

EL42/2004 – Mt Bertha

Work Program Report 2012.

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Summary

Shree Minerals Ltd undertook 2 weeks of reconnaissance exploration field work on EL42/2004 (Mt Bertha), during March 2012. Exploration mainly targeted significant magnetic highs, some being identified within or adjacent to windows through the Tertiary and Permian cover sequences. The primary target is magnetite, analogous to the Savage River Iron Ore deposit which lies ~30km SW along strike within the Arthur Metamorphic Complex (AMC). The potential for other commodities (Cu and Au) was also considered.

A magnetic susceptibility meter was utilised to test as many rocks as possible in the field. This generated 166 data points to enable more effective modelling of the area; in particular allowing characterisation of the variably magnetic Tertiary Basalts which are widespread and mask potential subsurface magnetite mineralisation within the Arthur Metamorphic Complex (AMC) schists.

Histogram analysis shows that anomalous magnetic susceptibilities are generally >5SI, with a clear standout population (No = 7) in the basalts ranging from 10 to 51.6SI. Anomalous magnetic susceptibilities were located in basalt at all significant magnetic anomalies investigated. However, AMC schists locally returned anomalous values (No = 5) in the range 5 to 9.09SI, favourably indicating a likely relationship to an overprinting magnetite mineralising event.

A total of 17 rock chip samples were collected, mostly in the form of composites, some with additional reference samples. A Savage River – like (Magnetite+/-Cu) system could have influenced the tenement area since a very weak relationship between magnetic susceptibility (to 0.63SI) and Cu, Zn and Fe is apparent. A road side schist (AMC) outcrop was composite sampled returned an indicative 35m @ 242ppmCu(max401ppmCu).

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Introduction

Shree Minerals Ltd undertook 2 weeks of exploration field work on EL42/2004 (Mt Bertha), during March 2012. The tenement is located in the north west of Tasmania (Figure 1) and is accessible via the unsealed all-weather Savage River Pipe Line track.

Exploration within the Mt Bertha Tenement (Figure 1) mainly targeted significant magnetic highs (Figure 2), some being identified within or adjacent to windows through the Tertiary and Permian cover sequences. The primary target is magnetite, analogous to the Savage River Iron Ore deposit which lies ~30km SW along strike within the Arthur Metamorphic Complex (AMC). The potential for other commodities (Cu and Au) was also considered.

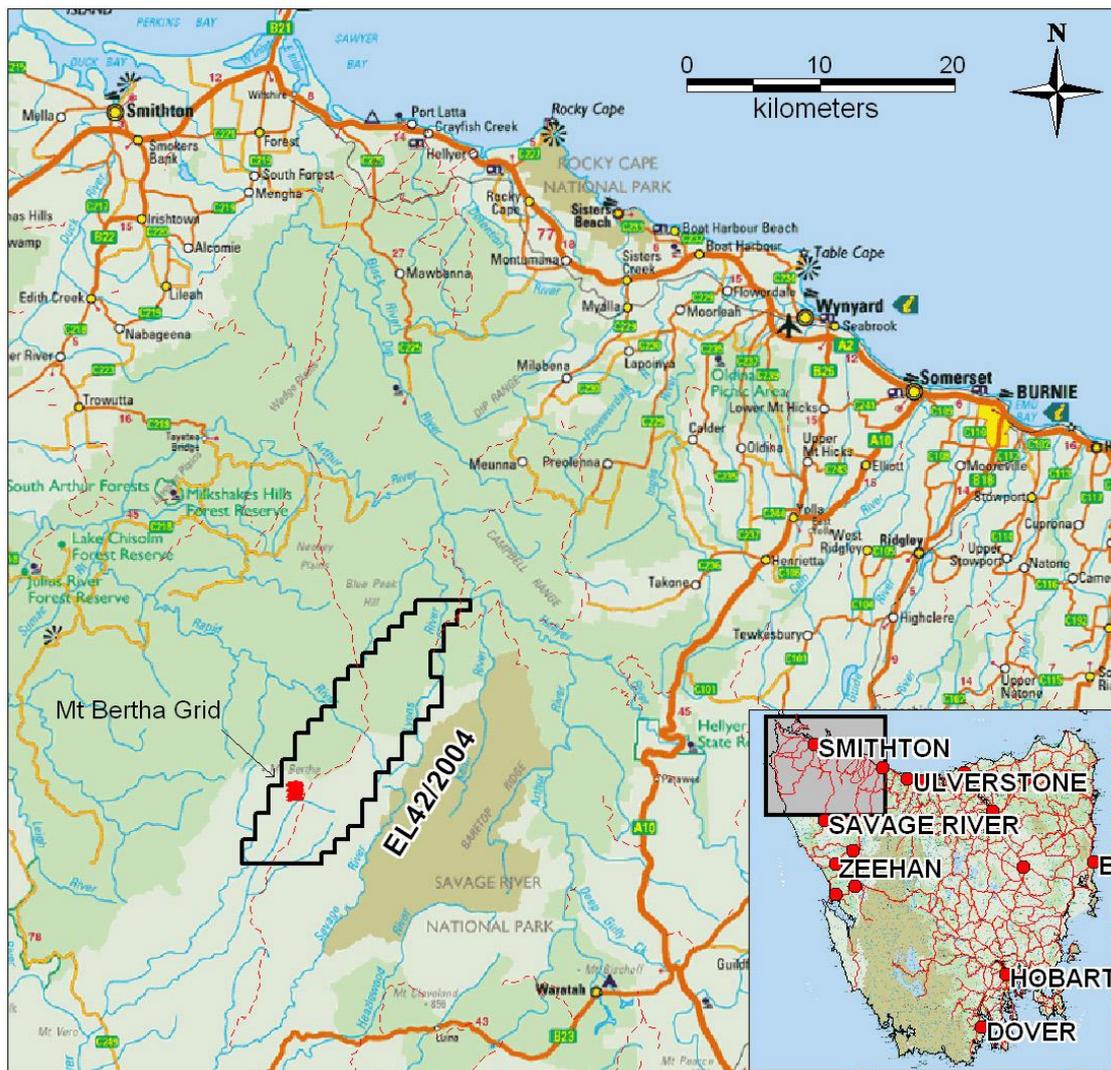


Figure 1: Location of Mt Bertha (EL42/2004).

Field work was low impact, primarily entailing reconnaissance geological mapping, insitu magnetic susceptibility readings and limited rock chip sampling. Track cutting (~3500m) was planned and approved to facilitate access for geological reconnaissance of the more remote magnetic targets (MTB 2; Figure 2), but was not undertaken in light of making an initial field visit to identify prospectivity.

