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EL 4124

MOUNT MARY

**COMBINED FIRST ANNUAL / FINAL REPORT AT
LICENCE EXPIRY/SURRENDER FOR THE PERIOD
14/4/2008 TO 13/4/2009**

Submitted by
Copper Range Ltd
2009

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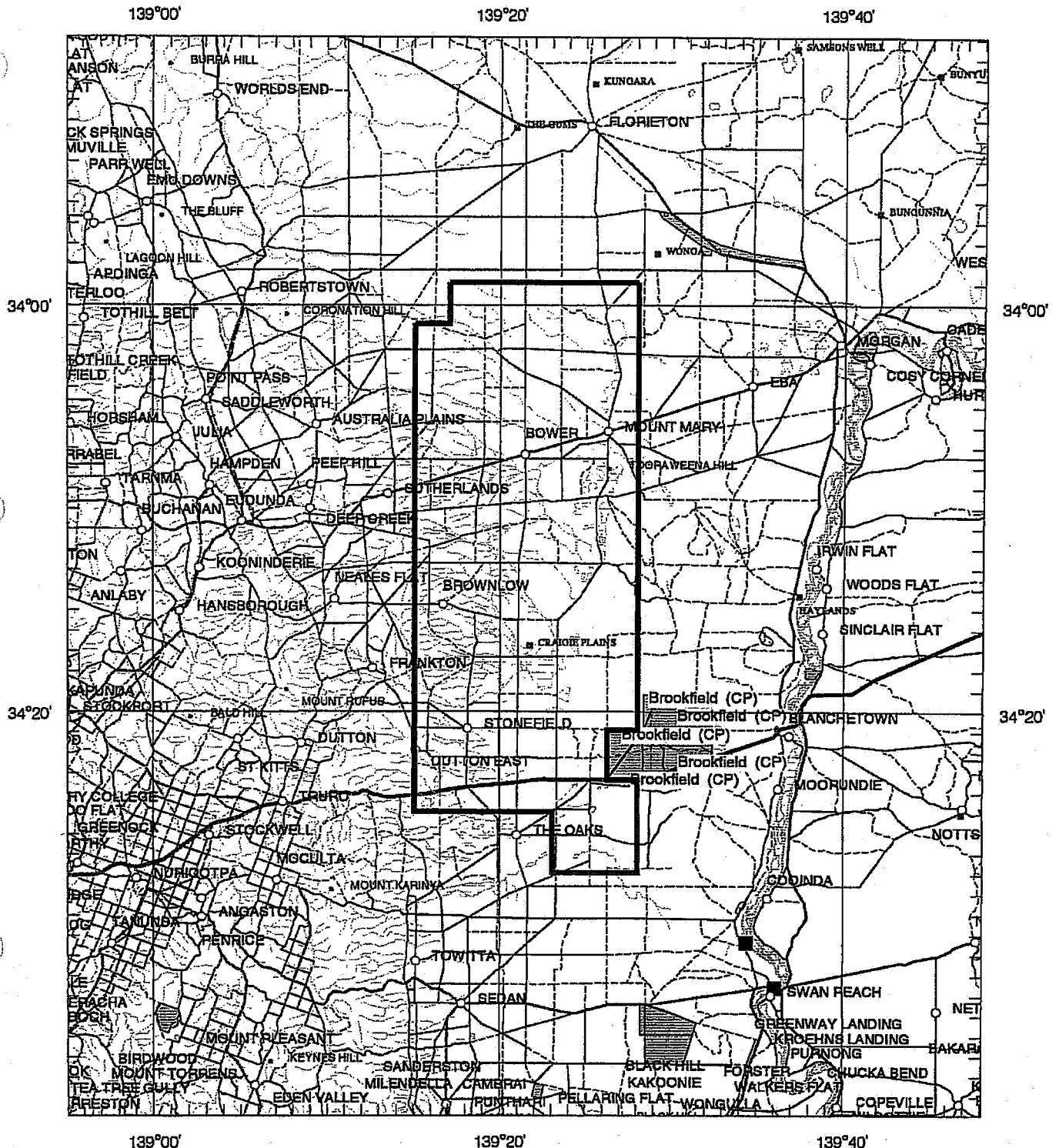
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Government of South Australia
Primary Industries and Resources SA

SCHEDULE A



APPLICANT : COPPER RANGE (SA) PTY LTD

FILE REF : 564/07

TYPE : MINERAL ONLY

AREA : 978 km² (approx.)

1:250000 MAPSHEETS : BURRA ADELAIDE

LOCALITY : MOUNT MARY AREA - Approximately 20 km northeast of Blanchetown

DATE GRANTED : 14-Apr-2008

DATE EXPIRED : 13-Apr-2009

EL NO : 4124

COPPER RANGE (SA) PTY LTD



FINAL TECHNICAL REPORT 14th April 2008 to 14th April 2009

EL 4124 – Mt Mary

TITLE: FINAL RELINQUISHMENT REPORT FOR
EL 4124 – Mt Mary for the Period
Ending 14/04/2009

HOLDER: COPPER RANGE (SA) Pty Ltd

OPERATOR: COPPER RANGE (SA) Pty Ltd

1:250,000 SHEET: Adelaide SI 54-9

1:100,000 SHEET: Eudunda 6729

AUTHOR: Ian Garsed/Charlotte Seabrook

SUBMITTED BY: Sarah Vaile

DATE: 14/04/2009

KEYWORDS: Anabama Belt, aeromagnetism, gravity, Teale Flat
Shear Zone, Porphyry copper-gold-molybdenum,
skarn, mafic – ultramafic intrusions

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South Australia

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SUMMARY

EL 4124 – Mt Mary lies approximately 100km to the northeast of Adelaide. Outcrop is extremely limited with the whole tenement being covered with Tertiary and Quaternary sediments. Depth of this cover deepens to the east and north to between 150-200m. Aeromagnetic interpretation of the bedrock geology shows three distinctive, north-south orientated structural and stratigraphic domains.

The eastern domain is dominated by major north –northeast faults and shears that are part of the Anabama and Teale Flat Fault Zones and contains Cambrian Normanville and Kanmantoo Group stratigraphy. The western domain is made up mostly of the sediments of the Adelaide Fold Belt that have been folded about northwest to north-northwest axes with contemporaneous development of major fault zones of similar orientation. Separating the above domains is the central domain, which contains extensive pre, syn and syn to post-tectonic intrusives varying from granitic to mafic/ultramafic in composition. Faults and fault contacts preserve elements of both neighbouring domains and have been important in the localisation of some intrusive bodies.

Compilation and reprocessing of previous gravity and magnetic data were used in the geological interpretation and to identify targets prospective for porphyry-style Cu-Au-Mo, Ni-Cu-PGE, and skarn Au \pm base metal mineralisation. Eighteen magnetic and gravity targets were identified over the Mt Mary EL. Two of these are porphyry-style Cu-Au with the rest being either skarn / base metals and Ni-Cu-PGE targets. Four targets are classed as high priority, five medium priority and nine low priority targets.

Insufficient funding to drill the most prospective targets has resulted in the relinquishment of the tenement.

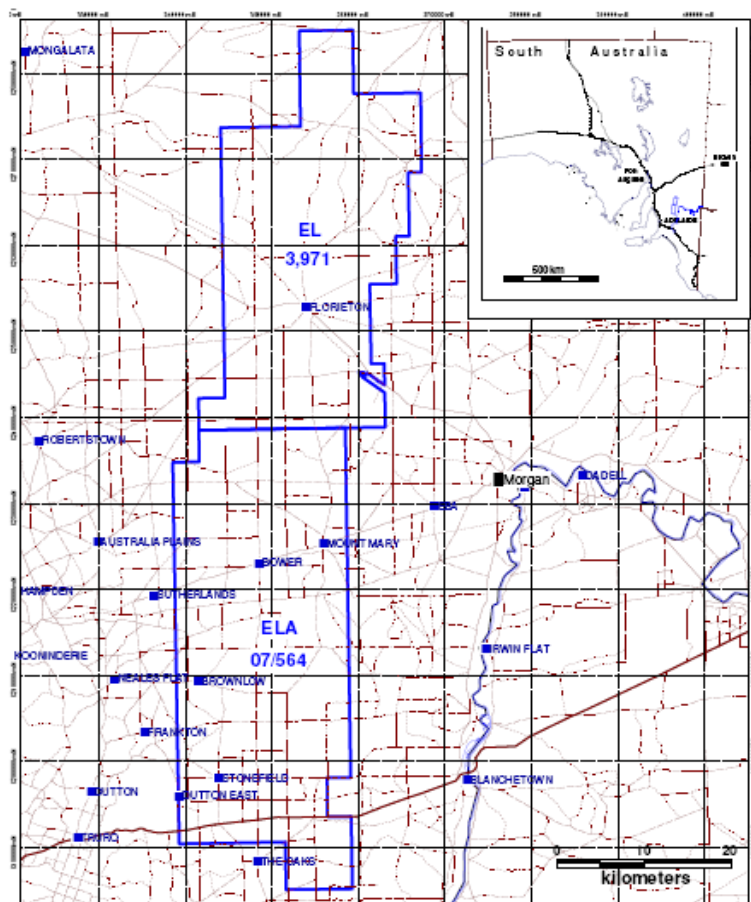


Figure 1. Location of EL 4124 within the current Copper Range (SA) Pty Ltd Anabama Belt project areas

1. INTRODUCTION

The Mt Mary tenement was taken out by Copper Range (SA) Pty Ltd, and with the Florieton tenement (EL 3971) covers a large strike length of intrusive units within the Anabama Belt, on the eastern margin of the Adelaide Fold Belt. The area was selected as it is considered to be prospective for porphyry-style Cu-Au-Mo, skarn-type Au and base metals and Ni-Cu-PGE's associated with mafic to ultramafic intrusive. There is also potential for structurally controlled gold mineralisation. Tenement details are summarised in Table 1.

A study by independent geologist Ian Garsed was undertaken on the Mt Mary and Florieton tenements, which included a review of previous exploration and identified and prioritised gravity and magnetic targets for initial exploration. The report includes image generation and interpretation of previous gravity and aeromagnetic data. Targets were selected on the results of the study and further evaluated on the basis of the geophysical signature, previous exploration data and depth of cover.

Higher priority targets are discussed in detail and ranked in order of priority for follow-up. Recommendations are also given for exploration programmes to assess these targets.

2. LOCATION AND ACCESS

The Mt Mary tenement (EL 4124) is located approximately 120km northeast of Adelaide. The tenement is accessed via the Sturt Highway which passes through the tenement in its southern end and by roads heading west of Morgan in the north. Numerous formed roads traverse the tenement.

The bulk of the Mt Mary EL is covered by the Adelaide 1:250,000 sheet (SI 54-9). No National Parks or restricted areas are noted over the tenements, according to the PIRSA state GIS dataset.

No Native Title claims are known in the area at this time.

3. TENURE DETAILS

The Mt Mary tenement EL 4124 was taken out by Copper Range (SA) Pty Ltd, a wholly-owned South Australian subsidiary of International Base Metals Ltd that was floated on the ASX as an independent company in December 2006. Tenement details are summarised in table 1.

Tenement number	Date granted	Expiry date	Renewal date	Project name	Licensee and operator	Locality	Area km ²
EL 4124	14/04/08	13/04/09	13/03/09	Mt Mary	Copper Range (SA) Pty Ltd	100km NE of Adelaide	978

Table 1. Summary of tenement details

4. GEOLOGY

The Mt Mary EL is approximately 100km northeast of Adelaide and covers a N-S strike length of 54km within the southern part of the Anabama Belt.

4.1 Regional geological setting

The Anabama Belt is a large Cambro-Ordovician igneous province located at the eastern margin of the Proterozoic Adelaide Fold Belt (figure 2). In the central and northern part of the belt it marks the approximate boundary between this fold belt and Cambrian sediments to the west. Further south the belt occurs within the Stansbury Basin. The igneous rocks were mainly intruded immediately prior to, during and immediately after the Delamerian Orogeny. Folding and faulting associated with this orogeny has overprinted both the Adelaide Fold Belt and the Cambrian sequences in the Stansbury Basin to the southwest. Aeromagnetic images suggest that the Cambrian sediments further west, beneath the Tertiary Murray Basin, are less deformed.

The igneous province forms an elongate and arcuate belt that can be traced from around Mutooroo in the north through to the Padthaway Ridge in the south, and through to the Glenelg Zone of southwest Victoria. Normandy Exploration provided a useful summary of the main igneous suites in the belt (Open File Envelope 9721). They defined four suites based on a modification of the scheme of Rankin et al. (1991).

1. Early Cambrian mafic and lesser felsic volcanic consisting of within-plate andesite trachytes and metabasalt. These include the Truro, Teale Flat and Marne River Volcanics
2. Middle to Late Cambrian, variable deformed and metamorphosed mafics with MORB-like geochemistry. These are possible equivalents to the metabasalts in the Glenelg River Complex in Victoria. They are interpreted by Rankin to represent renewed extension associated with deposition of the Kanmantoo Group.
3. Syn to late-tectonic granitic intrusions associated with the Delamerian Orogeny. These include all of the felsic intrusive in the belt that display tectonic fabrics, including the clearly early Rathjen Gneiss and the numerous elongate felsic intrusives that are aligned parallel to the main structural trend of the belt.
4. Ordovician, post-tectonic A-type granitoids, porphyritic rhyolite and mafic-ultramafic intrusive complexes exposed in the Padthaway Ridge and Black Hills areas.

The third suite above is based on the structural style and timing rather than the geochemistry of the intrusive, in contrast to the other three suites.

The regional geological setting of the Anabama Belt is given in figure 3. Geochemical and geochronological work shows that the intrusive form a spectrum of types, both geochemically and temporally that span from immediately prior, during and following the Delamerian Orogeny. The geochemistry of the intrusive directly reflects the tectonics with changed from early extension and deposition of the Kanmantoo Group, to convergent orogeny and back to post-orogenic extension. The syn-tectonic granitoids results from mixing mantle-derived I type melts with S type melts. The crustal end-member of these melts shows a geochemistry indistinguishable from the Kanmantoo Group.

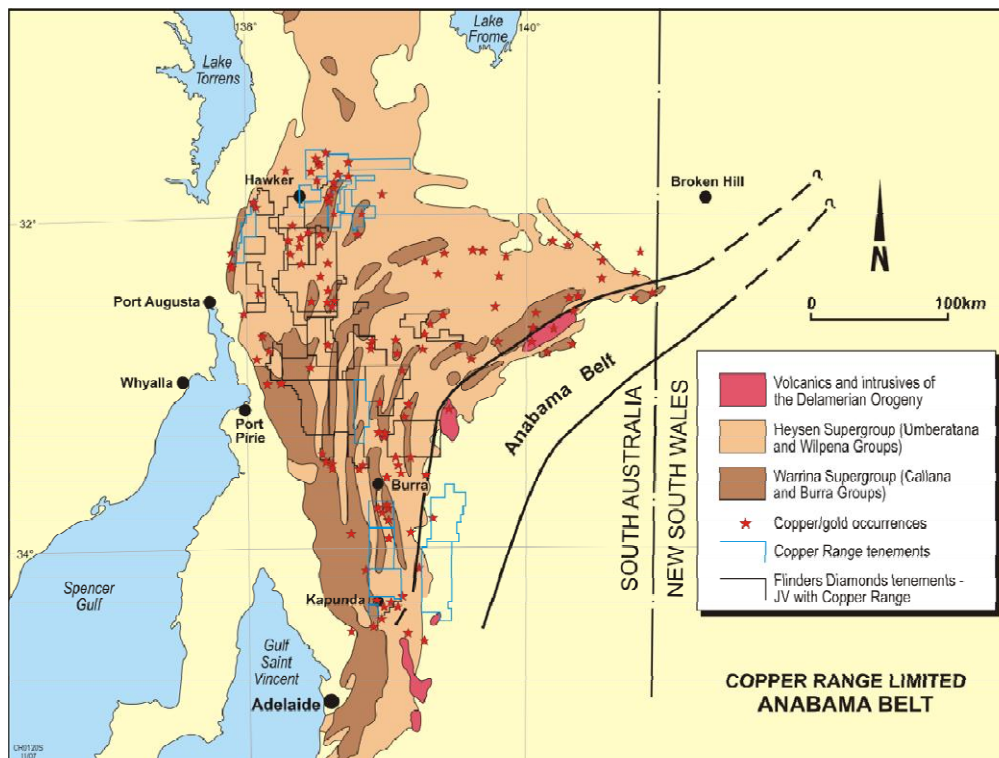


Figure 2. Copper Range (SA) Pty Ltd tenement holdings and location of Anabama Belt

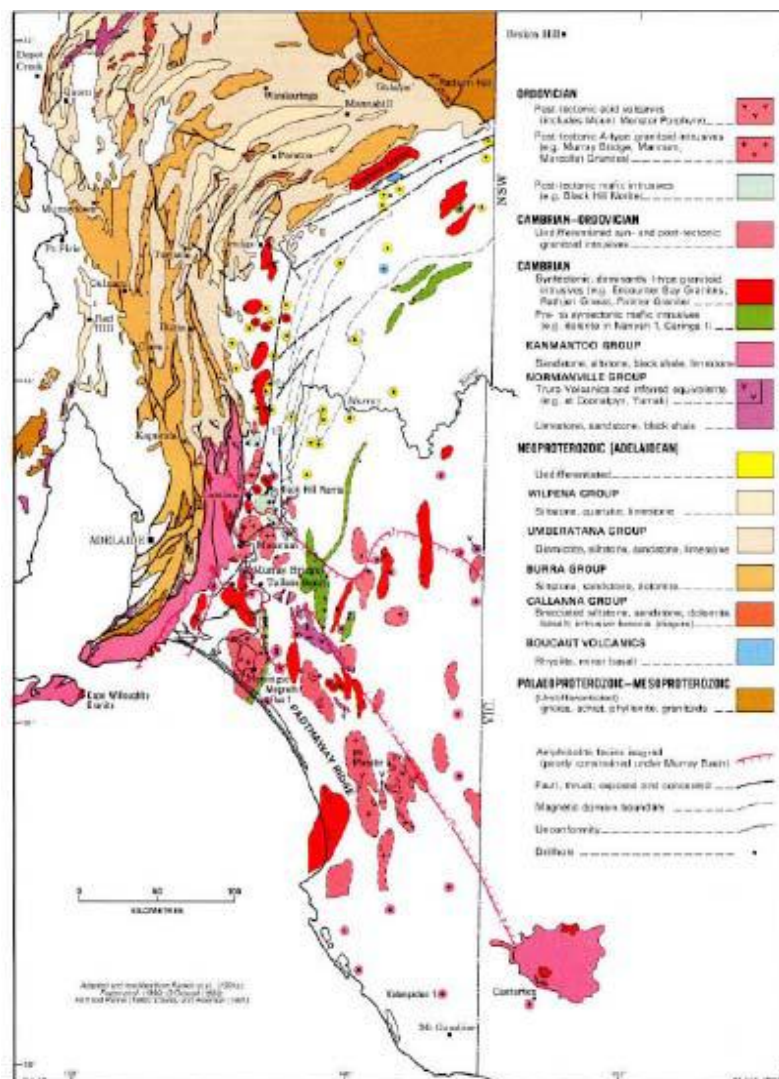


Figure 3. Regional geological setting of the Anabama Belt, after Drexel and Preiss 1995

4.2 Geology of the Mt Mary area

The PIRSA 1:100,000 scale mapping shows that the tenement area is extensively covered by Quaternary and Tertiary (Murray Basin) sediments. Pre-Tertiary basements outcrops are limited to the very south-western corner of the Mount Mary ELA. The exposed units consist of northwest striking Appila Tillite and Wilyerpa Formation of the Yudnamutana Subgroup, and Tapley Hill Formation and Elatina Formation. The Cambrian sediments of the Stansbury Basin are exposed mainly to the southwest of the tenement area, however they extend to the west of the southern Mount Mary area as an elongate zone within the N-S trending Karinya Syncline.

