KNOWLEDGE FACTORY PRIVATE LIMITED

CLAIMS 064032AA, 064037AA, BOKO TRANSFER, 064033AA, 006548AA, 006547AA AND 006548AA ,

Geophysical Survey Report

JUNE 2019

1. Contents

TERMS OF REFRENCE	
KEY PROJECT PERSONNEL RESUME	
1.1 HISTORICAL AND BACKGROUND INFORMATION	6
1.2 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND	
PHYSIOGRAPHY	6
1.3 REGIONAL GEOLOGICAL SETTING	6
Figure 1 – Regional Geology Map of the Claims area	7
1.3.1 LOCAL GEOLOGICAL SETTING	7
1.3.2 PROSPECTS FOR GOLD MINERALIZATION	7
2 GEOPHYSICAL SURVEYS METHODOLOGY	8
2.1 GROUND MAGNETIC SURVEY	9
2.2 MAGNETIC SURVEY INSTRUMENTATION	9
2.3 MAGNETIC DATA PROCESSING	9
2.3.1 DISCUSSION	10
Plate 1 – Coverage of magnetic survey	11
2.4 BIBI CLAIM 0064032AA	12
Figure 2 – Total Magnetic Intensity Map showing structures	12
2.4.1. Main Pit Anomaly	12
Figure 3 – Total Magnetic Intensity Map Overlain by Geology Interpretation	13
2.4.2 A Anomaly	13
2.4.3 B Anomaly	13
Figure 4 – Derivative Map Overlain by Targets	14
2.5 IP SURVEY METHODS	14
2.6 IP INSTRUMENTATION	14
2.6.1 Survey Parameters	15
27 SUDVEV DATA DROCESSING AND DRESENTATION	15
2.7 JUATA DESENTATION	15
2.7.1 DATA PROCESSING	15
2.7.2 DATA FROCESSING	15
2.7.2.1 GEOFFITSICAL TECHNIQUES	15
2.0 DISCUSSION OF ID DESULTS FOD CLAIM 0640323 A	10
2.7 DISCUSSION OF IF RESULTS FOR CLAIM 004052AA	10
Figure 6 – Resistivity Man showing short strike length targets	17 17
2 10 Pool Section Anomalies	17
2.10 Real section chargeshility man showing Main Pit Target (hot colour on section)	18
Figure 8 – Real section resistivity map showing a broadened resistivity feature at denth assoc	iated
with magnetics and chargeability	10
3 BIBLCI AIMS 006547A & AND 006548A A	10
3.1 BIBI CLAIMS 000547AA AIVD 000540AA	19
Figure $9 =$ Reduced to note magnetic man showing the magnetic domain to the west	20
3 2 BIBLCL AIM 006547A A/006548A A ANOMALY DESCRIPTIONS	20
Figure $10 - Residual magnetic man showing the magnetic domain to the west and shear zone$	
Figure 10 – Vertical Derivative magnetic map showing the magnetic domain to the west and show and $zone = 11 - Vertical Derivative magnetic map showing the magnetic domain to the west and$	shear
Zones	22
Figure 12 – Analytical signal magnetic map showing the magnetic domain SH1 and SH2 as	
positive	
4 BIBI CLAIM 0064033AA	23
Figure 13 – Total magnetic Intensity Man showing high magnetic domains to the south and h	ow
magnetic domains to the north (effect of regional geology/trend)	
Figure 14 – Reduced to Pole total magnetic intensity man showing magnetic domains	
4 1 BIBI CLAIM 64032AA ANOMALY DESCRIPTIONS	25