All activities were undertaken within the guidelines outlined in the Mineral Resources Tasmania's Mineral Exploration Code of Practice. Approval for Savage River Pipe Line access was obtained from Grange Resources, following an induction.

Digital data was compiled from Tear (2006; Appended in Harder 2007) and consultant data, enabling generation of field base and prospectivity maps.

Field Work

Shree Minerals Ltd undertook 2 weeks of reconnaissance exploration field work on EL42/2004 (Mt Bertha), during March 2012. Exploration mainly targeted significant magnetic highs, some being identified within or adjacent to windows through the Tertiary and Permian cover sequences (Figure 3). The primary target is magnetite, analogous to the Savage River Iron Ore deposit which lies ~30km SW along strike within the Arthur Metamorphic Complex (AMC). The potential for other commodities (Cu and Au) was also considered.

Traverses to anomalies A, B and C, as well as along the Pipeline Track were undertaken. A magnetic susceptibility meter was utilised to test as many rocks as possible in the field. This will aid geophysical modelling to see if additional highly magnetic material other than basalt is possibly present. Field data including magnetic susceptibilities, samples, geology and structural data is digitally appended.

Anomaly A

A faulted contact between Tertiary Basalt and Arthur Metamorphic complex schists was located in the Anomaly A vicinity; minor quartz veining was noted in the schists as well as the strongest magnetic susceptibility measurements for the tenement coming from basalt.

A traverse was made up the Rapid River, the course of which differs markedly from that shown on the 1:25,000 topographic maps. Basalt was located where a ~10km long very straight magnetic anomaly crosses the river. This feature is interpreted as a Tertiary-aged basalt feeder, as supported by medium grained moderately feldsparphyric / near equigranular basalt/porphyritic dolerite located in the vicinity. The strike of this feature is approximately parallel to the regional foliation.

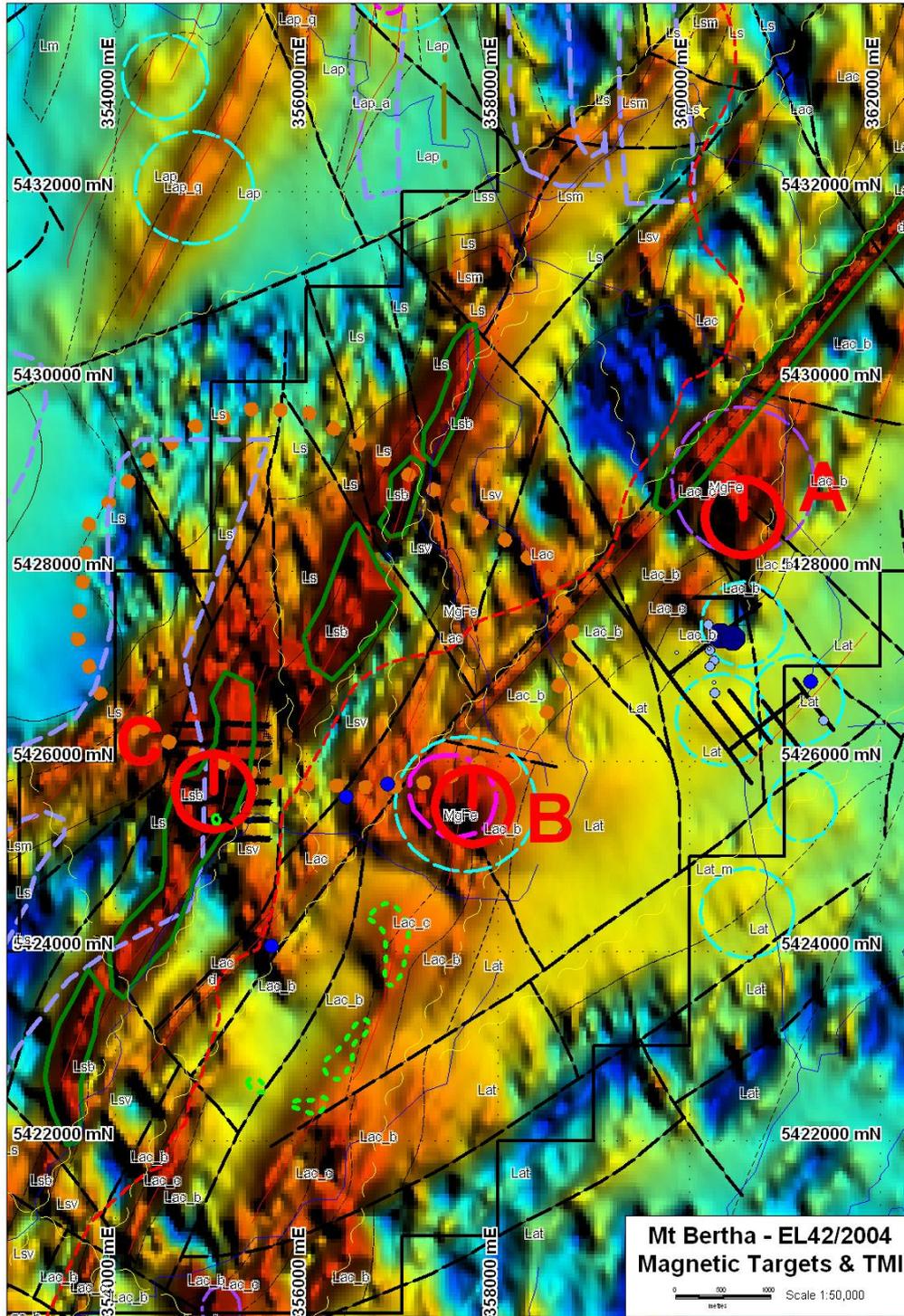


Figure 2: Magnetic Targets (**red** = Tear in Harder 2007, **green** = Cowan 2010, dashed **light green** = CRA vegetation anomaly; **Blue** dots = Fe in stream sediments) with interpreted sub basalt geology (from Tear in Harder 2007) over WTRMP Aeromagnetics total magnetic intensity (GDA94).

The actual centre of Anomaly A was not reached, however magnetic basalt was located along the northern strike extent of the anomaly. This dark grey sparsely vesicular basalt returned the strongest magnetic susceptibility recorded in the Mt Bertha tenement. The basalt is variably magnetic, mostly in the 2 to 4SI range, but locally reaches 51SI. Float from this magnetic susceptibility high area was composite rock chip sampled (31107).

