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## ANNUAL TECHNICAL REPORT - YEAR TWENTY THREE

### MINERAL AUTHORITY 364

**2 JULY 2015 – 1 JULY 2016**

|  |  |
|--|--|
| <b>Titleholder</b>                     | Compass Resources Limited  |
| <b>Project Operator</b>                | Compass Resources Limited  |
| <b>Titles/Tenements</b>                | MA364  |
| <b>Tenement Manager/Agent</b>          | AMETS Pty Ltd  |
| <b>Mine/Project Name</b>               | N/A  |
| <b>Personal author(s)</b>              | Holly Edgar  |
| <b>Company reference number</b>        | N/A  |
| <b>Target Commodity or Commodities</b> | Cu, Pb, Co, Ni, Ag & Zn  |
| <b>Date of report</b>                  | 24 August 2016   |
| <b>Datum/Zone</b>                      | GDA94/Zone 52  |
| <b>250 000 K Mapsheet</b>              | Darwin SD5204  |
| <b>100 000 K Mapsheet</b>              | Noonamah 5172<br>Bynoe 5072  |
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## **1. Abstract**

Mineral Authority 364 (the licence) is located approximately 80km South of Darwin and has an area of 357.8 square kilometres.

The licence area sits within the Browns Deposit in the Rum Jungle Mineral Field. This mineral field host various commodities, which includes copper, lead, nickel, zinc and cobalt.

During the reporting period, two Induced Polarisation (IP) lines were conducted on the licence and a compilation of the lithology, reports and geophysical data was also conducted.

## 2. Copyright

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This document and its contents are the copyright of Compass Resources Limited. The document is for submitting to the Department of Mines and Energy of the Northern Territory, as part of the tenement reporting requirements of the *Minerals Titles Act 2010*. Any information included in this report that originates from historical reports or other sources is listed in the 'References' section at the end of this document. Compass Resources Limited authorises the Department of Mines and Energy to copy and distribute the report and associated data.

## 3. Location and Access

The tenement is located approximately 80 kilometres south of Darwin and nearby the original mine sites of the Whites and Intermediate (Rum Jungle) Deposits.

Access from Darwin is via sealed roads to Batchelor and thence via the Litchfield Road.