Figure 15 – Residual of total magnetic Intensity Map showing low magnetic domains interpreted
to be shears
5. BIBI BOKO TRANSFER CLAIM
Figure 16 – Total magnetic intensity map showing low magnetic domains interpreted to be shears
28
Figure 17 – Reduced to Pole total magnetic intensity map showing low magnetic domains
interpreted to be shears 29
6 BIBI CLAIM 64037AA 29
Figure 18 – Total magnetic intensity man showing low magnetic domains interpreted to be shears
30
Figure 19 – Reduced to Pole total magnetic intensity map showing low magnetic domains
interpreted to be shears/ high magnetic domains as gabbro 30
Figure 20 – Residual of total magnetic intensity man showing low magnetic domains interpreted
to be shears
6 BIBLCLAIM 0065/8AA 31
Figure 21 - Total magnetic intensity man showing magnetic domains interpreted to be variations in
minoralogy with the andesite
7 DISCUSSION OF ID DESULTS FOD CLAIMS 006547 A A 006548 A A ND 0064022 A A 22
7 DISCUSSION OF IF RESULTS FOR CLAIMS 000347AA, 000348AA AND 0004033AA
Figure 22 –Chargeability anomaly map showing SH1, SH5 and SH5 with section that are
Chargeable
Figure 23 – Resistivity anomaly map showing SH1, SH3 and SH5/with section that are resistive 35
Figure 24 – Resistivity anomaly map showing resistive exposed reef trace
Figure 25 – Chargeability anomaly map showing chargeable central unit
Figure 26 – Resistivity anomaly map showing resistivity unit associated with the exposed quartz
reef
Figure 27 – Resistivity anomaly map showing resistivity anomalies at depth

TERMS OF REFRENCE

- To carry out ground magnetic survey on the entire block of claims covering some 53Ha
- To carry out IP surveys on selected lines guided by the ground magnetic survey results
- To carry out RSIP at depth levels of up at 100 metres
- To provide client with processed ASCII files from the IP survey
- To carry out data integration and interpretation
- To produce report and recommendation of way forward

The following is a detailed report of the work carried out to satisfy the Terms of Reference.

KEY PROJECT PERSONNEL RESUME

Tenyears Gumede – Holder of a Masters in Exploration Geophysics degree from the University of Zimbabwe and ITC, Deft Netherlands. BSc Honours in Physics degree from the University of Zimbabwe. 19 years industry experience as a graduate/staff/senior/expatriate geophysicist with Anglo American Corporation for 10 years and expatriate geophysicist for Mineral Search of Africa/Norilsk Nickel Burundi for 4 years. Involved in a number of Anglo Projects and part of the team that discovered and evaluated Bubi Gold Mine(Zimbabwe), McKays Gold Mine (Zimbabwe), WHEN Gold Mine (Zimbabwe). Involved in evaluation of Unki Platinum Mine and Hunters Road low grade high tonnage nickel deposit in Zimbabwe. Member of the Geological Society of Zimbabwe, Australian Society of Exploration Geophysicist and South African Geophysical Association.

1.1 HISTORICAL AND BACKGROUND INFORMATION

The Mberengwa greenstone belt is regarded as one of the richest belts in Zimbabwe having produced gold since ancient times. Bibi claims are located within such mines as the Dunbeth, Jumbo, A, B, C mines whose production figures are detailed in Section 1.4.2. Several reefs have been exploited on a smaller scale as evidenced by artisanal workings, which are distributed heterogeneously within different lithological units.

1.2 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The prospect area, whose ore can feed into Jumbo Mine, in which a hammer mill is located, is situated on the northern flank of the main the Ngezi River, above some 1160m above sea level. It is located on a ridge that rises above the general plain. The prospect is linked directly by roads to Zvishavane, the nearest town and Bulawayo and is approximately 3km by road from the Mimosa Mine Road.

The main drainage system is Ngezi and Mtshingwe Rivers with the Mtshingwe, have a relatively straight course, following a fault zone from the Fort Rixon area. From their confluence, the Ngezi follows the fault line until the effect disappears eastwards and meandering starts.

The climate is composed of a very hot spell in September, October and recently November before the rainy season that runs till March commences. Otherwise a very cold winter in May, June and July is experienced.

1.3 REGIONAL GEOLOGICAL SETTING

The Belingwe greenstone belt comprises two distinct greenstone successions, the lower 2.9 Ga Mtshingwe and the 2.7Ga Ngezi group. These units consists of stratigraphic units of intermediate to felsic volcanic and volcanoclastic unit, ultramafic to mafic lava plain sequence, a conglomerate-shale sedimentary sequence, and a unit of tectonically imbricated sedimentary and volcanic rocks (see Figure 1).



