



**ANNUAL REPORT**  
**ROSEBY INFILL TENEMENT**  
**EPM 14535**  
**FOR THE PERIOD**  
**28 February 2013 to 27 February 2014**

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**250K Map Sheets:** Cloncurry SF54-2  
**100K Map Sheets:** Marraba 6956 and Quamby 6957  
**Submitted By:** Altona Mining Limited

This report has been compiled using the Queensland Department of Natural Resources and Mine's Reporting Guidelines version 01-08-1 and complies with the conditions under Section 141 (1)(f) of the Mineral Resources Act 1989 and Mineral Resources Amendment Regulation (No 4) 2008 unless otherwise indicated.

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## 1. INTRODUCTION

This report documents the work conducted on EPM 14535 – ‘Roseby Infill’ for the 12 months to 27 February 2014.

Altona Mining Limited completed a RAB drilling programme in several locations within the greater Roseby Project that partially included EPM14535. In addition selected locations of EPM14535 were covered by a prospecting and rock chip sampling programme as part of more extensive regional prospecting.

Altona Mining Ltd signed a farm-in agreement with Chinalco Yunnan Copper Resources Ltd (“CYU”) in 2013 that includes EPM14535. CYU completed a RC drilling programme and soil sampling at Millenium project area partially within the reporting area.

Finally the EPM14535 was included in an extensive regional target generation and prioritisation generating multiple target areas for further exploration.

## 2. LOCATION AND ACCESS

EPM 14535 is located approximately 40 to 50km west and northwest of Cloncurry (Figure 1) in the eastern region of the Mount Isa Inlier of North West Queensland. Access is gained via the Old Cloncurry – Mount Isa road, past the Corella Park homestead and then via several old roads and pastoral tracks. A number of the southern blocks can also be accessed from the Mary Kathleen turn-off along the Barkly Highway, and the northern blocks via a track that leads from the Mt Roseby airstrip/homestead. This access is the best method for reaching the Southern Black Shale Prospect.

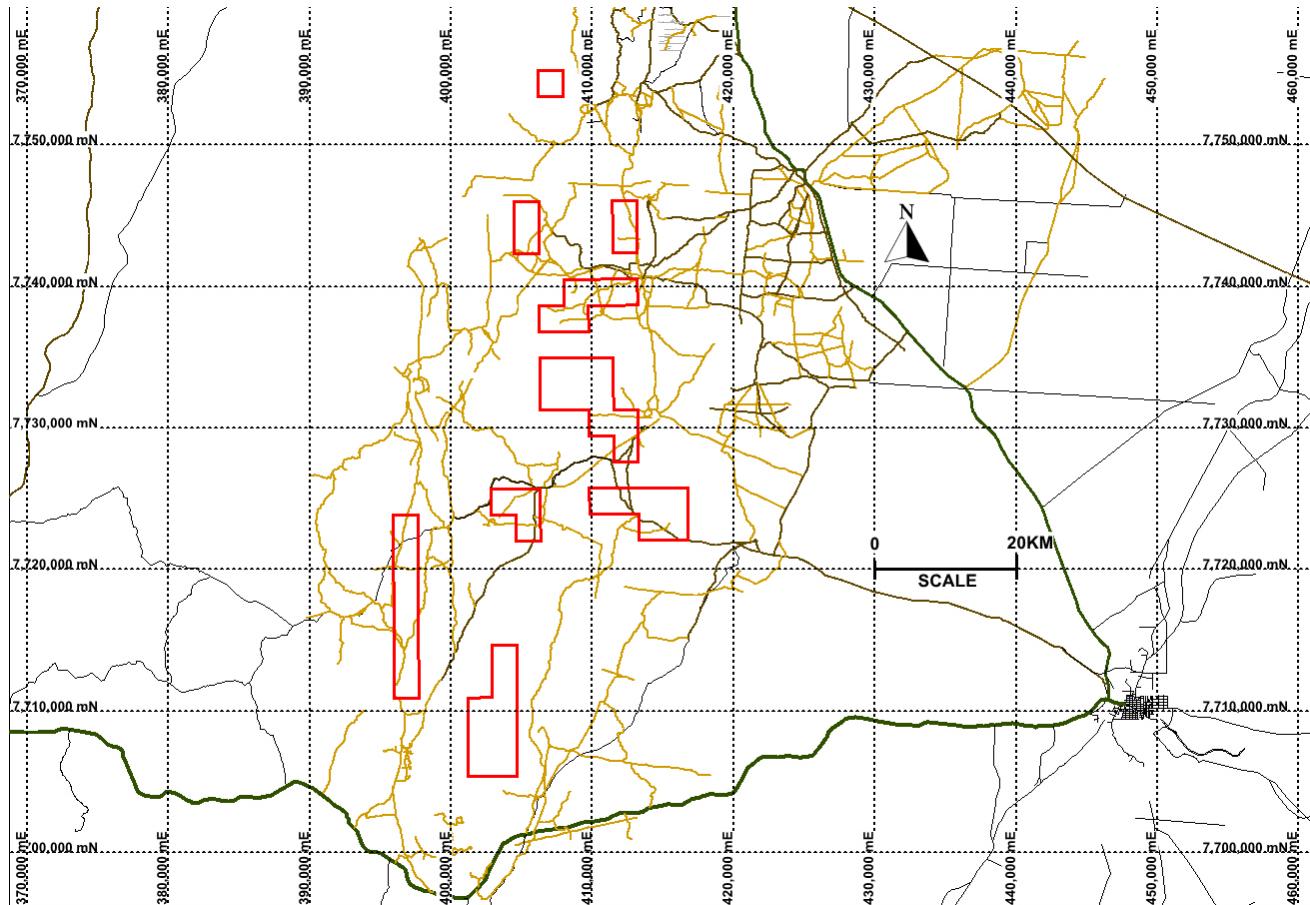


Figure 1: Tenement Location Plan with EPM14535 denoted by 9 series of sub-blocks outlined in red. (Datum – MGA 94. Projection – GDA Zone 54).

### 3. TENURE

The tenement comprises 43 sub-blocks, grouped into nine discrete areas (Figures 1 and 2) covering approximately 138km<sup>2</sup>. A listing of the current sub-blocks is shown in Table 1.

Table 1: EPM14535 Roseby Infill- Current Sub-blocks.