A 253TN/-65W orientated faulted contact between massive basalt and moderately foliated (65TN/-55E) light green schistose siltstone was located in the river. No hornfels was evident at the contact. Other structural features include a -4 to 43TN drag fold plunge and local weak kink bands in the schist. The schist surface is weathered orange with weak to moderate FeO and bears quartz-chlorite veining(0.5%) forming sheared lenticular boudins in stronger foliated zones. A 2.5m composite rock sample (31103) was collected from this site.

Nearby, cream and very pale green siliceous schist displays a similar foliation (43TN/-60E) and an oxidised surface. This outcrop includes a ~25cm quartz vein thinning to 6cm (31106; Au <0.005ppm).

Anomaly B

A traverse was undertaken to Anomaly B and then south to a CRA identified vegetation anomaly. Tertiary basalt was common beneath open forest from the road to the Anomaly B area. Anomaly B is notably located at the margin of MRT (1:250,000 Geology; Figure 4) mapped basalt. However basalt was also located further south, along the anomaly trend, than was previously mapped. The magnetic high at Anomaly B appears to be explained by basalt of locally elevated magnetic susceptibility to 5.26SI average. Whilst at the southern end of the anomaly, a basalt returning up to 36.5SI (Average 24SI; 31111) was located as float within a small gully.

This traverse also crossed a patch of Bauera (~356500mE, 5425300mN; GDA94), between the road and Anomaly B, forming a significant vegetation anomaly of ~250m width and ~700m length, containing no outcrop. This vegetation is unlike that covering typical basalt areas and possibly signifies a change in rock type; a fault bounded sliver of AMC? The vegetation anomaly is coincident with an inferred fault line (Figure 4) as well as a subtle magnetic high. Soil sample follow up may be warranted to determine the anomaly source.

AMC schist with minor milky quartz veining was located in the creek immediately east of the Anomaly B magnetics high (@ ~357730mE, 5425400mN; GDA94). These rocks were sampled (31110) along with a bulk sediment sample to ascertain the general background metal values in the catchment. Magnetic susceptibilities within these rocks were low (ranging 0.01 to 0.1SI). Similar AMC outcrop was located in the creek immediately SW of Anomaly B (0.09SI; 31112, weathered cream and pale green siliceous micaceous schist, foliation(m/s), with quartz vein breccia fragments locally and FeOx(w/m) weathered zones; foliation trend 170MN).

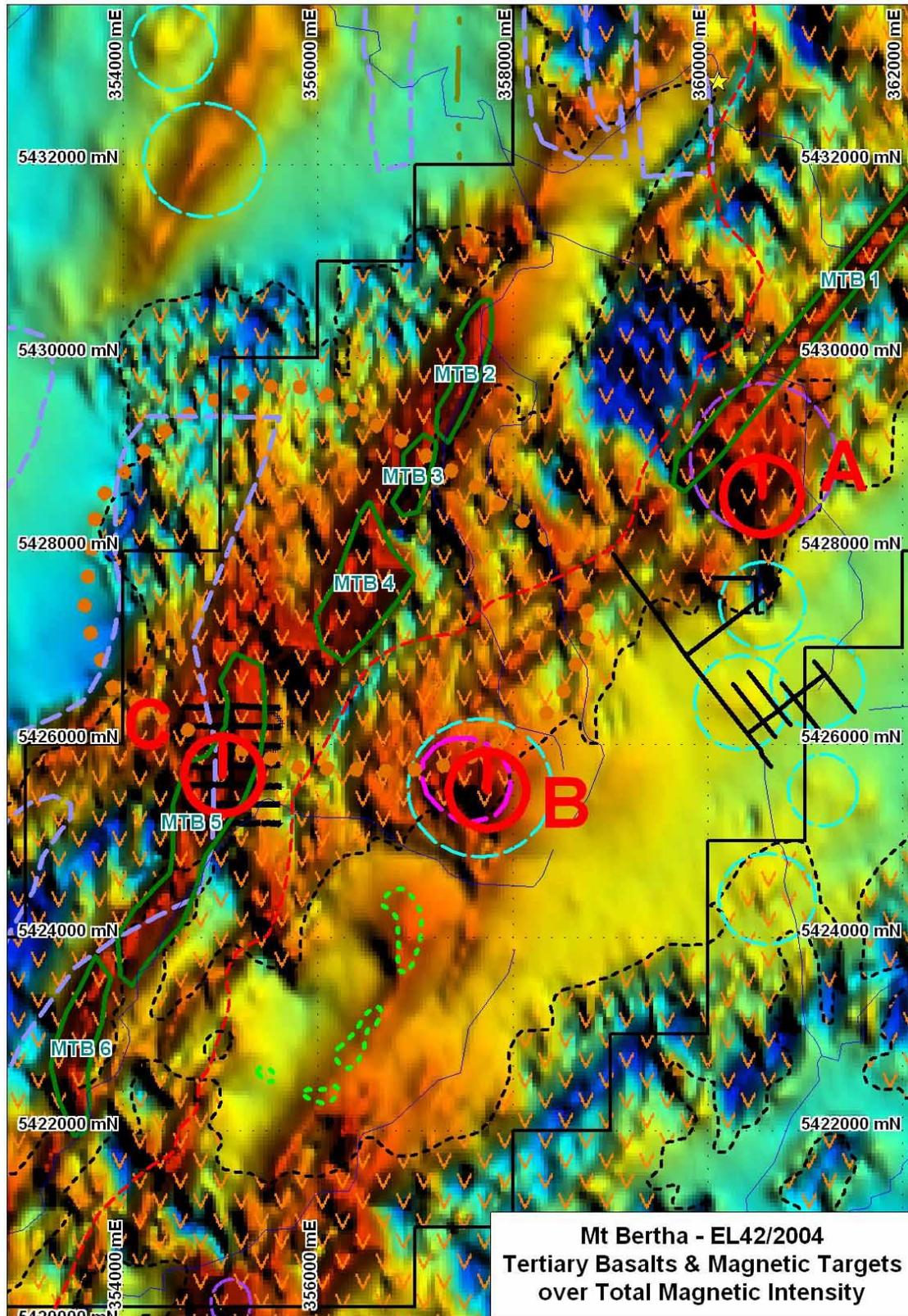


Figure 3: Showing Magnetic Targets (**red** = Tear in Harder 2007, **green** = Cowan 2010, dashed **light green** = CRA vegetation anomaly) with Tertiary Basalt (V) distribution over WTRMP Aeromagnetics total magnetic intensity (GDA94).

