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# GROUP TECHNICAL REPORT

# GROUP REPORT 437

# 3 DECEMBER 2017 – 2 DECEMBER 2018

| | |
|---|---|
| **Titleholder** | Northern Territories Resources Pty Limited |
| **Project Operator** | Northern Territories Resources Pty Limited |
| **Titles/Tenements** | ELs 25561, 27005, 27007, 27559, 27560, 27561, 27562, 27638, 27788, 27789, 27968, 27969, 28037 & 28703 |
| **Tenement Manager/Agent** | AMETS Pty Ltd |
| **Mine/Project Name** | Batchelor Project |
| **Personal author(s)** | Joseph Lori |
| **Company reference number** | N/A |
| **Target Commodity or Commodities** | Cu, Pb, Co, Ni, Ag, Zn |
| **Date of report** | 30 January 2019 |
| **Datum/Zone** | GDA94/Zone 52 |
| **250 000 K Mapsheet** | Darwin SD5204<br>Pine Creek SD5208 |
| **100 000 K Mapsheet** | Batchelor 5171<br>Bynoe 5072<br>Noonamah 5172 |
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## 1. Abstract

The Batchelor Project comprises of Exploration Licences 25561, 27005, 27007, 27559, 27560, 27561, 27562, 27638, 27788, 27789, 27968, 27969, 28037 and 28703 (the licences). The northern licences are located approximately 45km South of Darwin and the southern licences are located approximately 70km South of Darwin. The licences have a combined area of 60.71 square km.

The licence area sits within the highly prospective and resource rich Rum Jungle Mineral Field within the Pine Creek Orogen. The area is known to host various commodities, which includes copper, lead, nickel, zinc, cobalt and uranium.

During the reporting period a LiDAR survey was flown over all of the NTR tenements. As well, several tenements in Group 437 we subject to a geophysics re-processing program. A detailed investigation was conducted on existing known mineral occurrences / targets, focusing on exploration potential of the southern tenements within the NTR land tenure. A land owner identification study was also completed for all of the southern tenements. These activities were completed to validate and strengthen the current geological and geophysical interpretation of the tenements in order to determine the economic potential and plan future exploration programs.

## 2. Copyright



## 3. Location and Access

The Batchelor licences are located approximately 45 to 70 kilometres south of Darwin and nearby the original mine sites of the Whites and Intermediate (Rum Jungle) Deposits.

Access to the northern licences from Darwin is via sealed roads to Batchelor and thence via the Batchelor and Rum Jungle Roads and unsealed roads. The southern licences can be accessed via the Miles Road from Batchelor Road.

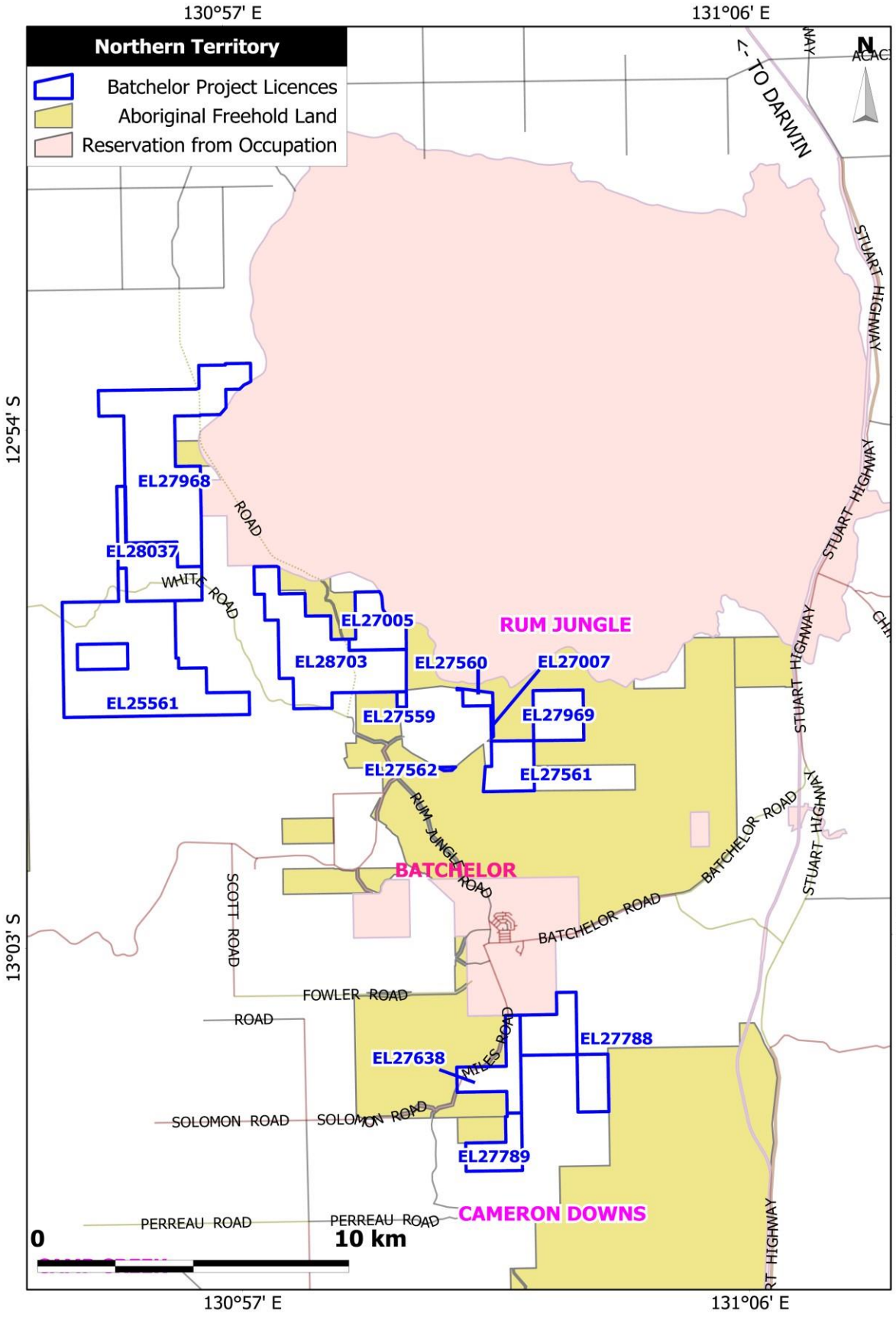


**Figure 1- Location Map**

## 4. Tenure and Land Use

The licences cover numerous Freehold portions of land. The below table shows the details of each licence.