1:250,000 MAP SHEET(BIM)	BLOCK	SUB-BLOCKS
CLONCURRY	242	r
CLONCURRY	314	q, u, v, z
CLONCURRY	386	h, j, k, m, n, w, x, y
CLONCURRY	457	z
CLONCURRY	458	b, c, d, j, k, p, v, y, z
CLONCURRY	459	v, w
CLONCURRY	529	a, f, l, q, v
CLONCURRY	530	a
CLONCURRY	531	a, b
CLONCURRY	601	a, e, f, k, o, p, t, u, y, z

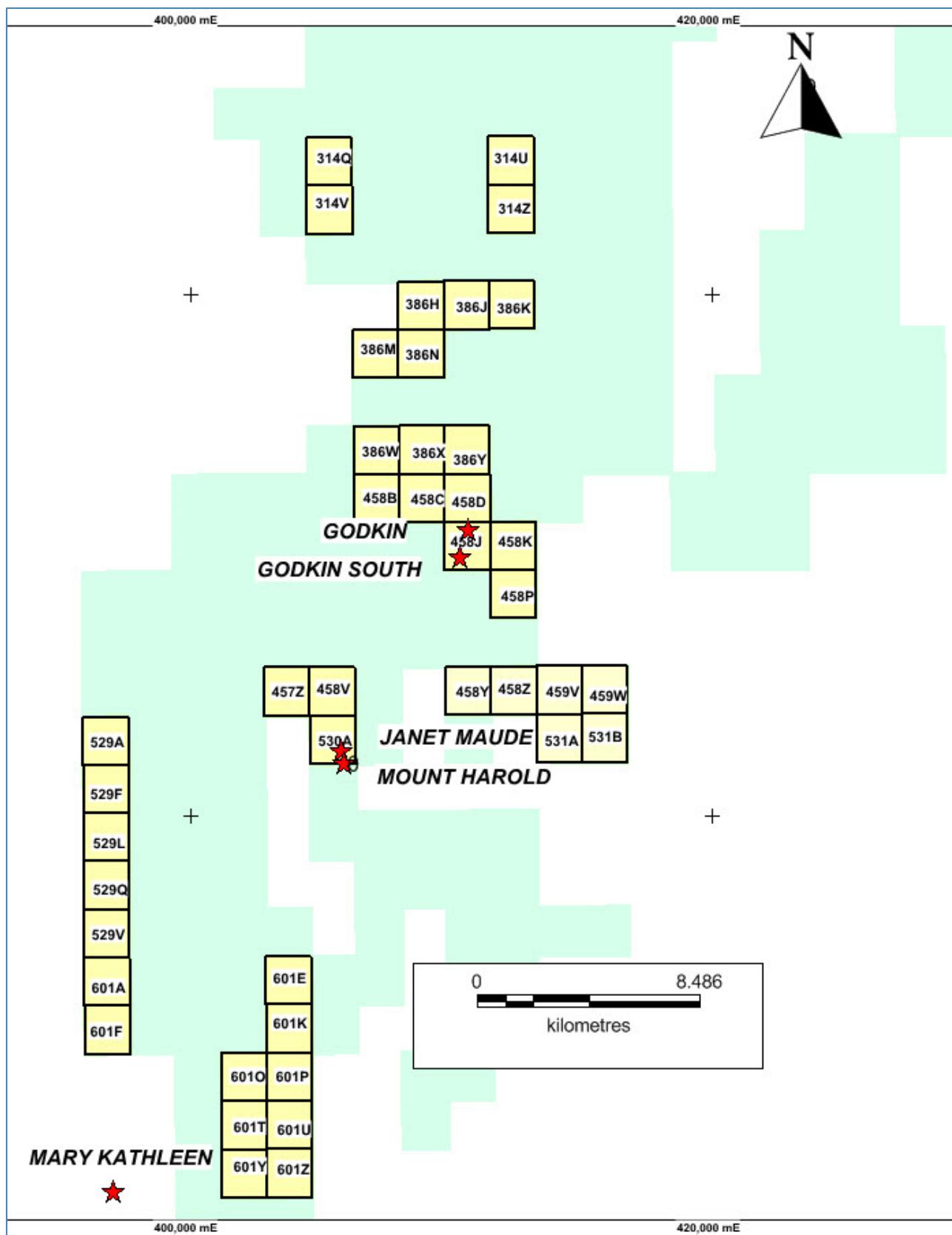


Figure 2: EPM 14535 Roseby Infill - Sub-block Plan (Datum – MGA 94. Projection – GDA Zone 54). Red stars denote mineral occurrences and deposits.

## 4. GEOLOGY

The Roseby Project lies in the Eastern Fold Belt of the Proterozoic Mt Isa Inlier (Figure 3).