The lack of outcrop has meant that the basement geology has had to be interpreted from aeromagnetic data. The study area (including the Mt Mary tenement to the south) is marked by a N-S striking belt of intrusive that separate sedimentary sequences with linear magnetic anomalies in the east from strongly folded sequences in the west. Based on the structural style and stratigraphic associations the area can be subdivided into Eastern, Central and Western Domains.

The sequences in the Eastern Domain have been interpreted to comprise interlayered sediments and volcanic/volcaniclastics that have been equated with the Upper Normanville Group. They have a variable magnetic texture of low to moderate total magnetic intensity (TMI), with minor long, narrow, linear highly magnetic zones. These magnetic linears are interpreted as mafic units that are the equivalents of the Truro Volcanics. Contacts with the surrounding units are largely fault-controlled, particularly in the south where north to north-westerly faults/shears have caused interfingering of the magnetic stratigraphy. North of this area the interpreted upper contact appears to be preserved, occasionally being offset by northwest trending dextral strike-slip faults. A discrete, highly magnetic, circular gabbroic pluton has intruded at this contact in the central part of the study area where the contact is offset by a northeast striking fault.

Overlying the Normanville Group to the west is a zone marked by a very flat magnetic texture and low TMI. A small number of drill holes have intersected bedrock in this zone and show the presence of grey siltstones, consistent with the presence of Kanmantoo Group. Minor narrow magnetic linears within this are thought to be mafic units, possibly volcanics. They are much less in volume and less continuous than in the Normanville Group to the east. Other subtle magnetic linears may be due to pyrite and pyrrhotite-rich stratigraphy. A discrete magnetic pluton similar to the gabbroic one described above occurs in the northern part of the study area within this unit. It appears to be deeper and has not been intersected in any drilling.

Another belt of the Kanmantoo Group is interpreted to occur to the east of the Normanville Group, on the very eastern edge of the study area. The contact with the eastern edge of the Normanville Group is a major fault zone. Immediately south of the study area this eastern band of Kanmantoo Group appears to be folded into a synform with a major fault parallel to the northeast trending axis.

The Central Domain is marked by the long, narrow belt of intrusives, with lesser sediments of the Adelaide Fold Belt and the Kanmantoo Group. The western boundary of the Kanmantoo Group is difficult to interpret with certainty. Major N-S to NNE faults and shears run along the boundary which in places is marked by the contact with the intrusive complexes. In other areas it has been interpreted as being in fault contact with Adelaidean sediments. In some places this is based on stratigraphic associations interpreted by PIRSA in their state drill hole database, in others it is based on the change in magnetic texture.

In the southern and central part of the Mount Mary ELA the western part of the belt of Kanmantoo rocks contains felsic intrusives that have been strongly overprinted by the major fault zones. Immediately east of these are the variably magnetic Delamerian intrusive complexes. They vary from very highly magnetic (including reversely magnetised plutons south of the study area) to non-magnetic and very low magnetic intensity bodies. Based on their magnetization and their structural relationships they have been sub-divided as follows:

- Pre to syn-tectonic granitoids and felsic intrusives. These are exposed on the eastern boundary of the intrusive complexes and are possible equivalents of the Rathjen Gneiss.
- Syn-tectonic intrusives comprising quartz-feldspar-biotite granites to intermediate quartz-hornblende±magnetite bearing plutons.
- Syn to post-tectonic granitoids of lower magnetic intensity to very high magnetic intensity, composed of felsic to mafic / ultramafic plutons, some remanently magnetised. The Black Hills Suite (BHS) intrusive appear to belong to this group.

The eastern margins of the intrusive complexes of the Central Domain are dominated by major fault zones. In contrast the western boundary with the Western Domain usually consists of well preserved intrusive contacts. West-northwest striking stratigraphic trends in the magnetic data are often truncated by the intrusives, with major west-northwest faults occasionally defining the intrusive margins.

To the west of the intrusives are extensive areas of Adelaidean stratigraphy. It outcrops in the south but is completely covered in the north. The magnetic patterns in this area are dominated by NNW trending folds and faults. A small zone of Cambrian Kanmantoo Group is preserved within the Karinya Syncline to the west of the Mount Mary ELA. Narrow, linear magnetic anomalies in this western domain are interpreted as being due to magnetite in the Grampas Quartzite / Belparana Sandstone. Previous interpretations by PIRSA have equated these units with the Ulipa Siltstone which is the main magnetic unit to the west around the Kapunda area.

4.2.1 Structure

The three magnetic domains defined in this study are characterised by distinctive structural styles. The Eastern Domain is dominated by major N-S to NNE trending faults and shears, with only minor folding, whereas the Western Domain is dominated by N-S and NW trending fold and fault patterns that show clear timing relationships. The intrusive complex of the Central Domain contains elements the fault styles of the other two domains.

The Eastern Domain is dominated by major north to north-northeast trending faults or shear zones. Only minor-scale folding is observed in the sequences in this part, with the exception of a synformal structure to the immediate south of the study area. This fold has repeated the magnetic units of the Normanville Group, with the Kanmantoo Group in the core of the fold occurring along the eastern edge of the study area. The fold axis has been disrupted by a major north-northeast trending dextral fault. The contact between the eastern belt of Kanmantoo Group and the Normanville Group is marked by a complex north-northeast fault that may be offset by minor northeast dextral faults. In the south this structure splays into several northeast-striking strands that usually showing dextral offsets. The north-northeast structure appears to continue to the south of these northeast faults as several faults defining the edges of blocks of Normanville Group.

The Western Domain is dominated by the north-northwest oriented folding and faulting of the Adelaidean stratigraphy. A series of north-northwest synclines and anticlines appears to be synchronous with major fault zones of the same orientation. These faults have developed along the limbs, and to a lesser extent the axes, of the major fold structures. They can be traced to the southeast into the western part of the tenement area. In contrast

the Karinya Syncline in the southern part of the Western Domain is an elongate north-south fold, bounded on both sides by north-south faults. These structures are truncated at their northern end by a major north-west trending fault zone that has two main strands. Further to the northwest this zone is the main structure through the Burra area. It changes direction to a more east-southeast orientations where it cuts the northern end of the Karinya Syncline before swinging around to the south-southeast where it merges with a major north-northwest/south-southeast trending structural zone. This north-northwest structural zone can be traced to the north where it merges with a north-south zone that runs through the Mongolata goldfield. Assuming that the Karinya Syncline is a D2 structure then the northwest and north-northwest structures must be D3 or later in age.

The Central Domain is characterised by minor structures that occur in the Western and Eastern Domains. The north-northwest faults of the Western Domain appear to control the western margins of some of the major intrusives, particularly in the Mount Mary ELA area. In the north, over the Florieton EL area, they appear to be overprinted by the large intrusive complexes. However minor north-northwest structural trends can be seen within the intrusives. Northeast structural trends are also evident along the eastern margins of the intrusives and also may be controlling the locations of some of the intrusive margins. On the basis of these structural relationships the bulk of the intrusive complexes in the Central Domain are considered to have been intruded in the later stage of the Delamerian Orogeny.

4.3 Depth to basement

The depth to the pre-Tertiary basement is variable across the tenement area. Previous drillhole information has been used to make an estimate of this depth over both of the tenement areas (figure 4). Overall the thickness of the Tertiary cover increases from west to east. The trends are more east-west on the Florieton EL with a narrow trough around 160 m deep through the centre. The western half of the Mt Mary ELA is the shallowest with the target sequences less than 100m deep, and less than 50 m deep along the western edge.

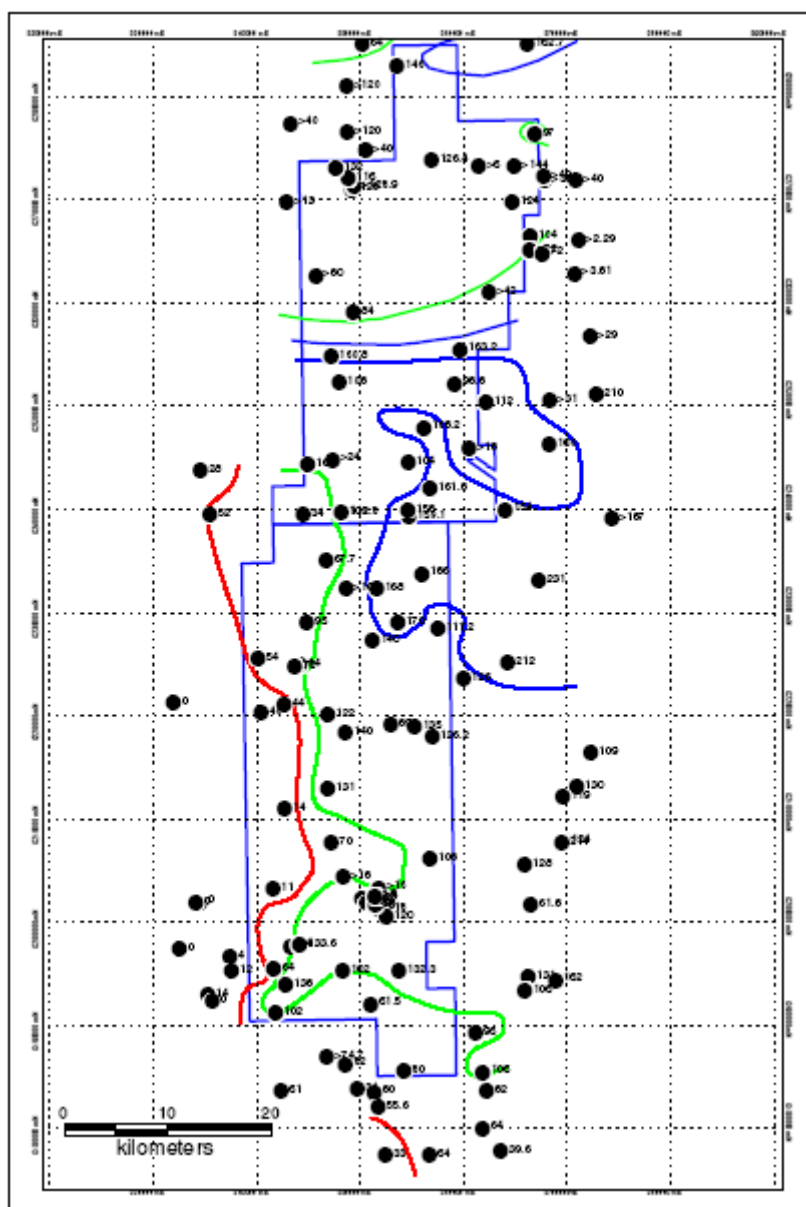


Figure 4. Depth of pre-Tertiary basement from open file drill hole data. 50m contour in red, 100m in green, 150m in blue (Ian Garsed)

5. PREVIOUS EXPLORATION

A search of the PIRSA database of previous Exploration Licence and Special Mining Leases shows a total of 37 previous tenements over the area since 1972. This review of previous exploration is not exhaustive. It has focused on the reports and programs that have either been the most extensive or relevant to the current exploration focus. Most of the previous reports were assessed based on the summaries in the PIRSA SAMREF database and the most useful reports selected on the basis of this for more detailed examination. The most extensive exploration programs, from the most recent backwards, were carried out by Inco Resources Australia, Normandy Gold Exploration Pty Ltd, Rio Tinto Exploration Pty Ltd, CRA Exploration Pty Ltd, Western Mining Corp. Ltd., CRA Exploration Pty Ltd, and Dampier Mining Co. Ltd. North Broken Hill Ltd were one of the first to target the area for Ni-Cu-PGE's. Their work was all around the Black Hills area to the south but is discussed briefly below because of its relevance to the current target identification exercise. Some of the open file company reports are not discussed in detail because they were reporting exploration only for coal (e.g. EL 289 by Electricity Trust of South Australia, EL 429 by Theiss Bros Pty Ltd, similarly their work on EL 609). Other Open File Envelopes were not available for download using the SAMREF system on the PIRSA Minerals website. They have been ordered from PIRSA but due to a large back-log of requests at PIRSA they had not been received at the time of writing. The reports ordered are: Env. 1097 for CRAE work on EL 745, Env. 4095 for CRAE work on EL 745, Env. 8773 for Placer Exploration Ltd work on EL 1834, Hillview Mining's EL 2967 which is not in the SAMREF system. Advice from PIRSA was that EL 3164 held by Bonanza Gold Pty Ltd is still current and the reports not yet available on open file.

5.1 Inco Resources (Australia Pty Ltd EL's 3304 and 3305)

The most recent exploration over the current tenement area is that done by Inco Resources (Australia) Pty Ltd (Inco) in 2005 and 2006. They explored the area as the Black Hill Project for Ni-Cu-PGE mineralisation associated with mafic to ultramafic intrusions. They considered the region prospective for the following reasons:

- Previous exploration had identified mineralisation of the style within two bodies in the Black Hill – Cambrai area.
- The geochemistry of the rocks is favourable.
- The possible presence of sulphide-rich stratigraphy that could be assimilated with the intrusives.
- The area has been poorly explored due to the extensive cover.

Inco relied solely on geophysical exploration techniques because of the widespread cover. They carried out "semi-regional" gravity surveying along all the accessible roads and detailed gravity surveys over eight selected prospects. Three of these prospects are located on the Florieton EL, two are over the Mount Mary application, and one straddles the boundary of the two. The other two prospects are over the Cambrai and Landmark areas that are located to the south of the Copper Range tenements. Further discussion of the gravity data and results is given in the section on Geophysical Datasets and in discussion of the targets identified in this study.

A Geotem airborne electromagnetic (AEM) survey was flown over the southern part of EL 3304 and the neighboring EL 3122. Inco further explored selected areas with fifteen lines of MT surveying, using a station spacing of 500m to 250m. They report conductive overburden over most lines and no significant bedrock conductors. One area west of the Bower Prospect was considered to show a possible response representing bedrock sulphides. Time domain electromagnetic (TEM) surveys were also carried out over five

prospect areas. Forty-seven lines of moving loop EM (MLEM) and five fixed loops (FLEM) were surveyed. Results for these lines were considered negative. Further processing of the MT and TEM data highlighted a possible response on the eastern end of MT Line 08 to the north of Bower however it was considered by Inco to be due to culture rather than geology. A lesser priority anomaly was also present on this line, coincident with a magnetic anomaly.

Only two drillholes were completed by Inco. Both diamond holes were drilled to test the anomaly to the west of Bower. Neither hole intersected mineralisation or any source for the modelled conductors.

5.2 Normandy Gold Exploration Pty Ltd EL's 2609, 2610, 2659 and 2678

These EL's covered the current Copper Range tenement area but they formed part of a much larger area Normandy called the Padthaway Ridge Project. The tenements in relation to the current EL's are shown in figure 5. Another tenement, EL 2544, was also held in JV with Yardarino Ltd and this covered most of the Mt Mary ELA. That JV work is described separately below. Most of the work was carried out in 1999 / 2000.

Normandy carried out an extensive review of previous exploration, an aeromagnetic interpretation incorporating a previous drillhole compilation, and a target generation program for iron-oxide-copper-gold (IOCG) mineralisation. The targeting was based solely on the aeromagnetics. Detailed helimag surveys were carried out over two areas of interest at Keith and Brimbago, well south of the current tenements. No ground-based geophysics was carried out, not even ground magnetics to confirm the targets from the aeromagnetics.

They drilled fourteen diamond-tailed holes, and twenty-two aircore holes. The only anomalous results were from holes near the margin of the Bendigo Granite (north of current tenements). PAAC018 intersected 2m @ 12 ppb Au and 160 ppm Co in clay after metasediments at the basement / cover interface. Their target 2601-05 was tested by PADD035 which contained chlorite-epidote altered mafic volcanics with "minor late-stage quartz-magnetite" (refer page 21 of Open File Envelope 9721).

EL 2659 "Thistlebeds Homestead" was located to the northwest of the Copper Range tenements. The southeast part of the EL covers the northwest of the Florieton EL. Normandy carried out a fence of aircore drilling over magnetic stratigraphy in the northeast. This intersected a maximum of 14 ppb Au and 135 ppm Cu which was not considered significant and the ground was surrendered.

EL 2678 Stonefield as explored from October 199 to 2000, in the southwest of the Mount Mary ELA. It was taken out to explore the Stonefield magnetic target, considered a magnetic skarn target. Soil (96 samples) and rock chip sampling showed no anomalous values and the tenement was dropped. The best value was 280 ppb Au from narrow quartz veins but further sampling returned only low values. The geochemical results for the soil samples seem to show a problem with initial samples which were mistakenly pulverized. The Cr values for these are very high, whereas the pulverized fractions of the subsequent samples were very low. The sampling was also carried out after heavy rain and had to be dried in the laboratory prior to assay by the ARM2 ICPMS analytical technique. How much the wet and subsequent drying has affected the analyses is uncertain. Normandy cite a correlation of soil Fe with the position of the magnetic anomaly as evidence of the effectiveness of the program. The area has been highlighted as a target during the current review (see section 6.4.2. for further discussion).