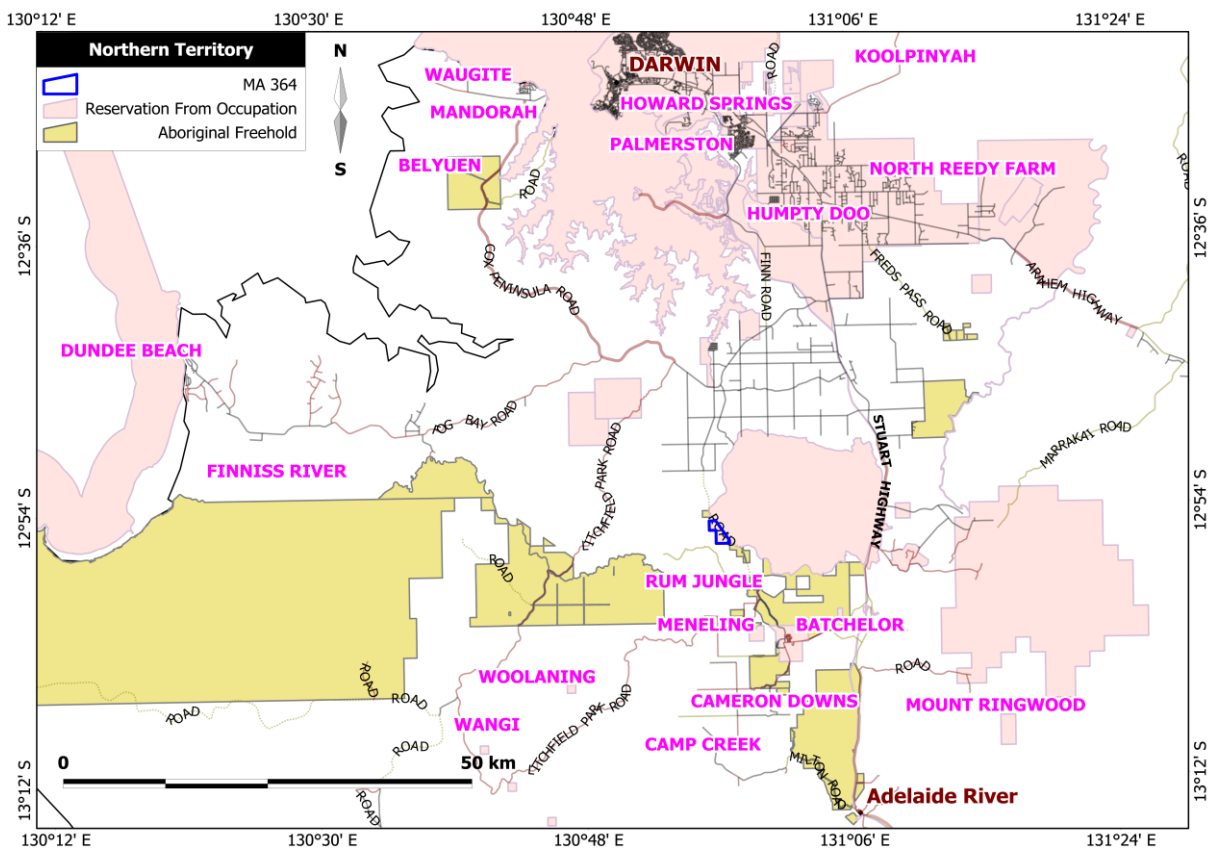


Figure 1- Location Map

#### 4. Tenure and Land Use

Mineral Authority 364 (357.8 hectares) was granted to Compass Resources NL (now Compass Resources Limited) for five years on 2 July, 1993. The tenement was joint-ventured with Billiton Australia Gold Pty. Ltd. (later Acacia Resources Limited) on 4 August, 1993. Acacia managed the joint venture until mid-June 1997 when Compass Resources resumed management.

The licence is covered by privately owned Freehold Land and a Crown Lease in Perpetuity.

#### 5. Topography & Hydrology

The topography within the area is dominantly low, with limited outcrops. A road intersects the licence and small creeks also flow through the licence during the wet season.