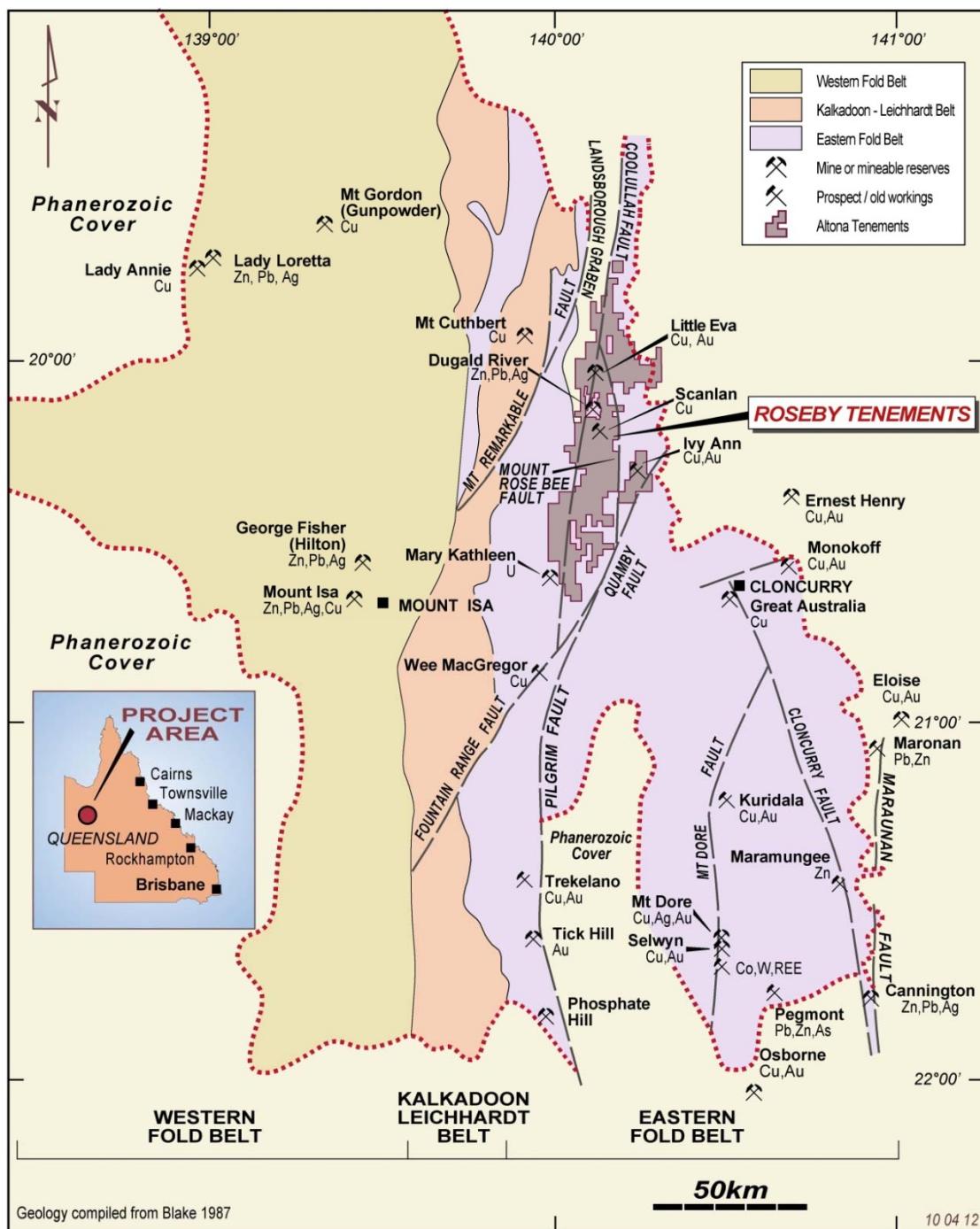


Figure 3: Mount Isa Inlier Geology and Roseby Project Tenements Location.

The tenements cover a highly deformed and prospective package of Proterozoic Corella Formation, which is in fault contact with Soldiers Cap Group metasediments. Naraku-Williams Granite batholith and stocks outcrop east of the north-south trending Mount Rose Bee Fault (MRF), a major crustal scale structure characterised by prominent outcrops of linear quartz ridges.

Numerous splay faults from the MRF, as well as north-east trending shears/faults transect the project area and, together with the Coolullah Fault (which forms the boundary with the Phanerozoic Landsborough Graben to the west), are thought to have provided significant pathways in channeling mineralising hydrothermal fluids.

The Mt Isa Inlier is host to a variety of major metal deposits including copper, copper-gold, zinc, silver, abundant small to moderate gold deposits and a plethora of uranium occurrences. Significant uranium deposits occur at Mary Kathleen, Valhalla and Skal. Uranium and rare earth mineralisation at Mary Kathleen (Figure 3) is hosted by skarnified calc-silicate breccias of the Corella Formation. Skarn alteration and brecciation of the host rock first occurred during the Wonga granite batholith intrusion towards the termination of the Corella Formation sedimentation. The uranium and rare earth mineralisation hosted by the breccias is attributed to the much later Isan Orogeny. The association of rare earth elements (lanthanum, cerium, yttrium, thorium and boron) with uranium at the Mary Kathleen deposit is well established, having been reported as one of the largest light rare earth accumulations within Australia.

Soda-metasomatism (albite-scapolite) and ‘red-rock’ (hematite) alteration is widespread throughout the project area.

Highly competent metallic hematite/magnetite bodies outcrop locally and are often spatially associated with major fault structures. Such iron concentrations frequently accompany hydrothermal Cu-Au deposits.

Locally, the geology within EPM14535 was recently synthesised by work undertaken by Southern Geoscience Consultants. The geology is characterised by;

- Corella Formation, Lady Clayre Dolomite and Roseby Schist to the north within some of the sub-block packages
- Godkin Granite, Corella Formation and Roseby Schist within the central sub-blocks and
- Lunch Creek Gabbro, Burstall Granite, Corella Formation, Lady Clayre Dolomite and Roseby Schist in southern sub-block areas.

## 5. WORK COMPLETED

### 5.1. RC DRILLING

One 120 metre long RC hole (table 2) was completed by CYU at Millenium target. The hole was drilled by Kelly Drilling (Cloncurry, QLD) in October 2013 using a Schram 450WS rig. The drilling was designed to validate historic work completed by Carpentaria Exploration Co. Pty Ltd (CEC) in 1964 and Diversified Mineral Resources NL in 1992.