The vegetation anomaly south of Anomaly B is coincident with a linear magnetic anomaly. Whilst this feature maybe a Tertiary basalt feeder, it also represents a magnetic (/structure?) hosted target worthy of geophysical modelling. The area is covered by moderate height rainforest canopy with few large myrtle trees. The understory contains very thick horizontal bush with patches of cutting grass. No rock was located in the area, but Mines Department 1:250,000 scale mapping and observation from nearby creeks indicates this area is underlain by AMC schists, likely at a faulted lithological contact. AMC schists were also observed in a creek west of the vegetation anomaly but were not geologically logged (due to darkness).

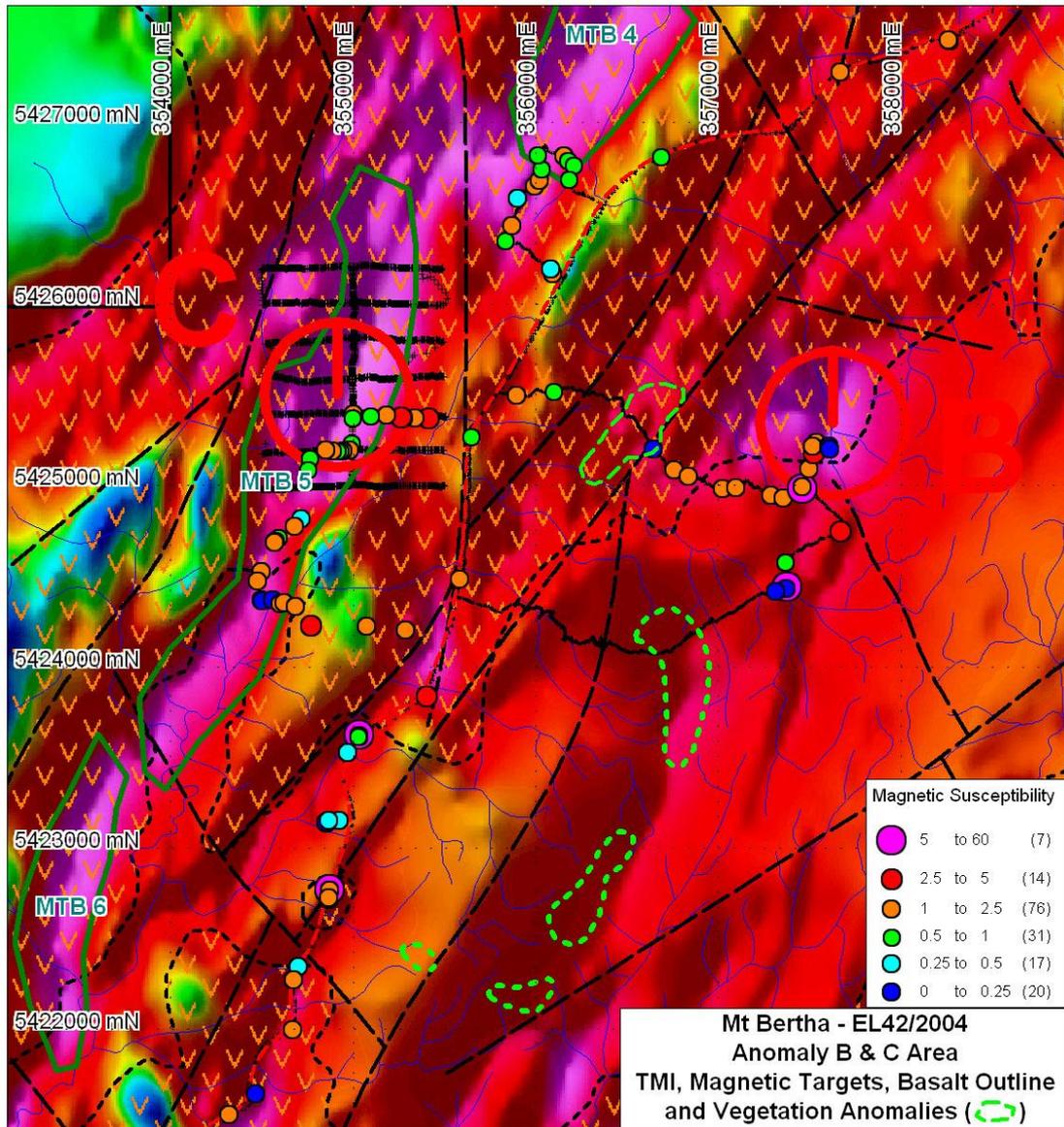


Figure 4: Anomaly B & C Area; Magnetic Targets, Basalt Outline, Interpreted Faults and Vegetation Anomalies over Total Magnetic Intensity.

Anomaly C

The Anomaly C area and to the south of the Mt Bertha Grid was investigated to obtain magnetic susceptibility readings, which ranged from 0.5 to 3.3SI. Basalt subcrop was common along a steep drop into the creek south of the Mt Bertha grid. Weakly

oxidised schistose grey and brown siltstone and sandstone was composite sampled (31100) from the creek there.

An inferred fault intersection area and the southern portion of the possibly dextrally offset magnetic anomaly to the immediate NE of Target C was investigated (MTB3 & 4). Tertiary basalt float and subcrop was located at the southern end of the anomaly MTB4, returning 0.6 to 2.3SI.

Pipeline Track

The Pipeline Track was used to advantage to test a number of magnetic and radiometric zones / features. Tertiary Basalt was located across much of the tracks extent within the tenement. A basalt flow base was identified in the south, overlying AMC schists which are weakly hematitic at the contact. The basal surface was weakly irregular and marked by vesicular lava (~1m thick), grading to variably foliated and interpreted flow banded facies, with blocky subangular basalt float and massive outcrop located ~10m south of the contact. These features allowed identification of a near flow base facies in outcrop a little further south.

An extensive road cutting at ~355150mE, 5423800mN (GDA94) comprised schists that were notably weakly magnetic, with susceptibility values ranging up to 8SI. Whilst in other areas minimal magnetic susceptibility was recorded within similar rocks. These observations suggest that primary (pre – Tertiary) magnetite (possibly Savage River – like) may exist in the area. This road side outcrop is near continuous and was sampled as composite rock chips covering intervals from 5 to 10m (31113 to 31115). Further, magnetic susceptibility measurements were taken every ~0.5m along the outcrop surface, then averaged over 2.5m intervals.