Figure 1 – Regional Geology Map of the Claims area

1.3.1 LOCAL GEOLOGICAL SETTING

The local geology is mainly the mafic and ultramafic (see map above) being serpentinized peridotite pyroxenite trending NE SW and gabbroic rocks to the north cut by peridotite pyroxene consumed in basaltic greenstone and foliated banded and massive tonalite. The basaltic greenstone is sheared with quartz ridge outcrops on hill crests.

A lot of artisanal work has been done on the valley side of the claims area targeting elluvial and alluvial gold nuggets by tribute members. Quartz reef ores are stock piled on the crest side, not processed perhaps due to poor grades. The outcropping quartz reefs are as much as 1m, but showing that there could be wider at depth. The quartz veins pinch and swell giving differential thickness.

1.3.2 PROSPECTS FOR GOLD MINERALIZATION

The claims are approximately 1 and 2.5 miles respectively west of Mberengwa Bulawayo Road turn-off some few kilometers from C Mine, the largest producer in the vicinity. 'C' mine had been worked from 1907 to 1951 and production averaged 6g per ton. The C Mine reef forms a prominent outcrop of quartz which follows the crest

of a low hill, striking E W and dipping 60 degrees S. A dolerite sheet cuts the reef between the 6 and 7 levels. Little work had been done below this level and values were generally low. The workings extend over 600m and reach a depth of approximately 200m.

The mine produced 28937 Oz from 220750T milled and15012 Oz from 199763T of re-treated sands and slimes

Dunbeth Mine, located 2.5km west of Mberengwa lies on a fine-grained, massive and blocky greenstone rock. The reef strikes N S and dips west along a distinct fissure cutting the country. It is reported that 304 Oz of gold were produced from 1896T milled and from 2560T of sands and 850T of slimes 98 Oz were recovered. This mine lies some 1.2km SE of Jumbo Mine Claims operated by client.

A high grade deposit in the form of Great Belingwe Mine lies 3.75km SSE of Mberengwa business centre. The reef occurs in a shear zone that flanks the western boundary of the serpentinites range in pyroclastic greenstones. Reported production is 20350 Oz from 74002T milled and 2206 Oz from 70120T of sands 5076T of slimes.

In general, the number of operating/producing gold mines per square kilometre is relatively high compared to other known greenstone belts in Zimbabwe and warrants further exploration work to map blind orebodies lying at depth. It is important to notice that a lot of these mine operations were discovered and worked by the ancients, pre-colonisation, taken over and mined economically after 1890. Human skeletal material, for example, is document at C Mine under archaeological survey reference number R 869.

2 GEOPHYSICAL SURVEYS METHODOLOGY

Geophysical surveys involving ground magnetic surveys and Induced Polarisation Surveys were employed to guide the exploration programme paying particular attention to the geology over past producing pits.

2.1 GROUND MAGNETIC SURVEY

A detailed ground magnetic survey was done at a 50m line spacing and 5m sample stations, with infills over more promising/known mineralisation to enable development of an interpretation framework. The main objective was to map subsurface geology and structures that control gold mineralization. Note: magnetic surveys are not direct detectors of mineralization, but give guidance if the mineralization is associated with magnetic minerals like pyrhotite, magnetite, and ilmenite.

2.2 MAGNETIC SURVEY INSTRUMENTATION

The survey utilized a GSM 19 Overhausser magnetometer of sensitivity ± 0.01 nT as a roving machine whiles the GSM 19 Proton magnetometer of sensitivity ± 0.01 nT was a base machine to monitor diurnal effects of the survey days.

2.3 MAGNETIC DATA PROCESSING Map Generation

The following data transforms and routines were effected using frequency and space domain filters in MapInfo Discover Program.

Pole reduction

This transform generates a total field data set whose magnetic anomaly signatures are commensurate with those at the poles rather than the -60° for the induced magnetization in the prospect area. The effect is to simplify the magnetic map by rendering anomaly waveform independent of strike and to generate symmetrical anomalies over steeply dipping magnetic sources. Anomalies with asymmetric waveform reflect flatly dipping magnetic sources or with a component of remanent magnetization.