Table 2. Collar information for hole Q-001

HOLE ID	GRID	EASTING	NORTHING	RL (m)	DEPTH (m)
Q-001	MGA94	415873	7722531	238	120

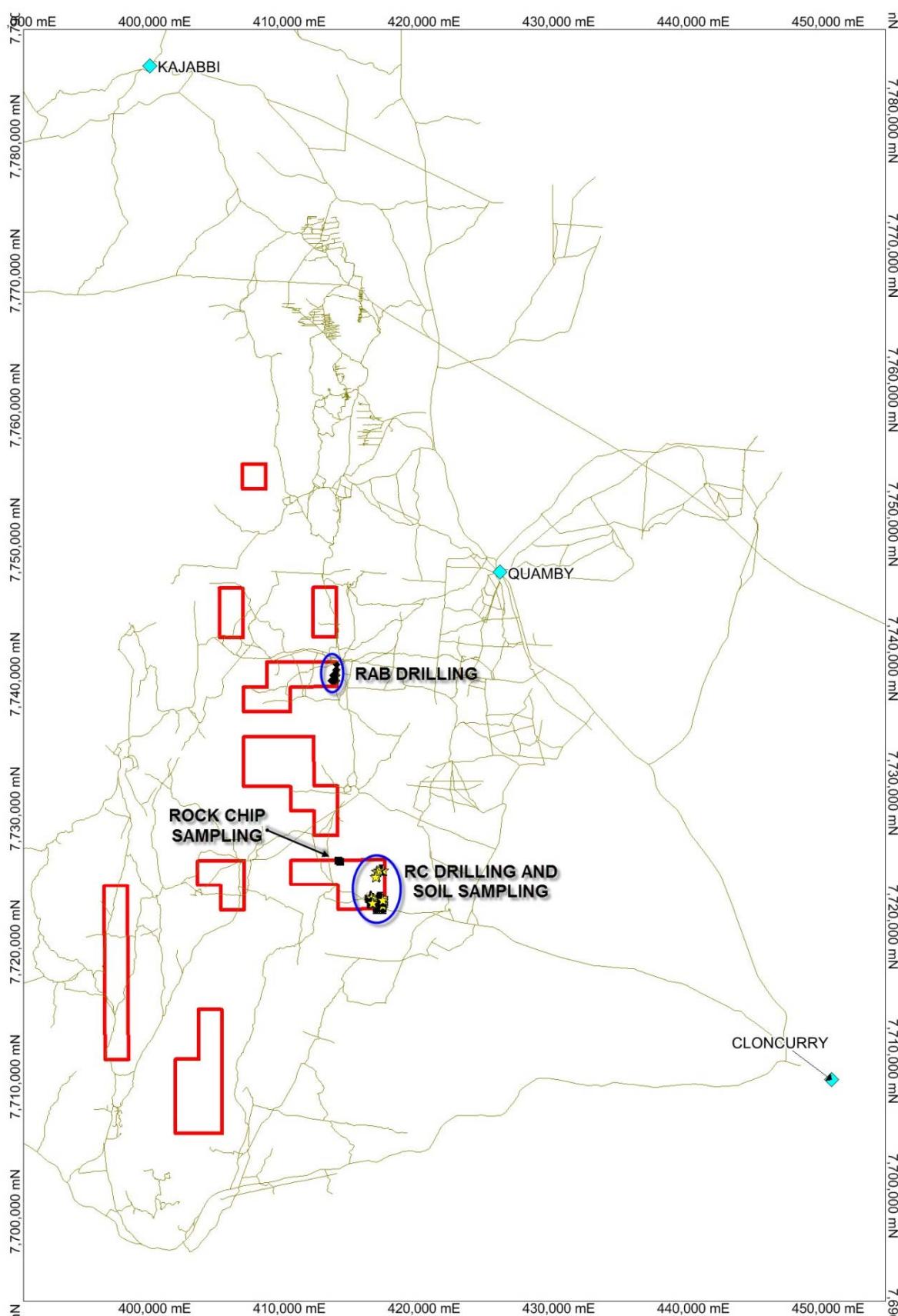


Figure 4. Work locations within EPM14535.

## 5.2. RAB DRILLING

A total of 36 shallow RAB holes were drilled for 242 metres as part of more extensive Companion – Brolga trend drilling. East – west oriented traverses consist of average 6.7 metre deep RAB holes drilled down to bedrock at 25 or 50 metre intervals. Drilling was completed by Tom Browne Drilling in June 2012 using an Almet Master 50/S top drive drill rig mounted on 6 x 6 Toyota fitted with a Sullair 150-psi x 250-cfm compressor. The unit utilised 3" percussion drill rods with a ~4" open hole blade bit and ~3" open hole hammer. Open hole hammer drilling was used only in circumstances of very hard ground with little resulting sample return.

Table 2. Collar information for 2013 RAB Drilling

PROSPECT	HOLE ID	DEPTH (m)	GRID ID	EASTING	NORTHING
Companion	CPB107	6	MGA94_54	413150	7740300
Companion	CPB108	6	MGA94_54	413175	7740300
Companion South	CPB193	6	MGA94_54	413175	7739900
Companion South	CPB194	6	MGA94_54	413150	7739900
Companion South	CPB195	6	MGA94_54	413125	7739900
Companion South	CPB196	6	MGA94_54	413100	7739900
Companion South	CPB250	15	MGA94_54	413175	7739500
Companion South	CPB251	7	MGA94_54	413150	7739500
Companion South	CPB252	6	MGA94_54	413125	7739500
Companion South	CPB253	15	MGA94_54	413100	7739500
Companion South	CPB254	6	MGA94_54	413075	7739500
Companion South	CPB255	6	MGA94_54	413050	7739500
Companion South	CPB256	6	MGA94_54	413025	7739500
Companion South	CPB257	6	MGA94_54	413000	7739500
Companion South	CPB258	8	MGA94_54	412975	7739500
Companion South	CPB259	6	MGA94_54	412950	7739500
Companion South	CPB260	6	MGA94_54	412925	7739500
Companion South	CPB261	6	MGA94_54	412900	7739500
Companion South	CPB266	6	MGA94_54	413175	7739100
Companion South	CPB267	6	MGA94_54	413150	7739100
Companion South	CPB268	6	MGA94_54	413125	7739100
Companion South	CPB269	9	MGA94_54	413100	7739100
Companion South	CPB270	6	MGA94_54	413075	7739100
Companion South	CPB271	6	MGA94_54	413050	7739100
Companion South	CPB272	6	MGA94_54	413025	7739100
Companion South	CPB273	6	MGA94_54	413000	7739100
Companion South	CPB274	5	MGA94_54	412975	7739100
Companion South	CPB275	6	MGA94_54	412950	7739100
Companion South	CPB276	6	MGA94_54	412925	7739100
Companion South	CPB277	6	MGA94_54	412900	7739100
Companion South	CPB278	6	MGA94_54	412875	7739100
Companion South	CPB279	6	MGA94_54	412850	7739100
Companion South	CPB280	6	MGA94_54	412825	7739100
Companion South	CPB281	6	MGA94_54	412800	7739100
Companion South	CPB282	9	MGA94_54	412775	7739100
Companion South	CPB283	6	MGA94_54	412750	7739100
<b>TOTAL</b>		<b>242</b>			

### 5.3. SOIL SAMPLING

A total of 245 soil samples were collected within the tenement by CYU over a 100 x 25m grid covering the southern portion of the Millennium MLs and extending partially to EPM14535. Sampling targeted the C-horizon and the average sample depth was 25cm; samples were sieved on site to -80# and XRF readings of the sample packets were made using a DeltaX unit.

