHT: the same radiometric image overlying the greyscale SRTM topography. Red shows where there is [relatively] anomalous Potassium, Pink where there is anomalous Potassium and Uranium, Cyan where there is anomalous Thorium and Uranium etc. White indicates an elevated response in all channels - Potassium, Thorium and Uranium.

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Targeting

From the Society of Economic Geologists newsletter in 2018:
Bougainville Island has had a complex tectonic and magmatic history dominated by two phases of magmatism, separated by a hiatus caused by the collision of the Ontong Java oceanic plateau with the Melanesian arc and consequent reversal in subduction polarity. The world-class Panguna porphyry copper-gold deposit formed during the second phase of magmatism. With the application of modern exploration techniques, there is significant potential for the discovery of porphyry, epithermal, and skarn deposits on an island that has received very little exploration expenditure during the last 47 years.

The discrete analytical products developed from the survey data were combined to generate porphyry Cu-Au targets for exploration shown in Figures 1 & 8. These targets can be described as: "being on or proximal to a discrete magnetic high, not too distant from a major structure or structural intersection, ideally around the rim of a deeper intrusive complex; possibly with a supporting Potassium high".

Some targets do not exhibit the 'deep core' criteria but are defined as targets nonetheless, with an epithermal vein model being more appropriate, considering deeper intrusive complexes do not always exhibit a strong magnetic response.

The ranking categories, essentially an assessment of their exploration potential, were developed on the following criteria:

1. **Priority 1 (12 targets)** – all around the deeper intrusive complex (except 2) exhibiting all criteria
2. **Priority 2 (15 targets)** – less favourable structural setting or less pronounced shallow discrete magnetic response; unlikely to have Potassium anomaly
3. **Priority 3 (29 targets)** – good structural setting with supporting discrete magnetic response; unlikely to have Potassium response
4. **Priority 4 (8 targets)** – minor targets that exhibit one or two favourable features.

The geochemistry dataset (historic and recently reported) was not received by Fathom until after the processing and filtering of the data had been completed. The modelling was not influenced by this data but the close correlation between the geochemistry data and the geophysical modelling is confirmation of the robustness of the work completed by Fathom and the exploration programme underway by Kalia at TJV.

The TJV now has 64 targets for porphyry copper style mineralisation, importantly with 12 Priority 1 targets.

When the geochemistry (historic and recent, all previously reported) is overlaid on the structures and modelled cupolas there is good correlation between the geophysical features and anomalous geochemical results (Figure 8). The elevated zones are concentrated around recent sampling, but the results highlight several areas that need immediate sampling such as the area north of Petspets in the West and west of Melilup.