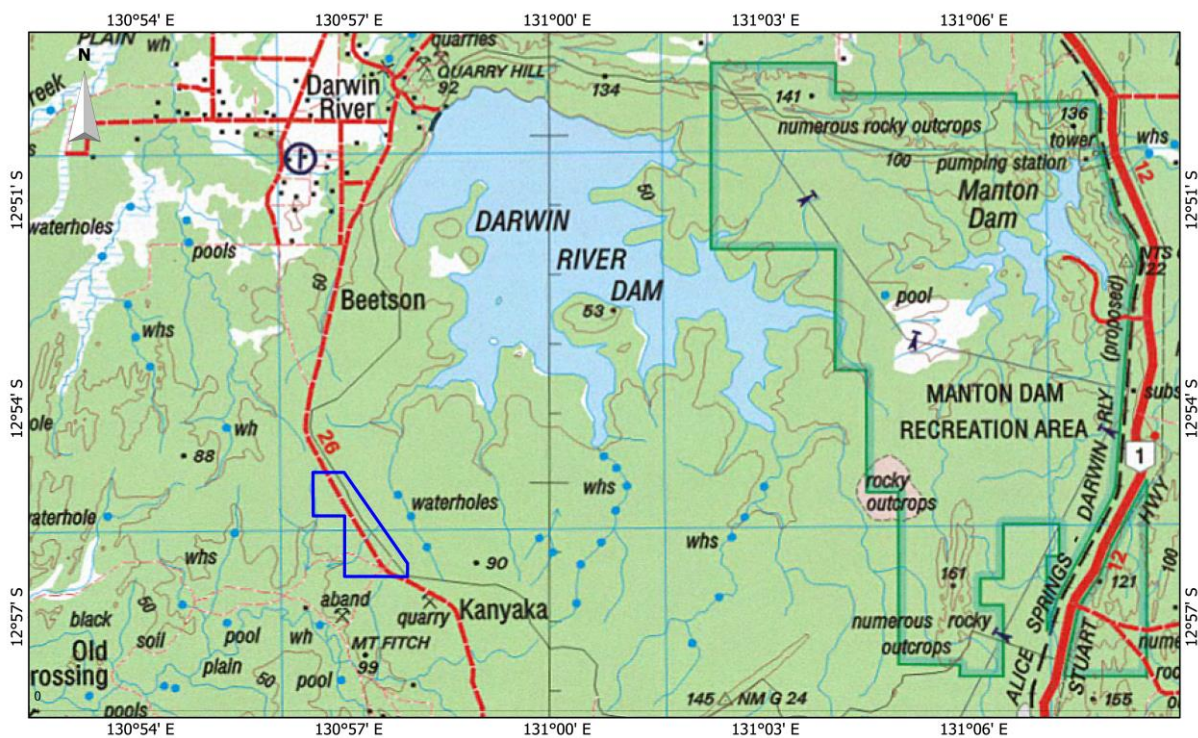


Figure 2 - Topography Map

#### 6. Geology

The licence is situated on the Browns deposit, which lies in the Rum Jungle Mineral Field. The basement geology is dominated by the Archaean Rum Jungle Complex comprising of two inliers (the Rum Jungle and Waterhouse domes) of S- and I-type granitoids. These are unconformably overlain by Palaeoproterozoic sedimentary strata forming the base of the Pine

Creek Orogen. This sedimentary strata hosts significant deposits of stratiform base metal mineralization and structurally controlled uranium mineralisation.

The Browns Oxide deposit is hosted within weathered Proterozoic Coomalie dolomite and Whites Formation. Beneath the base of oxidation, both units dip steeply to the southeast and a large body of stratiform base metal mineralization occurs in the basal shales close to the boundary with the dolomite.

The Proterozoic Zamu Dolerite intrudes both the Whites Formation and base metal mineralization but the majority of the dolerite is to the south of the Oxide Pit.

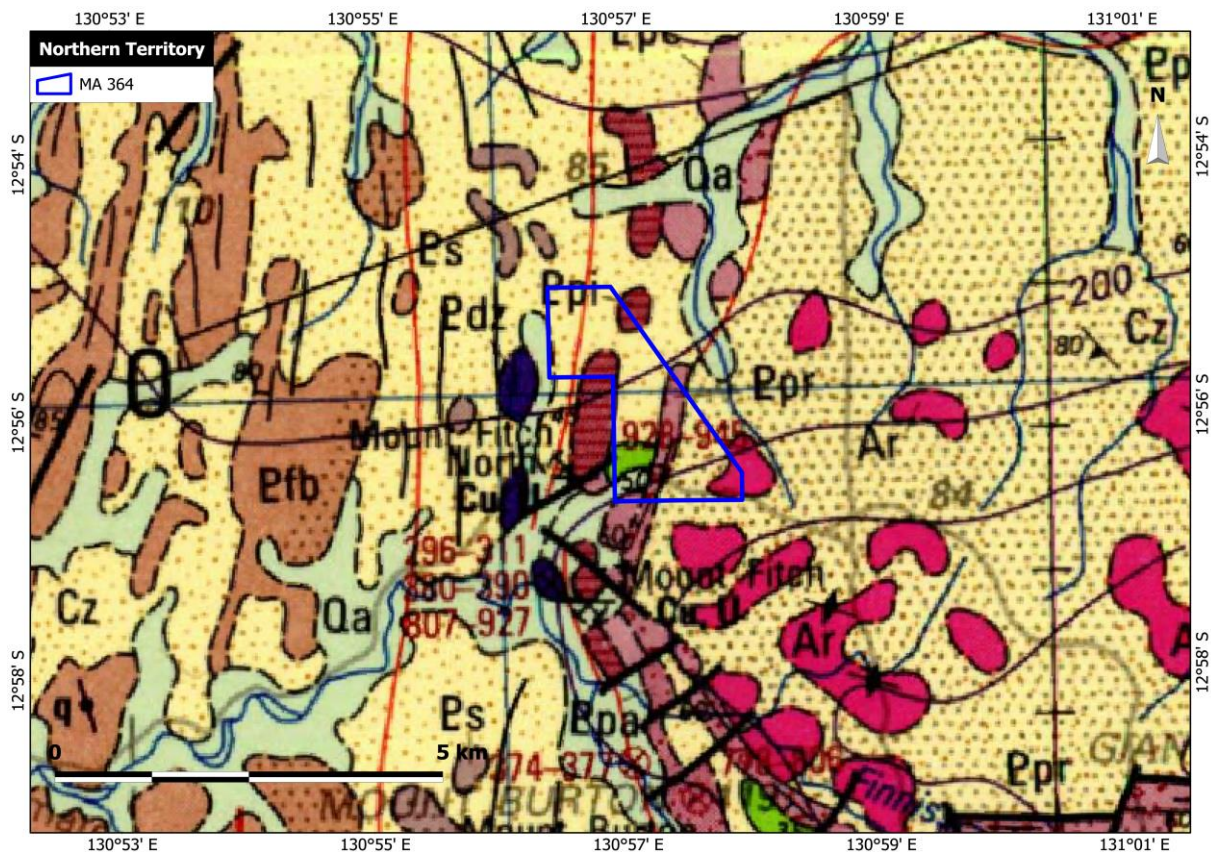
Close to the base of oxidation the bedding is folded suddenly and becomes almost flat lying. Though some tectonic folding may be involved the majority of this change in bedding dip is in response to preferential weathering and dissolution of dolomite (acid generated from breakdown of sulphides) causing slumping of the shale/dolomite contact and associated base metal gossan.

