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## EL 23437 - CASTLEMAINE

# Year 10 Annual Report

## For the period

## 30<sup>th</sup> December 2012 to 29<sup>th</sup> December 2013

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5<sup>th</sup> February 2014

Batchelor & Reynolds River 1:100,000 sheets MGA94 Zone 52

Target Minerals are Cu, Pb, Zn, Ag, Co, Ni and U

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#### INTRODUCTION

Compass Resources is exploring in the Batchelor area for oxide and sulphide basemetal deposits and uranium. During the reporting period, Compass received the data from a detailed airborne FALCON gravity survey (and associated LIDAR survey) covering all tenements (including EL 23437) in the Batchelor district.

#### **TENEMENT DETAILS**

An application for parts of 4 blocks (5.75 square kilometres) was made on 12 November, 2001. It was granted as EL 23437, effective 30 December, 2003. Ownership was Compass Resources NL 90% and Guardian Resources Pty. Ltd. 10%, with Compass being the operator. However, as the result of a deal completed in 2006, ownership is now effectively 100% Compass, as it now owns Guardian Resources Pty Ltd.

The tenement is located on the Pine Creek 1:250,000 map sheet (5270), Reynolds River and Batchelor 1:100,000 map sheets, and both the Gould 1:20,000 topographic map (5071-11) and the Finniss Valley 1:20,000 topographic map (5071-44).

#### ACCESS

The area is located about 3km immediately west of the town of Batchelor. Access to the area is by following the Meneling (abattoir) road west from the town of Batchelor. It is also possible to reach the area from the northwest, via the unsealed road to the old Rum Jungle Creek South mine, thence south on dirt roads from the old mine. Minor tracks exist in the tenement.

#### **GEOLOGICAL SETTING**

This tenement is located approximately three kilometres west of Batchelor on the northern side of the Archaean Waterhouse complex, covering the basal sedimentary sequence, including the Namoona Group and the Mt. Partridge Group. The presence of large areas of brecciated ferruginous rocks (haematite quartz breccias or HQB) occurs as a major ridge on the northern side of the tenement and extends to the northwest as a major topographic feature.

The most recent published data of this area is that of Lally et al 2002 (Rum Jungle 1:100,000 Mineral Field Map) and Lally and Bajwah 2006 (Uranium Deposits of the Northern Territory).

### PREVIOUS EXPLORATION

During the early 1950s, a major portion of the exploration in this area was conducted by the BMR as part of a regional programme aimed at locating uranium deposits. They also evaluated iron rich breccia (HQB) areas at "Castlemaine" for their phosphorous content. Following the discovery of the Rum Jungle Creek uranium deposit only 1km to the north of the current EL, Territory Enterprises Pty Ltd (TEP) was responsible for most of the exploration from that time on. TEP drilled a large number of diamond drill holes, mostly as fences of vertical holes. Several of these holes record copper and lead anomalism within the current EL and require serious follow up. In the period 1979 to 1984, Uranerz undertook a large exploration programme in the Batchelor area, including EL 1618 over the western portion of the present tenement.

Portions of the grid used by Uranerz still exits in some areas. Aircore drilling of 44 holes by Uranerz has helped define the sedimentary sequence from the basal conglomerates through to the Whites Formation. A portion of this sequence has been logged as amphibolite where dolomite was expected.

The first years work involved the acquiring of and familiarisation with the existing recorded exploration results. The locations and depths of the previous diamond and aircore drilling programmes within the tenement were compiled into an Excel format for use in future data compilations.

Field visits were made to the area, to locate access tracks, old costeans and some old drill locations. They confirmed that the HQB in this area is of the same nature to that located in the Whites to Dysons part of the Embayment.

During the second year, compilation of available exploration data into GIS format commenced. One reverse circulation drill hole (05C01) was completed to a depth of 108 metres. This hole was in Whites Formation black shales, having failed to reach the target contact Coomalie Dolomite. Despite not reaching the target contact the results from the 2005 RC drill hole were sufficiently encouraging to plan additional drilling. During 2007, a single 301 metre diamond drill hole was completed and again was drilled entirely within the Whites Formation without reaching the target contact. The contact position must be displaced by significant folding or faulting and this will require further drilling to resolve. In 2007 the tenement was also covered by new aerial photography.