5.3 Yardarino / Normandy / BHP Billiton JV EL 2544

This EL was explored by Normandy under the Brownlow Joint Venture with Yardarino, signed on the 8th of March, 1999. They carried out airborne magnetics and radiometrics at a 200m line spacing as infill of a TEISA survey in the southern part of the Mount Mary ELA (figure 6). They targeted the remanently magnetised Black Hills Complex and “ring structures” in the Stonefield granite / mafic complex. A skarn target in the Stonefield area was tested with hole PADD009. This hole intersected strong skarn alteration of the host gabbro but was considered to have only low potential for economic metal occurrences.

Twenty-two diamond-tailed holes and 2 RC holes were completed over the area. PADD005 intersected gabbro / norite very similar to the Black Hills Suite (BHS) however it was normally magnetised unlike the remanently magnetised BHS. Similar rocks were intersected in holes PADD001 and PADD006.

Drillhole PADD003 tested an unusual magnetic feature and encountered BHS gabbro. The maximum assays were 76 ppb Au and 380 ppm Cu.

Target 2544-08 was a magnetic skarn target. The PIRSA drillhole ST015 intersected 16m of massive magnetite according to Normandy accounts. Hole PADD007 tested this area and found metasediments with minor calc-silicate alteration and magnetite.

Weak Au up to 25 ppb and Cu to 310 ppm in the saprock / cover was the best geochemistry. PADD009, discussed above, tested a separate magnetic anomaly on the margin of the same pluton (Stonefield Granite). The skarn alteration observed was considered an endoskarn and the results were reviewed by consultant Professor Larry Meinert. He concluded there was little potential for significant mineralisation and no further work was carried out.

PADD017 and 108 tested a magnetic / gravity target offset from a magnetic granite. The intersected biotite-gabbro (PADD017) and carbonaceous phyllite (PADD018) with minor bleaching and pyrite. The stratigraphy was interpreted as belonging to the Kanmantoo Group. PADD018 contained up to 7 ppb Au and 1300 ppm Cu at the end of the precollar. All core analyses were low.

Hole PADD019 tested target 2544-13; a discrete, medium amplitude magnetic high. It contained weak Cu and Ni sulphides in normally-magnetised BHS. The best assays were 1 ppb Au, 500 ppm Cu and 220 ppm Ni.

BHP Billiton Minerals Pty Ltd entered into Joint Venture with Yardarino on the 20th of April, 2001 to explore for PGE-Cu-Ni (PCN) mineralisation. BHP targeted the Black Hills Complex for the following reasons:

- It is a long, multi-phased igneous province.
- Mantle-derived geochemical signatures.
- Known Ni-Cu-PGE mineralisation.
- Mafic intrusives are strongly oxidised and highly magnetic.
- Sulphide-rich stratigraphy is present along a large cross-fault cutting the igneous province.
- Host rocks are reduced, containing widespread carbonate and sulphide assemblages.
- Common hypersthene is indicative of excess silica and crustal contamination.
- Moderate Cu/Pd ratios of known mineralisation suggesting good potential for ore-grade PGE's.
- Lack of extensive previous exploration.

BHP carried out a thorough assessment of previous drilling, the chemistry of which was considered favourable. They carried out TEM and ground magnetic surveys on sixteen prospects without identifying any targets worthy of follow-up. Six of the prospects are located at the southern end of the Mt Mary ELA, the rest are further south in the Black Hills / Cambrai area.

BHP mainly targeted the Black Hills area for Voisey's Bay style mineralisation, focusing on areas interpreted to be feeder structures for the mafic intrusives. While the TEM was considered negative, IP effects at two areas were thought to have some potential for disseminated sulphides. These were the BH9 and BH11 targets in the Cambrai area. Three of the magnetic lines were considered to have not covered the targets adequately. One of these, BH4, is in the southern part of the Mt. Mary ELA.

5.4 Minefinders Pty Ltd EL 2628 Mount Karinya

This EL was located immediately southwest of the present tenement. The target was Pb-Zn in the Kanmantoo Group within the Karinya Syncline. In 2000 a stratigraphic drillhole, KM1, was completed to a depth of 599m. It intersected 109m of pyritic and pyrrhotitic siltstones but no Pb-Zn mineralisation.

No further work was carried out and the tenement was dropped.

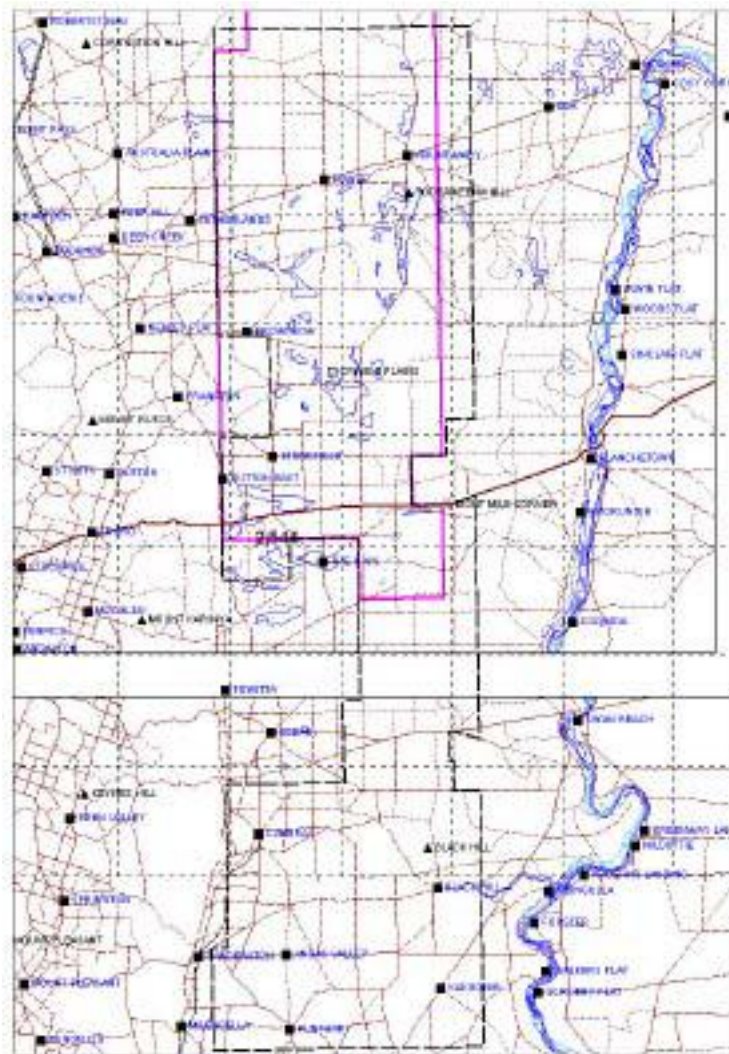


Figure 6. Yardarino / Normandy / BHP EL 2544 location plan

5.5 MIM Exploration Pty Ltd EL's 2118 Swann Reach and EL 2119 Morgan

The current tenement area is covered by 2119 and the northern part of 2118. MIM explored the area in 1997 and were targeting skarn-related Au and sediment-hosted base-metals. They re-assayed old North Broken Hill holes S2, 11, 18, 19. The results included anomalous Au up to 90 ppb and Cu up to 2800 ppm in hole S2. Hole S19 was the best of the old holes grading 30m @ 0.2% Cu with up to 0.14% Ni, however MIM decided on the basis of their re-sampling that the intrusives were not prospective for Ni-PGE mineralisation.

Four lines of Sirotem TEM were carried out in the Stonefield area, including the area drilled by Normandy with hole PADD009 (Sirotem Line 2). Results for this were negative and no further work was done.

5.6 Rio Tinto Exploration Pty Ltd EL 2209 Peep Hill

The Peep Hill EL was located on the north-western edge of the Mt Mary ELA and was explored for stratabound base-metals between October 1996 to 1997. The main area of interest was to the west of the current tenure within the northern part of the Karinya Syncline.

Rio Tinto focused on surface gossans identified by PIRSA. Sampling of these had contained up to 26% Zn in gossans located on the contact between the Karinya Shale and the Backstairs Passage Formation.

Surface mapping, soil, and rock chip geochemistry identified two Pb-Zn anomalies:

1. Australia Plains North – defined by auger soil sampling with values up to 600 ppm Zn, 430 ppm Pb, and 185 ppm Cu, Also got up to 1600 ppm Zn in rock chip sampling of ironstone outcrop.
2. Australia Plains South – rock chip anomaly. Up to 3500 ppm Zn and 1850 ppm Pb from ironstone float.

They recommended drilling of the Australia Plains North anomaly and soil sampling at the southern anomaly, neither of which appears to have been carried out.

5.7 CRA / Rio Tinto Exploration EL 1732 / 2198 Truro

This tenement covered the western boundary of the Mt Mary ELA. It was granted to CRA in 1991 and renewed for one year in 1996 before being surrendered in February 1998. The area was originally taken out to explore for diamonds and then later base metals following the discovery of the gossans discussed above.

Regional rock chip sampling identified four Pb-Zn targets at the base of the Karinya Shale:

1. Malabena North – up to 0.96% Pb from ironstone
2. Malabena South – Zn up to 0.83% and Cu up to 1.7%.
3. Deep Creek North – low level Zn.
4. Deep Creek South – up to 0.19% Zn, 0.15% Pb, and 480 ppm Cu. RC drilling was recommended.

Drilling of the Truro gossan (called Holmes Watson by PIRSA) returned up to 2m @ 8.10% Zn and 2.37% Pb in hole RC96TR027. Two other diamond holes tested the area. The only values of interest were in hole DD97TR030 which tested under hole 027 and intersected 4m @ 3.5% Zn, 1.1% Pb, and 10 ppm Ag. It was within carbonates and thought to be of Mississippi Valley style. Hole DD97TR029 was drilled about 2.75 km to the north and failed to intersect the carbonate horizon, containing only low assay values. Three RC holes in the prospect area failed to return significant values. Downhole IP surveying showed chargeable responses due to the graphitic and sulphidic Karinya Shale. The mineralised carbonate could not be distinguished from the underlying Backstairs Passage sandstone. Downhole density logging however showed a positive correlation with the mineralised zone. Physical property measurements showed an average density of 3.05 g/cm³ compared to a background of 2.73 g/cm³.

An orientation stream sediment geochemical program of 82 samples around the Truro Gossan area showed the best results from the -200# fraction. This was attributed by CRAE as being due to chemical absorption of weathered Zn into the clay fraction.

The area appears to have been surrendered with no further work being carried out on the four targets identified north of the Truro gossan.

The diamond exploration was carried out during the earlier tenure under EL 1732. It consisted of bulk gravel samples, mostly southwest of the Mt Mary ELA. Indicator minerals were identified from samples east of Angaston and thought to be sourced from the magnetic anomaly designated Angaston 1. Drilling of the target has previously been

carried out with hole DD92TR1. This intersected a kimberlitic diatreme breccia which was fission track dated at 163.3 Ma \pm 17.8 Ma. No diamonds were identified.

Single micro diamonds were identified from bulk samples located at 323700mE, 6182675mN, and 332150mE, 6189050mN (presumably AGD84 datum).

5.8 PetraSearch EL 2190 Touralie

This EL was located immediately northwest of the Florieton EL with the very bottom southeast corner overlapping. Exploration was carried out from 1996 to 1999 for Telfer-style Au using a syngenetic model with a later intrusion related upgrading.

Using PIRSA interpretations they inferred the presence of the equivalent to the Cox Sandstone (host to Au mineralisation at the Mongolata area) beneath sediments of the Murray Basin. They targeted areas where it was thought to occur in the aureoles of the Bendigo and White Dam granites. They highlighted the King's Well area as being one of these situations. Quartz-albite-carbonate-chlorite-talc veins and breccias are described for this area as well as another target at Anomaly F.

Thirty-three calcrete samples were collected. Results were poor with one sample returning 5 ppb Au (7 ppb on repeat) from an area 400m north of the King's Well prospect. Rock chip sampling and re-sampling of old BHP drillholes for Au got only low-level anomalism. The Taikuendi Shear Zone was considered a favourable structure for gold mineralisation but no further work was carried out.

5.9 Western Mining Corp. Ltd EL 1306 Florieton

In 1986 Western Mining took out an EL covering all of the current Florieton EL, extending 14km further to the east, 22 km to the north, and 10 km to the northwest (over the King's Well prospect). It was taken out as a "conceptual gold exploration project" following encouraging rock chip sampling from King's Well (a single assay of 49 g/t Au). This sample was a grab from the dump however follow-up sampling returned only low values.

They drilled a hole under the workings and another nearby, intersecting "altered" dolomitic sediments. All assay results were low.

Three lines of ground magnetics were surveyed across a linear magnetic anomaly on the eastern side of the EL and a single line to the west. Sirotem surveying along the lines failed to identify any conductors. Two RC holes were drilled to test magnetic anomalies. FLORC3 ended in Tertiary at 42 m, and FLORC4 intersected chloritic metasediments at 124m to the end of hole at 140m. Assay results were all low with the Ni, Co, V, Y, Zn and REE's suggesting a mafic component.

5.10 CRA Exploration EL 655 Bungunna, EL 657 Kakoonie and EL 664 Redcliffe

These tenements formed part of a regional exploration program for lignite in the Murray Basin. The target stratigraphy was the Eocene Upper Renmark beds. EL 664 covered the northern half of the Florieton EL and another 30 km the north. EL 655 covered the southern part of the Florieton EL and the northern half of the Mt Mary EL, extending to the east of Morgan. EL 657 covered the southern half of the Mt Mary EL, continuing another 60 km south past Teale Flat (figure 7).

After doing an aeromagnetic survey they targeted 16 "point source" anomalies as being possible intrusives in the Florieton North area. Ten similar anomalies were targeted in the

Florieton South area. Ground magnetic follow-up was carried out on 13 anomalies in the north and 8 in the south.

Two of the ground magnetic grids are located in the current Florieton EL. Anomaly FN13 is located in the northeast corner and was tested by 5 lines of ground magnetics and hole 82FN13RM1. This hole intersected weathered calc-silicate from 97 to 106.9m with a strong biotite-chlorite defined foliation and 4% disseminated pyrite. Weakly anomalous Cu was intersected over 4.4m with a highest value of 0.7m @ 460 ppm Cu and an average 0.07 ppm Au immediately below the unconformity. No obvious source for the magnetic anomaly was intersected in this hole although downhole logging showed a spike in the magnetic susceptibility at 50m.

Anomaly FS3 was covered by Sirotem surveying and drill tested. It was found to be caused by a barren kimberlite and is located about 11 km west of the Mt Mary ELA near Irwin Flat on the Murray River. Anomaly FS66 is located 12 km northwest of Blanchetown, approximately 10 km east of the Mt Mary ELA. Drilling by SADME in hole M142 (called RD84WA1 by CRAE) intersected a good lignite seam between 195 to 202m before intersecting another barren kimberlite from 214m to 229.5m (EOH).

In total they collected ground magnetic data over 107 anomalies for kimberlites over their entire project area. Twenty-four were tested by 25 rotary mud / core holes and 2 percussion holes for a total of 2572m. Five magnetic anomalies were selected as base metal targets. Drilling of one of the discrete anomalies intersected magnetic gabbro.

The coal potential was considered best on the down-thrown side of the Morgan Fault, however it was thought too deep to be of economic interest. However hole 81MBR39 in the northern part of the Florieton EL intersected a 1.8 m seam of clayey lignite with the base of the seam at 62.4m. Assay sheets for this hole could be found in the open file report and show anomalous Zn between 1400 to 4300 ppm from pyritic sediments which are briefly referenced in the quarterly report text. The PIRSA State GIS database contains a single value of 1500 ppm from 128 to 130m for this hole. This is considered to be Neoproterozoic siltstone in the PIRSA stratigraphic drillhole database. It corresponds to sample 942131 in the CRAE report. Presumably the 4300 ppm Zn value in sample 942133 is from below this. Assuming them to all be 2 m samples then this is from the end of the hole. This is immediately to the north of a subtle magnetic anomaly highlighted in this study (anomaly FL_M_03).

5.11 CSR / Placer Exploration Ltd EL 1419 Mannum – Sedan area

Placer Exploration explored the area for Ni-Cu-PGE's in 1988, focusing on the Black Hills area. They carried out ground magnetics, Sirotem surveying, and drilled one RC hole, Kakoonie No 1 to 256m, with negative results.

5.12 Aberfoyle Resources Ltd EI 1558 Brookfield

Aberfoyle carried out a program of mineral sands exploration in 1989 over the southern half of the current tenement area. Fifty-five RAB holes for 933m were drilled on 4 regional traverses totaling 22 km in length. They intersected Parilla Sand which was not considered prospective and the ground was dropped.