Erosion in the Tertiary created an uneven topographic surface that has filled with fluvial deposits of Tertiary clays, sands and gravels. These deposits are part of an extensive area of Tertiary valley fill that forms low ridges immediately to the north of the mining leases.

Identification of rock units within the weathered horizon can be problematic. Major element geochemistry often provides a better indication of rock type than geological logging of drill holes and was the primary source of data when developing the geological model.

The Browns-Browns East stratabound base metal sulphide resource occurs at the base of the Whites Formation. Mineralisation extends for 2.5 km along strike essentially from the eastern edge of the historical Whites open cut pit, to the west. Mineralisation occurs on the contact with the Coomalie Dolomite, or through apparent facies change, and away from the contact up to 70 metres within the Whites formation.

(from the former Compass Annual Reports prepared by Rosewall)



**Figure 3- Geology Map**

*Legend in Appendix 1*

## 7. Exploration Rationale

The licence area sits within the Browns Deposit in the Rum Jungle Mineral Field. This mineral field host various commodities, which includes copper, lead, nickel, zinc and cobalt.

Compass believe that an economic Pb-Zn-Cu-Ni-Co deposit will be found within the area.

## 8. Previous Exploration

During the previous reporting period, MA 364 was part of a large geophysical survey which included 100m flight line spaced electromagnetics (EM) and infill ground gravity survey points.

MA364 contained around 43 line km of airborne EM and magnetics and 14 infill gravity stations fell on this tenement.

This survey was initially affected by military radar signals and some minor internal problems, however this was rectified and the corrected data sent to the department.



During the 2011 reporting period, MA 364 was incorporated into the large data reprocessing and geophysical remodelling that took place due to the erroneous data that was previously received. All errors were removed from this data set and the data was effectively remodelled.

During 2012 this tenement was subjected to a regional airborne FALCON gravity survey. This survey included not only gravity but also acquired magnetics and LIDAR high resolution elevation data.

The line spacing was approximately 200m and has been processed and divided into individual tenements. The survey data has been submitted to the department. Approximately 18.1 line km of data acquisition fell on this tenement.

A ground IP (Induced Polarisation) survey line of approximately 900m was acquired on MA364 during the 2012 reporting period. This data has also been submitted to the department.

The data for the airborne FALCON gravity survey carried out during the writing of last years' report was received and passed on to the department. The data has been modelled and processed and is being incorporated into a large regional data modelling package at the time of writing this report. The modelling will incorporate all of the previous EM, IP, MAG and gravity data into one complete package.

During 2014, Compass incorporated all of the geophysical survey data into a broad regional data set to model suitable targets for exploration drilling.

(from the former Compass Annual Reports prepared by Rosewall)

## **9. Exploration During Reporting Period**

During the reporting term, two IP lines were conducted on the licence from September to November 2015. These IP lines were conducted between 8,568,000mN and 8,535,000mN. A copy of the IP Survey Data and Modelling from Montana GIS is attached in Appendix 2.

A compilation of the lithology, reports and geophysical data was also conducted during the reporting term.

## **10. Conclusions and Recommendations**

During the next reporting period (2 July 2016 to 1 July 2017), Compass intends to carry out office studies to determine drill hole locations to target IP anomalies for the 2017 to 2018 field program.

## **11. References**

Rosewall, D. MA389 Annual Report From 2nd July 2014 to 1st July 2015. HNC Australia Resources Pty Ltd. 2015

