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# **ANNUAL REPORT**

(INCLUDING A BRIDGING REPORT COMPONENT)

# TO COVER EXPLORATION ACTIVITIES OVER MCC's 907 – 910, 912, 913 & 1065 01 JANUARY 2001 – 31 December 2011

MCC's 907 – 910, 912,913 &1065 Marathon Group

# LICENSEE: GIANTS REEF EXPLORATION PTY LTD

A.C.N. 009 200 346

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MAY 2012

DISTRIBUTION:	
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MAP SHEETS:	
TENNANT CREEK	SE53-14
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## 1. SUMMARY

MCC's 907 – 910, 912, 913 & 1065, Mt Samuel Group, were acquired by Giants Reef Exploration Pty Ltd (Giants Reef) to search for Tennant Creek style iron oxide copper-gold deposits.

This Annual (& bridging) report records the exploration work done on these group of tenure during the term 01 January 2001 to 31 December 2011.

As detailed below Emmerson will continue to conduct exploration in the Gecko Area to further develop the application, understanding and execution of targeting HeliTEM and/or VRMI anomalies. Emmerson will continue to conduct exploration in the Gecko Area to further develop the application, understanding and execution of targeting HeliTEM and/or VRMI anomalies. With continuing good results the Marathon Area would be a high ranked area for the next round of HeliTEM surveys, with the aim of identifying targets for further geophysical surveys, such as Induced Polarisation (IP) and then drill testing.

# 2. INTRODUCTION

MCC's 907 – 910, 912, 913 & 1065, Marathon Group, were acquired by Giants Reef to search for Tennant Creek style iron oxide copper-gold deposits.

This Annual (& bridging) report records the exploration work done on these group of tenure during the term 01 January 2001 to 31 December 2011.

# 3. LOCATION

MCC's 907 – 910, 912, 913 & 1065 are tenure located within Exploration Licence (EL) 26594 & 28776 straddling the Stuart Highway, 38km north of the Tennant Creek Township.

Access to the group of tenure is gained north via the Stuart Highway then west and east via a series of 4WD tracks.

Figure 1 shows the location of the Marathon Group tenure with respect to the Tennant Creek Township.

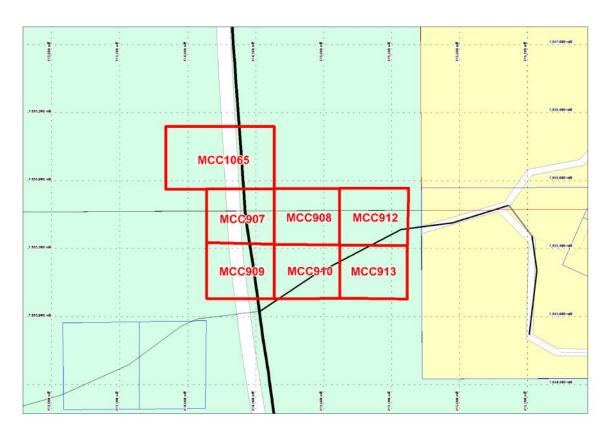


Figure 1: Location of the Marathon Group

## 4. TENURE

Tenure details for the Marathon Group is as follows:

Tenure	License Holder	Blocks & part- blocks	Area (ha)	Expiry Date
MCC 907	Giants Reef Exploration Pty Ltd		20	31 <sup>st</sup> December 2011
MCC 908	Giants Reef Exploration Pty Ltd		20	31 <sup>st</sup> December 2011
MCC 909	Giants Reef Exploration Pty Ltd		20	31 <sup>st</sup> December 2011
MCC 910	Giants Reef Exploration Pty Ltd		20	31 <sup>st</sup> December 2011
MCC 912	Giants Reef Exploration Pty Ltd		20	31 <sup>st</sup> December 2011
MCC 913	Giants Reef Exploration Pty Ltd		20	31 <sup>st</sup> December 2011
MCC 1065	Giants Reef Exploration Pty Ltd		40	1 <sup>st</sup> January 2012

MCC's 907 – 910, 912, 913 & 1065 lie within Perpetual Pastoral Lease, NT Parcel 00408, Phillip Creek Station.

Figure 1 shows the tenure area as it was during the reporting term.

## 5. GEOLOGY

# 5.1 Regional Geology

The reader is referred to AuslMM Monograph 14 (Geology of the Mineral Deposits of Australia and Papua New Guinea), Volume 1, pp. 829-861, to gain an introduction to the regional geology and styles of gold-copper mineralisation of the area.

In 1995 the Northern Territory Geological Survey released a geological map and explanatory notes for the Tennant Creek 1:100,000 sheet, which covers the area of the license.

The rocks of the Warramunga Formation host most of the ore bodies in the region and underlie the Exploration License.