A large road base quarry is located in the south of the tenement (~355000mE, 5423350mN; GDA94). This bears AMC schists with minor scattered fragments bearing pink albitic(/carbonate?)-quartz-chlorite selvaged veins in schist, along with sparse disseminated dark silvery metallic hematite on late fractures. This irregular veining was sampled as a concentrated grab rock chip 31116 (0.07SI) with reference sample.

Geological Observations

The geology of the AMC is covered in Harder (2007) as well as various sections of Burrett and Martin (1989). Tear (2006, appended in Harder, 2007) provides an interpretive geological reconstruction, attempting to record sub basalt geology.

General geology notes additional to anomaly descriptions above and pertaining to the principal rock types encountered during field work are made below.

Basalts

Basalt is most commonly evident as variable quantities of float clasts to boulder size, with sparse subcrop and outcrop. The basalts are typically aphanitic to fine grained, massive and indurated. Flow base basalt facies are described above. Locally variably feldspar porphyritic varieties are seen, such as at waypoints 134 and 186. Some of these rocks may represent intrusive feeder or near feeder facies. eg. At waypoint 134, is a medium grained moderately feldspar-phyric / near equigranular basalt/porphyritic

dolerite, coincident with a 10km long linear magnetic feature. Another example being wp186, where weathered moderately feldspar-phyric basalt is again coincident with a magnetic high. Feldspar is often euhedral as locally near close packed laths to 6mm, within a groundmass tending to medium grained, near dolerite texture locally.

The Tertiary aged basalts have not undergone any significant deformation, being unfoliated but variably jointed. Therefore their morphology is likely to be relatively simple as feeder intrusions, extrusive palaeo channel fill (depth potentially to >50-100m) and possibly some widespread lava flow /flood sheets and associated hyaloclastite breccias. Significant Palaeo channels could be expected to form local concentrated elongate magnetic highs, but the tabular bodies identified by Cowan (2010) are those that extend to depth; representing either basalt feeders and/or potentially hypogene magnetite mineralisation. More recent basalt scree also has the potential to partially mask the underlying rock locally. In the vicinity of waypoint 244, >5m of basalt vertical thickness is exposed.

Flow morphology, aside from the prominent NE alignment may be in part controlled by NW aligned rift / extension faults. One of these is immediately NE of Target C. These appear to offset the strongest magnetic zone to the west of the Pipeline Track, but a long magnetic linear feature is not disrupted over its ~10km length.

The basalt flow cover is somewhat eroded / stripped in patches in the southern portion of the tenement.

Permian Sediments

Possible Permian sediments in the form of a weakly clayey weathered grey poorly sorted siltstone and fine grained sandstone with sparse mica flecks were noted on the Pipeline Track. This single outcrop area (354980mE, 5422954mN; GDA94) enigmatically returned weak but appreciable magnetic susceptibilities ranging from 0.26 to 0.48SI. If magnetite vein mineralisation is considered to be Devonian or older, then magnetite within Permian sediments could imply hydrothermal activity related to Tertiary basalt intrusion. A very weak foliation within these rocks does not favour Permian age, but foliated Permian rocks are known elsewhere (near Zeehan; R Bottrill, pers. comm.). Further, the Permian rocks appear to have a fault bounded distribution within the AMC area, with a weak foliation supporting structural emplacement rather than a more conventional origin as local graben fill. The AMC has evidently had a protracted structural history.

Note that the sheared Savage River deposit is thought to contain relict mafic volcanics and these and the magnetite mineralisation are considered to be pre Tertiary (basalt).

Geochemistry

Seventeen rock chip samples were collected with geological descriptions and sample details digitally appended. Samples include typical and magnetic basalt, quartz veining and AMC schist. The number of rock chip samples does not represent a statistically viable population; AMC samples = 9, Tertiary Basalt = 5. Samples were largely in the form of composite rock chips, comprising ~6 to 12 fragments from the sampling area. Several grab samples were also collected to evaluate metal potential

and composite to near channel samples over intervals of 10 to 15m were undertaken along an extensive road side outcrop.

Reference samples for the more interesting rocks were collected. Samples were sent ALS (Burnie Research Lab) for preparation and forwarding to Perth. Sample analysis was via a package combining Au and ICP multi-element analysis (ME-MS61 and Au-AA23).

Weakly magnetic (to 0.63SI) AMC schists in a road side cutting (~355150mE, 5423800mN, GDA) returned elevated Cu ranging from 114 to 401ppm. These samples were collected as composite rock chips, evenly across the outcrop surface, resulting in an indicative interval of 35m @ 242ppm Cu. This included 10m @ 401ppm Cu. These samples returned elevated V and Zn to 481 and 275ppm, respectively. A very weak relationship between magnetic susceptibility and Cu, Zn and Fe is apparent for AMC samples in Figure 5. Comparatively, as expected there is no relationship for these elements when compared to magnetic susceptibility in post mineralisation Tertiary Basalt (Figure 6).

The maximum gold analysis was 0.019ppm (SN# 31110), returned from variably silicified and irregular milky quartz veined(1%) cream and grey schist. This sample came from creek outcrop in the Anomaly B area. A bulk sample (SN# (31109) of creek alluvium bearing abundant angular to sub angular milky quartz vein, as well as schist, from immediately downstream of this location returned no elevated analysis (Au <0.005). Other quartz veined samples from the tenement did not return gold above the 0.005ppm detection limit. For instance, a 25cm quartz vein outcrop in the creek north of Anomaly A returned 0.14% S, but Au was below detection and no other analytes were appreciably elevated.

A single fault sample (31103) from the contact between basalt and AMC schist not un-expectedly returned no anomalous values.