### 5.4. RECONNAISSANCE MAPPING AND ROCK CHIP SAMPLING

In conjunction with the regional prospectivity review, reconnaissance geological mapping and rock chip sampling was completed at selected target areas within Roseby Project. Hobby Area was selected as one priority area and a preliminary site visit was completed consisting of geological review and sampling of old workings and adjacent areas.

### 5.5. REGIONAL PROSPECTIVITY STUDY

During 2013, work consisted of a prospectivity analysis for the full extent of Roseby Project tenements including EPM 14535.

The areas of interest have been defined using the following elements;

- Geochemical anomalism
- Previous drilling and assay results
- Geology and structure
- Geobotanical anomalism.
- Southern Geoscience Consultants (SGC) target zones.

The prospectivity analysis encompassed a GIS data compilation, review of previous work, reconnaissance geological mapping and rock chip sampling.

## 6. RESULTS

### 6.1. RC DRILLING

Drillhole Q-001 was sampled at 1 metre intervals from surface. The drill sample was collected in an inline cyclone and dropped through a triple deck riffle splitter at the end of each metre.

The drillhole intersected a hanging wall suite of carbonaceous slates underlain by a thick sequence of feldspathic quartzites. 23 metre zone of copper – gold – cobalt mineralisation was intersected from 16 metres down hole (figure 5.). Average grades of 0.48% Cu, 0.16% Co and 0.1ppm Au were assayed over the interval but it also includes higher grade mineralisation of 5 metres at 1.37% Cu, 0.37% Co and 0.5ppm Au.

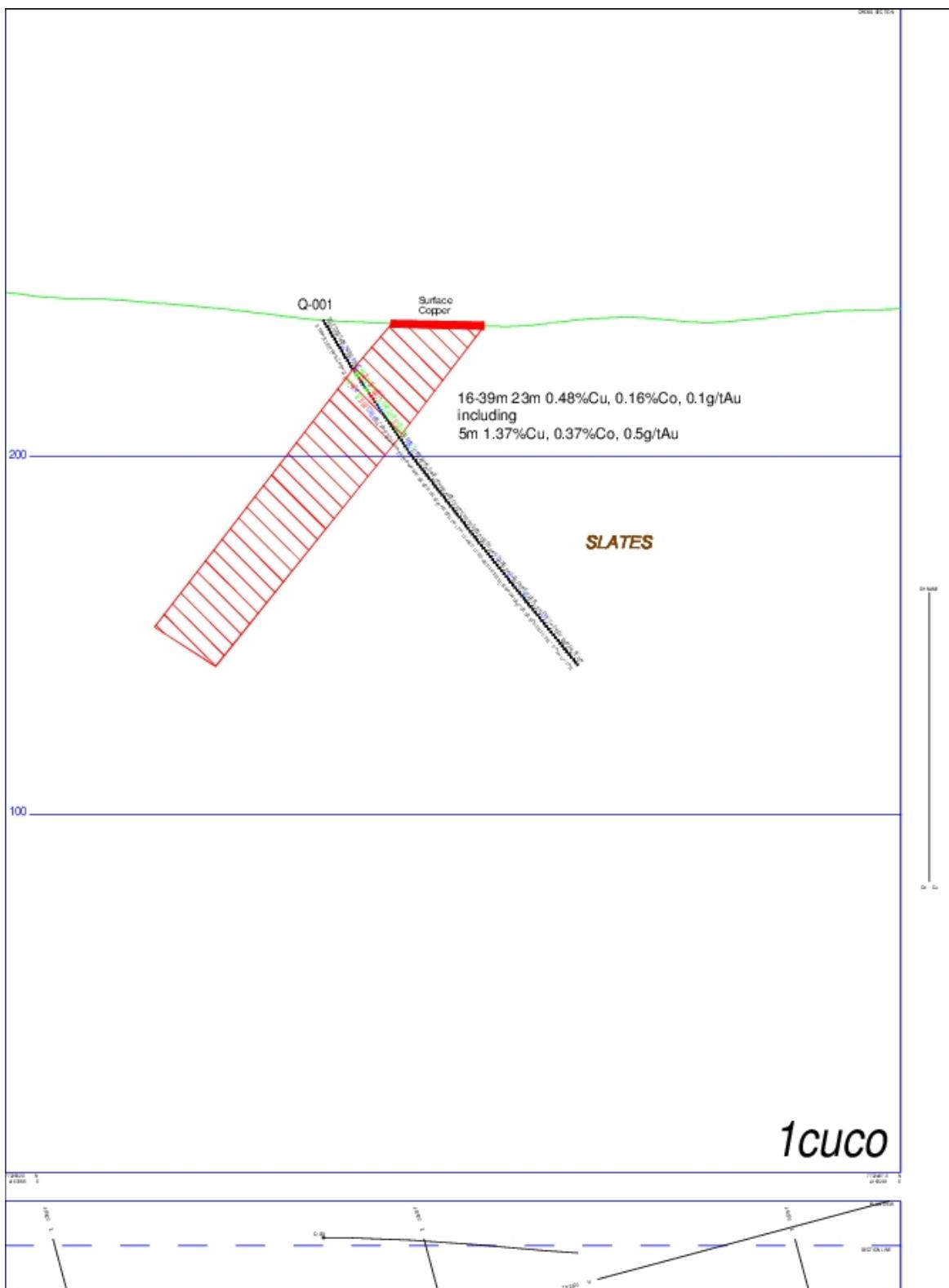


Figure 5. Cross section of Q-001 RC hole

## 6.2. RAB DRILLING

The RAB Drilling within EPM 14535 was performed as part of a more extensive Companion drilling programme and only included the westernmost parts of four drill traverses. Only two holes intersected weak copper indications, one being clearly mineralised with 1170ppm copper, and the results were spatially coincident with a small magnetic anomaly. Further infill soil and possibly RAB drilling is required to follow up the anomalies to infill 400 metre line spacing.

Results are presented below and in figures 6 and 7.

