MOUNT ISA MINES

A GLENCORE COMPANY

Technical Report
No. 3912

Exploration Permit for Minerals No 18179
'Rayners Bore', Queensland
Annual Report
For the Period Ended 18 January 2014

MIM RESOURCE DEVELOPMENT PTY LIMITED

TECHNICAL REPORT
No. 3912

TITLE:	EXPLORATION PERMIT FOR MINERALS No. 18179 'RAYNERS BORE', QUEENSLAND ANNUAL REPORT FOR THE PERIOD ENDED 18 JANUARY 2014
HOLDER:	RED METAL LIMITED
OPERATOR:	MIM RESOURCE DEVELOPMENT PTY LIMITED
1:250,000 SHEET:	SE54-14 'DOBBYN'
1:100,000 SHEET:	6959 'KAMILEROI'
INVESTIGATIONS CONDUCTED BY:	MIM RESOURCE DEVELOPMENT PTY LIMITED
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DATE:	JANUARY 2014
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SUMMARY

Aim of Project

Exploration Permit for Minerals (EPM) 18179 'Rayners Bore' was obtained to explore for iron-oxide copper-gold (IOCG) mineralisation within Proterozoic basement units of the Corella Formation (Cover Sequence 2).

Object of Report

The object of this report is to document exploration carried out on EPM 18179 Rayners Bore during the twelve month period ending 18 January 2014.

Location

EPM18179 Rayners Bore is located 160 km north of Cloncurry in northwest Queensland. It covers an approximate area of 15 km^2.

Tenure

EPM 18179 Rayners Bore was granted on January 19, 2011 over six (6) sub-blocks for a period of five years to Red Metal Limited (RDM).

A joint venture (JV) between RDM and Mount Isa Mines Limited (MIM – a Glencore Company) was signed in March 2011. Under the terms of the JV (RDMJV), MIM has the right to earn 51% of the seven (7) tenements that comprise the Corkwood JV by spending $5.5M over four years. EPM 18179 Rayners Bore is one of the seven tenements that comprise the RDMJV.

Precis

Work completed during the reporting period included the collection of 57 mobile metal ion (MMI) soil samples collected in April 2013, and a portion of a single Magneto-Telluric (MT) traverse line surveyed during June 2013.

Conclusions

EPM 18179 Rayners Bore covers an area of strong magnetic response within the Mount Isa Inlier. The area is interpreted to be prospective for iron-oxide copper-gold (IOCG) mineralisation.

Recommendations

Further work programmes including geochemical and geophysical surveys are planned for the RDMJV tenements (including EPM 18179) for 2014. MIM work plans include drill testing priority targets during the 2014 field season.

1. INTRODUCTION

Exploration Permit for Minerals (EPM) 18179 Rayners Bore currently comprises six sub-blocks and is located around 160km north of the township of Cloncurry in northwest Queensland. This tenement is one of seven included in the Corkwood Project Joint Venture (RDMJV) between Red Metal Limited (RDM) and Mount Isa Mines Limited (MIM).

RDM recognised an area of anomalism identified in a review of regional airborne magnetic data sets over the Mount Isa Inlier and subsequently applied for what is now EPM 18179 which was granted in January 2011. These magnetic features were interpreted to have potential for iron-oxide copper-gold (IOCG) style mineralisation, though prospective Proterozoic basement rocks are covered by younger sedimentary sequences with depth of cover ranging from 100-200 metres. Reviews by both RDM and MIM of available historic data and geophysical interpretations suggest EPM 18179 is highly prospective.

This report documents work carried out on EPM18179 for the twelve month period ending 18 January 2014. Note: all coordinates in this report are in AGD84 zone 54.

2. LOCATION AND ACCESS

The EPM 18179 covers approximately 15km² over six sub-blocks and is located approximately 160km north of the township of Cloncurry. Sealed roads and rail lines link Cloncurry with Mount Isa to the west and Townsville to the east. The tenement has generally low relief, with the dominant current land use being cattle grazing. The sealed Wills Development Road is located 15km to the east of this EPM while access within the project area is via station tracks.