| Licence | Titleholder | Area (km2) | Cadastre |
|---|---|---|---|
| EL25561 | Northern Territories Resources Pty Limited (100%) | 14.84 | Hundred of Goyder (315) - Parcel 893 |
| | | | Hundred of Goyder (315) - Parcel 892 |
| | | | Hundred of Goyder (315) - Parcel 2128 |
| | | | Hundred of Goyder (315) - Parcel 970 |
| | | | Hundred of Goyder (315) - Parcel 971 |
| | | | Hundred of Goyder (315) - Parcel 887 |
| | | | Hundred of Goyder (315) - Parcel 886 |
| | | | Hundred of Goyder (315) - Parcel 891 |
| | | | Hundred of Goyder (315) - Parcel 888 |
| | | | Hundred of Goyder (315) - Parcel 2172 |
| | | | Hundred of Goyder (315) - Parcel 973 |
| | | | Hundred of Goyder (315) - Parcel 972 |
| | | | Hundred of Goyder (315) - Parcel 999 |
| | | | Hundred of Goyder (315) - Parcel 979 |
| | | | NT Portion (000) - Parcel 3283 |
| EL27005 | Northern Territories Resources Pty Limited (100%) | 2.4 | Hundred of Goyder (315) - Parcel 1109 |
| | | | Hundred of Goyder (315) - Parcel 1111 |
| | | | Hundred of Goyder (315) - Parcel 2944 |
| | | | Hundred of Goyder (315) - Parcel 1104 |
| | | | NT Portion 3516 |

| | | | |
|---|---|---|---|
| EL27007 | Northern Territories Resources Pty Limited (100%) | 0.07 | Hundred of Goyder (315) - Parcel 2968 |
| EL27559 | Northern Territories Resources Pty Limited (100%) | 0.15 | Hundred of Goyder (315) - Parcel 2968 |
| EL27560 | Northern Territories Resources Pty Limited (100%) | 0.47 | Hundred of Goyder (315) - Parcel 2968 |
| EL27561 | Northern Territories Resources Pty Limited (100%) | 2.39 | Hundred of Goyder (315) - Parcel 1069 |
| | | | Hundred of Goyder (315) - Parcel 1070 |
| EL27562 | Northern Territories Resources Pty Limited (100%) | 0.05 | Hundred of Goyder (315) - Parcel 2968 |
| EL27638 | Northern Territories Resources Pty Limited (100%) | 2.75 | Hundred of Goyder (315) - Parcel 2999 |
| | | | Hundred of Goyder (315) - Parcel 2928 |
| | | | Hundred of Goyder (315) - Parcel 2963 |
| | | | Hundred of Goyder (315) - Parcel 2958 |
| EL27788 | Northern Territories Resources Pty Limited (100%) | 4.63 | Hundred of Goyder (315) - Parcel 2937 |
| | | | Hundred of Goyder (315) - Parcel 2999 |
| EL27789 | Northern Territories Resources Pty Limited (100%) | 2.13 | Hundred of Waterhouse (810) - Parcel 1461 |
| | | | Hundred of Waterhouse (810) - Parcel 1462 |
| | | | Hundred of Waterhouse (810) - Parcel 90 |
| | | | Hundred of Waterhouse (810) - Parcel 1459 |
| | | | Hundred of Goyder (315) - Parcel 2999 |
| | | | Hundred of Waterhouse (810) - Parcel 1460 |
| | | | Hundred of Waterhouse (810) - Parcel 33 |
| | | | Hundred of Waterhouse (810) - Parcel 1184 |
| | | | Hundred of Waterhouse (810) - Parcel 96 |

| | | | |
|---|---|---|---|
| | | | Hundred of Waterhouse (810) - Parcel 1458 |
| | | | Hundred of Waterhouse (810) - Parcel 1187 |
| EL27968 | Northern Territories Resources Pty Limited (100%) | 13.87 | Hundred of Goyder (315) - Parcel 874 |
| | | | Hundred of Cavenagh (160) - Parcel 2407 |
| | | | Hundred of Cavenagh (160) - Parcel 883 |
| | | | Hundred of Goyder (315) - Parcel 877 |
| | | | Hundred of Goyder (315) - Parcel 875 |
| | | | Hundred of Cavenagh (160) - Parcel 862 |
| | | | Hundred of Goyder (315) - Parcel 872 |
| | | | Hundred of Cavenagh (160) - Parcel 868 |
| | | | Hundred of Goyder (315) - Parcel 873 |
| | | | Hundred of Cavenagh (160) - Parcel 869 |
| | | | Hundred of Cavenagh (160) - Parcel 866 |
| | | | Hundred of Goyder (315) - Parcel 876 |
| | | | Hundred of Cavenagh (160) - Parcel 819 |
| | | | Hundred of Cavenagh (160) - Parcel 867 |
| | | | Hundred of Cavenagh (160) - Parcel 834 |
| | | | Hundred of Cavenagh (160) - Parcel 859 |
| | | | Hundred of Cavenagh (160) - Parcel 861 |
| | | | Hundred of Cavenagh (160) - Parcel 860 |
| | | | Hundred of Cavenagh (160) - Parcel 863 |
| | | | NT Portion (000) - Parcel 3516 |
| EL27969 | Northern Territories Resources Pty Limited (100%) | 2.59 | Hundred of Goyder (315) - Parcel 1233 |
| | | | Hundred of Goyder (315) - Parcel 1246 |

| | | | |
|---|---|---|---|
| EL28037 | Northern Territories Resources Pty Limited (100%) | 4.64 | NT Portion 3283 |
| EL28703 | Northern Territories Resources Pty Limited (100%) | 9.73 | Hundred of Goyder (315) - Parcel 962 |
| | | | Hundred of Goyder (315) - Parcel 958 |
| | | | Hundred of Goyder (315) - Parcel 2944 |
| | | | Hundred of Goyder (315) - Parcel 3003 |
| | | | Hundred of Goyder (315) - Parcel 954 |
| | | | Hundred of Goyder (315) - Parcel 982 |
| | | | Hundred of Goyder (315) - Parcel 981 |
| | | | Hundred of Goyder (315) - Parcel 961 |
| | | | Hundred of Goyder (315) - Parcel 1111 |
| | | | Hundred of Goyder (315) - Parcel 957 |
| | | | Hundred of Goyder (315) - Parcel 963 |
| | | | Hundred of Goyder (315) - Parcel 1104 |
| | | | Hundred of Goyder (315) - Parcel 2881 |
| | | | Hundred of Goyder (315) - Parcel 2953 |
| | | | Hundred of Goyder (315) - Parcel 2965 |