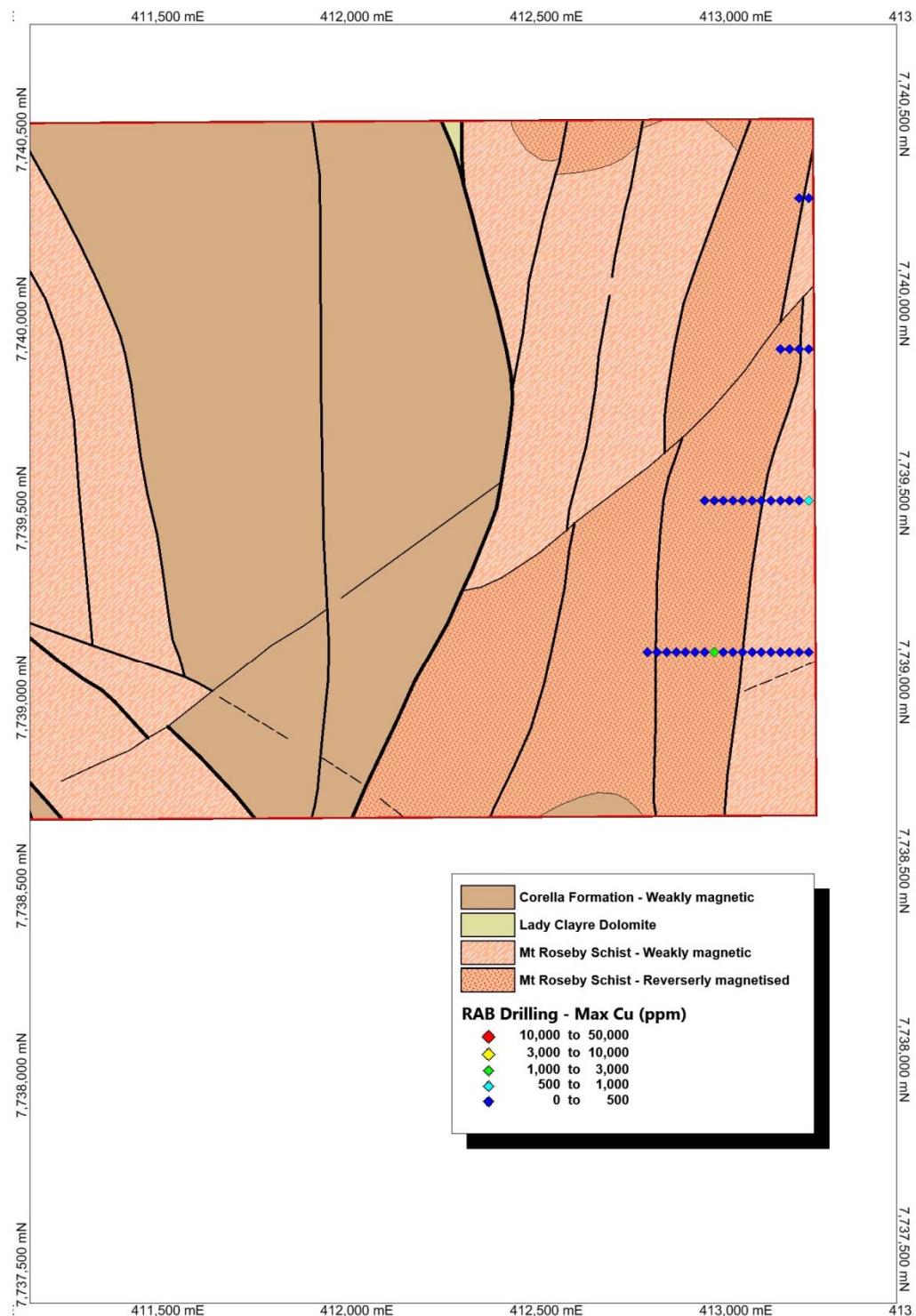


Figure 6. Companion RAB drilling results on top of interpreted geology. (Datum GDA94, MGA Zone 54)