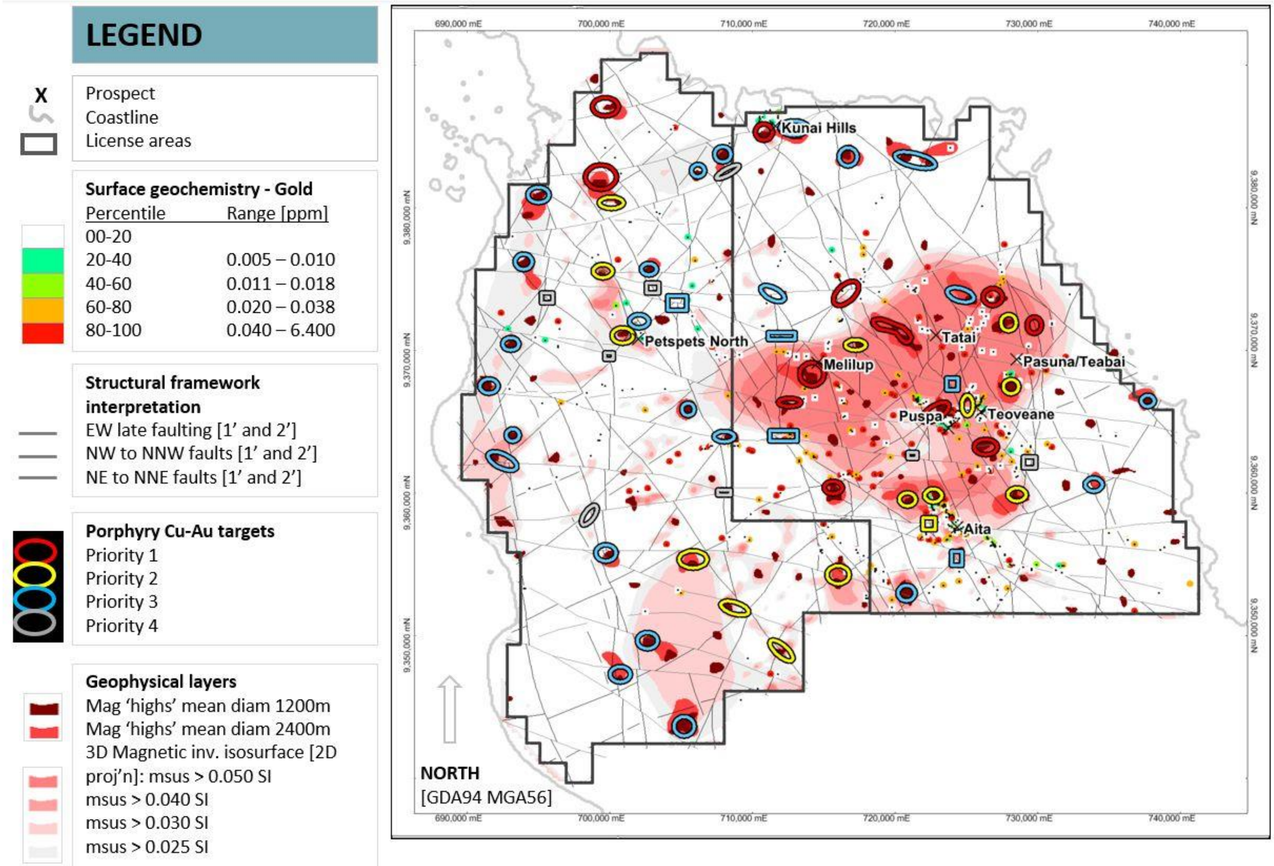

Figure 8: Porphyry Cu targets over magnetic derived layers & elevated gold

The next stage of analysis is to scrutinize these geophysical targets with the geochemistry data to upgrade or downgrade the targets and define a key set of field sites to visit for focussed exploration (ground geological mapping, 'ridge & spur' soils etc; before drilling).

Terry Larkan, Managing Director of Kalia stated "our view has always been that EL03 and EL04 would have multiple targets. The quality and number of the targets revealed through the geophysics, as shown in Figures 1 and 8 of this announcement, exceeds our expectations and clearly demonstrates the unique opportunity presented by Kalia with this ground in Bougainville.

I am not aware of anywhere else that offers the geological potential for discovery that we have disclosed today.

Our geologists continue to deliver samples that give positive assay results for gold, copper and other desirable minerals. They are already working on the top ranked targets returning late last week from the first trip to Melilup.

This geophysical analysis together with the ongoing assay results we are getting from rock chips taken from outcrop gives all the positive signs needed to push on at an increased pace to drilling our first target in the coming quarter."

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About the Bougainville Exploration Licences

The Company manages two exploration licences on the island of Bougainville, Autonomous Region of Bougainville, Papua New Guinea, through Tore Joint Venture Limited.

Tore Joint Venture Limited is 75% owned by Kalia Limited, with the remaining 25% being held by Toremana Resources Limited, a registered landowner association.

The two exploration licences, EL03 and EL04 were issued in November 2017 and cover a combined area of 1704 km^2. There are only five licences issued by the Autonomous Bougainville Government for mineral exploration on the island of Bougainville,

The Company has previously disclosed details of the historical reports which note that potential exists for multiple deposits in the north and up to seven different styles of mineralisation were and these seven styles can be broadly grouped into three:

1. Porphyry Cu, Au;
2. Epithermal veining (including polymetallic veins and Au); and
3. Volcanogenic Massive Sulphides (VMS)

Competent Person Statements
The information in this announcement that relates to Exploration Results is based on information reviewed by Mr. Peter Batten who is a member of the Australasian Institute of Mining and Metallurgy (AusIMM) and is a full time employee and shareholder of Kalia. Mr Batten has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which he is undertaking 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 Batten consents to the inclusion of the information in the form and context in which it appears.

Information in this announcement that relates to Geophysics and Geophysical data is based on information reviewed by Ms Amanda Buckingham who is a consultant geophysicist and principal of Fathom Geophysics. Ms Buckingham was contracted by Kalia Limited and gives consent to the inclusion of the information in the form and context in which it appears.

Amanda Buckingham PhD has been involved in mineral exploration for 25 years. Amanda co-founded Fathom Geophysics in 2007, an award winning and industry leading geophysical consulting group that has developed worlds-best technology for interpretation under cover. Tools developed include structure detection and 3D geochemical footprint modelling of specific deposit styles as well as many other technologies; significantly increasing the chances of discovery under cover.