The tenement is located within the 1:250,000 sheet of Dobbyn (SE54-14) and on the 1:100,000 sheet of Kamileroi (6959). Refer Drawing No. 63082 for tenement location and sub-block details.

3. TENURE

EPM 18179 was granted on January 19, 2011 for a period of five years over six sub-blocks. The tenement occurs within Kalkadoon People #4 native title determination (QUD579/2005).

A joint venture (JV) between Red Metal Limited and Mount Isa Mines Limited (MIM – a Glencore Company – with work to be done MIM Resource Development Pty Limited - MIMRD) was signed in March, 2011. Under the terms of the JV, MIM has the right to earn 51% of the seven (7) tenements that comprise the Corkwood JV by spending $5.5M over four years. EPM 18179 is one of the seven tenements that comprise this Corkwood JV.

Details of EPM 18179 are shown below. The tenement is comprised of six (6) sub-blocks. Tenement location is shown in Drawing No. 63082.

BIM	Block	Sub-Blocks
NORM	2834	f, g, h, j, n, s
Total	**6**	

4. PREVIOUS EXPLORATION

A review of previous exploration indicates the project area has been held by several companies. The most recent and regionally extensive exploration was carried out by BHP as part of their regional Boomarra Project from 1991 to 2001. Earlier work was completed by CRAE and North Limited.

Within the area of immediately adjacent to EPM 18179, BHP completed four diamond holes. The holes intersected a range of rock types, from granite to amphibolite to psammitic schist. Strong magnetite ± haematite + albite alteration is well developed throughout. No significant assay results were reported. Highest Cu assay (733ppm) was associated with a zone of pervasive chlorite/haematite/albite altered biotite schist. In addition to the BHP work, two other holes have been drilled, one by North, and one by CRAE. No significant assay results were reported. Other holes drilled by North Limited adjacent to EPM 18179 have reported significant zones of "metasomatic magnetite alteration", suggesting an extensive alteration system is present in the region. No historic drilling is located within EPM 18179.

The area was also included in the government sponsored NWQMP Study, released in December 2000. The study identified numerous targets in the North West Queensland Mineral Province with potential for Cu, Pb, Zn, Ag & Au. The nearby Pelican Dam area (within the nearby RDMJV tenement EPM 13376 Pelican Dam) was designated as being prospective for Fe-oxide associated Cu-Au mineralisation, with the target labelled CGM93 (Cu-Au).

5. REGIONAL GEOLOGY

EPM 18179 is underlain by a sequence of Mesozoic and Cainozoic sediments belonging to the Eromanga and Carpentaria Basins.

The prospective geology in the area comprise the buried Proterozoic basement sequences, which are host to significant Cu ± Au mineralisation in other parts of the Mt Isa Inlier. No areas of Proterozoic outcrop exist within the project area. Distribution of rock types is based on the NWQMP study, which interprets that the area is dominantly underlain by Proterozoic sediments belonging to the Corella Formation (1742Ma to 1756Ma) from the Mary Kathleen Group of Cover Sequence 2. The Corella Formation is dominated by carbonate sequences, varying from very fine to fine grained calcareous to dolomitic siltstone to fine arenite. The western area of the tenement is currently interpreted to be

underlain by volcanics of the Argylla Formation (Pea), Eastern Creek Volcanics (He), 1757-1800Ma with some pre-Barramundi metamorphic basement >1800Ma.

The sediments occur around the margin of a Wonga-Burstall aged intrusive. Regionally the sequences occur within the upper plate of the Wonga detachment fault zone in a region of N-trending faults (which are interpreted as early basement faults, with multiple stages of reactivation, including Wonga and D3 events). The anomalies are covered by approximately 100m to 200m of younger cover.

The target in the project area is large tonnage breccia or replacement style magnetite or hematite associated Cu-Au mineralisation within strongly altered Cover Sequence 2 sediments.