In 2008-10 a comprehensive database of all historical drilling was compiled for the Rum Jungle Mineral Field and numerous historical maps were geo-referenced into ARCveiw. Currently, over 5000+ drill holes for 350 000+m has been entered into a validated database (DataShed). Field work comprised reconnaissance mapping to better understand the structural controls on mineralisation.

One of the prime benefits of compiling so much historical exploration data is that it generates a better understanding of both the regional geology as well detailed geology of individual prospects. At Rum Jungle this has resulted in a complete re-think of the timing and controls to mineralisation.

Based on the review of the historical exploration data there are two distinct primary mineralisation events at Rum Jungle:

(a) Lower Proterozoic stratiform base metal event (Browns, Area 55, possibly Mt Fitch sulphides)

(b) Mid Proterozoic structurally controlled uranium-gold-platinoid-base metal event (all other prospects).

The Mid Proterozoic event is associated with a series of stacked, essentially bedding parallel thrust surfaces. These surfaces are characterised by extensive zones of brecciation and variable but often intense hydrothermal alteration. Alteration includes silicification, haematite dusting, specular haematite, apatite, chlorite, disseminated pyrite and formation of magnesite. In EL 23437 these breccia zones are best expressed as the large ridges of HQB. Sills and non-concordant bodies of Zamu dolerite intrude along the thrust sheets and these are also variably altered and provide some age constraints on the structural and mineralising events.

The recognition of a major NNW trending structural corridor approximately 2km wide consisting of HQB (hematite quartz breccia) and strongly deformed country rocks significantly increased the prospectivity of the tenement.

In 2010/11 the tenement was flown with helicopter borne detailed aeromagnetics and EM (part of a survey covering all Compass tenements in the Batchelor district). Flight lines within EL 23437 were E-W at 150m spacing with a nominal terrain clearance of 35m. N-S tie-lines were flown at 1km intervals. Approximately 40 line kilometres of survey were completed within EL 23437.

In late December 2012 the tenement was flown with a detailed FALCON gravity survey and an associated LIDAR survey.

#### WORK COMPLETED IN YEAR 10

Exploration within the Batchelor district continued to focus on obtaining quality geophysical coverage. As a consequence all tenements (including EL 23437) were flown with a detailed FALCON gravity survey and an associated LIDAR survey in late December 2012 (flying completed on 27<sup>th</sup> December 2012 with 33.5 line km in EL23437).

The survey data was received by the Compass consultant geophysicist in March 2013 with the total survey supplied to the department in June 2013.

Final payments for flying and processing the FALCON gravity survey were completed and a review of the multiple geophysical datasets undertaken. An exploration program involving ground IP traverses to accurately define drilling targets was formulated but not implemented before the onset of the wet season.

#### PLANS FOR WORK IN YEAR 11

Once the processing and modelling of the detailed FALCON gravity survey is completed it will be integrated with the recently acquired helicopter borne AEM and magnetics surveys. Targets identified from the multi-layered geophysical data will be checked against the extensive historical data compilation to identify and rank targets for further testing by IP traverses.

Expected expenditure is anticipated to exceed \$20,000.

### CONCLUSIONS AND RECOMMENDATIONS

The tenement has now been covered by a full suite of detailed geophysical surveys (aeromagnetics and radiometrics, airborne EM and Falcon Gravity. These will be integrated to select targets for further exploration. The compilation of historical drilling within the tenement will be used to help rank the targets identified through the extensive geophysical surveys for ground testing with IP.

The tenement covers a zone of strong structural deformation related to thrust faulting, hosts anomalous basemetal and U values and is adjacent to the historical RJCS uranium pit.