## 5. Topography & Hydrology

The topography within the area is dominantly low, with limited outcrops. Roads intersect the licences and small creeks and river branches also flow through the licence and flow into the Finnis River.

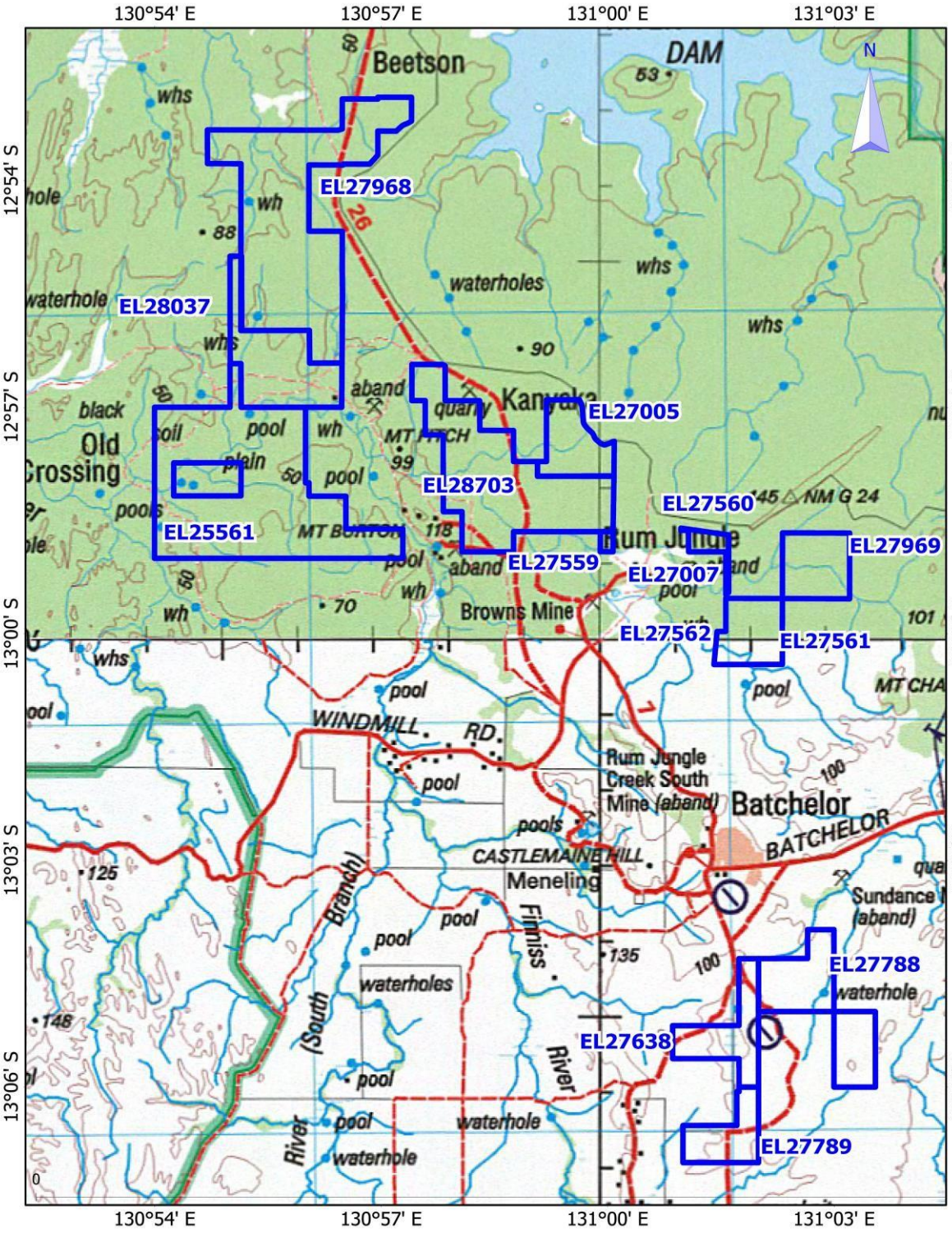


**Figure 2 - Topography Map**

## 6. Geology

The project area is situated within the Rum Jungle Mineral Field of the Palaeoproterozoic Pine Creek Orogen. The Pine Creek Orogen largely consists of variably deformed and metamorphosed Palaeoproterozoic metasedimentary and intrusive rocks forming part of the North Australian Craton.

The Pine Creek Orogen is well known for exploration and Compass believe that there is a potential for this region to host significant Copper, Lead, Cobalt, Nickel, Zinc and silver deposits.

As shown in Figures 3 and 4, there are numerous known significant faults that intersect the licences at various trends.