#### 5.2 Local Geology

The tenure covers an area of intermittent outcrops.

The geology includes areas largely covered by the Tennant Creek drainage system and comprises Cainozoic alluvium and colluvium. The cover sediments include alluvial deposits in active channels and on floodplains, and sheet /dune sand and sandy soil on high floodplain terraces.

In 1995 the Northern Territory Geological Survey released geological maps and explanatory notes for the Tennant Creek 1:250,000 sheet, and the Tennant Creek (5758) 1:100 000 sheets, which covers the area of the tenure.

#### 6. PREVIOUS EXPLORATION

## MCC's 907 - 910, 912, 913 & 1065

Marathon	414 600E	7 864 290N
Helos	414 320E	7 866 020N
Troy	415 050E	7 865 570N

## Exploration pre-Emmerson (up to 01 August 2006)

Geophysical models were created using previous downhole magnetometry and aeromagnetic data which was subsequently loaded into Micromine (1998 – 1999).

Identification (but no tested) of the Delphi Magnetic Target – 415600mE 7865250mN (1999).

One Diamond drill hole TYRD-003 was drilled by Giants Reef to a final depth of 591m. All relevant data, that could be sourced, accompanies this report, the assay data is still outstanding and will be provided once it has been located.

Further work completed previous to the report period is outlined in; Fabray, J.F., (1997): Mineral Claim 1065 Report to Accompany Renewal Application, September 1993 – December 1997.

## 7. WORK DONE DURING THE REPORT PERIOD

# MCC's 907 - 910, 912, 913 & 1065

Marathon	414 600E	7 864 290N
Helos	414 320E	7 866 020N
Troy	415 050E	7 865 570N

# Exploration post-Emmerson (after 01 August 2006)

Emmerson engaged consultant geologist Belinda Smith who translated and validated historical drilling and loaded data into a MicroMine project.

During 2010 Emmerson and contract geophysical consultants, Spinifex Geophysics, further developed a processing technology, Vector Residual Magnetic Intensity (VRMI) aimed at existing magnetic data from Emmerson's Tennant Creek tenure package, figures 2 (pre-VRMI) & 3 (VRMI) represent the success of the VRMI technology. Immediate identification of highly prospective VRMI targets reprioritised Emmerson's target matrix, the Red Bluff Area in Emmerson's Western Project Area became the No. 1 priority area for exploration activities. Drilling during 2010 at Red Bluff confirmed the VRMI technology with significant intercepts of thick ironstones, although assay results were mixed, the successful ironstone intercepts were evidence to support the development and use of VRMI technology. The VRMI preliminary assessment of MCC's 907 – 910, 912, 913 & 1065 have identified subdued VRMI responses, refer to figure 4, initially thought to downgrade the prospectivity, but later this conclusion was abandoned due to results from HeliTEM as described below.