6. WORK COMPLETED DURING THE REPORTING PERIOD

6.1 Geochemistry

Mobile metal ion (MMI) soil sampling can be an appropriate technique to identify mineralisation through moderate to thick cover. During the dry season of 2013, MIM organised collection of 57 MMI soil samples (500m line spacing; 200m sample spacing) within EPM 18179 (sampling programme was contracted to Map To Mine Pty Ltd) with results presented in Appendix 1. Samples were sent to SGS Minerals in Perth, WA (code MMI-M).

Results indicate that a number of typical IOCG (deposit examples of this type include the nearby Ernest Henry Mine) style metals including copper and gold (Figures 1 and 2 respectively) show some co-incident anomalism at low levels. Assessment of these results is ongoing.

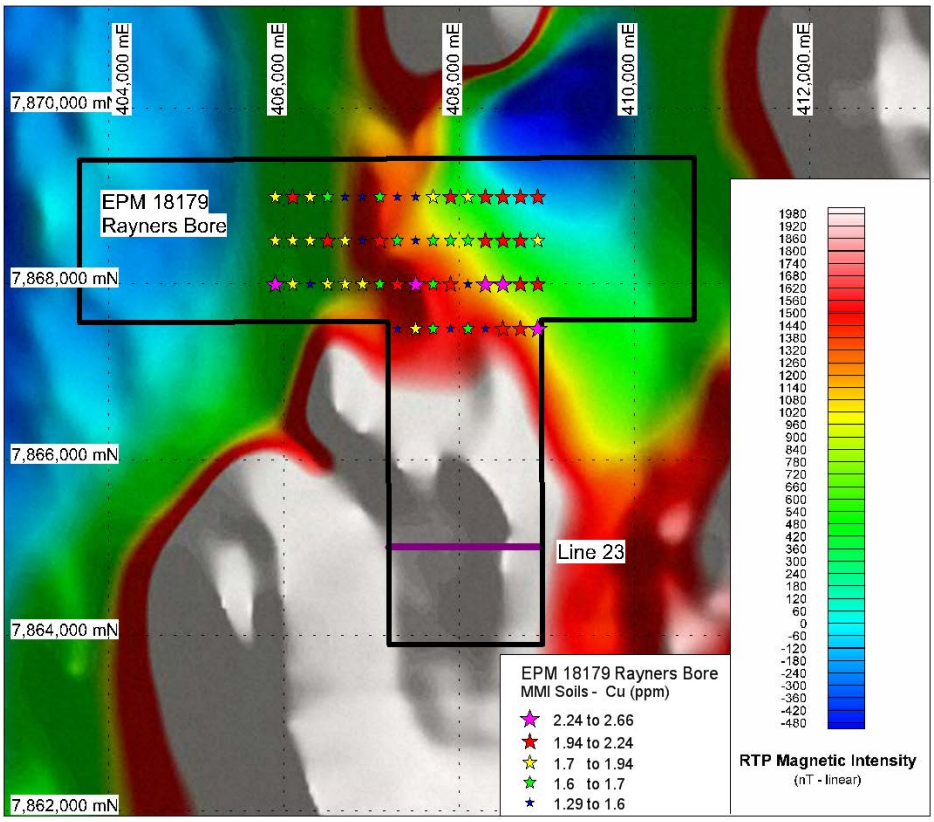

Figure 1: MMI soil geochemistry for Copper at EPM 18179 Rayners Bore sorted via 'natural break' on an RTP-linear magnetic image. The portion of MT line 23 within the tenement is shown in purple.