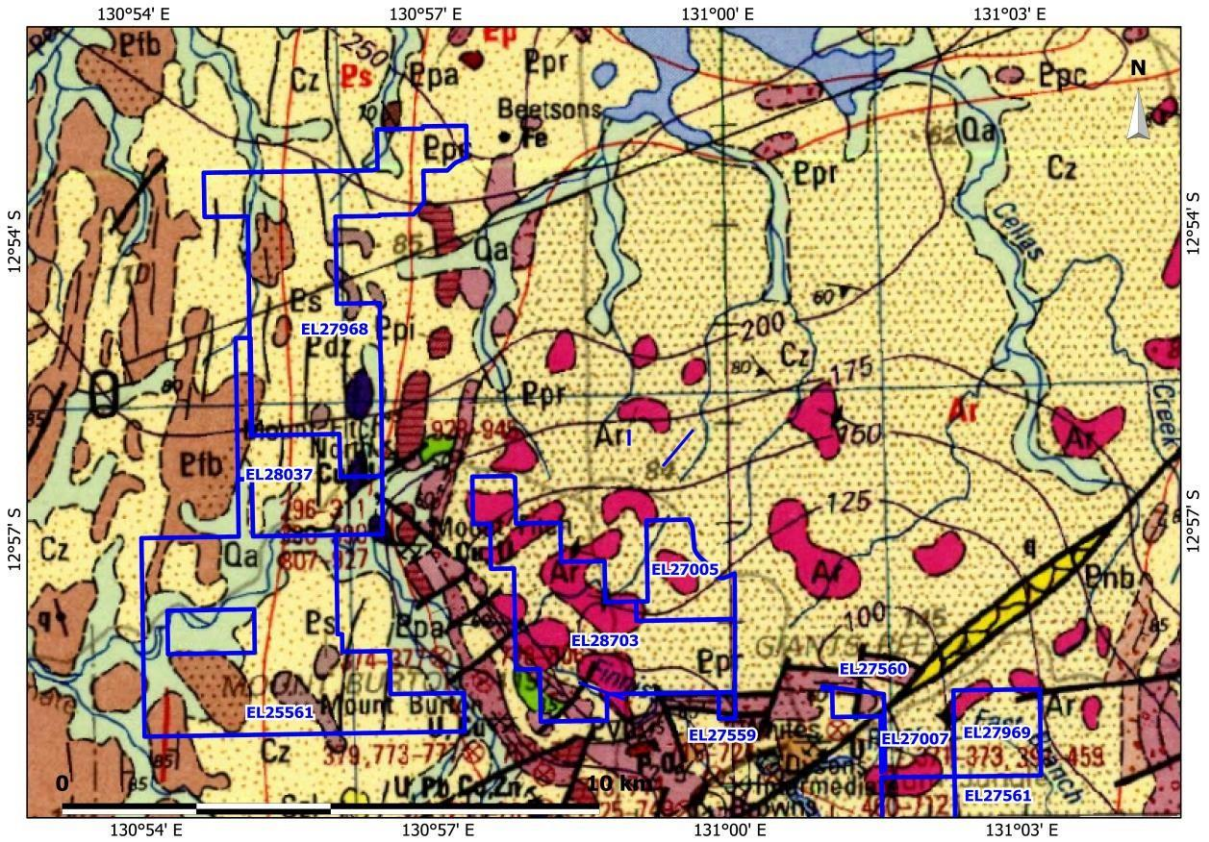


**Figure 3- Geology Map- Northern Portion**
***Legend in Appendix 1***

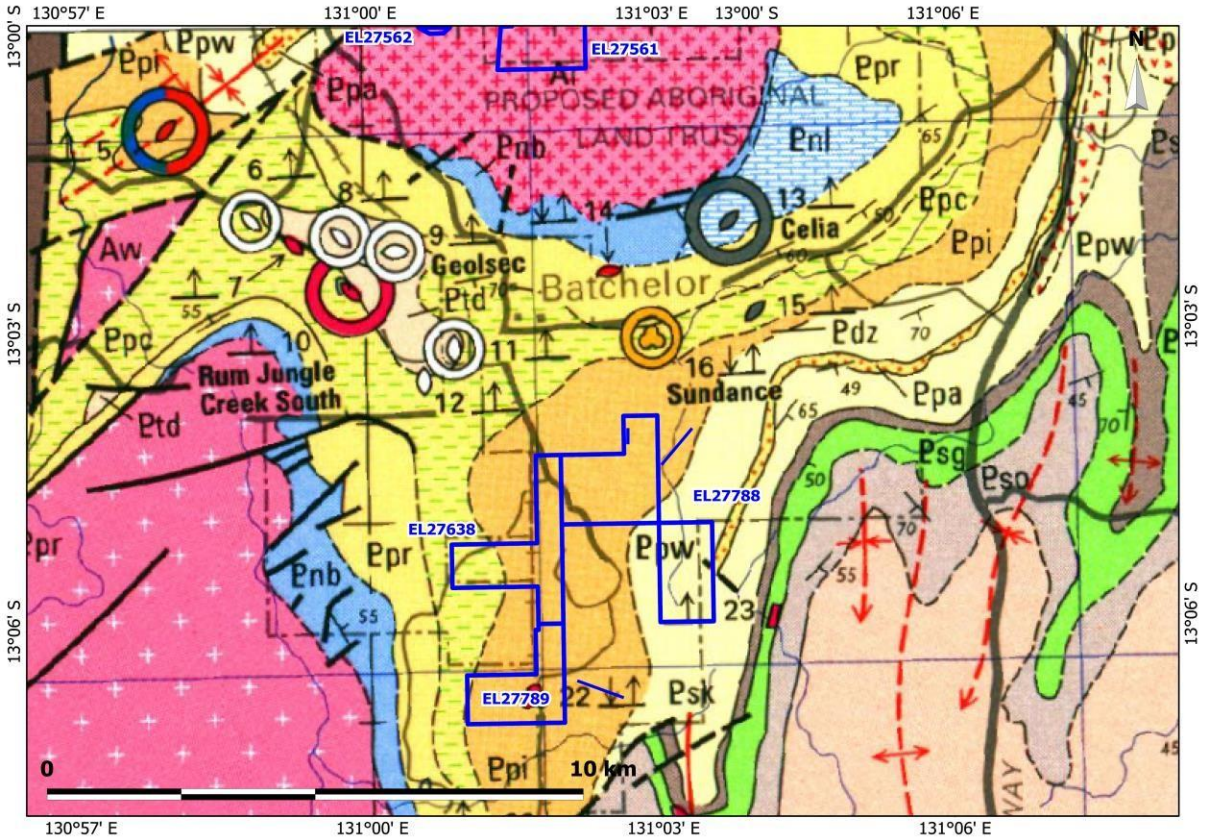


**Figure 4- Geology Map- Southern Portion**
***Legend in Appendix 2***

## 7. Exploration Rationale

The licences sit within the highly prospective and resource rich Pine Creek Orogen. The area is known to host various commodities, which includes copper, lead, nickel, zinc, cobalt and uranium.