Gradient Data

Computation of the first vertical derivative in an aeromagnetic survey is equivalent to observing the vertical gradient directly with a magnetic gradiometer and has the same advantages, namely enhancing shallow and suppressing deeper sources in addition to giving a better resolution of closely-spaced ones. Second, third and higher order vertical derivatives may also be computed to pursue this effect further, but usually the

noise in the data becomes more prominent than the signal at above the second vertical derivative (Reeves, 2005)

Second vertical derivative further boosts the response of shallow targets but higher noise levels are experienced. Note: Over isolated bodies, second derivative data has the advantage that zero level contours approximate contacts of magnetic body, rendering this data of some significant use in semi-quantitatively outlining the plan position of stratigraphic units.

✤ Analytical Signal

This is a scalar sum of the vertical and the two horizontal gradients. It yields a wholly positive bell-shaped anomaly over any magnetic source irrespective of its dip, or magnetization history and is useful in mapping the strike trace of long magnetic sources or the centre of plug-like sources.

✤ Image processed data

Relief Shading highlights short wavelength, low amplitude anomalies at shallow depths in total field and other related data sets. Steep features generate sharp, intense shadows. Where the azimuth is at a large angle to the strike (perpendicular), the process allows for the visual confirmation of strike continuity along sectors where anomalies are poorly developed.

2.3.1 DISCUSSION

The magnetic surveys were processed claim by claim beginning with the main **Bibi Claim (0064032AA)**. The claim covers the main Bibi pit and is 10Ha in area with its longer axis being east west. Plate 1 below shows the claim numbers as named by the Ministry of Mines.

Survey AreaDimensions53HectaresNumber of claims7 gold claimsComment5 contiguous claims and 2separate. Claim
0064037AA is distal north



Plate 1 – Coverage of magnetic survey

2.4 BIBI CLAIM 0064032AA

The magnetic survey results, Figure 2, show an E –W trend magnetic high being the volcanic andesites cut by NW SE structures being interpreted as faults. Magnetically low zones are interpreted as potential shear zones and on the central east correspond to a mine out pit to depths of 15m. The Main Pit anomaly is, however N S anomaly curvilinear at UTM800650/7741900, changing its strike direction to NW SE.



Figure 2 – Total Magnetic Intensity Map showing structures

3 distinct magnetic horizons (see Figures 2), **Main Pit**, **A** and **B** have been mapped with trough to ambient variation of 9nT, indicating that the technique is mapping variation in magnetic mineralogy of the regionally mapped greenstone.

2.4.1. Main Pit Anomaly

This is a huge feature that shows as magnetic low from the total field and residual total field data. It strikes north and very broad interpreted as a splay shear cutting across the general geological strike. The general shear, **Sh**, is curvilinear and trends NW SE cutting through the andesite. The **Main Pit** anomaly, narrows to the north having been displaced to the east by a more intermediate magnetic anomaly feature.

Open cast mining covers some 100m over the broad zone but exploration pits continue to the north and south tracing the anomaly.



Figure 3 – Total Magnetic Intensity Map Overlain by Geology Interpretation

2.4.2 A Anomaly

This anomaly may be a mirror image of **Main Pit** anomaly south of the **Sh** shear zone (see Figure 3). The anomaly is cut by a NW SE structure and is interpreted as a shear zone that requires additional work in the form of IP surveys to map the potential of sulphides that may be related to gold mineralization.

2.4.3 B Anomaly

This anomaly is synonymous with anomalies A and Main Pit except for its E W strike that conforms to the general strike in the area (see Figure 3). It requires additional work in the form of ground truthing and follow-up pitting.

The vertical derivative component of the magnetic field further maps the four magnetic horizons (**Main Pit, Sh, A and B**) as zones of depressed magnetic gradient with narrower wavelengths as expected (see Figure 4). Furthermore, other geological

structures that dissect the main anomalies are prominent and their influence in mineralization cannot be ignored.



Figure 4 – Derivative Map Overlain by Targets

2.5 IP SURVEY METHODS

Follow up Induced Polarisation (IP) surveys (gradient and real section IP configurations) were implemented on more prospective ground to identify potential pitting/trenching and drill targets.