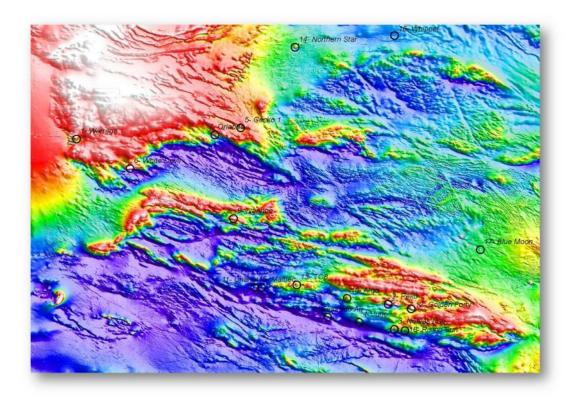


Figure 2: Conventional Magnetics

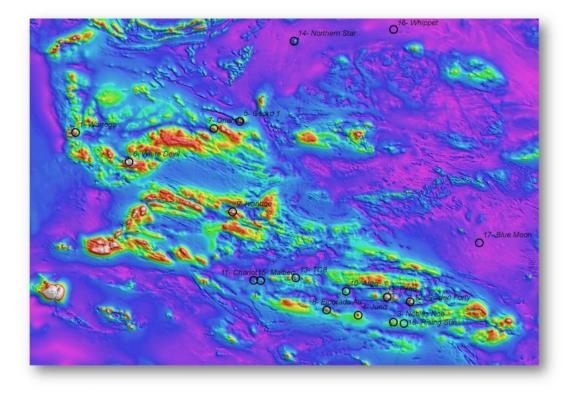


Figure 3: VRMI

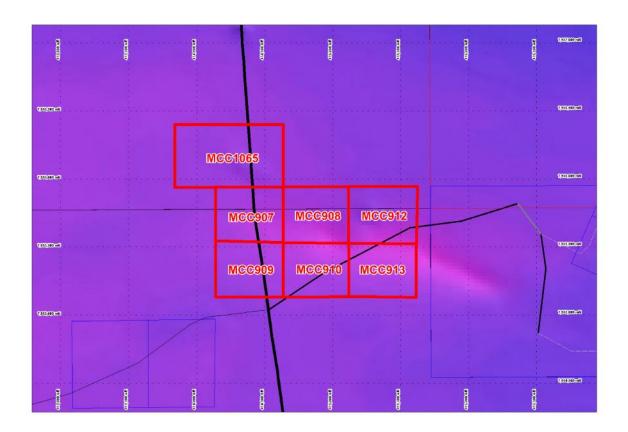


Figure 4: MCC's 907 - 910, 912, 913 & 1065 vs. VRMI

Further to the application of VRMI Emmerson conducted a geophysical survey called HeliTEM. Heli-TEM is a helicopter mounted system capable of measuring the conductivity of the rocks to significant depth and utilises the world's most powerful airborne, timedomain electromagnetic system. A breakthrough during late 2010 and early 2011 has been the recognition that drill core from the mineralised portions of Tennant Creeks historic deposits is conductive up to 80times the background levels. Emmerson completed the first round of "Proof of Concept' drilling of identified HeliTEM targets in the Gecko and Orlando Areas and resulted in success with the several intersections of mineralisation, gold and copper rich. Further drilling will be conducted in this area to further define the economic potential and further develop and refine the application of HeliTEM.

The most significant factor in the application of HeliTEM has been the Goanna and Monitor discoveries (in the Gecko Area) as it occurs in subdued magnetic signatures, therefore confirming that magnetic anomalies are not the only potential hosts for economic mineralisation in the Tennant Creek Field. Figure 5 below shows the magnetic image (VRMI) of the Gecko Corridor, it can be seen that the drilling at both Monitor and Goanna has focused on the 'blue' area (magnetic low), compare this with the HeliTEM image in figure 6 and it can be seen that the drilling has focused on a HeliTEM anomaly not seen in the magnetics, this has vast implications for exploration in the rest of the field, in particular areas of subdued magnetics, therefore MCC's 907 – 910, 912, 913 & 1065.

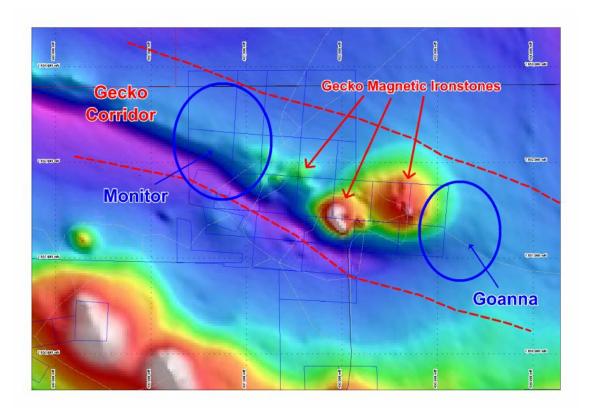


Figure 5: Gecko Corridor vs. VRMI

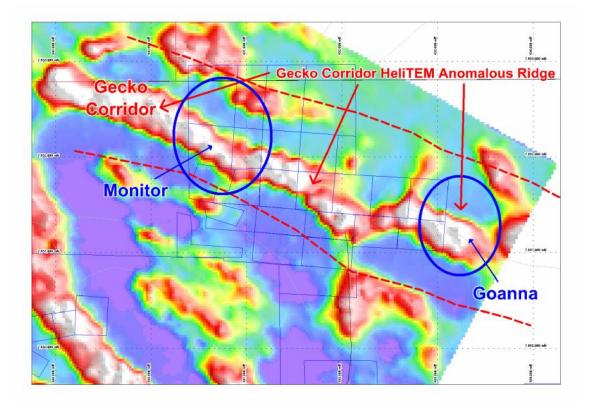


Figure 6: Gecko Corridor vs. HeliTEM (depth Slice at 350m below surface) EMMERSON RESOURCES LTD

## 8. REHABILITATION

Exploration within the Marathon Group consisted of non-invasive geophysical surveys and detailed desktop studies. As no on ground exploration was conducted no rehabilitation has been completed.

Any future exploration activity rehabilitation will be completed as per the guidelines and commitments made under the Northern Project Area (NPA) Mining Management Plan (MMP) Authorisation 0467-03.

# 9. CONCLUSIONS

As detailed above Emmerson will continue to conduct exploration in the Gecko Area to further develop the application, understanding and execution of targeting HeliTEM and/or VRMI anomalies. With the encouraging results from work in the Gecko Area the Marathon Area would become a prime candidate for the next round of HeliTEM surveys with the aim of generating targets for further geophysical assessment and then drill testing.