Northern Territory Resources believe that an economic Pb-Zn-Cu-Ni-Co deposit will be found within the project area.

## 8. Previous Exploration

**EL25561**

Regional geological mapping, RAB drilling and soil geochemistry programs were undertaken at various times by Territory Enterprises, Uranerz and Mt Grace Resources NL. None of the surveys identified any anomalies worthy of drill testing.

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, tourmaline, chlorite and disseminated pyrite.

Within EL 25561 the faulting sliced up much of the lower Proterozoic stratigraphy reducing exploration potential for base metals. However the strong structural zone is regionally associated with broad zones of elevated base metal, arsenic and gold geochemistry indicating potential for gold and uranium mineralisation.

In October/November 2010 the eastern half of the tenement was flown with helicopter borne detailed aeromagnetics and EM and part of a survey covering all Compass tenements in the Batchelor district. Major difficulties were encountered in processing the EM data (possible caused by interference due to Defence facilities) and it was not till September 2011 that final data was supplied by the Contractor. A copy of the relevant data was supplied to the Department in October 2011.

The detailed airborne magnetics and EM data was processed and interpreted by a consultant geophysist in early 2012. While no specific source to the uranium anomalism was detected some EM targets were identified.

To further improve the geophysical database it was decided to undertake a gravity survey in 2013. The Falcon Gravity Survey consisted of N-S lines at 200m spacing with a nominal terrain clearance of 80m (see Figure 2 for flight lines). An aeromagnetic survey was completed at the same time as was a LIDAR survey to provide the detailed topographic data for processing the gravity data.

During 2015, Compass completed an IP survey and 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)

**EL27005**

During the 2011 reporting period 25 line km of heliborne electromagnetic and magnetic surveys (XTEM) were carried out over EL27005. A gravity survey was also carried out consisting of 9 stations in total. The gravity was designed to infill existing surveys and the XTEM was flown at 100m line spacings to give a very high resolution survey. This data has already been submitted on disc to the department as there were some significant data acquisition problems to overcome.

Preliminary geophysical modelling has been carried out on this EL and we are hoping to continue with this to generate anomalies worthy of follow up during the next reporting period.

During 2011-2012, EL 27005 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.

Some follow up targets were generated for additional geophysics and potential drilling.

Ground reconnaissance for a potential IP survey was completed.

During 2012-13 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 11.7 line km of data acquisition fell on this tenement.

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 2015, Compass completed a ground IP survey and 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)

**EL27007**

During the previous reporting period, EL 27007 was part of a large geophysical survey which included 100m flight line spaced electromagnetics (EM) and infill ground gravity survey points.

EL 27007 contained around 1km of airborne EM and magnetics and no 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 reporting period, EL 27007 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 rmodelled.

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 1.1 line km of data acquisition fell on this tenement.

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)

**EL27559**

During the previous reporting period, EL 27559 was part of a large geophysical survey which included 100m flight line spaced electromagnetics (EM) and infill ground gravity survey points.

EL 27559 contained around 3km of airborne EM and magnetics and no 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, EL 27559 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 was processed and divided into individual tenements. Approximately .98 line km of data acquisition fell on this tenement.

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)

**EL27560**

During the previous reporting period, EL 27560 was part of a large geophysical survey which included 100m flight line spaced electromagnetics (EM) and infill ground gravity survey points.

EL 27560 contained around 6km of airborne EM and magnetics and 3 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, EL 27560 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 was processed and divided into individual tenements. Approximately 2.4 line km of data acquisition fell on this tenement.

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)

**EL 27561**

During the previous reporting period, EL 27561 was part of a large geophysical survey which included 100m flight line spaced electromagnetics (EM) and infill ground gravity survey points.

EL 27561 contained around 24 line km of airborne EM and magnetics and 10 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, EL 27561 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 was processed and divided into individual tenements. Approximately 12.1 line km of data acquisition fell on this tenement.

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)

**EL27562**

During the previous reporting period, EL 27562 was part of a large geophysical survey which included 100m flight line spaced electromagnetics (EM) and infill ground gravity survey points.

EL 27562 contained around 1km of airborne EM and magnetics and no 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, EL 27562 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 was processed and divided into individual tenements. Approximately .22 line km of data acquisition fell on this tenement.

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)

**EL27638**

During the period 1950-1992, the area was covered by a variety of regional surveys with more detailed work undertaken by Pancontinental (1975-79), Marathon (1980) as the tenement covers the northern extension of the Waterhouse No.4 Uranium anomaly. A total of seven shallow, vertical percussion drill holes were completed targeting uranium mineralisation.

Aztec Mining held the area in the period 1992-1998. Work by Aztec included stream sediment sampling, soil and rock chip sampling. They also completed a large detailed aeromagnetic and radiometric survey of the general region including EL 27638.

In 2011 Compass Resources compiled all historical exploration data for the Rum Jungle Mineral Field into a true GIS system. Exploration drilling data was collated and entered into the Datashed database and evaluated using ARC GIS and Micromine. In addition all historical maps relevant to EL 27638 were geo-referenced in ARC. Seven historical drill holes were located within the Miles Road tenement.

The detailed aeromagnetic and radiometric surveys flown by Aztec in the 1990s were merged with the regional geophysical data sets and reprocessed.

Given the improved understanding of the prospectivity of EL 27638 it was decided to fly the area of the tenement (along with all other Compass tenements at Batchelor) with helicopter borne aeromagnetics and EM. A consultant geophysist modelled the geophysical data in late 2011/early 2012 and identified EM anomalies requiring field evaluation.

The tenement were flown with a Falcon gravity survey in late December 2012 (as part of a survey covering all tenements at Batchelor). The survey consisted of N-S lines at 200m spacing with a nominal terrain clearance of 80m (see Figure 2 for flight lines). An aeromagnetic survey was completed at the same time as was a LIDAR survey to provide the detailed topographic data for processing the gravity data.

The survey data was received by the Compass consultant geophysist in March 2013 with the total survey supplied to the department in October 2013. The gravity and aeromagnetic data was integrated with the earlier EM surveys to refine targets for further exploration.