2.6 IP INSTRUMENTATION

The IP surveying was conducted using an IRIS IP system, in both single and multigradient array 2-D mode to survey different pseudo-depth levels. The potential electrode spacing was set to 25 metres to a depth slice of 50m, 75m, and 50m to a depth slice of 100m and 125m while along line sampling was set at 25m for high lateral resolution.

Survey Area
Dimensions

10 Hectares

2.6.1 Survey Parameters

The area was surveyed using gradient configuration as a reconnaissance survey following results from the magnetic survey and field observations being potentially mineralized outcrops. Line 7741950 was surveyed using real section technique to map the depth extents of the anomalies

2.7 SURVEY DATA PROCESSING AND PRESENTATION

2.7.1 DATA PRESENTATION

The geophysical data from this survey are displayed in several formats and all plan maps are registered to the Arc 1950, zone 35K, and UTM grid coordinate system to enable integration with magnetic data.

2.7.2 DATA PROCESSING

2.7.2.1 GEOPHYSICAL TECHNIQUES

IP METHOD

The time domain IP technique energizes the ground surface with an alternating square wave pulse using two current electrodes. After the transmitter pulse has been transmitted into the ground via the current electrodes, the IP effect is measured as a time diminishing voltage at the receiver electrodes during the off time. By passing an induced current into the ground and measuring the change in voltage with respect to time, or changes in phase at a given frequency with respect to a reference phase, the IP effect can be determined. The IP effect is a measure of the amount of polarizable materials in the subsurface rock. On ideal circumstances, the chargeability responses are a measure of the amount of disseminated metallic sulphides (pyrite, pyrhotite etc) in the subsurface rocks and usually the sulphides are associated with gold, nickel (pentlandite) or other economic minerals.

It is important to note that there are other non economic rock materials that give rise to IP effects, including some graphitic rocks, clays and some metamorphic rocks (serpentinite for example). Ambiguity on interpretation in such geological environments is introduced so, that from a geological point of view, IP responses are almost never uniquely interpretable. Also, from the IP measurements the apparent (bulk) resistivity of the ground is calculated from the input current and the measured primary voltage. IP/Resistivity measurements are generally considered repeatable within about five percent. However, they will exceed that if field conditions change due to variable water content or variable electrode contact. IP/Resistivity measurements are influenced, to a large degree, by the rock materials nearest the measuring electrodes, and the interpretation of the traditional pseudo section presentation of IP data in the past have often been uncertain. This is because stronger responses that are located near surface could mask a weaker one that is located at depth.

Gradient Array - The gradient array is an efficient setup that can be used for reconnaissance or detail surface work. This array is a generalization of the Schlumberger array, and is used for surveying large grids. The size of the receiver dipoles would be based on the lateral resolution desired. This array provides data with good penetration, data are easy to interpret, there is less masking by conductive overburden, lateral resolution is very good, and can use two or more receivers on line to speed up the survey. Its main drawback is that depth to anomalous bodies cannot be determined.

Real Section IP is a form of multi-gradient array in which the current electrodes are moved to increase depth of observation. The configuration has the advantage that the polarisable body attitude can be estimated from the pseudo section, making interpretation straight forward compared to pole-dipole, dipole-dipole data.

2.8 INTERPRETIVE MAP GENERATION

Gridded gradient array chargeability and resistivity maps on plan view were created to aid in identifying targets (see Figure 5). The plan-view maps are essential to determine possibility of structures and correlation with magnetic survey results/interpretation, trenching to improve geological understanding of the area.

2.9 DISCUSSION OF IP RESULTS FOR CLAIM 064032AA

A strongly chargeable feature is mapped corresponding with the Main Pit magnetic anomaly indicating that the ores mined were sulphidic at depth (see Figure 5). The anomaly is broken along strike indicating the effect of NW SE structures mapped by the magnetic survey (see Figure 5).



Figure 5 – Chargeability Map showing short strike length targets



Figure 6 – Resistivity Map showing short strike length targets

Subordinate chargeability anomalies have also been mapped to the west. These subordinate anomalies have a NS orientation that cuts across the A magnetic anomaly.