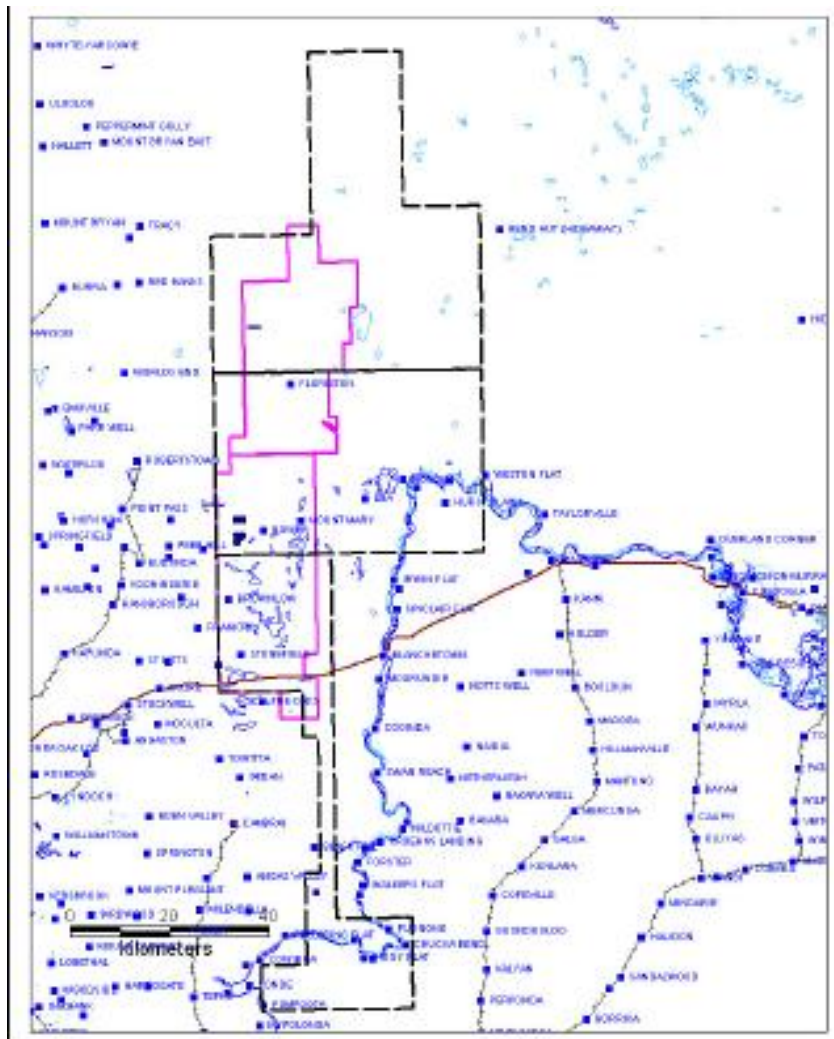


Figure 7. CRA Exploration EL's 655, 657 and 664 location diagram. Copper Range tenements shown in pink

5.13 Dampier Mining Co. Ltd EI 372 The Gums

This was taken out by Dampier for coal exploration and to a lesser extent for base metals. It covers the southern two third of the Florieton EL and the northern third of the Mt Mary ELA, extending 18 km further west and 25 km to the north. They carried out ground magnetics on the Redcliffe grid in the north of the Florieton EL and over the West Bend grid to the north of Morgan. One long line across EL 4124 was carried out between the two grids.

Seventeen drillholes were completed for coal with negative results. Only TG11 contained lignite and this was in a seam less than 0.5m thick.

5.14 North Broken Hill Ltd EI 204 Kongolia

This EL was located to the south over the Black Hills / Cambrai area. The northern end overlaps with the south-eastern corner of the Mt Mary ELA around Eight Mile Corner. They don't appear to have done any work over the current ELA. Extensive ground magnetics and IP surveying was carried out, and the drilling of 19 holes.

Hole S2 went into norite at Black Hills and got 1300 ppm Cu and a best of 481 ppm Ni. Hole S11 intersected 2.7m @ 0.4% Cu and 0.1% Ni from 276.8m. Hole S19 intersected 23.8m @ 0.13% Cu from 234.7m with no Ni. Results from the other holes were low.

6. TARGET GENERATION

Previous exploration and the regional geological setting shows the area to be prospective for skarn-related Cu-Au±Mo, porphyry Cu-Au-Mo, structurally controlled Au, and Ni-Cu-PGE mineralisation associated with mafic to ultramafic intrusives. Previous exploration and the open file mineral deposit database shows that the area may have limited potential for lignite within the Tertiary Murray Basin sequences and surficial gypsum. This study however has focused only on the metaliferous styles within the basement sequences. The extensive cover over the area has meant that identification of targets has relied heavily on the aeromagnetic data, gravity data, and open file reports and drillhole information. The magnetics and gravity were used as the first pass tool to identify potential targets with the open file data being used to assess whether they had been previously tested and to assist in ranking them in order of priority.

6.1 Exploration models

To identify targets for the above styles of mineralisation it is important to know what empirical factors distinguish each style. The following provides a brief description of the characteristics considered for each target. In this area where there is little bedrock exposure and very little geochemical data of use then the targets are all either magnetic and / or gravity targets.

6.1.1 Porphyry Cu-Au-Mo

This target style produces the least obvious response in either of the magnetic or gravity data. In general they do not produce a positive gravity anomaly that can be directly related to mineralisation. If they are hosted within felsic intrusives then they may be within a broader gravity low. The magnetic signature can also be variable. Porphyry copper deposits are often associated with a subtle magnetic anomaly within a zone of low magnetic intensity. This low is due to the destruction of magnetite in the propylitic and phyllic alteration zones (Clark et al, 1992), while the central high may be due to magnetite associated with the mineralisation. The alteration is often visible in the radiometric data due to the potassium enrichment.

The disseminated and vein style mineralisation of porphyry Cu-Au deposits means that they often give a pronounced IP response. IP surveys however are ground-based and detailed in nature and airborne data of this type is not available for regional target selection.

Dentith (2003) reviewed the geophysical signature over the Anabama Granite area in the northern part of the Anabama Belt. Morris (1981) described the exploration and geology of this prospect and applied a porphyry model to the mineralisation that is associated with a greisen within the granite. Dentith highlighted a zone of low magnetic intensity around a discrete, subtle magnetic high associated with the mineralisation in the aeromagnetics. He also presented pseudosections showing the pronounced IP anomaly associated with the mineralisation.

Figure 8 shows the aeromagnetics over the Anabama Granite area. The magnetic high and surrounding low described by Dentith is obvious, as are possible mineralising structures and other targets in the area. This magnetic signature was used as the model to select possible porphyry targets over the Florieton and Mt Mary areas.

6.1.2 Skarn Cu-Au±Mo

The presence of carbonate-rich stratigraphy within the Adelaide Fold Belt that abuts late-stage intrusives was the basis for previous explorers as well as this study considering the areas favourable for skarn-style mineralisation. To a lesser extent there is also some potential within the Cambrian Kanmantoo and / or Normanville Groups. However these are

on the western side of this study area, generally beneath deeper cover, and therefore more difficult to identify.

The Blue Rose prospect to the north of the Anabama Granite (Figure 9) is the most prominent known deposit of this style within the belt. It is located within a pronounced magnetic low which is probably due to remanently magnetised alteration associated with the mineralisation (figures 8 and 9). This signature has been used to search for similar targets within the Copper Range tenements. However potential skarn deposits may also be magnetic highs depending on the timing of mineralisation. Evidence of the variability of the magnetic signature can be seen by the presence of strong magnetic anomalies of both polarities associated with otherwise similar mafic intrusives in the Black Hills area (confirmed by Normandy drilling).

6.1.3 Ni-Cu-PGE

This style of deposit has been the focus of the majority of the previous exploration in the current tenement and to the south around Black Hills. Extensive use of the magnetics, and to a lesser extent the gravity has been used to select targets. Further testing of selected targets either took the form of drilling the magnetic anomalies and/or screening the anomalies by doing EM soundings to try and define high-grade sulphide targets. Minor Ni-Cu mineralisation was intersected in the Black Hills area and work reported by previous explorers on the chemistry of the intrusives suggests they are fertile for this style of deposit.

The methodology in this study is much the same as that used by previous explorers. Coincident magnetic and gravity anomalies thought to be due to mafic intrusives have been selected for further evaluation. Those occurring as elongate zones within plutons, or within major structures that could represent feeder zones have been given higher priority.

6.2 Geophysical Datasets and Image Processing

The magnetic dataset used in this study was the public domain PIRSA aeromagnetics. The MGA zone 54 grid with a cell size of 100m was used for the geological interpretation. It was reduced to the pole using ERMMapper™ software however at the scale of 1:100,000 used here it was seen to make little difference to the positioning of the magnetic anomalies. A grid at a 35 m cell size was also used at times where it could be seen to be providing better detail.

The main image schemes used in the interpretations were stretches of the pseudocolour TMI with various shade angles for anomaly definition, and AGC images with a pseudocolour drape for increased definition of magnetic trends and structures. Greyscale images of the first vertical derivative were also used to aid in the highlighting of structural features. Various edge enhancement filters were tried on the grid however they were found to be of little use.

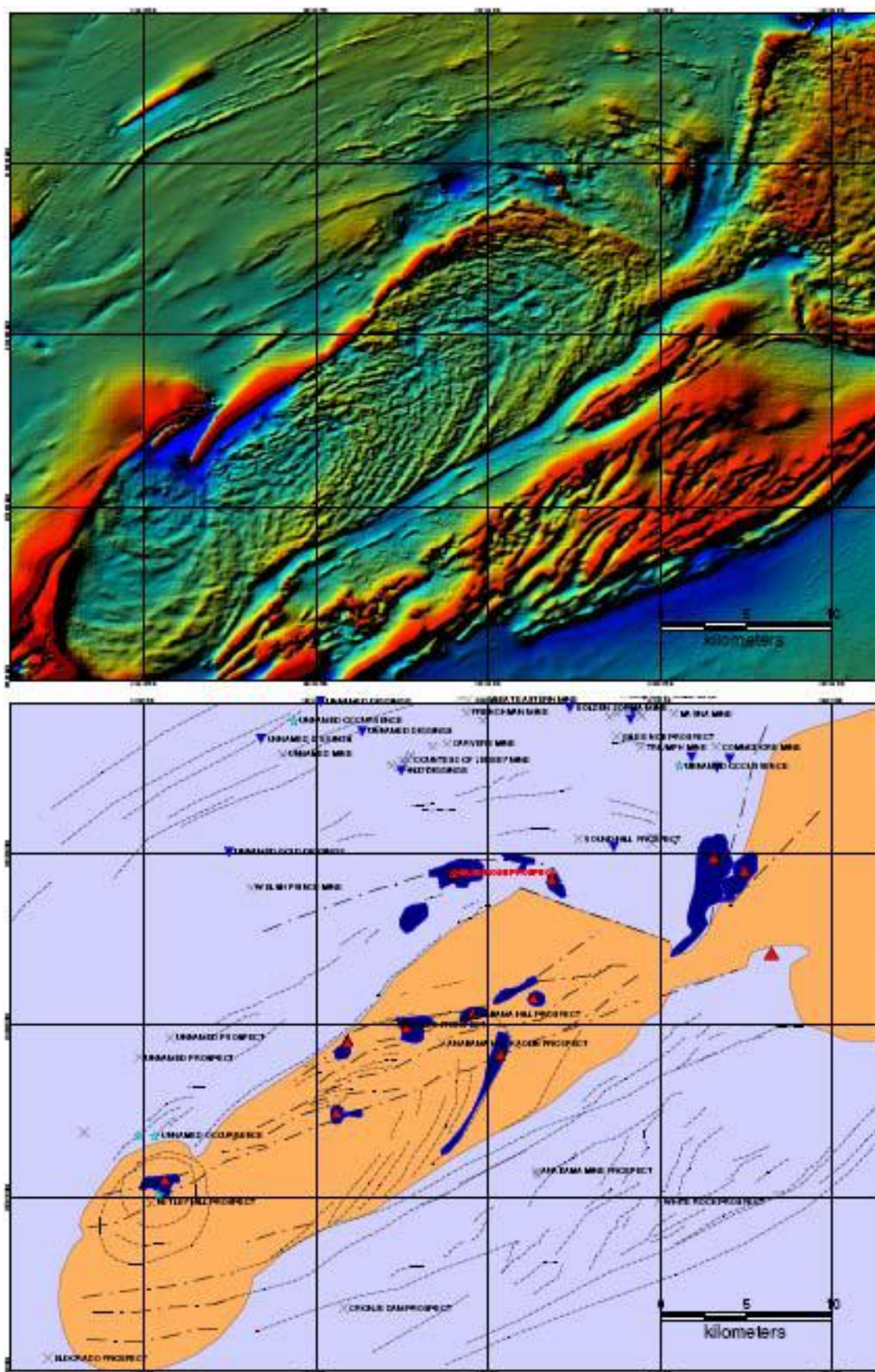
The available state radiometric data were imaged using ternary colour schemes however they were found to be of no value for targeting purposes. The coverage and data quality is poor, with one channel missing over a large area. This, and the extensive masking cover, meant that the radiometric data were not used in this study.

6.2.1 Gravity Data

Gravity data over the Florieton and Mt Mary areas were obtained from PIRSA as ASCII files of the bouger corrected values. The station spacing in the PIRSA dataset is very poor and does not include the data acquired by Inco Resources in 2005 and 2006. These data files were obtained from the contractor who carried out the surveys and merged with the PIRSA data to provide a much more detailed dataset.

Inco carried out gravity surveys along all the existing roads (figure 10) and this has greatly improved the data spacing (termed “semi-regional” by Inco). After merging with the PIRSA data the points were displayed in Mapinfo and compared for level shifts. None of the Inco points are exact repeats of the points in the PIRSA database which means it is difficult to accurately compare them. However where they are very close there seems to be a close match in the bouger values. It appears that the values in the PIRSA dataset may be slightly lower overall, and there are a couple of clear problems between the two sets (e.g. in the northwest corner of the Florieton EL and central-eastern part of the Mt Mary ELA) however without a quantitative measure of the difference it is not possible to adjust the values. Visual assessment of the gridded data was made to determine that the merged set was good enough for the purposes of this study.

Inco Resources also carried out more detailed gravity on grids over selected targets. These detailed data were gridded separately as well as merged with the regional data collected along the roads and the PIRSA data. The merged dataset was gridded using a range of cell sizes, with a 200m grid cell seeming to provide the best trade off between detail and smooth imagery. Images were also prepared with the detailed grids at 50m and 100m cell sizes draped over this 200m grid. Residual gravity images were prepared from the grids and these used for anomaly selection (figure 11).



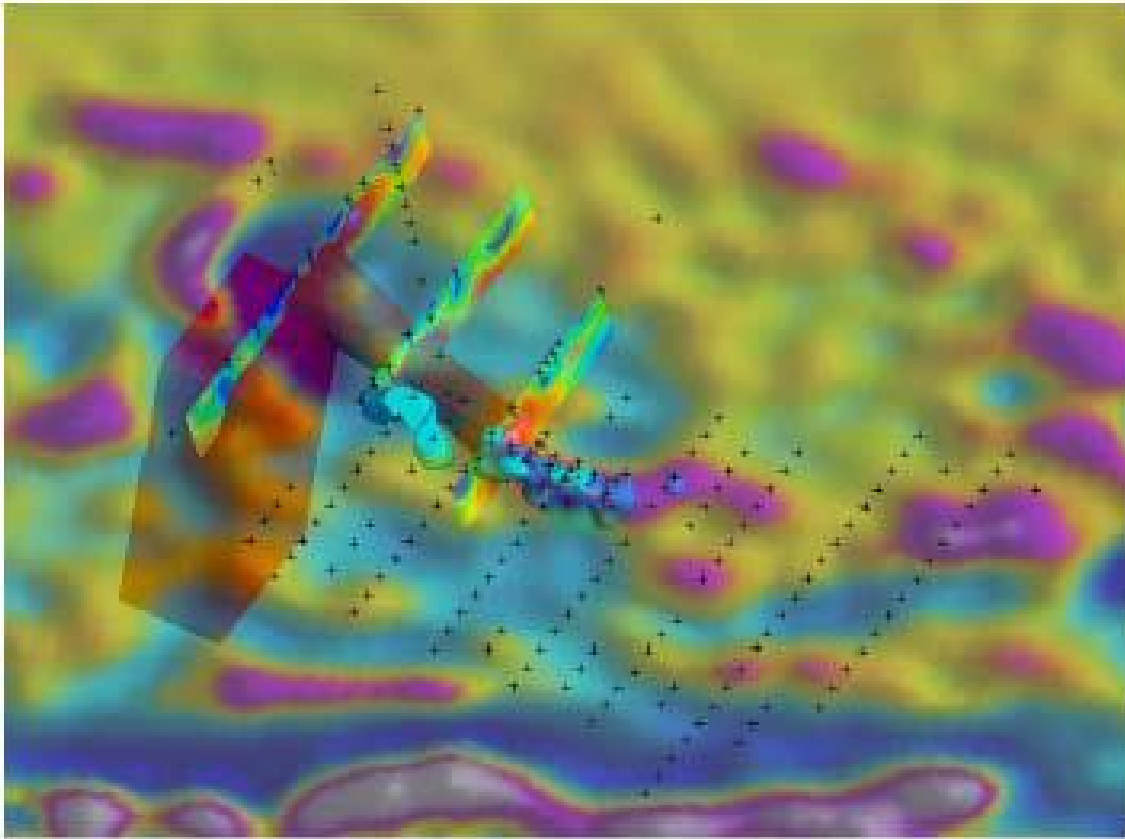


Figure 9. Isometric view of the Blue Rose Prospect, showing remnant magnetic anomaly with modelled source (purple triangulation), IP chargeability anomalies as pseudosections with 3D representation of source (red triangulation), > 1000ppm and 500ppm Cu isosurfaces (dark and light blue respectively). After figure 3 in Clifford 2006.

6.3 Mt Mary Targets

A total of eighteen targets were identified over the Mt Mary ELA area, two of which are porphyry Cu-Au targets with the rest being either skarn / base metals and Ni-Cu-PGE targets (Figures 25, 26 and Table 4). Six of these are gravity targets and the other 12 are magnetic targets. Four are considered high priority for follow up, five are medium priority and nine are of low priority.

The high and medium priority targets are further evaluated below.