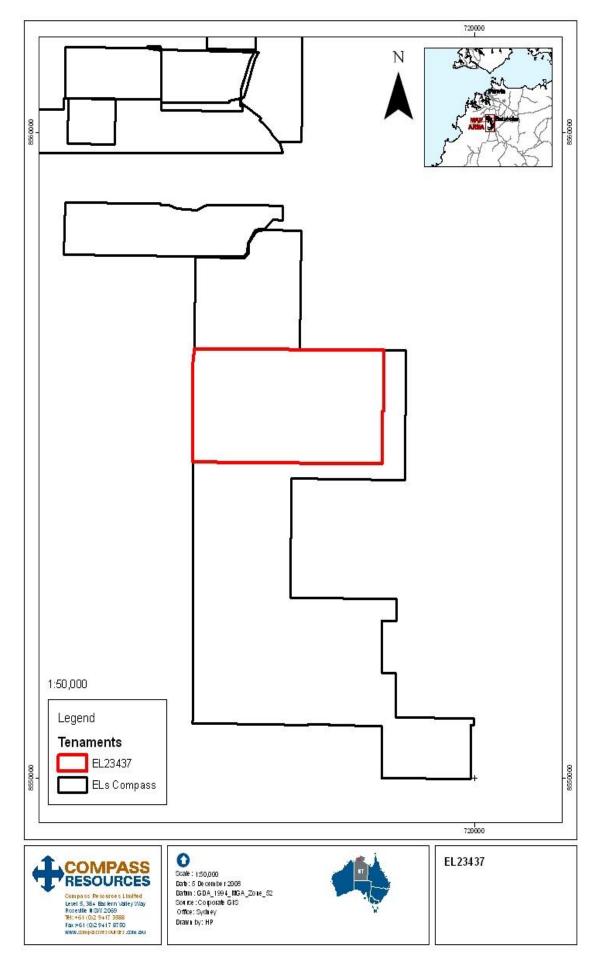


Figure 1 Tenement Location

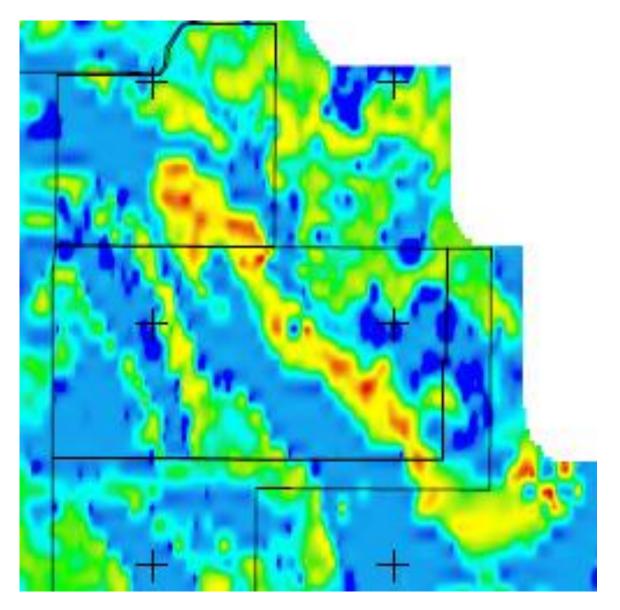
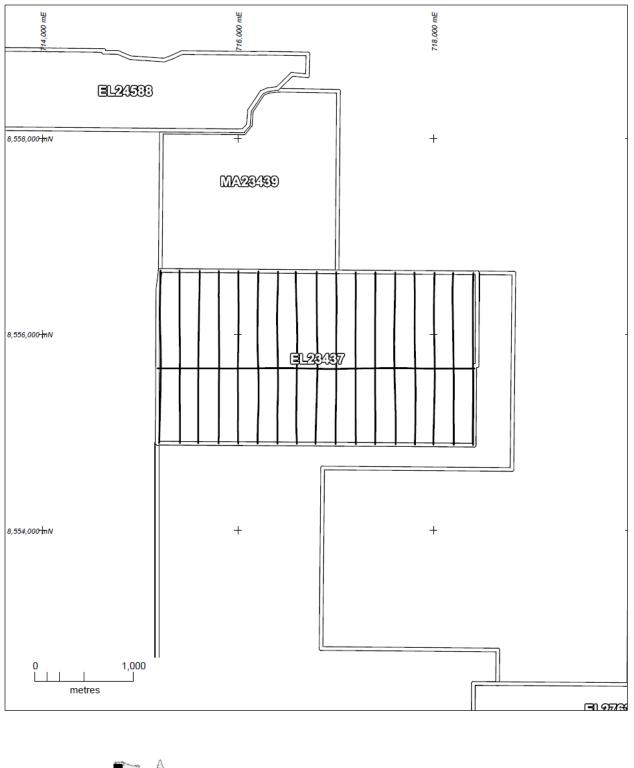


Figure 2 Depth Slice of EM Data showing NW trending conductive zone extending through the tenement.





COMPASS RESOURCES LIMITED FALCON **Airborne Gravity Flightlines** 

18 lines 33.3km Map Projection: MGA Zone 52 (GDA94) Date: 11may13 Drawn: Montana GIS