The chargeability anomaly over the Main Pit is associated with a high resistivity anomaly, a condition necessary for disseminated sulphides in quartz material. The mined out reef at surface is a quartz vein that is oxidized (see Figure 6). The resistivity anomaly over the Main Pit is composed of 3 short strike length anomaly indicating the potential of separate reefs and structure .within the main body

2.10 Real Section Anomalies

The real section IP line maps the Main Pit Zone as a steeply dipping anomaly with an increased chargeability at depths of up to 100m. The anomaly is associated with a resistivity anomaly that broadens with depth.



Figure 7– Real section chargeability map showing Main Pit Target (hot colour on section)

The chargeability anomaly section 7741950N (see Figure 7) shows a textbook depth anomaly of up to 4mV/V coinciding with the low magnetic anomaly that is

interpreted as a shear zone. A corresponding resistivity feature located at UTM800650/7741950 is also mapped but lies at depth with a dip attitude towards the west.



Figure 8 – Real section resistivity map showing a broadened resistivity feature at depth associated with magnetics and chargeability

3. BIBI CLAIMS 006547AA AND 006548AA

The claims are the most southerly with their long axis being north-west south-east (see Plate 1). Based on the regional geological trend the magnetic and IP survey lines were oriented east west.

Survey Area

Dimensions

```
13.9 Hectares
```

3.1 BIBI CLAIM 006547AA/006548AA RESULTS

A highly magnetic anomaly, perhaps a gabbro unit lies to the north west of the claims area while the south east is generally subdued in magnetic intensity. An east west



regional magnetic trend is observed subduing the anomalies to the east on the total magnetic intensity results (see Figure 9).

Figure 9 – Reduced to pole magnetic map showing the magnetic domain to the west

The magnetic feature is some 100nT above the ambient field due to the andesitic rocks. Similarly the low magnetic features are 20nT below the ambient magnetic field of the area.

3.2 BIBI CLAIM 006547AA/006548AA ANOMALY DESCRIPTIONS

SH1 ANOMALY

It is a north south low magnetic anomaly that has been cut by north-west south-east and north-east south-west structures. It is interpreted to be a shear zone. Conjugate, near east west shear zones have been mapped. Remnants of magnetic features are also observed within the interpreted shear zones being zones where magnetite has not been completely destroyed (see Figure 10 and 11).



Figure 10 – Residual magnetic map showing the magnetic domain to the west and shear zones

SH2 ANOMALY

The anomaly lies north-west of the claims area, north of the interpreted gabbro. It is a low magnetic feature synonymous to SH1 anomaly to the south. The anomaly pinches and swells along its curvilinear strike direction, which is east west to the south and north south to the north. East West structures dissecting the anomaly have been mapped. SH1 and SH2 magnetic anomalies are targets for gold mineralization. Their conjugate anomalies are particularly important in gold mineralization. The younger structures cutting through these two magnetic anomalies may also be targets for gold mineralization. Hydrothermal fluids migrate along weaker zones like shears and structures and if mineralized, precipitate gold along them.

The anomalies were further targeted with resistivity/induced polarization surveys. Trenching and pitting over these anomalies is recommended.



Figure 11 – Vertical Derivative magnetic map showing the magnetic domain to the west and shear zones

A north south structural fabric cut by north-east south-west faults has also been mapped (see Figures 10, 11, 12). The mapped faults are f1 and f2 with a north-east south-west orientation and f3 and f5 being north south. The f4 fault has a north-west south-east orientation. The faults dissect the mapped shear SH1. The gabbro anomaly is massive and not affected by the faults system indicating that it may be later than the faults.

Two east west structures have been identified further to the north, one dissecting the SH2 anomaly.



Figure 12 – Analytical signal magnetic map showing the magnetic domain SH1 and SH2 as positive

4. BIBI CLAIM 0064033AA

Survey Area

Dimensions

7.6 Hectares

The block consists of highly magnetic units to the south, interpreted to be potential gabbro formation and low magnetic strength features to the north that is related to potential shears. A regional north south magnetic trend is identified from the total magnetic intensity map and subdues the residual geology related anomalies. The highly magnetic anomalies are some 120nT above the ambient magnetic field due to andesitic rocks, while the low magnetic units are some mere 20nT below the ambient field.