During 2015, a consultant geophysicist processed the data and based on the EM, magnetic and gravity surveys has selected targets for further exploration. Ground IP traverses were selected as the most appropriate exploration tool to further refine exploration targets.

(from the former Compass Annual Reports prepared by Johansen)

**EL27788**

During the period 1950-1992, the area was covered by a variety of regional surveys without any specific prospects being identified within the tenement boundaries.

Aztec Mining held the area in the period 1992-1998. Work by Aztec included stream sediment sampling, soil and rock chip sampling and a diamond drill hole in 1991. The hole (91WHD01) was drilled to 802m and tested the faulted boundary between the Lower and Mid-Proterozoic. The hole intersected several major fault zones and two large sills of Zamu Dolerite. They also completed a large detailed aeromagnetic survey of the general region including EL 27788.

Compass Resources has compiled all historical exploration data for the Rum Jungle Mineral Field into a true GIS system. Exploration drilling data was collated and entered into the Datashed database and evaluated using ARC GIS and Micromine. In addition all historical maps relevant to EL 27788 were geo-referenced in ARC. A single historical drill hole falls within the Miles Road East tenement.

Given the improved understanding of the prospectivity of EL 27788 it was decided to fly the area of the tenement (along with all other Compass tenements at Batchelor) with helicopter borne aeromagnetics and EM. The survey was completed by GPX Surveys in late 2010 with flight lines at 150m spacing, orientated east-west and with a terrain clearance of 30m. East-west tie lines were spaced at kilometre intervals. This generated approximately 24 line kilometres of data within EL 27788.

Given the improved understanding of the prospectivity of EL 27788 it was decided to fly the area of the tenement (along with all other Compass tenements at Batchelor) with helicopter borne aeromagnetics and EM. A consultant geophysist modelled the geophysical data in late 2011/early 2012 and identified EM anomalies requiring field evaluation.

Fugro flew the tenement with a Falcon gravity survey in late December 2012 (as part of a survey covering all Compass tenements at Batchelor). The survey consisted of N-S lines at 200m spacing with a nominal terrain clearance of 80m (see Figure 2 for flight lines). An

aeromagnetic survey was completed at the same time as was a LIDAR survey to provide the detailed topographic data for processing the gravity data.

The Compass consultant geophysist received the survey data in March 2013. The data from the Falcon Gravity survey was processed by a consultant geophysist and the survey data (Falcon gravity, LIDAR and aeromagnetics was supplied to the Mines Department in October 2013.

During 2015, a consultant geophysicist processed the data and based on the EM, magnetic and gravity surveys has selected targets for further exploration. Ground IP traverses were selected as the most appropriate exploration tool to further refine exploration targets.

(from the former Compass Annual Reports prepared by Johansen)

**EL 27789**

The tenement hosts part of the Waterhouse No. 4. Uranium anomaly which was an area of interest in the 1960's to 1980's. Pancontinental held the ground in the 1970's and completed a percussion hole within the tenement. Mobil Energy also completed a drill hole within the tenement in 1982. No source for the uranium anomaly was identified by the exploration.

Aztec Mining held the area in the period 1992-1998. Work by Aztec included stream sediment sampling, soil and rock chip sampling. They also completed a large detailed aeromagnetic survey of the general region including EL 27789.

In the last few years Compass Resources compiled all historical exploration data for the Rum Jungle Mineral Field into a true GIS system. Exploration drilling data was collated and entered into the Datashed database and evaluated using ARC GIS and Micromine. In addition all historical maps relevant to EL 27789 were geo-referenced in ARC.

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 and disseminated pyrite.

Within the Miles Road South tenement these thrust surfaces separate the major lithological units. Extensive 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 extent of thrusting and brecciation has been confirmed through field checking and reviewing historical drill logs.

Given the improved understanding of the prospectivity of EL 27789 it was decided to fly the area of the tenement (along with all other Compass tenements at Batchelor) with helicopter borne aeromagnetics and EM. The survey was completed by GPX Surveys in late 2010 with flight lines at 150m spacing, orientated east-west and with a terrain clearance of 30m. East-west tie lines were spaced at kilometre intervals. This generated approximately 10 line kilometres of data within EL 27789.

Processing of the data commenced in early 2011 and unfortunately a problem was encountered that may be related to Defence Department infrastructure and considerable reprocessing was required. Compass Resources only received the final, corrected data from this extensive survey in September 2011. The detailed airborne magnetics and EM data was processed and interpreted by a consultant geophysist in early 2012. While no specific source to the uranium anomalism was identified the ground is still considered prospective and it was decided to continue with obtaining additional geophysical data to improve target definition.

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 was being incorporated into a large regional data modelling package at the time of writing the report. The modelling incorporated all of the previous EM, IP, MAG and gravity data into one complete package.

During 2015, Compass completed a ground IP survey and incorporated all of the geophysical survey data into a broad regional data set to model suitable targets for exploration drilling. There may be an opportunity to drill some of the targets generated from this exercise later in the year.

(from the former Compass Annual Reports prepared by Rosewall)

**EL27968**

During the 2011 reporting period 150 line km of heliborne electromagnetic and magnetic surveys (XTEM) were carried out over EL27968. A gravity survey was also carried out consisting of 53 stations in total. The gravity was designed to infill existing surveys and the XTEM was flown at 100m line spacings to give a very high resolution survey. This data has already been submitted on disc to the department as there were some significant data acquisition problems to overcome.

During the 2012 reporting period, EL 27968 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.

Some follow up targets were generated for additional geophysics and potential drilling.

Ground reconnaissance for a potential IP survey was completed.

During 2013 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 74.3 line km of data acquisition fell on this tenement.

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 2015, Compass completed a ground IP survey and 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)

**EL27969**

During the 2011 reporting period 30 line km of heliborne electromagnetic and magnetic surveys (XTEM) were carried out over EL 27969. A gravity survey was also carried out consisting of 9

stations in total. The gravity was designed to infill existing surveys and the XTEM was flown at 100m line spacings to give a very high resolution survey. This data has been submitted on disc to the Department following some significant data acquisition problems which had to be overcome.