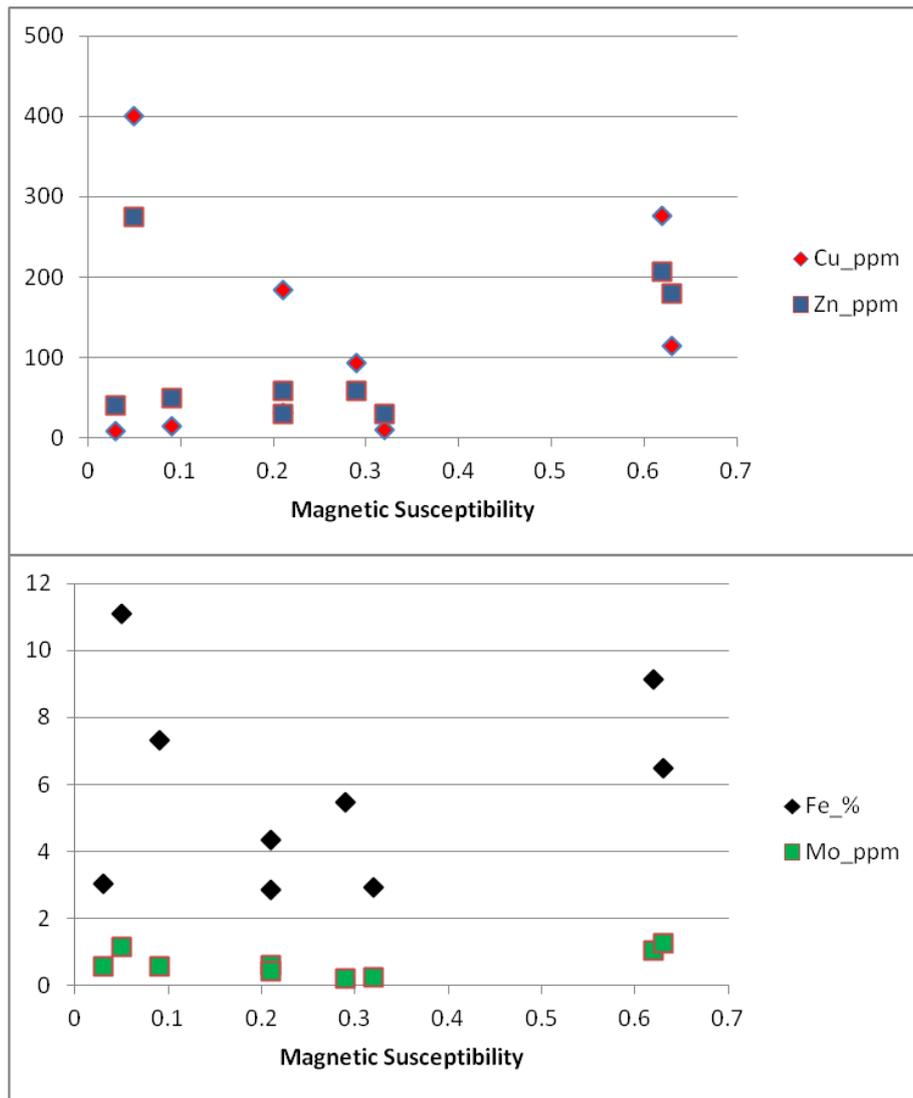


Figure 5: A comparison of magnetic susceptibility with select elements for AMC schists (No. Samples = 9)

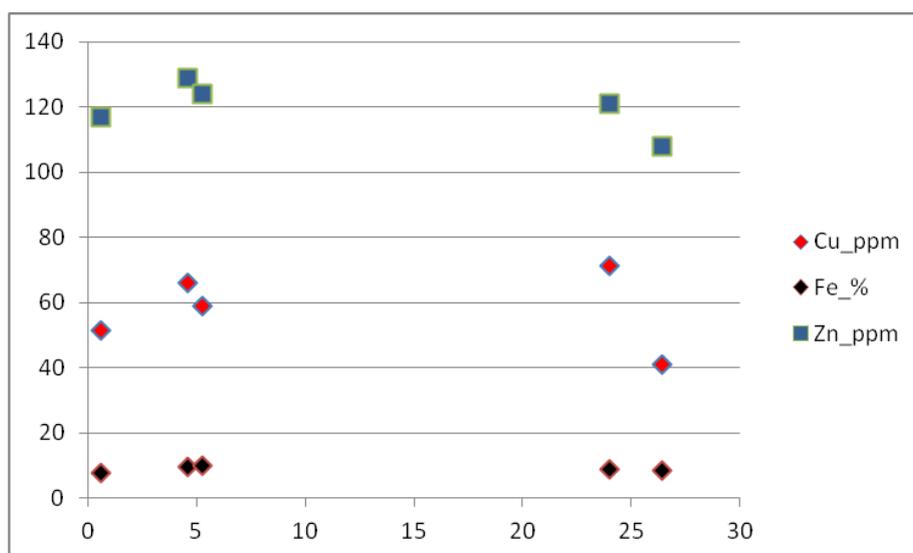


Figure 6: A comparison of magnetic susceptibility with select elements for Tertiary Basalts (No. Samples = 5)

Magnetic Susceptibility

A magnetic susceptibility meter was utilised to test as many rocks as possible in the field. This generated 166 data points (see digital data appended) to enable more effective modelling of the area; in particular the Tertiary Basalts, answering the question as to how thick they are and is there potential for significant sub basalt hydrothermal magnetite. In many cases approximate profiles were generated sub parallel to the aeromagnetic survey flight lines.

Magnetic susceptibility readings were commonly taken on 4 to 5 samples / rocks, but where float was sparse, spot readings only were possible. Field data recorded the average and the number of magnetic susceptibility readings, but individual readings recorded to reflect sample variability are not always complete (See appended digital data).

A thematic comparison between average magnetic susceptibility and 1st Vertical Derivative magnetics is shown in Figure 7, which illustrates the distribution of anomalous magnetic susceptibility readings as in general being coincident with or adjacent to magnetic high linears.

A frequency histogram for magnetic susceptibility for all recorded readings classified as basalts, AMC schists and quartz veins shows what appear to be near normal distributions (Figure 8). Summary statistics are shown in Table 1. The basalts are commonly 1 to 2SI and basalt derived soil was in one instance shown to basically reflect the susceptibility of it's protolith. This example, at wpt250 (~354450mE, 5421750mN; GDA94), is a >1m thick red Fe-rich soil bearing basalt fragments and a magnetic susceptibility of 1.66. AMC schists generally range from 0.25 to 0.75SI. Low values for quartz veins are similar to those of the bulk of the schists, suggesting no significant magnetite is related to the veining sampled.