Table 2. Mt Mary EL 4124 target descriptions

Target ID	Target Style	Description	Previous Exploration	Cover Depth	Rank
MM_G_01	Massive sulphides, skarn.	Gravity high in stratigraphy abutting felsic intrusive.	Poor gravity coverage	50 (?)	High
MM_M_02	Skarn Au, base metals	Mag anomaly on northern end of sandstone/siltstone	CRA hole 83FS49RM 1: metasilstone with 5% mag - soils over part, patchy weak Au	10 - 20	High
MM_M_06	Skarn	Medium intensity mag high on SE margin of large pluton expressed as gravity low	BHP TEM lines BH4-1 and 4-2 not adequately covered according to BHP and recommend further work.	75 - 80 (?)	High
MM_G_02	Massive sulphides, Ni-PGE, skarn	Diffuse gravity high in magnetically dead area on margin of large intrusive	Poor gravity coverage, Inco AMT Line 20 immediately north. Conductors at large depth beneath zone.	80	High
MM_M_09	Porphyry Cu-Au-Mo	Subtle mag blip in central low of late-stage pluton with major NW structure	PIRSA hole STO13 on edge got granite, low geochem	100	Medium
MM_G_04	Ni-Cu-PGE	Gravity high, moderately magnetic within intrusive complex, grav peak between TEM lines	Inco detailed gravity, EM (negative), Normandy PADD019 weak cpy, Ni in gabbro, Inco hole, MT conductors to north.	94	Medium
MM_G_05	Ni-Cu-PGE, skarn	Poorly define grav high on margin of magnetic rim of pluton	Nil, 1 km east of Inco TEM lines.	150	Medium
MM_M_08	Ni-Cu-PGE, skarn	Linear, high amplitude mag high on margin of pluton	Normandy hole PADD012: epidote altered mafic, nth end near cross-fault not tested, 2 MIM lines nearby	130	Medium
MM_M_10	Skarn Cu-Au, base-metals	Magnetic stratigraphy on margin or within intrusive.	Poor gravity coverage, hole to the south got Nk1 strat in PIRSA dh database	130	Medium
MM_M_01	Skarn, Porphyry Au-Cu	Mag high on margin of interpreted felsic intrusive	SADME hole STO 1 to 155m: Tapley Hill Form, low geochem, Inco MT lines 21,23,24, BHP EM lines target BH1:negative	150	Low
MM_M_03	Skarn, Porphyry Cu-Au-Mo	Magnetic high on margin of gravity high.	Inco detailed TEM:negative.	150	Low
MM_M_04	Skarn, Ni-Cu-PGE	Mag high on margin of gravity high.	Inco detailed TEM:negative, Normandy hole PADD011:gabbro with weak epidote alt.very weak Co, V otherwise dead	150	Low
MM_M_05	Skarn, Ni-Cu-PGE	Medium intensity mag high zone near margin of large gravity low., poor gravity coverage.	Extensive BHP and Inco TEM on southern edge and to south. Normandy PADD006 gabbro/norite to south	110	Low
MM_M_07	Skarn, Porphyry Cu-Au-Mo	Linear, and broader medium int mag high on margin of pluton within intrusive complex.	Poor gravity coverage, Inco MT Line 20 on Nth end, negative	120 - 130	Low
MM_M_11	Skarn Au & base metals	Mag high on sth end of strat unit abutting intrusion:Stonefield anomaly	MIM + Inco EM, Normandy PADD9: skarn-altered mafics, PADD007 dead, STO15, very weak Zn, Fe	130	Low
MM_M_12	Porphyry Cu-Au-Mo, skarn	Medium intens mag high, grav low in poss older intrusive, adjacent NW fault	Poor gravity coverage, Normandy hole PADD015 on edge got syenite, geochem low	85	low
MM_G_03	Ni-Cu-PGE	Gravity high, moderately magnetic within intrusive complex	Inco detailed gravity., Partially covered by Bower TEM, negative, Normandy PADD17 - gabbro with nothing	108	Low
MM_G_06	Ni-Cu-PGE, Skarn Cu-Au	Mod grav anomaly, poorly defined. Subtle mag singnature near margin of intrusive.	Nil, hole TG10 on margin -slate, no assays reported	100	Low

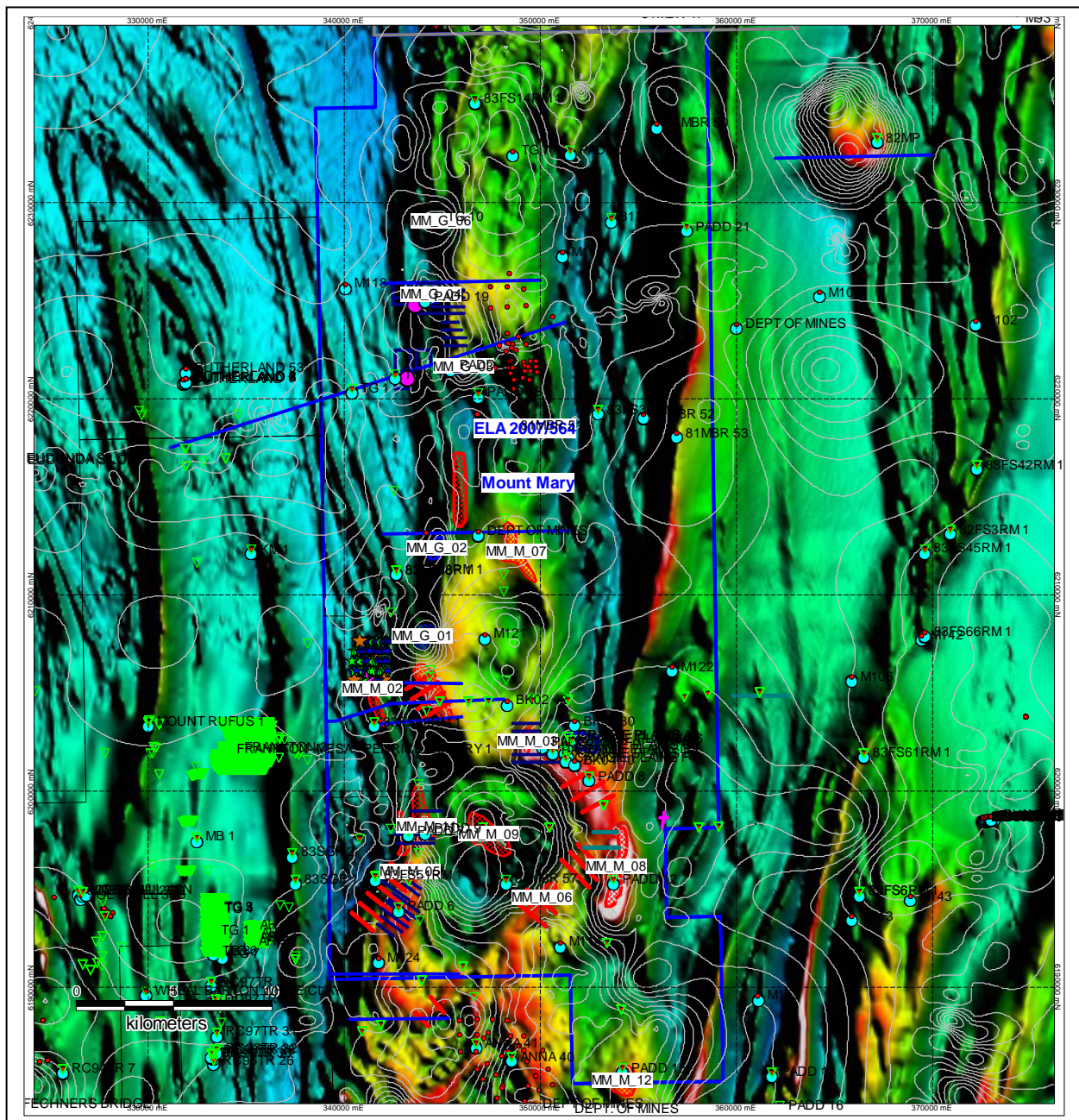


Figure 10. Mount Mary ELA gravity and magnetic target locations, overlain on aeromagnetic image. The contours are 0.5 mgal of the residual gravity. Previous geophysical survey line locations are shown in dark blue, red, and grey.

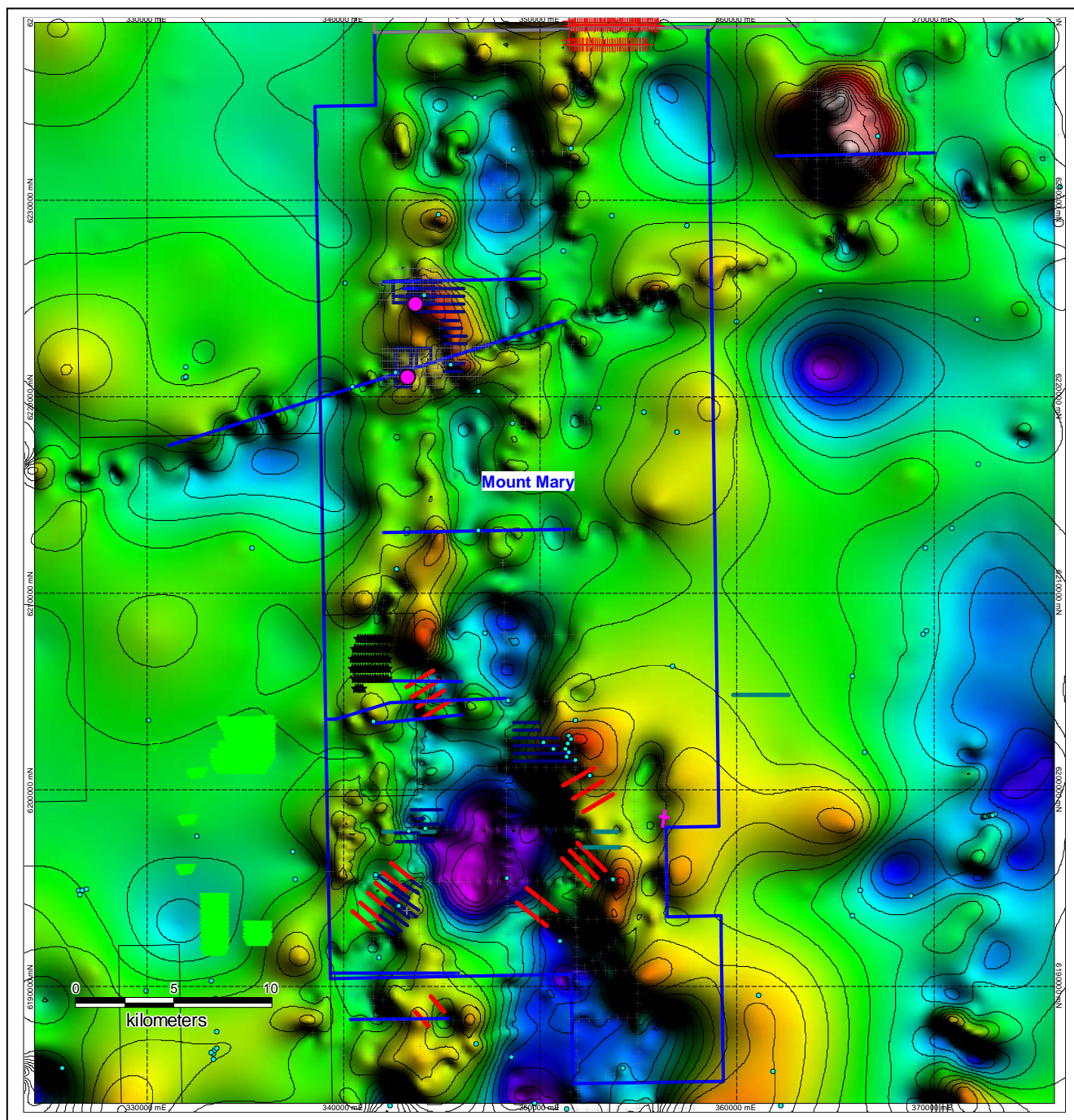


Figure 11. Mount Mary ELA residual gravity image. Previous drilling shown in light blue (Inco holes in pink). The crosses denote the gravity data points and the dark blue, red, and grey lines show the location of previous EM survey lines. The stars show the location of previous Normandy soil sampling.

6.4.1. Target MM_G_01

This is located in the central western part of the tenement area (Figure 12). It is a gravity anomaly located on the edge of the intrusive complex and appears to be on the end of a northwest striking stratigraphic trend where it terminates against the intrusive contact. It is considered a possible skarn or massive sulphide target although the magnetics do not show any sign of alteration.

There appears to be no previous exploration over this area that is interpreted to be beneath only 50 m of cover. It is centred at about 344000E, 6208000N but is poorly covered by the Inco gravity. The

PIRSA 100,000 scale geology shows some outcrop of Wilyerpa Formation siltstones in the northwestern part of the target. Two lines of broadly spaced readings fringe the anomaly which requires further surveying to better define it.

6.4.2. Target MM_M_02

This area is located about three kilometers to the southwest of target MM_G_01. It is a distinctive magnetic anomaly over the northern end of a stratigraphic trend that appears to be terminated by a north-northwest trending fault (Figures 12, 13). The southern end of this stratigraphic trend is the Stonefield Prospect, a zone of skarn alteration on the margin of a late stage pluton (anomaly MM_M_11 in this study).

Outcrop is patchy over the area but the stratigraphy over the anomaly appears to be the equivalent of the Grampus Quartzite (Yerelina Subgroup) which is mapped as being in fault contact with the older Saddleworth Formation. To the east is mapped as Appila Tillite, which appears to cover the entire northern part of the target. There must be a cross-fault beneath the Quaternary cover in the middle of the target area that has off-set the northern part to the west.

Normandy targeted this magnetic anomaly and carried out rock chip sampling, soil sampling at a 500 by 100m spacing, and reconnaissance mapping. The soil sampling showed only weakly anomalous gold, with a maximum of 7 ppb, that does not correlate with the location of the magnetic unit. Rock chip sampling returned a maximum of 280 ppb Au from narrow quartz veining to the west of the magnetic anomaly.

Normandy interpreted the stratigraphy to be Tapley Hill Formation and Saddleworth Formation as per the PIRSA mapping. A marble unit was interpreted by Normandy to belong to the Brighton Limestone rather than the Auburn Dolomite as mapped by PIRSA. The southern part of the prospect is covered by extensive Quaternary and the geochemical grid did not cover this area. Unfortunately a copy of the geological mapping is not included in the Normandy report.

The only other exploration in the area is the MT surveying carried out by Inco, and a single drillhole about 1 km to the southwest of the main anomaly, drilled in 1984 by CRAE. It intersected metasilstone at 11m with up to 5% magnetite. Assay results were low.

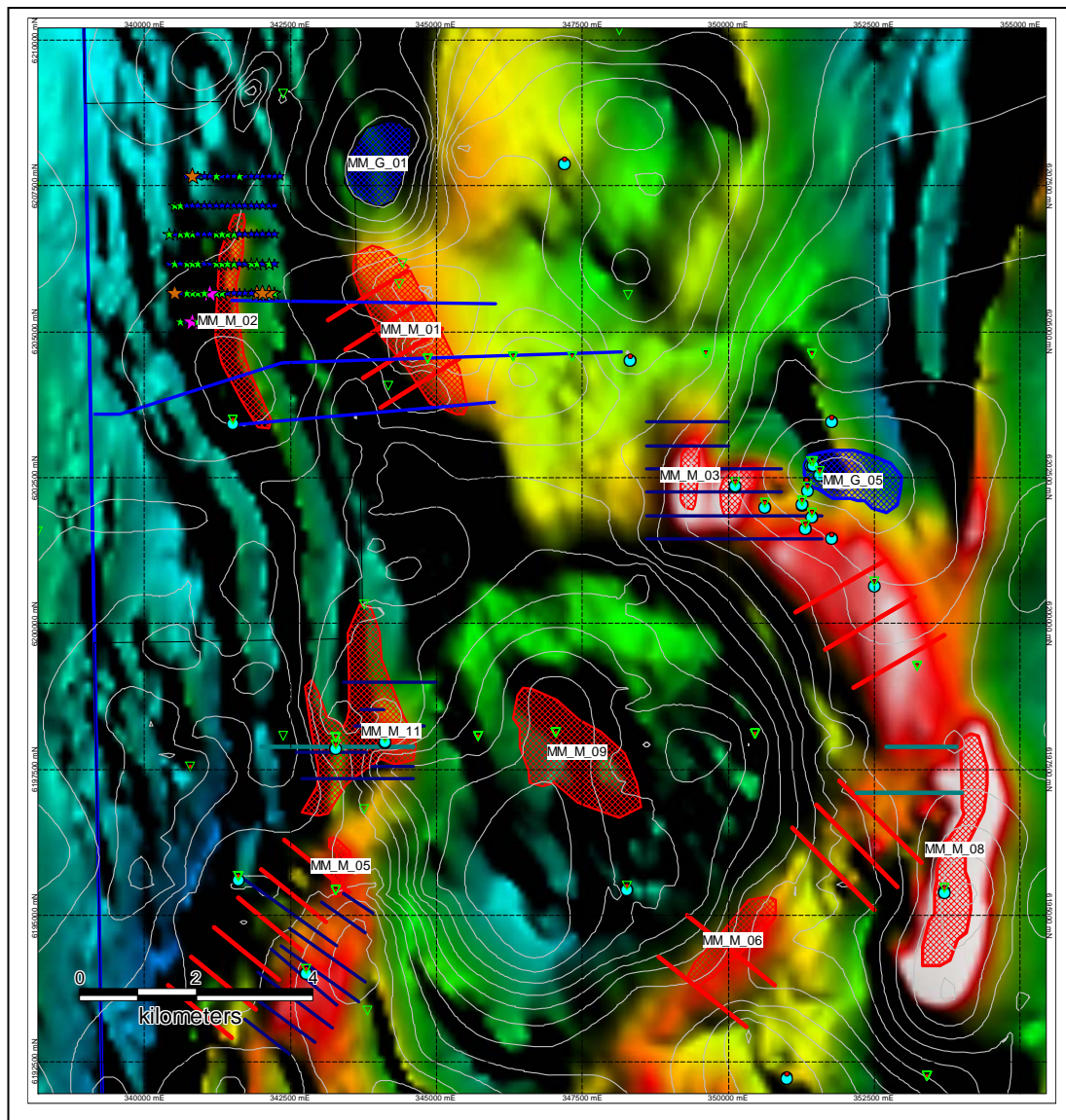


Figure 12. Magnetic image of the southern Mount Mary ELA area, showing target locations, previous EM survey lines (red and blue), and MT lines (blue).

The magnetic stratigraphy can be traced to the south for about 7 km where it is terminated against an intrusive contact. In this area the magnetic intensity increases again, although not as strongly as over target MM_M_02. This southern end was tested by the PIRSA drillhole STO 15 which intersected highly magnetic skarn-altered stratigraphy, possibly in contact with a brecciated kimberlite in the basement. The stratigraphy was interpreted as Saddleworth Formation and assaying showed an average bedrock Fe₂O₃ content of 56% over 45m, with values up to 72.5% over 10 m. Zn, Cu, P, Mo, and Ni are reported by PIRSA as also being weakly anomalous. Drilling to the east over another magnetic feature by Normandy intersected magnetite skarn alteration of mafic lithologies with only low geochemistry. They drilled PADD 7 very close to STO 15 but failed to intersect any skarn mineralisation. This hole encountered metasediments, calc-silicate alteration and minor chlorite veining. This result shows that the distribution of magnetite is not as simple as suggested by the aeromagnetic images. Ground magnetic surveys would be necessary to accurately locate anomalies.