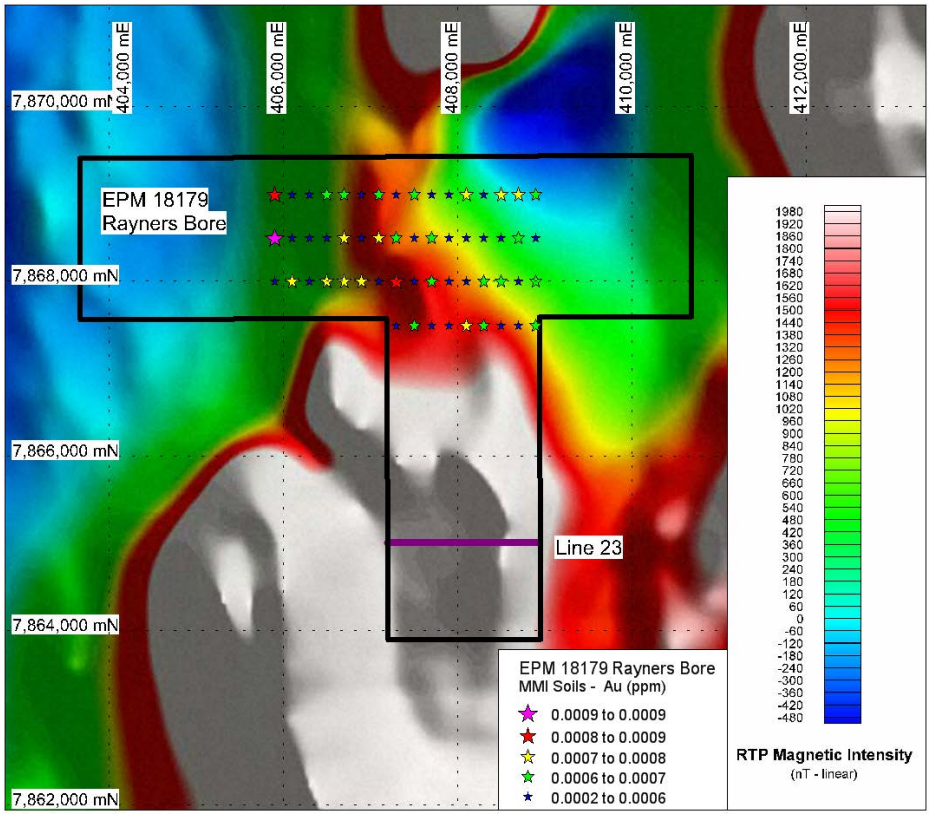

Figure 2: MMI soil geochemistry for Gold at EPM 18179 Rayners Bore sorted via 'natural break' on an RTP-linear magnetic image. The portion of MT line 23 within the tenement is shown in purple.

6.2 Geophysics

A contract crew from Quantec Geoscience undertook detailed Magneto-Telluric (MT) surveying along a series of individual traverses during May and June 2013 within the RDMJV tenure. Their work included a portion of one line within EPM 18179 (location shown in Figures 1 and 2).

The aim of the MT survey was the mapping of the geo-electrical properties of basement beneath a thick electrically conductive cover sequence, with particular emphasis on the identification of major structures and conductive (low resistivity) mineralisation associated with magnetite bodies.

Survey parameters comprised MT stations at 250 intervals; survey position and extent within EPM18179 Rayners Bore are summarised in Table 1. Finalised data processed in Canada and Mount Isa by Quantec as 2D inversions using a range of processing options is presented within this report (Appendix 2) as data files. An image of the finalised MUH4 inversion is also presented for traverse L23 in Figure 3.

The 2013 MT surveys were following-on from previous work completed by MIM at this tenement. The 2013 MT survey has shown a thick electrically conductive cover sequence – and no significant low resistivity features observed in the basement.

Line #	Northing AGD84 Z54	Easting AGD84 Z54	No of Stations	Line Length (metres)
23	7865000mN	407200-408950mE	7	1750