During the 2012 reporting period, EL 27969 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.

Some follow up targets were generated for additional geophysics and potential drilling.

Ground reconnaissance for a potential IP survey was completed.

During 2013 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 14.5 line km of data acquisition fell on this tenement.

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 conducted a ground IP survey and 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)

**EL28037**

During the 2011 reporting period 14 line km of heliborne electromagnetic and magnetic surveys (XTEM) were carried out over EL28037. A gravity survey was also carried out consisting of 1 station in total. The gravity was designed to infill existing surveys and the XTEM was flown at 100m line spacings to give a very high resolution survey. This data has already been submitted on disc to the department as there were some significant data acquisition problems to overcome.

During the 2012 reporting period, reconnaissance for a potential ground IP survey was carried out. A FALCON airborne gravity survey was to have been underway in October but was delayed until December. At the time of writing the 2012 report the survey was underway and results will be reported in the 2013 annual report. Some lower priority drill targets were modelled and will be further investigated once the gravity survey data becomes available.

During 2012-13 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 is currently being modelled with other geophysical data. The entire survey has been individually split out into individual tenement data and has been submitted to the department. Approximately 26.7 line km of data acquisition fell on this tenement.

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 2015, Compass completed a ground IP survey and 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)

**EL28703**

During the 2011-2012 reporting period, EL 28703 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.

Some follow up targets were generated for additional geophysics and potential drilling.

Ground reconnaissance for a potential IP survey was completed.

During 2012-13 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. All data has been submitted to the department as an entire survey that includes other tenements in the immediate area. Approximately 54 line km of data acquisition fell on this tenement.

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 the report. The modelling incorporated all of the previous EM, IP, MAG and gravity data into one complete package.

During 2014 to 2015, Compass completed a ground IP survey and 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 period a LiDAR survey was flown over the entire NTR land package, and historic airborne electromagnetic (AEM) geophysical data covering several tenements within Group 437 was re-processed. As well, a land owner identification and known mineral occurrence study was completed for NTR's southern land tenure covering several tenements in Group 437. All data mentioned in this section has been supplied to the DPIR.

*LiDAR Survey:* The entire NTR land tenure was flown to gain detailed topography. The work was completed by Earl James & Associates of Darwin, NT. In the figure below the black line represents the area that was flown with 2 point coverage, or 1 meter resolution. Inside the blue outline the area was flown with 4 point coverage, or 0.5 meter resolution. Over the next year the LiDAR data will be combined with existing geophysical coverage of the tenements to help strengthen further geophysical and geological interpretation.

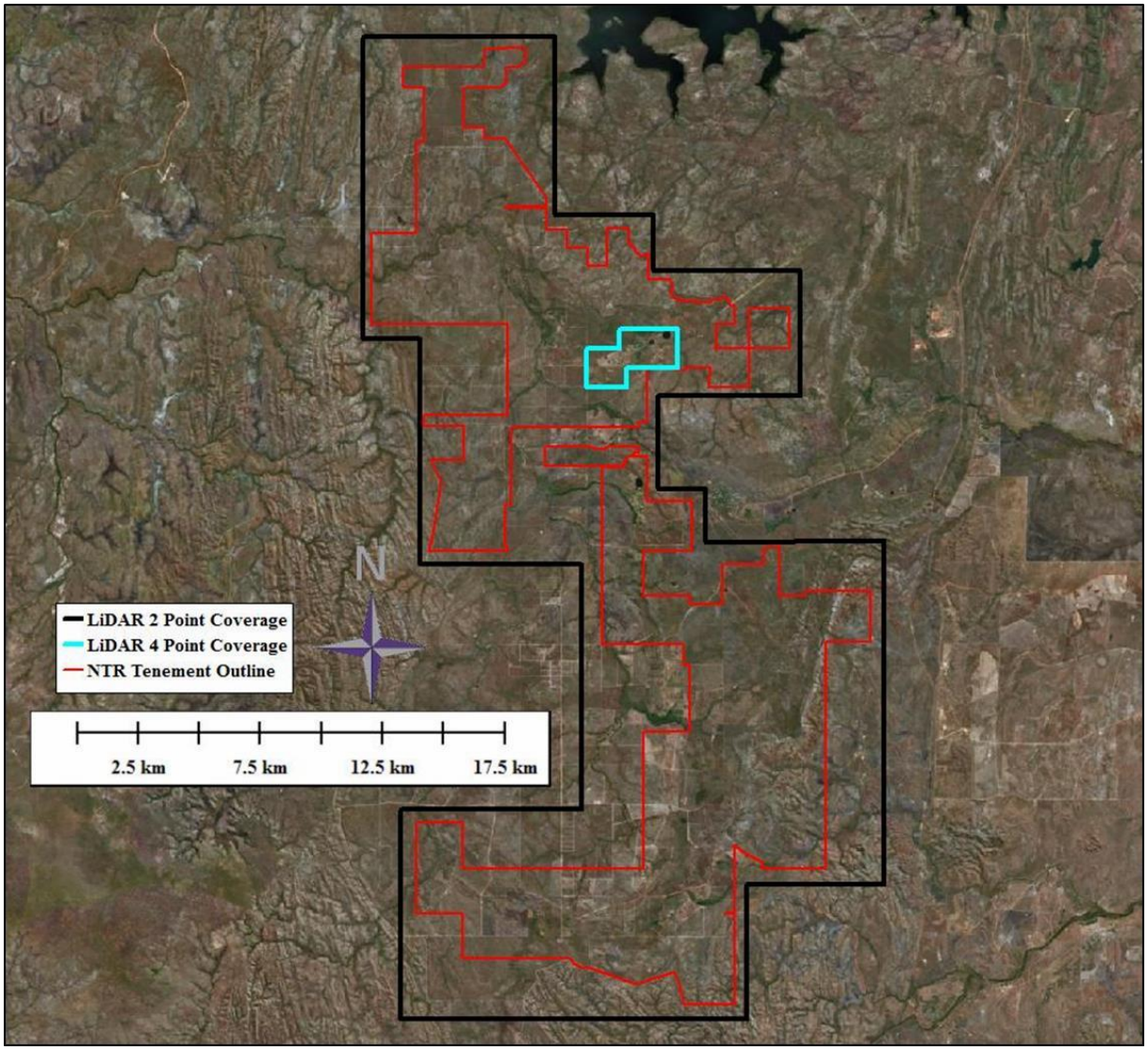


**Figure 5 – LiDAR Coverage of the NTR Tenements**

*Geophysics Re-processing:* In 2010, Compass Resources completed an Aerial Electromagnetic (AEM) survey covering the entire land package. During a technical review of this data it was recognized by DRA and NTR that there were potential issues with the AEM data, especially within the XTEM (time domain windows) portion of the survey. The original survey was split into 4 areas. The data in Area 4 (pictured below) was re-processed to validate the EM anomalies. David McInnes of Montana GIS was contracted to complete the re-processing. To date the re-processed data and models have been received from Montana GIS but the final technical report is still pending. This will be submitted to NTGS once received.