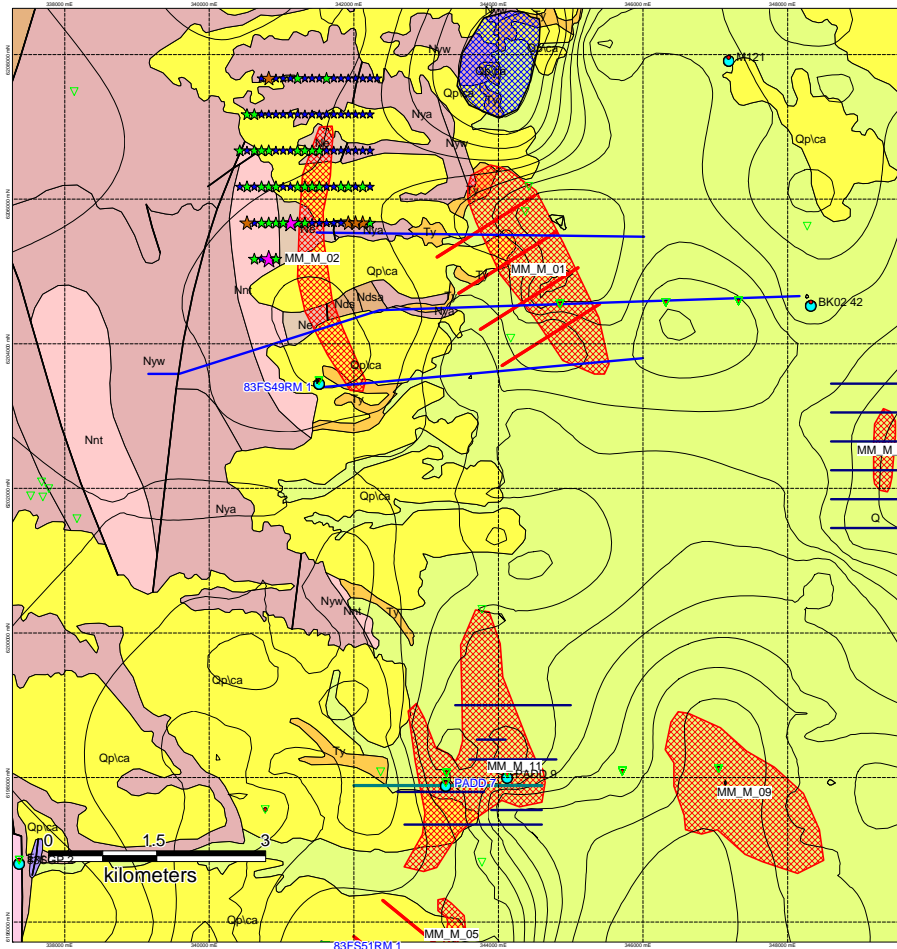


Figure 13. 1:100,000 scale geology over the MM_M_01, 02, 03, 09, and 11 area. The stars show the locations of Normandy soil sampling over the MM_M_02 area. Previous EM and MT lines are shown in blue.

The Inco MT surveying covers the southern part of the anomaly (Figure 14). Lines 21 and 24 extend across the magnetic trend while line 23 appears to stop directly over the peak of the anomaly. Line 24 showed very strong anomalies with the western one coinciding with the mapped position of the Tapley Hill Formation. The second anomaly, about 2 km further east is over an area of Quaternary cover and Appila Tillite. Neither coincides with the magnetic skarn target. MT line 23 however shows a weak resistivity response near its western end. This anomaly position is very close to the magnetic anomaly. Line 24 to the south shows a similar weak feature that is close to the southern end of the magnetic target. It is unsure whether these features represent genuine bedrock conductors.

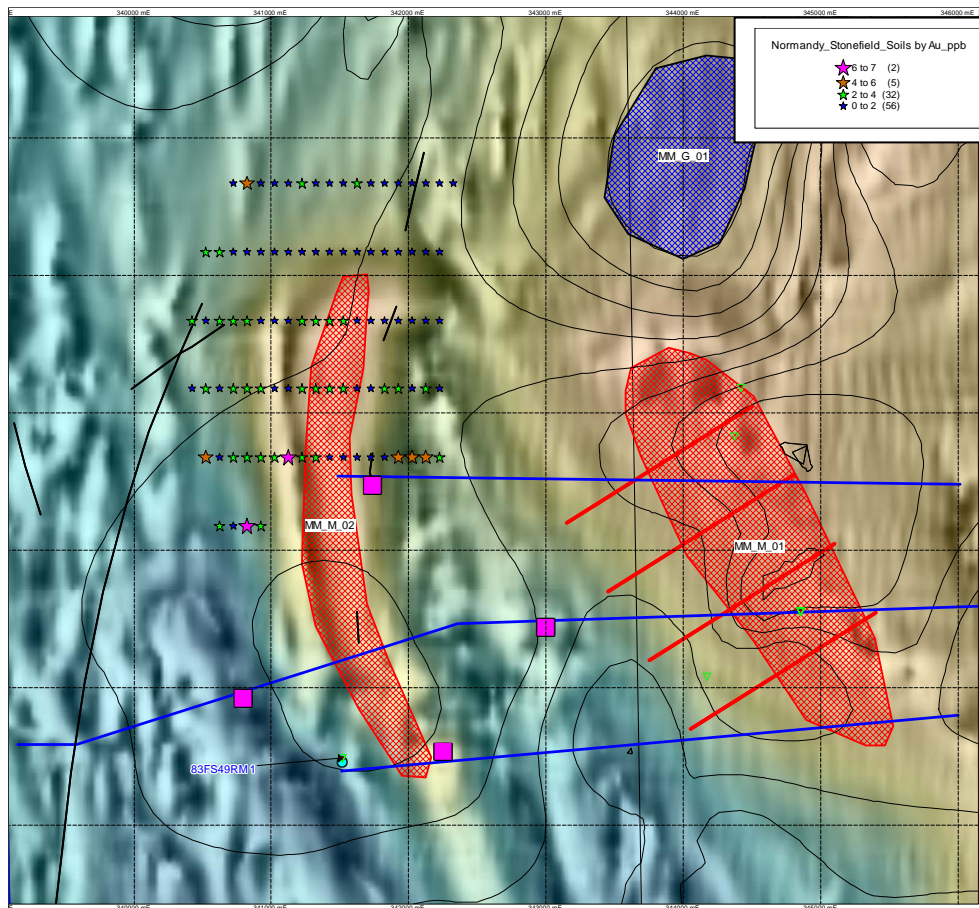


Figure 14. Previous exploration over Targets MM_M_01 and 02. The blue lines show the Inco MT surveys with possible anomalies highlighted by the pink boxes. The red lines are BHP Exploration EM lines. The Normandy soil sampling is shown as stars, colour coded by their Au values.

This area is considered to be highly prospective for skarn Au and / or base metals. The soil sampling by Normandy is not particularly encouraging however there are large areas of Quaternary cover and the area needs to be field checked to assess the effectiveness of this work. The elevated Au in the rock chip sample from veining in the area is encouraging. The MT results provide some encouragement although the anomalies are likely to be stratigraphic and the broad station spacing (approximately 250 m) means their exact location is uncertain. The results of the drilling to the south, where the anomaly is not as strong, are highly encouraging and suggest some iron potential in this target in addition to Au and base metals.

The area should be mapped in detail, the location of the magnetic anomaly accurately located on the ground, and further sampling and / or geophysics carried out to locate drilling targets. The MT data should be reprocessed to confirm the anomalies as they do not appear on inverted sections presented by Inco for lines 23 and 24.

6.4.3. Target MM_M_06

This is a magnetic target located in the southern part of the tenement area (Figure 12). It flanks the southern edge of a late-stage pluton and is considered prospective for skarn style Au and / or base metals.

Previous exploration over the area is limited. BHP carried out two lines of MLEM and ground magnetics with negative results (see section 5.3, Figure 15). However the contractors reports states

that the lines were not positioned well and had not tested the peak of the magnetic anomaly. The magnetic anomaly is located to the northwest of the survey lines.

The nearest drilling is hole M114 which is located about two kilometers to the southeast. This hole intersected fresh granite at 61 m with no anomalous geochemistry noted in the PIRSA database.

The area should be covered with detailed ground magnetics and either TEM or IP to identify drill targets.

6.4.4. Target MM_M_09

Target 09 is one of the few porphyry Cu-Au±Mo targets identified in this study. It is located within a late stage pluton on the southern end of the tenement, about four kilometers northwest of target 06. The magnetics show a zone of low intensity within the pluton, with the target selected as a zone of weakly elevated magnetics within this (Figures 12, 15). The target is not as well defined as the porphyry style targets in the Anabama Hill area, however there is around 100m of cover over this target. A porphyry style magnetic anomaly at this depth would be expected to be subtle.

There has been no previous exploration over the main part of the anomaly. One hole has tested immediately to the north of the anomaly in the area of low magnetic intensity. This hole, STO 13, was drilled by the South Australian Department of Mines and Energy in 1995 to look for gold and base metals. It intersected basement at 106 m and the assay values reported in the PIRSA database were low. Basement is noted as weathered and fresh granite and it seems that the assay samples were 10 m composites of the drill chips.

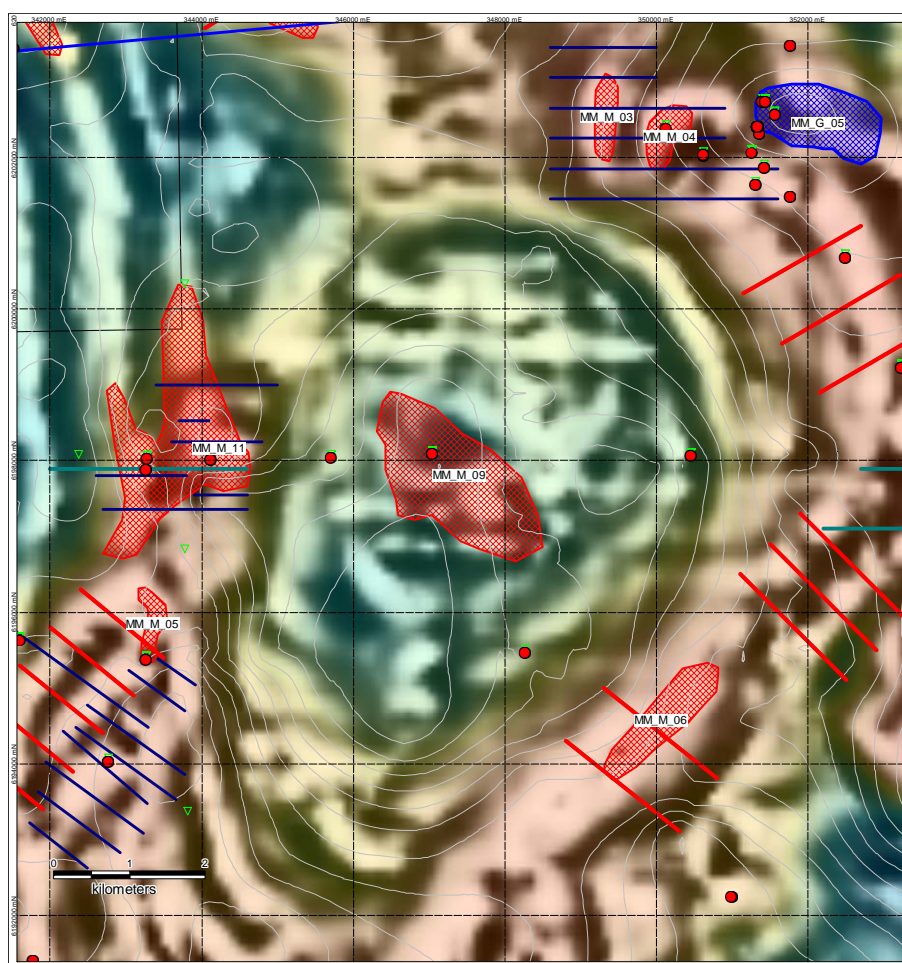


Figure 15. Aeromagnetic image of the MM_M_09 target and Stonefield prospect area. Previous geophysical survey lines are shown in blue and red.

The drillhole is not included in the PIRSA stratigraphic drillhole data table, only in the exploration drillhole table of the state MGA database. The geology in this table consists of a single lithology field so it is not possible to assess whether there is any significant alteration of the granite that may indicate peripheral porphyry-style zoning. The PIRSA report book on this drilling only provides the same detail of geological description and the assay data are not included in the downloaded version of the document. The original chips need to be logged and re-assayed at smaller intervals.

The target area should be covered with detailed ground magnetics and then IP surveying over selected targets.

6.4.5. Target MM_G_02

While listed as a massive sulphide, skarn or Ni-Cu-PGE high priority target, this area has an unusual signature in that it consists of a gravity anomaly with a totally flat magnetic response. It appears to be located on the western margin of the syn to post tectonic intrusive complex where this contact truncates the north-northwest stratigraphic / structural trend of the Adelaidean sediments (Figure 16). It is immediately west of a weak to medium intensity magnetic zone on the margin of the intrusives. The entire area is covered by Tertiary and Quaternary sediments. The basement is estimated to be about 80 in depth.

The gravity coverage over the target is poor, consisting of only a single traverse with six or seven points producing the high (Figure 17). The total lack of any magnetic signature, high or low, suggests that the gravity high is not the result of a mafic intrusive. The gravity anomaly may be skarn related, but again without any magnetite. Alternatively it may be due to shallower carbonate-rich stratigraphy, or massive sulphides.

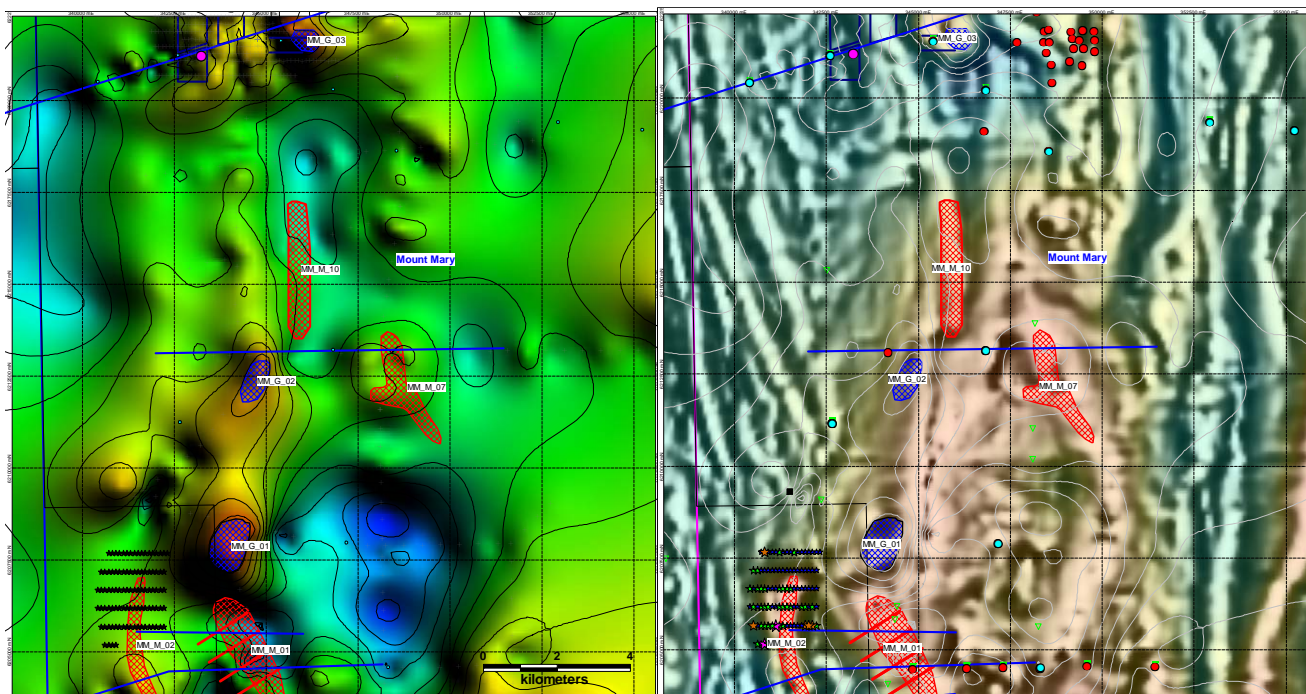


Figure 16. Residual gravity and AGC magnetic images for the MM_G_02 target area, southern Mt Mary ELA. The blue lines denote the Inco MT and TEM lines, the red denote previous explorer's EM lines and the stars denote Normandy soil sampling.

Very little previous exploration has been carried out in the area. Inco did one line of MT surveying on the northern edge of the target. MT Line 20 was aimed at testing this gravity anomaly (Figures 17 to 19). It highlighted a deep, conductive unit under, and to the west of, the gravity anomaly that was thought to be due to stratigraphic sulphides within the Karinya Shale.

A Department of Mines drillhole is located about 2 km to the northeast of the target and intersected what is logged as Curdimurka Subgroup at a depth of 131 m. No geochemical data is included in the PIRSA database for this hole. A single gravel sample collected by CRAE about 1.5 km further to the northeast contains slightly elevated Au of 12 ppb. The old CRAE hole 83FS38P 1 is located a little over 2 km to the southwest of the target area. It intersected pyritic Tapley Hill Formation siltstones from a depth of 17m. The geochemical database however notes the stratigraphy as a mixture belonging to the Heatherdale Shale and Tapley Hill Formation. Assay values are all low, with the highest value being 200 ppm Zn.