The magnetic survey has mapped major north-west south-east structures cutting east west geological formations (see Figure 13 and 14).



Figure 13 – Total magnetic Intensity Map showing high magnetic domains to the south and low magnetic domains to the north (effect of regional geology/trend)



Figure 14 – Reduced to Pole total magnetic intensity map showing magnetic domains

4.1 BIBI CLAIM 64032AA ANOMALY DESCRIPTIONS

SH3 ANOMALY

On the residual geology magnetic map, the unit is mapped as a low magnetic feature striking east west and cut by two major faults oriented near north south. The unit is interpreted to be a potential shear zone hosted within the andesites (see Figure 15).



The unit pinches and swells along its strike as it is cut by north-west south-east structures interpreted as faults.

Figure 15 – Residual of total magnetic Intensity Map showing low magnetic domains interpreted to be shears

SH4 ANOMALY

The anomaly is the southerly of the low magnetic features with an east west strike and cut by a series of structures to its east. The structures are major north-west south-east oriented features that also dissect SH3 anomaly to the north. The unit is interpreted to be an east west shear zone. It pinches and swells like its counterpart anomalies SH3, SH2 and SH1.

SH5 ANOMALY

This anomaly is relatively low magnetic intensity and trends north-west south-east. It is interpreted as a potential shear and intersects with the SH3 anomaly at UTM Arc 1950 800320/7741790. The anomaly is cut by north-east south-west structures that are potential faults.

The anomalies SH3, SH4 and SH5 require follow-up trenching and pitting. They were also targeted with resistivity/IP surveys (see Figure 22).

5. BIBI BOKO TRANSFER CLAIM

Survey Area

Dimensions 9.8 Hectares

The claim shares its southerly boundary with the Main Bibi Claim (64032AA) and a low magnetic feature lies to the north striking east west. The feature's magnetic strength is some 10nT below the ambient field of the mapped andesites (see Figure 16).

High magnetic anomalies, 20nT above the ambient magnetic field have been mapped, interpreted as variations in mineralogical composition of the andesites (compare to 120nT on other claims). The relative high magnetic anomalies are generally north south trending; narrow and deformed along their strikes (see Figure 16).



Figure 16 – Total magnetic intensity map showing low magnetic domains interpreted to be shears

SH6 ANOMALY

The anomaly is an east-west feature, synonymous to SH1, SH2, SH3 and SH4, depleted in magnetic minerals and is interpreted as a potential shear. It is cut by north south structures and displacement faults (see Figure 16 and 17).

The reduced to pole magnetic results show that the shear may be extending further south to its south east as evidenced by distorted/deformed magnetic anomaly with remnant magnetic highs (see Figure 17). These potential extensions need further investigations by geological mapping and ground truthing.

Trenching and pitting is recommended. The shear zone was further targeted with resistivity/IP surveys.



Figure 17 – Reduced to Pole total magnetic intensity map showing low magnetic domains interpreted to be shears

6. BIBI CLAIM 64037AA

Survey Area

Dimensions

10 Hectares

This is the most northerly of the claim, non-contiguous and constituting 10Ha (see Figure 1. Two major magnetic domains have been mapped, being a more magnetic feature to the north, juxtaposed to a low magnetic feature to its south. The greater part of the survey area is ambient magnetic field of 29739nT, being the andesite (see Figure 18).

The magnetic anomalies have an east west curvilinear trend and cut by north south and east west structures. The magnetic horizon is some 25nT above the ambient magnetic field and is potentially a gabbro.

The low magnetic horizon is some 25nT below ambient field and is potentially a shear zone (see Figures 18, 19 and 20).