Dr Buckingham's early career involved work as a geoscientist and project manager at majors such as Rio Tinto as well as listed juniors in both Canada and Australia and several years consulting at SRK. Amanda has extensive exploration experience in North and Sub-Saharan Africa, Canada, US, Mexico, South America, South East Asia, Russia and several countries in the former Soviet Union.

Amanda's PhD at the University of Western Australia involved the design of enhancement filters and edge-detection programs for potential field data. These algorithms have made possible significant advances in methodology for the semi-automated interpretation of data.

Dr Buckingham is currently a research fellow at the University of Western Australia.

References:
Gonzalo et al., 2018; Topographic correction of magnetic data on rugged topography with application to Río Blanco-Los Bronces and El Teniente porphyry copper districts, Southern Andes, Chile. Exploration Geophysics, 2018, 49, 595–607

ADDITIONAL INFORMATION

JORC CODE, 2012 EDITION – TABLE 1

The following sections are provided for compliance with requirements for the reporting of exploration results under the JORC Code, 2012 Edition.

Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *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 (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	• Kalia Limited is reporting the completion of processing, filtering and modelling of the airborne magnetic and radiometric data, for the survey carried out over the Mt Tore project area [EL03 and EL04] between 30/08/2018 and 30/11/2018.
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• Not applicable – data from geophysical survey only
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.*	• Not applicable – data from geophysical survey only
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to*	• Not applicable – data from geophysical survey only

Criteria	JORC Code explanation	Commentary
	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.*	
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.*	• Not applicable – data from geophysical survey only
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 (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• Not applicable – data from geophysical survey only
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.*	• Not applicable to this stage of work
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.*	• Datum: Geodetic Datum of Australia 94 (GDA94) • Projection: Map Grid of Australia (MGA) • Zone: Zone 56

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*
		• The airborne survey data has the following specifications:
		  • Traverse line direction 45
		  • Traverse line spacing 200 m
		  • Tie line direction 135
		  • Tie line spacing 2000 m

Criteria	JORC Code explanation	Commentary
	Ore Reserve estimation procedure(s) and classifications applied. • *Whether sample compositing has been applied.*	• Block Traverse Kilometres 8,839 • Block Tie Kilometres 1,051 • Block Total Kilometres 9,890 • Mean terrain clearance 80m
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.*	• Airborne magnetic and radiometric survey was flown perpendicular to the regional structure and stratigraphy with flight line direction: 045 degrees and tie line direction: 135 degrees.
Sample security	• *The measures taken to ensure sample security.*	• Not applicable – data from geophysical survey only
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Not applicable to this stage of work

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.*	• The Mt Tore Project consists of two exploration licences EL03 (865.3sqkm) and EL04 (838.7sqkm). • The Mt Tore Project is a joint venture between Kalia Limited (75%) and Toremana Resources Limited, a registered landowner association (25%).
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• All data sourced by the company has been disclosed.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Tore region consists of volcanic rocks in an island arc tectonic setting. Intrusive bodies are recorded in numerous locations throughout the project area and is highly prospective for porphyry Cu-Au-Ag-Mo and Epithermal Au deposits.
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:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole* o *down hole length and interception depth* o *hole length.* • *If the exclusion of this information is*	• No drilling results reported

Criteria	JORC Code explanation	Commentary
	justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. 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.*	• Not applicable – data from geophysical survey only
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').*	• Not applicable – data from geophysical survey only
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.*	• Figure 1
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.*	• Not applicable – data from geophysical survey only
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.*	Filtering and modelling carried out can be summarized as follows: - The magnetic data: variable continuation, reduction to the pole, modelling of magnetic response of topographic surface, ridge removal and re-gridding, enhancement filtering, structure detection, intrusion [radial symmetry] detection, 3D unconstrained magnetic inversion [coarse] - The radiometric data: removal of topographic valley responses & re-gridding, ratio-ing, gaussian smoothing, colour composites, extraction of elevated responses in K, Th, U - The topography data: enhancement filtering

Criteria	JORC Code explanation	Commentary
		- All data: generation of porphyry Cu-Au exploration targets & ranking thereof
Further work	• *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Integration with geochemistry and planning ground follow-up

Table 2: Photointerp Key Definitions

Key	Definition
Czb	Balbi Volcanics
Czba	Balbi Volcanics – pyroclastics
Czbf	Balbi Volcanics – lava flows
Czbp	Balbi Volcanics – mudflow deposits
Czd	Intrusive Dacite
Cze	Emperor Range Volcanics
Czof	Tore Volcanics – lava flows
Czop	Tore Volcanics
Kls	Keriaka Limestone
Qa	Alluvium
Qs	Sohano Limestone
Reef	Reef
Tbp	Buka Volcanics