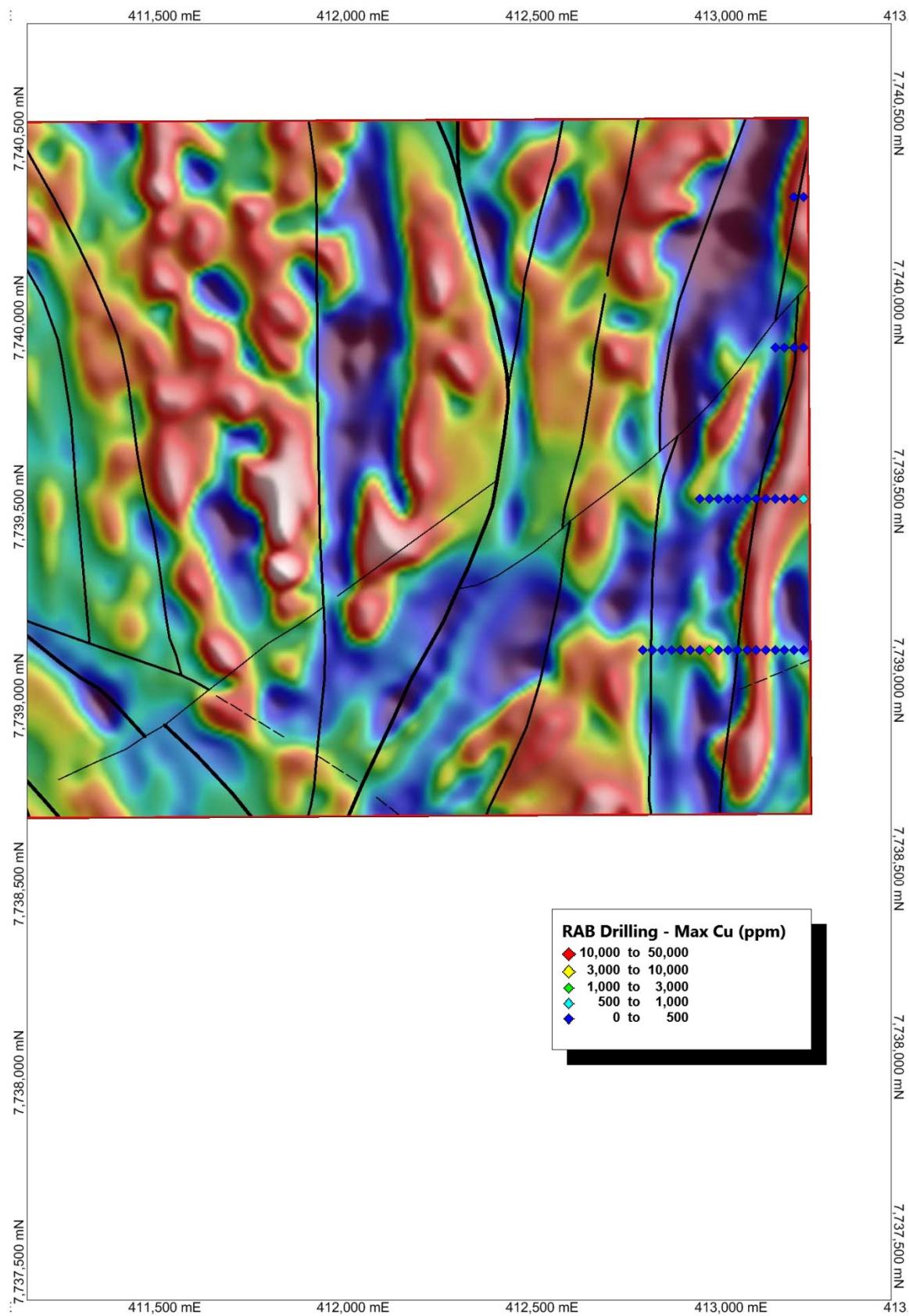


Figure 7. Companion RAB drilling results on top of magnetic image. (Datum GDA94, MGA Zone 54)

### 6.3. SOIL SAMPLING

Copper results show distinct anomalies corresponding with the Millenium mineralization SW and SE sides of the Mining Leases (Figures 8 and 9). Further data analysis is in progress.

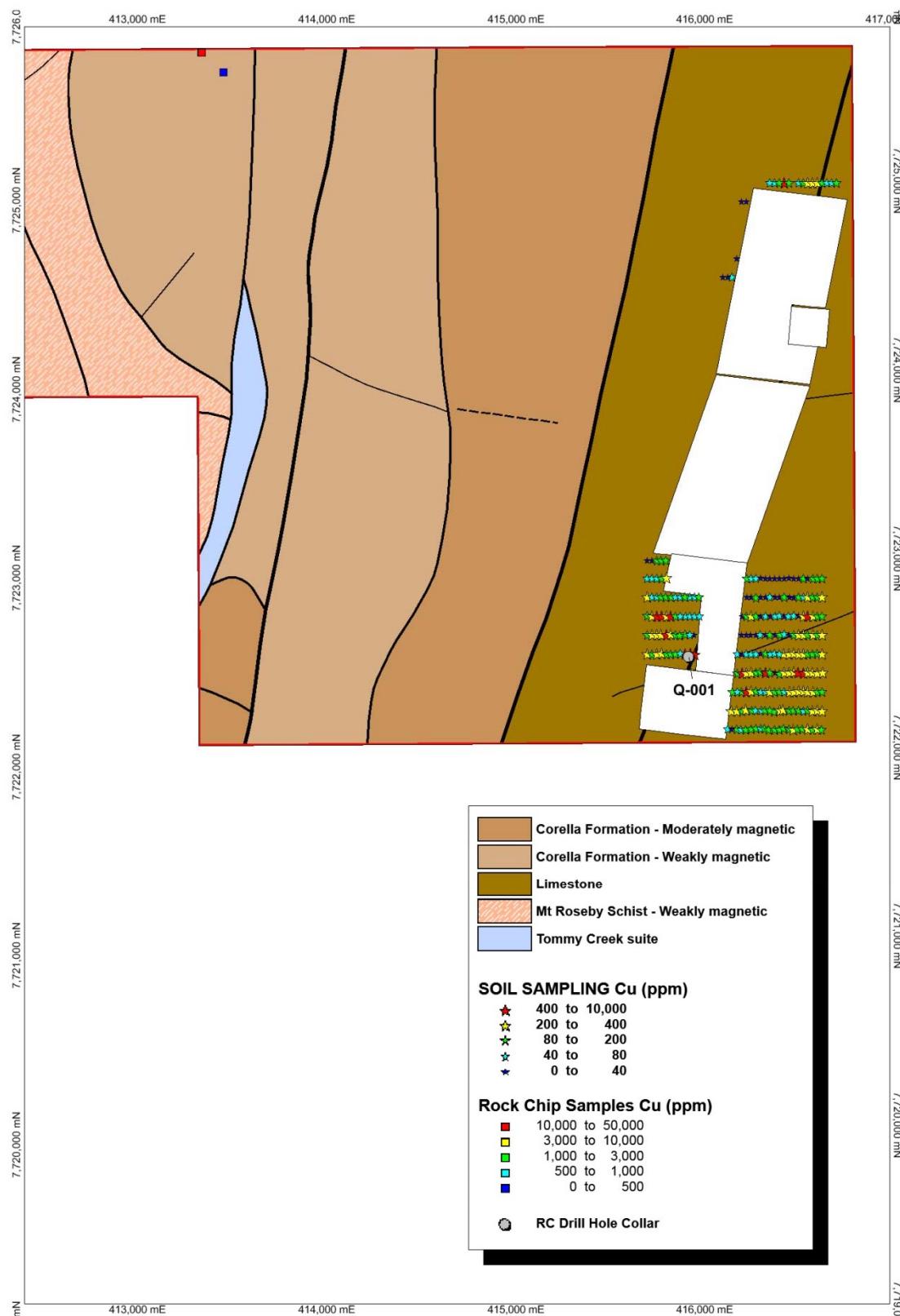


Figure 8. Millenium soil sampling and Hobby rock chip sampling results and locations on top of interpreted geology. (Datum GDA94, MGA Zone 54)