Table1. Line Location Details – EPM 18179 Rayners Bore MT Survey

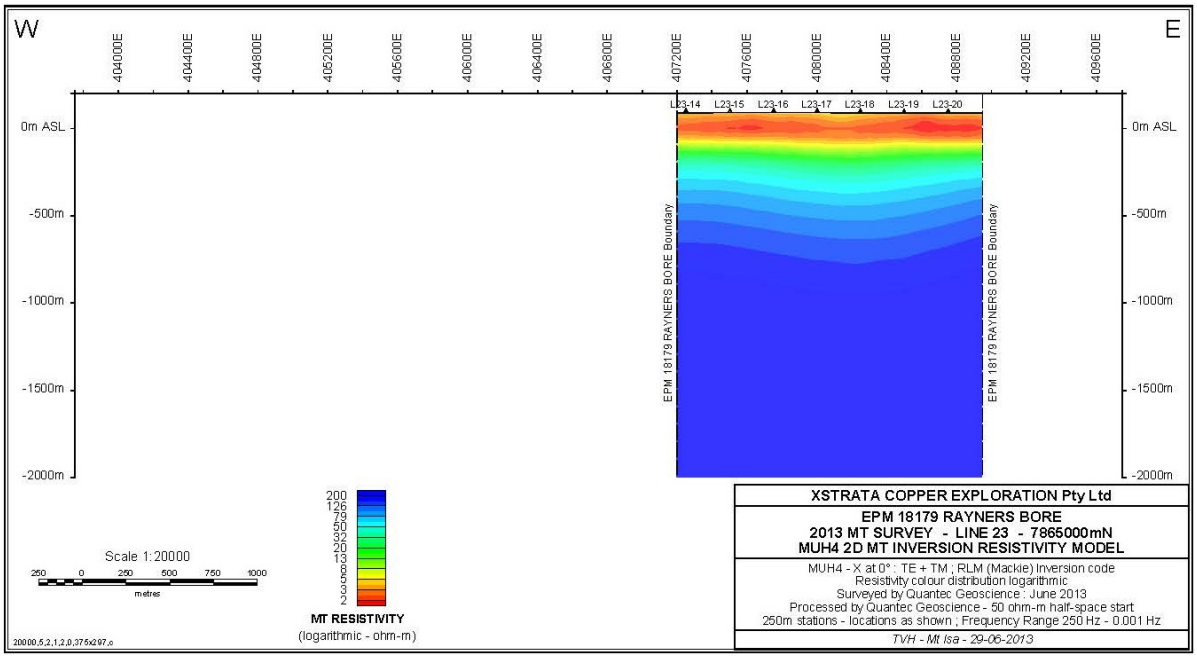

Figure 3: Section Line 7,865,000N (L23) Showing the MUH4 2D MT Inversion Resistivity Model at EPM 18179 Rayners Bore.

7. DISCUSSION

Assessment of results from the MMI soil programme and MT surveys is ongoing across the RDMJV tenure, with subsequent target generation and future work planning in progress.

Work by MIM in nearby RDMJV tenure has shown that the MT geophysical survey technique and MMI soil geochemistry can work well in this geological setting.

8. CONCLUSIONS

MIM entered into a Joint Venture with RDM as it was interpreted that potential for discovery exists within the RDMJV tenure. The aims of the MT survey were the mapping of the geo-electrical properties of basement beneath a thick electrically conductive cover sequence, with particular emphasis on the identification of major structures and conductive mineralisation associated with magnetite bodies. This, combined with MMI soil sampling to map geochemically anomalous zones sourced from economic copper sulphides, has been carried out to help produce targets for further exploration.

9. RECOMMENDATIONS

Target generation is ongoing; prospects will be assessed and ranked in the coming months, with priority targets within the RDMJV tenure to be drill tested in the 2014 field season. EPM 18179 Rayners Bore is considered prospective and favourably located in the RDMJV for future work.

10. REFERENCES

Male, M 2012. Exploration Permit for Minerals No 18179 Rayners Bore, Queensland Annual Report for the Period Ended 18 January 2012. *Report by Xstrata Copper Exploration Pty Ltd.*

Male MS and Harvey TV, 2012. Exploration Permit for Minerals No 13380 Corkwood, Queensland Annual Report for the Period Ended 27 June 2012. *Report by Xstrata Copper Exploration Pty Ltd.*

Miller, JR, Harvey, TV and Male, MS 2013. Exploration Permit for Minerals No 18179 Rayners Bore, Queensland Annual Report for the Period Ended 18 January 2013. *Report by Xstrata Copper Exploration Pty Ltd.*

DRAWINGS

APPENDICES