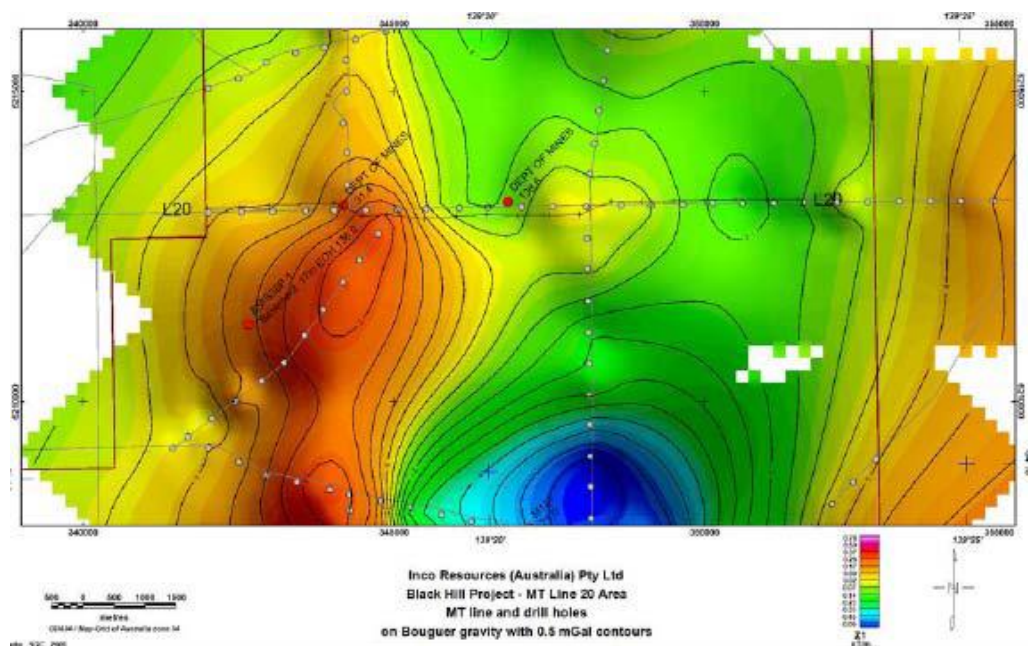


Figure 17. Target MM_G_02 gravity image, after Figure 58, Inco Annual Report to 16 Feb, 2007.

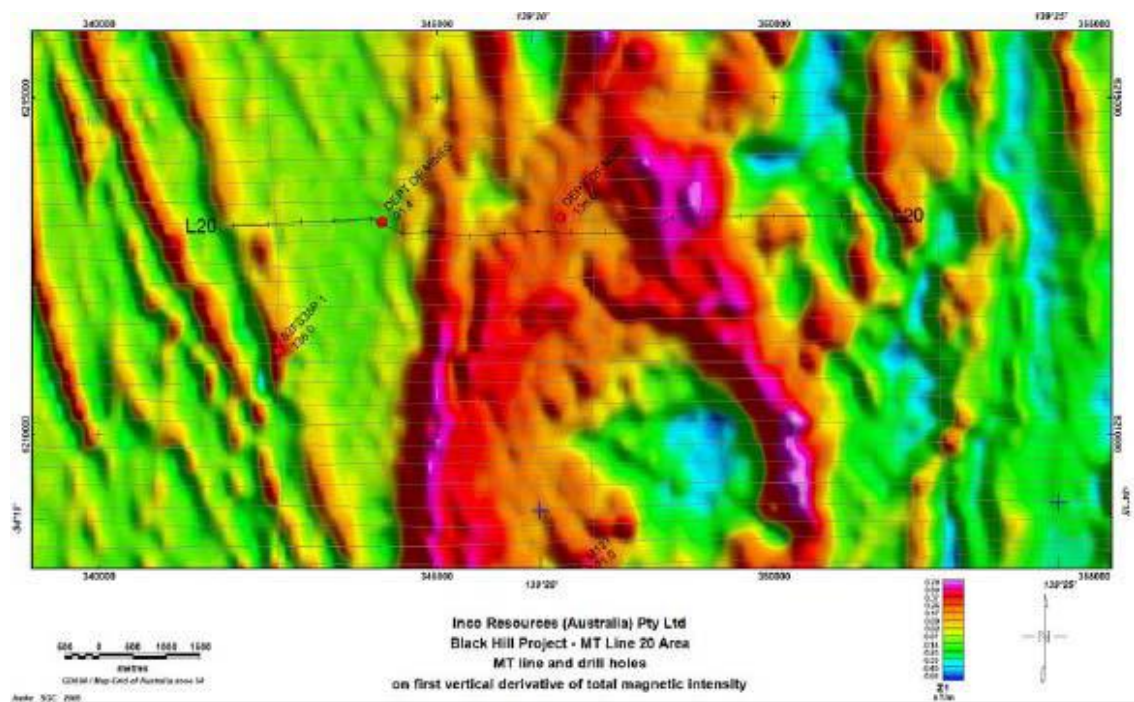


Figure 18. First vertical derivative magnetic image of the MM_G_02 target area, after Figure 59, Inco Annual Report to 16 February 2007.

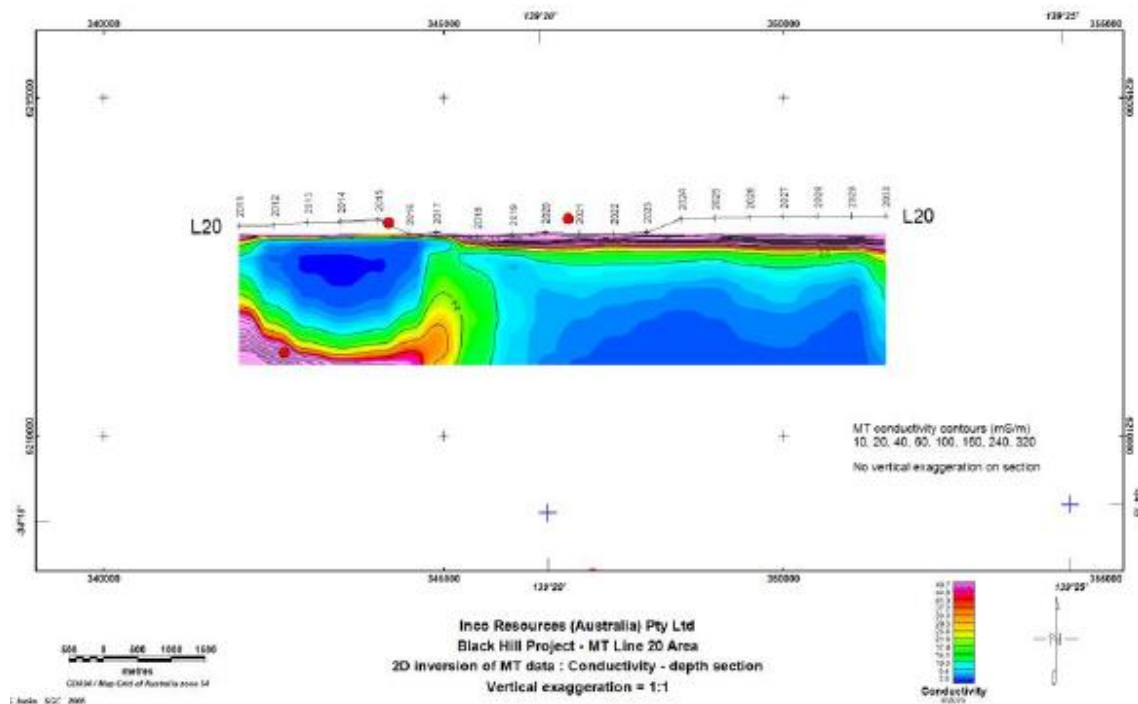


Figure 19. Inverted conductivity – depth section for MT Line 20, after Figure 60, Inco Annual Report to 16 February 2007.

The source of this gravity anomaly is unclear. It may be due to the pyritic stratigraphy in the area however it trends northeast, almost orthogonal to the northwest stratigraphic trend as seen in the magnetics. The anomaly is poorly defined with the current station spacing and a detailed gravity grid should be surveyed to better locate the anomaly. If it is confirmed to be cross-cutting the stratigraphy it should be tested with IP surveying. Alternatively the shallow cover may mean a fence of percussion drillhole over the anomaly is a more cost effective and definitive test.

6.4.6. Target MM_G_03 and 04

These targets form the northern and southern parts of a 5 km long, north-northwest trending gravity, and moderate magnetic high on the western edge of the intrusive complex. The area is located in the northern part of the tenement over what was explored by Inco as the Bower Prospect. Figure 20 shows the bouger gravity image produced from the Inco detailed surveys. This clearly shows that anomaly MM_G_03 is not as strong as it appears in the “semi-regional” grid due to the 50m grid cell size and the fact that it is not supported by the line to the south.

Anomaly MM_G_04 appears to be a discrete 1.5 mgal feature in the northern part of the Bower Prospect, however it is not effectively closed-off to the south by the existing gravity stations. The Inco MT line 19 covered the northern edge of this anomaly and detected conductive responses to the west. A fixed loop EM survey showed very weak anomalies on three lines on the western edge and immediately north of the gravity anomaly. No obvious bedrock conductors were noted in the moving loop EM survey lines.

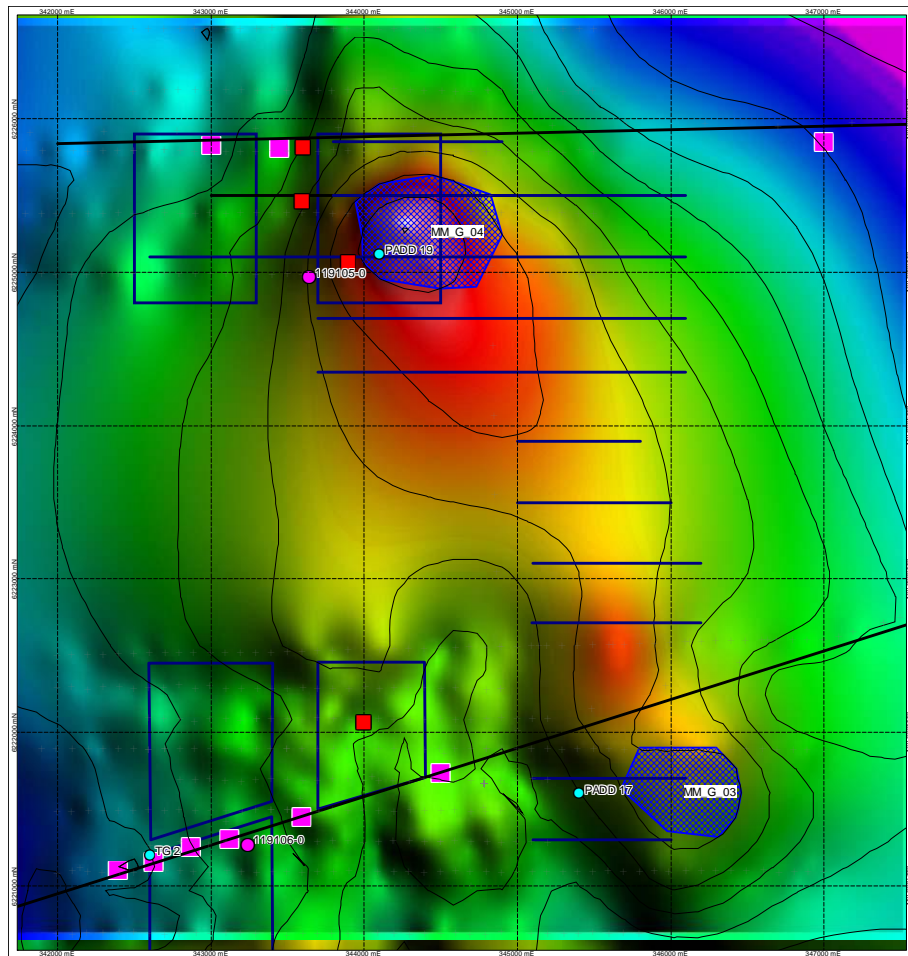


Figure 20. Detailed bouger gravity image over the MM_G_03 and 04 target areas. The blue polygons show the location of Inco FLEM surveys, the blue lines denote the location of MLEM lines with weak anomalies shown by the red squares.. The black line show the Inco MT lines with anomalies highlighted by pink squares.

Two holes were drilled by Inco to test what was modeled as a possible contact between a mafic intrusive and sulphidic stratigraphy (Figure 21). Hole 119105-0 intersected foliated metasiltsstones and then Black Hills Gabbro / mafics, while 119106-0 intersected dolomitic sediments. No sulphides of note or elevated gold or base metals were intersected. This appears to have intersected the margin of the mafic intrusive that was drilled by the Normandy hole PADD19. This hole is located about 500 m to the northeast and intersected basement (gabbro) at a depth of 94 m with very weak Cu and Ni sulphides. Assays were low however with a peak of 520 ppm Cu and 220 ppm Ni.

The area appears to be pretty well tested by the previous exploration. The peak of the gravity anomaly MM_G_04 is in between the MLEM lines and as such may not have been properly tested for conductive responses. The Normandy drillhole PADD 19 was sited to test the peak of the magnetic anomaly and this is slightly offset from the very peak of the gravity. It is possible that a steeply dipping shoot of massive sulphide exists and this could be tested by a single vertical or east-northeasterly dipping drillhole located at 344220E, 6223500N.

6.4.7. Target MM_G_05

This target is a gravity anomaly in the Craigie Plains area in the south-central part of the ELA. The gravity feature is defined by only a few points on a north-south traverse along a road. Another east-west traverse also has elevated values that result in the east-southeast trend in the gridded image. The 0.5 mgal contours show a north-west trend extending away from this zone and this is broadly conformable with the structural trends in the magnetic data (Figure 22).

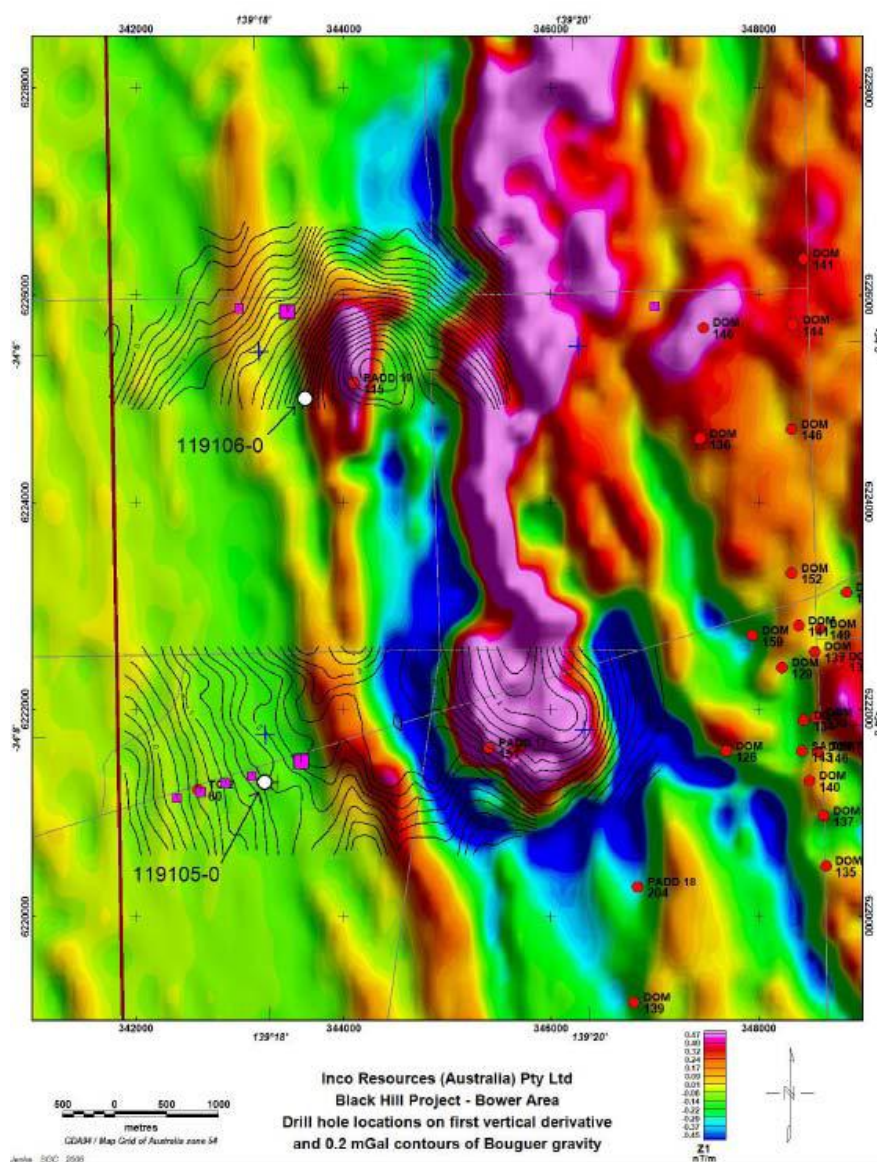


Figure 21. Gravity contours of targets MM_G_03 and 04 overlain on the 1st VD magnetics image. After Figure 57, Inco Annual Report to 16 February 2007.

The anomaly occurs on the southern end of what looks like a stratigraphic trend in the magnetic data. At this end the magnetic intensity increases significantly where it is adjacent to what is interpreted as a mafic intrusive. The gravity anomaly may be due to a mafic intrusive, or skarn-altered magnetite \pm sulphide-rich stratigraphy of uncertain age.

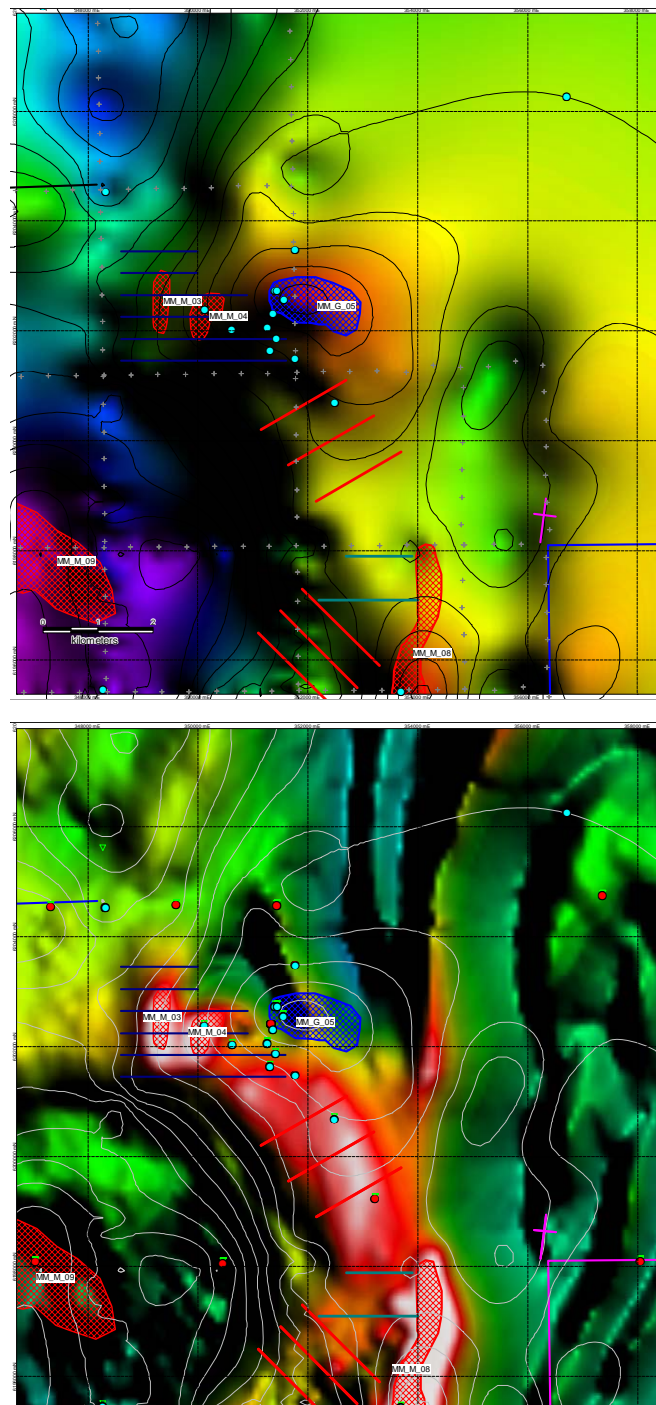


Figure 22. Residual gravity and magnetic images of the MM_G_05 target area with 0.5 mgal residual gravity contours. The existing gravity stations are shown as crosses, and previous drilling as red or blue circles. Previous EM survey lines shown in red and blue.