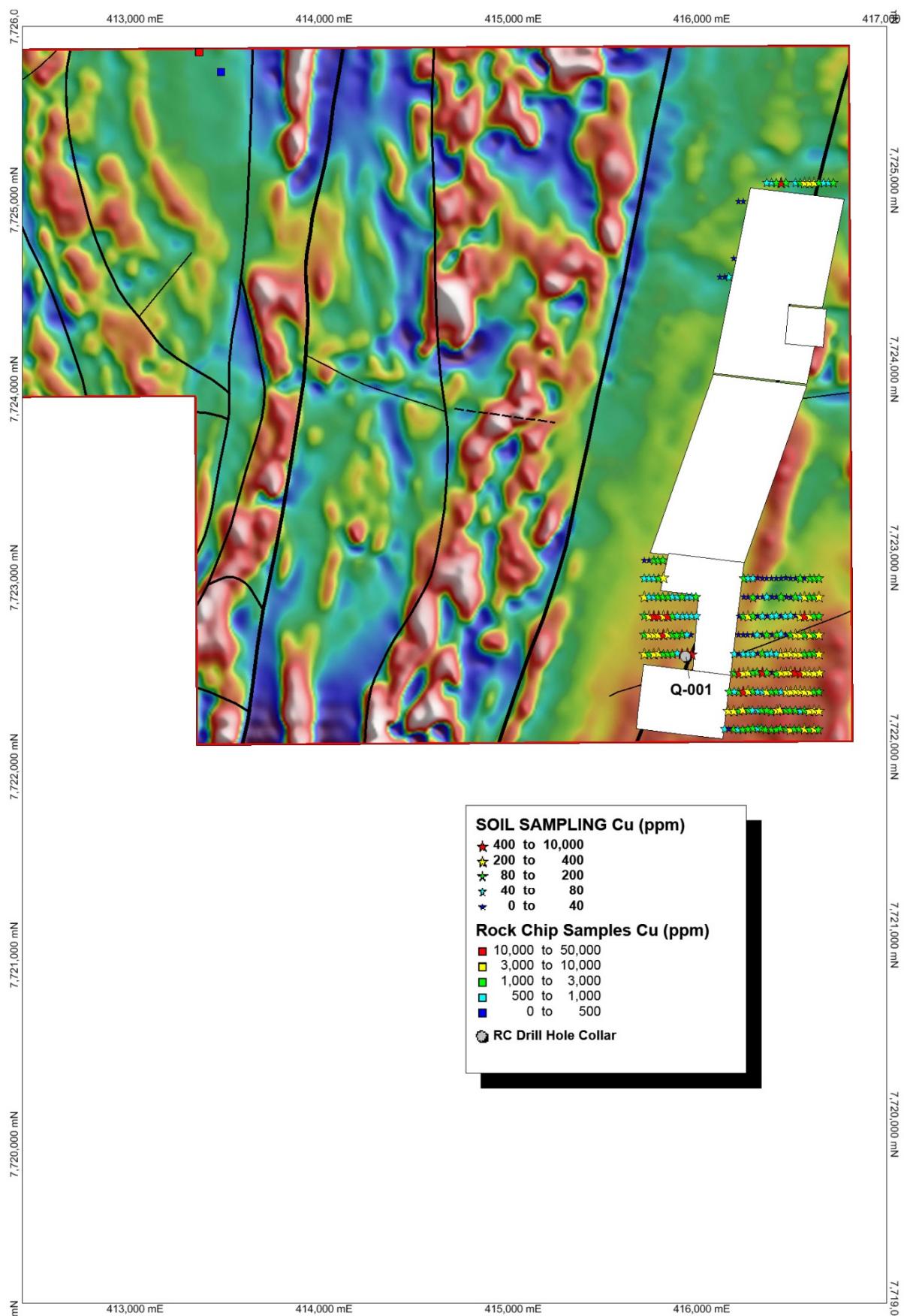


Figure 9. Millenium soil sampling and Hobby rock chip sampling results and locations on top of magnetic image. (Datum GDA94, MGA Zone 54)

#### 6.4. RECONNAISSANCE MAPPING AND ROCK CHIP SAMPLING

A total of three samples were collected from old workings at Hobby and adjacent areas. Samples were sent to be analysed at ALS laboratory in Townsville, QLD. Samples were assayed for : Ag, Al, As, Au, B, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Fe, Ga, Ge, Hf, Hg, In, K, La, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Rb, Re, S, Sb, Sc, Se, Sn, Sr, Ta, Te, Th, Ti, U, V, W, Y, Zn and Zr using aqua regia digestion followed by ICP-MS (method ME-MS41). Samples that returned over range Cu assays were re-assayed by ALS method Cu-OG46.

Two rock chip samples returned high grade copper results and clearly elevated gold grades (table 3.) Results and follow up work is being analysed and planned.

Table 3. Results of rock chip sampling at Hobby

PROSPECT	SampleID	GRID ID	NORTHING	EASTING	Cu (ppm)	Au (ppb)
HOBBY	AL0016192	MGA94_54	7725731	413295	3570	<200
HOBBY	AL0016193	MGA94_54	7725731	413298	47200	400
HOBBY	AL0016194	MGA94_54	7725628	413410	177000	700

#### 6.5. REGIONAL PROSPECTIVITY STUDY

An extensive prospectivity analysis, target generation and ranking was completed over the whole Roseby project area including EPM 14535.

Targets were ranked based on the abundance of:

- Known workings / occurrences
- Geochemical anomalism
- Geophysical anomalism
- Structural control
- Lithological control
- Amount of work performed

Over 20 targets were identified to be fully or partially within EPM 14535.

#### 7. CONCLUSIONS

The majority of the Targets generated in 2013 and from the geophysical and geological interpretation undertaken by Southern Geoscience Consultants have yet to be fully assessed. These targets will be assessed with a program of ground exploration activities including: RAB drilling, geological mapping, rock chip sampling, soil sampling and possibly ground geophysics.

#### 8. PROPOSED WORK

Work planned work for the reporting period 28 February 2014 to 27 February 2015 includes:

- Systematic geological mapping and sampling over priority targets.
- Surface geochemical and geophysical surveys over targets.
- Undertaking Cultural Heritage clearance surveys and landowner agreements where appropriate.
- RAB drill testing of targets as warranted.

9. REFERENCES

Ewert, B. (2011). Roseby Infill Tenement, EPM 14535, Annual Report for the Period 28 February 2010 to 27 February 2011. QDEX Company Report Number 68682.

Ewert, B. (2012). Roseby Infill Tenement, EPM 14535, Annual Report for the Period 28 February 2011 to 27 February 2012. QDEX Company Report Number 71387.

Carrello, F. (2013). Roseby Infill Tenement, EPM 14535, Annual Report for the Period 28 February 2012 to 27 February 2013. QDEX Company Report Number 76165.