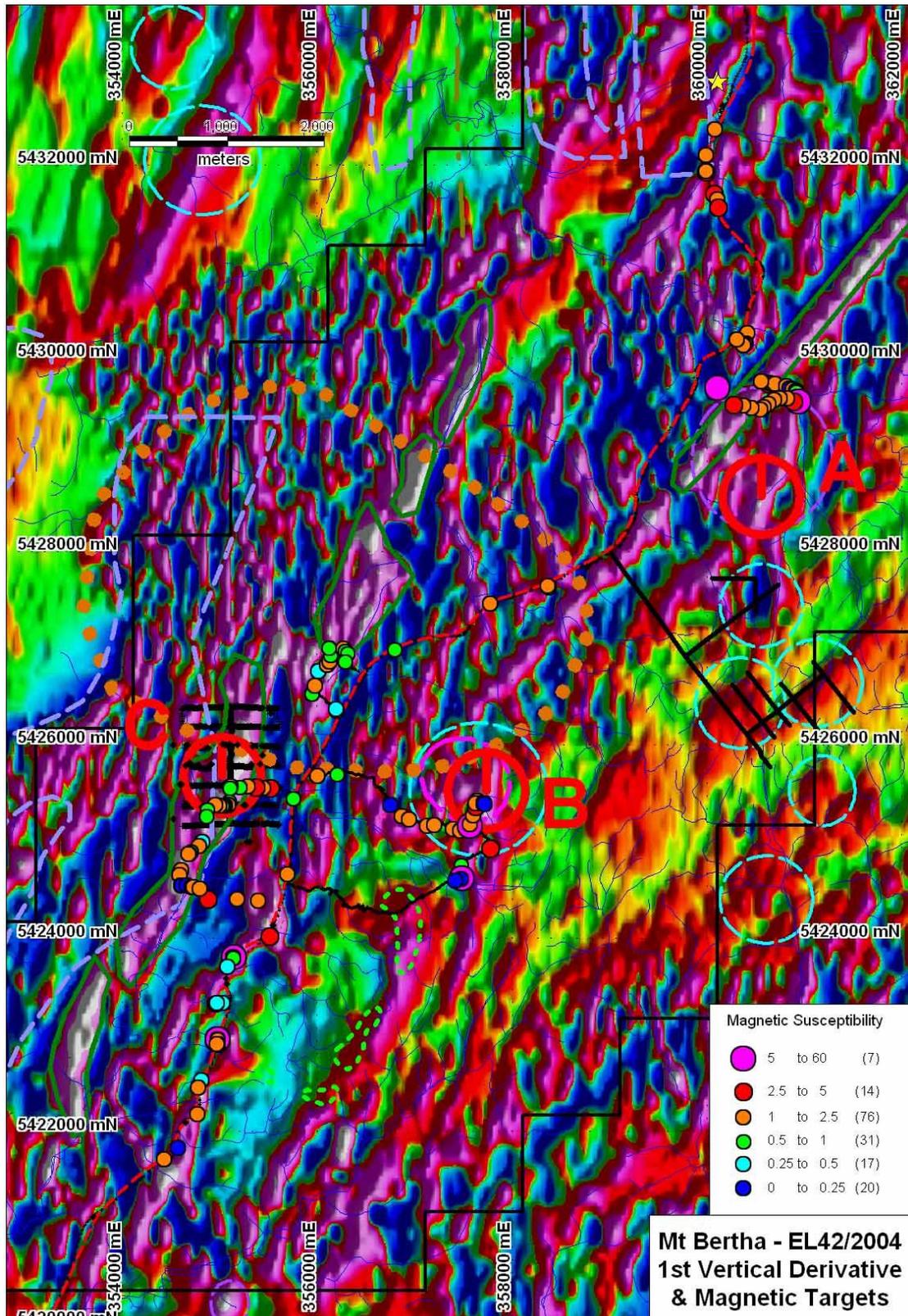


Figure 7: Magnetic susceptibility thematic over 1st Vertical Derivative Aeromagnetics with identified Targets.

	<i>Basalt</i>	<i>AMC</i>	<i>QVN</i>
Mean	2.42	0.87	0.32
Standard Error	0.35	0.23	0.12
Median	1.395	0.29	0.23
Mode	1.16	0	#N/A
Standard Deviation	5.58	1.88	0.31
Sample Variance	31.09	3.54	0.10
Kurtosis	50.98	10.73	2.84
Skewness	6.88	3.38	1.59
Range	51.591	9.09	0.93
Minimum	0.009	0	0.01
Maximum	51.6	9.09	0.94
Sum	610.419	58.17	2.23
Count	252	67	7
Confidence Level(95.0%)	0.69	0.46	0.29

Table 1: Summary Statistics for basalts, AMC schists and quartz veins.

Anomalous magnetic susceptibilities are generally $>5SI$, with a clear standout population ($No = 7$) in the basalts ranging from 10 to 51.6SI. These likely represent basalt flow bases or feeders. Encouragingly, AMC schists returned anomalous values ($No = 5$) in the range 5 to 9.09SI (Figure 6), indicating these are likely related to an overprinting magnetite mineralising event.

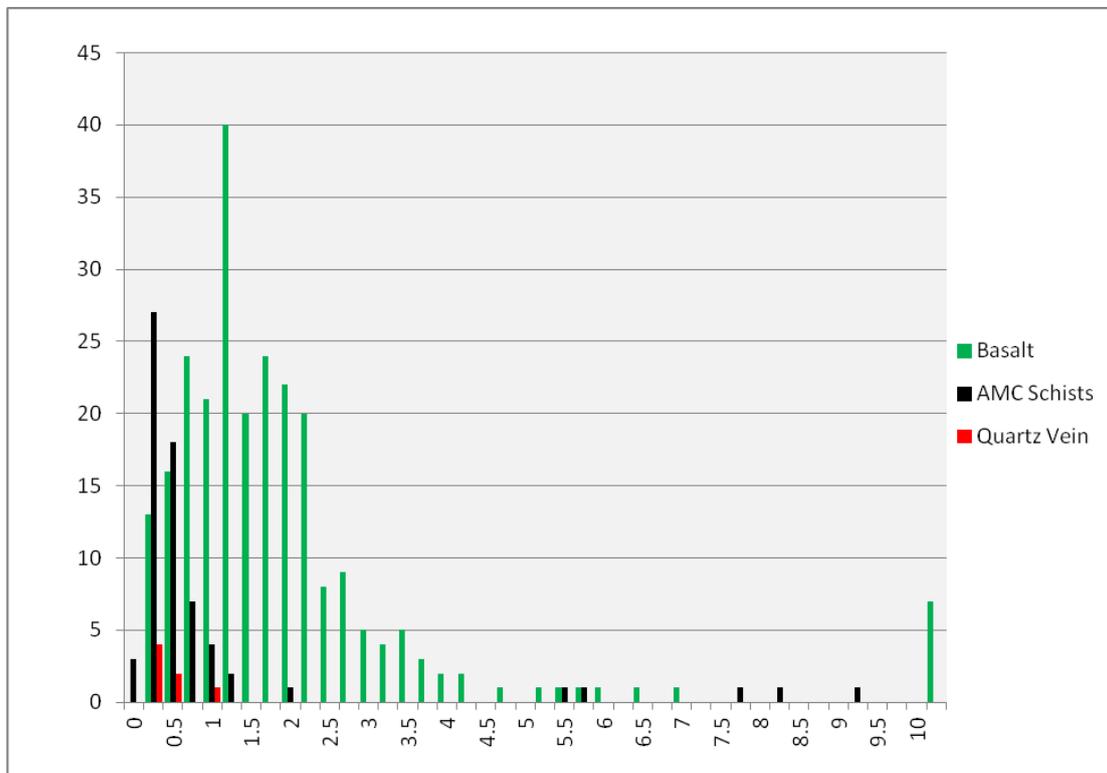


Figure 8: Frequency histogram for magnetic susceptibility of basalts, AMC schists and quartz veins.