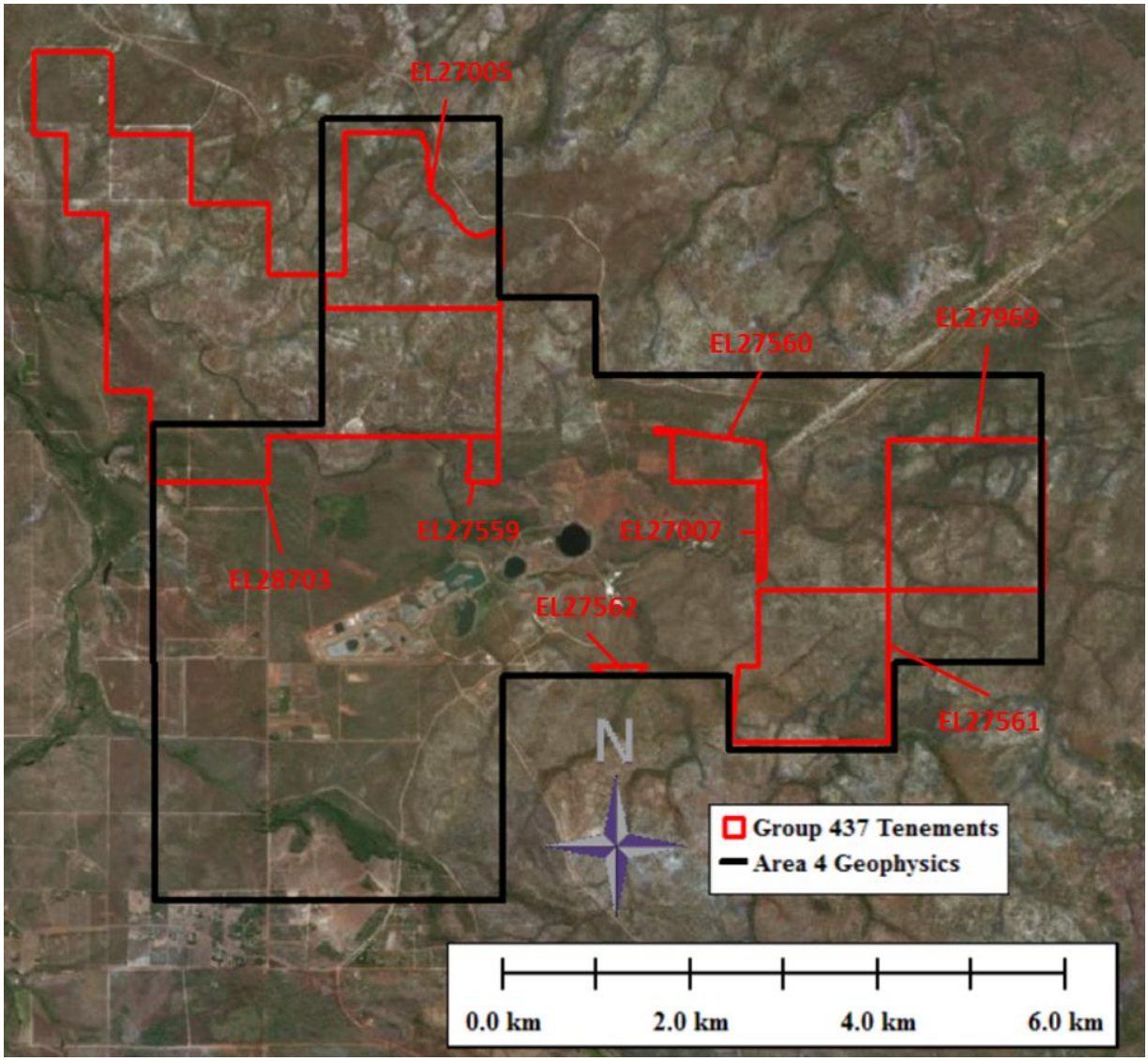


**Figure 6 – Area 4 Geophysics Re-processing**

*Review of Existing Mineral Prospects:* Known mineral occurrences or prospects, especially on NTR's southern land tenure, were examined in detail during this reporting period. On EL27789 the Waterhouse #4 uranium prospect was reviewed in detail. This review included going through drill logs, assay database, and compiling geophysics.

*Land Owner Identification:* An ArcGIS database was created for NTR's southern land tenure, including EL27638, EL27788, and EL27789, using publically available Cadastral data. Private property boundaries and parcel numbers were overlain within the tenement boundaries. A master list was created of parcel numbers in areas that NTR/DRA would potentially conduct field work on over the next few years. At the point in which NTR/DRA determines an exploration plan, the master list will serve as quick reference to conduct legal land owner title searches so that access negotiations can be initiated

## 10. Conclusions and Recommendations

The licence area sits within the highly prospective and resource rich Pine Creek Orogen. The area is known to host various commodities, which includes copper, lead, nickel, zinc, cobalt and uranium. During the next reporting period (3 December 2018 to 2 December 2019), NTR/DRA intends to carry out further office studies including combining the newly acquired LiDAR data with the airborne gravity data to further refine and strengthen geophysical anomalies. There is also potential to re-process the existing geophysical data over the entire land tenure. This work is being completed to further refine geophysical anomalies in order to design future exploration and mining programs.

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