Previous exploration in the area has focused on the magnetic anomalies to the west and south. Extensive EM surveying failed to identify any bedrock conductors within what the limited drilling in the area shows to be gabbro-norite lithologies (Normandy hole PADD 11, drilled into magnetic target MM_M_04). Other holes along the magnetic zone to the southeast intersected similar lithologies, with the depth of cover being around 14 to 150 m. The only drilling over the gravity anomaly is very shallow drilling to test the gypsum occurrences within the Quaternary. These holes drilled down into the Tertiary where they terminated at depths between about 6 to 16 m.

The area should be further assessed by carrying out detailed ground magnetics and gravity readings. The depth of Tertiary cover in this area may render IP methods ineffective. Percussion drilling of modeled magnetic / gravity targets would be the best approach.

6.4.8. Target MM_M_08

The area on the southwestern margin of a late-stage pluton in the southern part of the tenement shows very high magnetic intensity (Figure 22). The anomaly trends roughly north-south and appears to be within a major fault or shear structure. The gravity coverage is broad over this target. A line of stations over the middle of the anomaly shows higher values however a line on the very northern end does not. This may be due to truncation by the fault. The magnetic anomaly has been targeted previously by Normandy Exploration who drilled a single hole into the middle of the anomaly. PADD 12 intersected mafic lithologies with strong epidote alteration from a depth of 124 m. The mafics were interpreted as being a volcanic sequence and this would be consistent with the regional magnetic interpretation which shows the area may be the southern extension of a linear north-northeast trending magnetic zone interpreted as a mafic layer or flow within Kanmantoo Group equivalent rocks.

The area of interest here is in the northern end of the magnetic anomaly where it appears to be offset by a northeast trending fault and the gravity is low. This fault appears to be controlling the southeastern contact of the neighboring late-stage pluton suggesting a post-Delamerian timing on the movement.

No previous exploration has been carried out over this northern end of the anomaly. MIM Exploration Pty Ltd carried out two lines of MLEM but these were immediately to the west. The eastern ends of these lines only cover the western gradient of the magnetic feature.

The main magnetic feature has been explained by the Normandy drilling and this target is largely conceptual, based on the structure. An EM survey of two or three lines over the magnetic feature would be sufficient to test for massive sulphides with associated Ni-Cu-PGE mineralisation. There is some possibility of a skarn-style signature to the area, depending on the northern extent of the gravity feature.

6.4.9. Target MM_M_10

This is a skarn-style target located where a north to north-northwest striking magnetic linear anomaly is terminated against an intrusive contact in the centre of the tenement area (Figure 16). A subtle increase in the magnetic intensity of the trend is located against this contact, although this may be due to the highly magnetic sources to the south.

No previous exploration has been carried out over this area. The nearest drillhole is an old Department of Mines and Energy hole which intersected basement at 131 m. No descriptions are provided but SADME have interpreted the stratigraphy as belonging to the Curdimurka Subgroup. No assay results are available for this drillhole.

The area could be quickly assessed with a ground magnetic survey. Potential skarn altered targets from this would provide immediate drill targets.

7. CONCLUSIONS

The Florieton and Mt Mary tenements are almost completely covered by Quarternary and Tertiary sediments that increase in thickness to the east and the north. Pre-Tertiary outcrop is limited to sediments of the Adelaide Fold Belt in the southwestern corner of the Mount Mary ELA. The cover thickness is generally less than 50m along the western boundary of the Mount Mary ELA, thickening to the east to between 150 to 200m on the eastern side.

Geophysical surveys and drilling by previous explorers has focused on the search for Ni-Cu-PGE mineralisation associated with mafic intrusions, IOCG mineralisation, skarn-related massive sulphides, coal in the Tertiary Murray Basin, and mineral sands and gypsum in the Quaternary cover. No significant mineralisation was identified by this work, however drilling to the south in the Black Hills area intersected low-grade Cu±Ni mineralisation in reversely magnetised gabbros of the Black Hills Suite. Similar, normally magnetised intrusives are widespread across the project area. Drilling in the southern part of the Mount Mary ELA at the Stonefield Prospect intersected skarn alteration of the Adelaidean (Saddleworth Dolomite?) on the margin of the intrusive complex. This skarn contains iron concentrations up to 72.5% Fe₂O₃ and weakly anomalous Cu and Zn.

The aeromagnetic data show that the study area consists of three distinct domains. The Eastern Domain is interpreted to consist of Cambrian Normanville sediments and mafic volcanics and siltstones of the Kanmantoo Group. They appear to be folded into a synform in the southeast part of the area studied. The rest of the domain shows very little folding and is dominated by major NNE to NE trending faults and shears.

The Western Domain is mainly composed of the Neoproterozoic sediments of the Adelaide Fold Belt that have been folded into a series of NNW trending synclines and anticlines. Major fault zones trend in the same orientation and appear to be synchronous with the folding. This deformation is interpreted to be D3 or later in age based on its overprinting relationship with the north-south trending Karinya Syncline and associated faults which are located to the west of the Mount Mary ELA. Major NW and NNW trending fault zones can be traced from Burra and the Mongalata area into the southwest part of the Mount Mary EL.

The Central Domain is a long, narrow belt of intrusive rocks with minor intervening sediments of the Adelaide Fold Belt or the Kanmantoo Group. On its western side it is dominated by the north-northwest structural grain which in places controls the emplacement of the intrusives and in others is overprinted by them. The eastern side is dominated by the north-south, northeast, and north-northeast trending faults and shears that characterize the Eastern Domain. Some of the intrusive margins appear to be aligned along northeast structures and the eastern margin with the Eastern Domain may be a sheared contact in many places.

The intrusive rocks of the Central Domain consist of three main phases of intrusives. Pre to syn-tectonic granitoids and felsic intrusives are exposed on the eastern boundary of the intrusive complexes and are possible equivalents of the Rathjen Gneiss. Syn-tectonic intrusives comprising quartz-feldspar-biotite granites to intermediate quartz-hornblende±magnetite bearing plutons make up the bulk of the intrusive complexes in this domain. Syn to post-tectonic granitoids of lower magnetic intensity to very high magnetic intensity, composed of felsic to mafic / ultramafic plutons, some of them remanently magnetised, form smaller complexes and isolated intrusive bodies, often on the margins of syn-tectonic intrusive complexes.. The Black Hills Suite (BHS) intrusives belong to this group.

Compilation, re-gridding and imaging of previous gravity surveys has provided a dataset that is adequate for initial target identification when used in conjunction with the aeromagnetic imagery. Exploration models for porphyry Cu-Au-Mo, skarn Cu, Au ± Mo, and Ni, Cu, PGE mineralisation were used to determine the geophysical characteristics expected for each type. Eighteen magnetic and gravity anomalies were evaluated on the Mt Mary EL.

The high and medium priority targets over the area were reviewed in detail. Detailed gravity, where available, and previous exploration data were compiled to determine whether viable targets remained. Some of the remaining targets are already defined as drilling targets and others require additional ground surveys to define drill locations. Table 4 below summarises the six best anomalies. They have been ranked based on the assessment of their prospectivity however this is fairly subjective, particularly for the lower priority targets, they have therefore been grouped into three priorities; with priority 1 being the most prospective.

Rank	Target ID	Target Style	Cover Depth	Centre (MGA94)	Priority
1	MM_M_02	Skarn Au, base metals	10-20	341400mE 6206200mN	1
2	MM_G_01	Massive sulphides, skarn	50 (?)	344000mE 6208000mN	1
3	MM_G_02	Ni-PGE, Skarn	80	344700mE 6212500mN	2
4	MM_M_06	Skarn	75-80	350000mE 6194500mE	2
5	MM_G_05	Ni-Cu-PGE	150	352000mE 6202500mN	3
6	MM_M_09	Porphyry Cu-Au-Mo	100	361900mE 6270200mN	3

Table 3. EL 4124 – Mt Mary, target summary

8. RECOMMENDATIONS

The Inco airborne EM data that covers to the south of the Mount Mary tenement area should be obtained from PIRSA to see if any of the area covers the southern part of the tenement. If it does it should be processed and conductivity images produced to help with the geological interpretation and to search for bedrock sulphide targets.

Each of the targets identified in this review should be followed up as described below:

- Target **MM_M_02** should be mapped in detail, the location of the magnetic anomaly accurately located on the ground, and further sampling and / or geophysics carried out to locate drilling targets. The MT data should be reprocessed to confirm the anomalies as they do not appear on inverted sections presented by Inco for lines 23 and 24.
- **MM_G_01** should be mapped in detail, geochemical sampling carried out if considered effective, and a detailed gravity survey carried out to define drill targets.
- Target **MM_G_02** requires further ground gravity to properly define the orientation and extents of the anomaly. MLEM over selected targets should be carried out to identify potential bedrock sulphides
- **MM_M_06** needs to be accurately located by ground magnetics and then assessed by lines of MLEM.
- The gravity anomaly at **MM_G_05** requires additional ground gravity and magnetics to identify drill targets.
- Hole STO 13 near target **MM_M_09** should be re-logged to look for any signs of porphyry-style alteration. The target area should be covered with ground magnetics and any highs within the broad magnetic low further evaluated using IP methods. If IP is not considered able to penetrate the conductive cover then drillholes should be targeted to test the magnetic highs.

9. EXPENDITURE STATEMENT

<p>Copper Range (SA) Pty Ltd <i>34 Stepney St, Stepney, SA 5069</i></p> <p>EL 4124 Mount Mary (5029)</p> <p>Expenditure Statement 14/04/2008 To 14/04/09</p>	
Job Name	Debit
Consultant - Geology	\$8,850.00
Wages/Salaries- Geo/Technical	\$5,648.35
Travel -Field taxi, bus	\$83.66
Phone,fax	\$49.04
Motor Vehicles - Fuel	\$113.76
Management Fee - HO overheads (@10%)	\$1,474.48
Grand Total:	\$16,219.29

10. REFERENCES

Burt, A., Abbot, P., Fanning, M., 2000. Definition of Teale Flat and Marne River Volcanics and associated shear zone. MESA Journal, Vol 17, pp 37-43.

Clifford, M., 2006, Blue Rose JV Mineral Exploration - Project Blue Rose Sulphide – Target 2 PACE final report, unpublished report.

Clark, D.A., French, D.H., Lackie, M.A. and Schmidt, P.W., 1992, Magnetic petrology: Application of integrated rock magnetic and petrophysical techniques to geological interpretation of magnetic surveys, Exploration Geophysics, 23, 65-68.

CRA Exploration Pty Ltd, 1985, Murray Basin, Peake, Redcliffe, Sturtville, Swan Reach, Waikerie, Narrung, Lainong, Bungunna, Kakoonie, Mypolongo, Oakbank, Gluepot. Progress and final reports for the period 7/10/80 to 7/3/85, South Australia Department of Mines and Energy, Open File Envelope 3957.

CRA Exploration Pty Ltd, 1996, EL 1732 Truro, Progress and annual reports to licence expiry for the period 15/7/1991 to 14/7/1996, South Australia Department of Mines and Energy, Open File Envelope 8481.

CRA Exploration Pty Ltd, 1997, EL 2209 Peep Hill, Annual report for the period 11/10/96 to 10/10/97, South Australia Department of Mines and Energy, Open File Envelope 9304.

CRA Exploration Pty Ltd, 1999, EL 1732 Truro, Annual plus final progress reports for the period 13/9/1996 to 30/3/2999, South Australia Department of Mines and Energy, Open File Envelope 9303.

Dampier Mining Co. Ltd, 1978, Progress and final reports to licence surrender for the period 28/11/1977 to 1/9/1978. South Australia Department of Mines and Energy Open File Envelope 3208.

Dentith, M., 2003, Geophysical signatures of South Australian mineral deposits: Miscellaneous and minor deposits, in Dentith, M. C., ed. (2003), Geophysical signatures of South Australian mineral deposits. Centre for Global Metallogeny, University of Western Australia.

Foden, J., Sandiford, M., Dougherty-Page, J., and Williams, I., 1999, Geochemistry and geochronology of the Rathjen Gneiss: implications for the early tectonic evolution of the Delamerian Orogen, Australian Journal of Earth Sciences, 46, 377-389.

Foden, J.D., Elburg, M.A., Turner, S.P., Sandiford, M., O'Callaghan, J.O., & Mitchell, S., 2002, Granite production in the Delamerian Orogen, South Australia, Journal of the Geological Society, London, Vol 159, pp. 557-575.

Foden, J., Elburg, M.A., Dougherty-Page, J., & Burt, A., 2006. The timing and duration of the Delamerian Orogeny: correlation with the Ross Orogen and implications for Gondwana assembly, The Journal of Geology, Vo. 114, pp 189-210.

Hough, J.K., 1995, Stonefield bedrock drilling, South Australia Department of Mines and Energy Geological Survey Report Book 95/037.

Gredes, R.A. and Hough, L.P., 1992, Potential field surveys of the Stonefield anomaly and a geophysical appraisal of the Sandleton 1:50,000 map sheet area, South Australia Department of Mines and Energy Geological Survey Report Book 91/074

Korsch, R. J., Barton, T. J., Gray, D. R., Owen, A. J., and Foster, D. A., 2002, Geological interpretation of a deep seismic-reflection transect across the boundary between the Delamerian and Lachlan Orogens, in the vicinity of the Grampian, western Victoria, Australian Journal of Earth Sciences, 49, 1057-1075.

Inco Resources (Australia) Pty Ltd, EL 3304 and EL 3305 Black Hill Intrusive Complex, Joint annual and final reports to licence expiry / surrender for the period 17/2/2005 to 16/2/2007. South Australia Department of Mines and Energy, Open File Envelope 11,269.

Inco Resources (Australia) Pty Ltd, EL 3304 and EL 3305 Black Hill (Swan Reach – Morgan area), PACE initiative: theme 2, year 2, drilling partnership – Black Hill gabbroic complex mafic / ultramafic intrusion-hosted nickel sulphide mineral prospects, Project interim and final reports. South Australia Department of Mines and Energy, Open File Envelope 11,175.

MIM Exploration Pty Ltd, 1996, EL 2118 Swan Reach and EL 2119 Morgan, Annual Report for the year ending 22 November 1996. South Australia Department of Mines and Energy, Open File Envelope 9135.

MIM Exploration Pty Ltd, 1997, EL 2118 and EL 2119 Swan Reach and Morgan, Joint first partial relinquishment report for the period 22/11/96 to 21/11/97,. South Australia Department of Mines and Energy, Open File Envelope 9255.

Minefinders Pty Ltd, 2002, EL 2628, Mount Karinya, Annual reports to licence expiry for the period 5/8/99 to 4/8/2002, South Australia Department of Mines and Energy, Open File Envelope 9642. Morris, B. J., 1981. Porphyry style copper / molybdenum mineralisation at Anabama Hill. Mineral Resources Review, South Australia, 150, pp 5-24.

Normandy Gold Exploration Pty Ltd, 2000, EL 2659, Thistlebeds Homestead, First annual and final report for the period 14/10/99 to 3/11/2000, South Australia Department of Mines and Energy, Open File Envelope 9691.

Normandy Gold Exploration Pty Ltd, 2000, EL 2678 Stonefield, Annual and final report for the period 14/10/99 to 13/10/2000, South Australia Department of Mines and Energy, Open File Envelope 9690.

Normandy Gold Exploration Pty Ltd and BHP Minerals Pty Ltd, 2003, EL 2544 Brownlow, Annual reports and partial relinquishment report for the period 26/8/98 to 25/8/2002, South Australia Department of Mines and Energy, Open File Envelope 9568.

North Broken Hill Ltd, 1977, EL 204, Kongolia, Progress and final reports to licence surrender for the period 18/8/75 to 17/8/77, South Australia Department of Mines and Energy, Open File Envelope 2631.

Placer Exploration Ltd, 1988, Data release at partial relinquishment: report on investigations into the platinoid potential of the Black Hill norite, South Australia Department of Mines and Energy, Open File Envelope 8199.

Preiss, W. V. (compiler), 1987. The Adelaide Geosyncline – late Proterozoic stratigraphy, sedimentation, palaeontology and tectonics, South Australia. Geological Survey, Bulletin, 53. Preiss, W. V., 1993, Neoproterozoic. In: The Geology of South Australia, vol 1, The Precambrian. (ed. Drexel, J.F., Preiss, W.V., and Parker, A. J.) Bull. Geol. Surv. S.Aust. 54, 170-204

Preiss, W.V. 1995 Delamerian Orogeny, In: The Geology of South Australia, vol 2, The Precambrian. (ed. Drexel, J.F., Preiss, W.V., and Parker, A. J.) Bull. Geol. Surv. S.Aust. 54, 45-60.

Rankin, L.R., Clough, B. J., and Gatehouse, C. G., 1991. Early Palaeozoic mafic suites of the Western Tasman Fold Belt. South Australia Department of Mines and Energy Report Book 91/15.

Western Mining Corp. Ltd, 1987, EL 1306 Florieton, Progress and final reports to licence surrender for the period 3/10/1985 to 12/5/1987, South Australia Department of Mines and Energy, Open File Envelope 6460.