Little information is available detailing magnetic susceptibilities for Tasmanian rocks. The base of Tertiary Basalt's in NW Tasmania is commonly strongly magnetic returning 10 to 50SI magnetic susceptibilities (J McDougall, pers. comm.). Similar magnetic susceptibility zonation was evident in one Mt Bertha area outcrop, with a tapering high from the basalt base and then a further similar zone higher in the basalt (possibly representing an intra flow base).

Correspondingly, older basalts are minimally magnetic. Leaman (2002) found susceptibilities ranging from 0.001 to 0.05, with typical values less than 0.02 for (Jurassic) dolerite in Tasmania. Similar to the Mt Bartha basalts, dolerite magnetic susceptibility variation up to 0.15 SI is noted from oxide-rich zones, particularly in granophyres found near large dykes or feeders. Intruded rocks are reportedly non-magnetic for all practical purposes in the Leaman (2002) study.

Bottrill and Taheri(2003) found that magnetic susceptibilities within Precambrian rocks from the Balfour area, located west of Mt Bertha, were generally low (0 to 0.9SI), with the exception of a few siltstones and minor disseminated magnetite near the Frankland River. Many rocks in the Clump and Balfour road area had almost zero magnetic susceptibilities. Comparing to Nelson Bay River Iron Prospect RC drill samples within goethite-hematite ore (Fe> 48%) provide an average of 1.94SI. Whereas magnetite ore here is commonly >100 SI and ranges to rarely >1000SI; Average ~400SI for values >50SI.

Geophysics Notes

Local radiometric highs are evident within the tenement, but this data is of little use for direct targeting. Some of these are readily attributed to rock exposure on the Pipeline track (eg. waypoint 202), with vegetation cover masking most radiometric character. Strong anomalies are also locally evident beneath forest cover and appear to be related to better exposure in incised sections of streams. The anomaly near the northern tip of Cowan's (2010) Anomaly MTB2 is possibly explained as Permian sediments. Whereas, between MTB5 & 6, a radiometric anomaly lies proximal to a magnetic linear high, near an interpreted structural intersection and was considered worthy of investigation. However, this site could not be visited as hail, sleet and swollen creeks when the visit was planned on the last field day made it unsafe to proceed.

The Tertiary basalt commonly displays a rippled form in gridded images for total magnetic intensity (Figure 3). Whereas the anomaly on the faulted lithological contact south of Anomaly B is smoother in form and worth modelling by a geophysical consultant to reflect upon it's origin; basalt feeder v magnetite.

References

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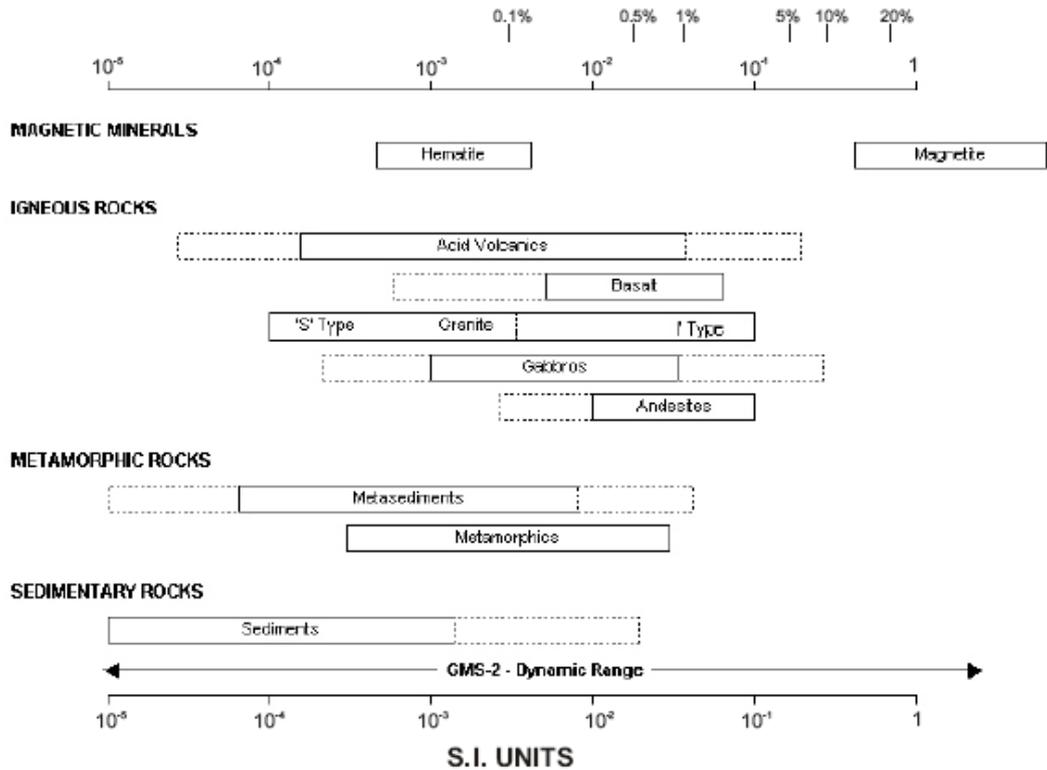
Appendices

List of Appended Digital Data

EL422004_01_Appended_Digital_Data.txt
EL422004_02_Work Program_Report.pdf
EL422004_03_Waypoints.txt
EL422004_04_SampleDescription&Analysis.txt
EL422004_05_Analysis_BU12129055.pdf

TYPICAL MAGNETIC SUSCEPTIBILITY READINGS

Percent of Magnetite by Volume (approx.)



Reference: Clark, D.A. & Emerson, D.W. - Exploration Geophysics 1991