Figure 18 –Total magnetic intensity map showing low magnetic domains interpreted to be shears



Figure 19 – Reduced to Pole total magnetic intensity map showing low magnetic domains interpreted to be shears/ high magnetic domains as gabbro



Figure 20 – Residual of total magnetic intensity map showing low magnetic domains interpreted to be shears

6. BIBI CLAIM 006548AA

Survey Area

Dimensions

1.9 Hectares

The prospect is the smallest in size, covering some 1.9Ha and lies east of the Main Bibi Claim. A highly magnetic feature, curvilinear, cut by north south structures has been mapped generally oriented east west. The anomaly is 5nT above ambient field and is interpreted a magnetic variations within the andesites.

Further to the north, an equally oriented low magnetic anomaly, SH7, has also been mapped juxtaposed to the high magnetic anomaly. The anomaly is some 3nT below the ambient magnetic field. It is also interpreted as variations within the host andesite rocks (see Figure 21).



Figure 21 –Total magnetic intensity map showing magnetic domains interpreted to be variations in mineralogy with the andesite

Due to the size of the block and the anomaly amplitudes, which seem to be mineralogical variations within the andesite formation, no further geophysical work was recommended. However ground truthing of these anomalies by a geologist is recommended

7 DISCUSSION OF IP RESULTS FOR CLAIMS 006547AA, 006548AA AND 0064033AA

Survey Area

Dimensions

22 Hectares

The chargeability anomaly map (see Figure 22) map sections of the interpreted shear zones (SH1, SH2, SH3, SH4 and SH5 as chargeable. SH1 and SH5 are the promising shears based on their quantum of chargeability and resistivity. Real section surveys to

a depth of 100 were subsequently carried out to map the depth extents of the chargeability anomalies.

The chargeable zones with strong resistivity relation are potential areas with disseminated sulphides in quartz veins.

The interpreted SH5 to the north has chargeability anomalies broken along strike. The areas are broken by north-north-east, north-north-west and north south structures. Mineralisation in these part of the claim area is therefore strongly controlled by these structures.

Similarly, SH1 anomaly to the south is cut by chargeability anomalies that seem to be oriented in the direction of the mapped structures from magnetic survey (see Figure 22). However, the resistivity anomaly follows the mapped magnetic anomaly along its strike direction (see Figure 23).

SH4 is cut by the north south chargeability and resistivity anomalies to its east. The anomaly itself is devoid of any chargeability anomaly and is therefore an uninteresting target. However, ground truthing is recommended on the interpreted magnetic anomalies devoid of chargeable parts.



Figure 22 –Chargeability anomaly map showing SH1, SH3 and SH5 with section that are chargeable



Figure 23 –Resistivity anomaly map showing SH1, SH3 and SH5/with section that are resistive



A zoomed in resistivity map is shown below as Figure 24. The huge resistivity anomaly to the west corresponds to a quartz reef that has been worked to some 3m.

Figure 24 –Resistivity anomaly map showing resistive exposed reef trace



Figure 25 – Chargeability anomaly map showing chargeable central unit

The quartz reef is devoid of chargeability anomalies, but its east counterpart (see Figure 25) shows a north south anomaly associated with SH5 shear.

The real section anomalies are shown as Figures 26 and 27 and map the quartz reef extensions to depth. The resistivity anomaly feature indicates that the anomaly is steeply dipping.



Figure 26 –Resistivity anomaly map showing resistivity unit associated with the exposed quartz reef



Figure 27 – Resistivity anomaly map showing resistivity anomalies at depth

Recommendation and Conclusions

The magnetic survey has been important in mapping structures, faults and shear zones that are conduits to gold mineralisation. The micro-variation in magnetic strength within the andesites may be a measure of shearing or mineralogical variations. Six targets having been identified from magnetics in addition to the Main Pit anomaly on Bibi Claim 0064032AA. The Bibi Claim is constituted by another chargeability anomaly to the west of Main Pit cutting across the main magnetic anomaly that strike east west. The six targets are synonymous in magnetic strength as Main Pit but vary in chargeability measure.

The resistivity/ IP surveys have mapped a north-west south-east reef on the edge of the claims to the west associated with a worked quartz reef. A sub-parallel anomaly east of the exposed quartz working has been identified and require further work. This

reefs has no corresponding IP anomaly. Trenching and pitting is recommended, priority being resistivity/chargeability anomalies associated with interpreted shear zones.