

# ABM RESOURCES NL

ABN 58 009 127 020

# PARTIAL RELINQUISHMENT REPORT

EL 27906

'Terry's Find'

For the period

30 August 2010 to 29 August 2014

Holder ABM Resources NL Operator ABM Resources NL,

Author J Rohde

Date September 2014

Email joer@abmresources.com.au

Target Commodity
Datum/Zone
250,000 mapsheet
100,000 mapsheet
Gold, Base Metal
GDA94/ MGA Zone 52
Mt Dorren (SF52-12)
Vaughan (5053)

#### Distribution:

o NT DoR - digital

o Central Land Council - digital

o ABM RESOURCES NL - Perth - digital

o INDEPENDENCE GROUP NL - Perth - digital

File: jr83 NTEL 27906 Terry's Find RR 14

## **CONTENTS**

	Pa	age
1.0	ABSTRACT	1
2.0	INTRODUCTION	1
3.0	TENURE	1
4.0	GEOLOGY	2
	4.1 Regional Geology	2
5.0	EXPLORATION COMPLETED	
6.0	RECOMMENDATION and CONCLUSIONS	5
7.0	REFERENCES	6
TABLE	·c	
IABLE	.5	
Table 1	Tenement Details	

## **FIGURES**

 Figure 1
 Tenement Location
 1 : 2,500,000

 Figure 2
 EL 27906 Relinquished Area 2014
 1 : 63,360

## **PLATES**

Plate 1 Surface Samples on Interpreted Regional Geology EL 27906 Relinquished Area 2014

1:25,000

## **APPENDICES**

FILE DESCRIPTION

EL27906\_2014\_P\_01.pdf EL27906\_2014\_P\_02\_SurfaceGeochem. txt EL27906\_2014\_P\_03\_SurfaceGeochem. txt Partial Relinquishment Report Surface sampling type, location, assay results Surface sampling type, location, description

#### ACKNOWLEDGEMENT AND WARRANTY

- 1. Subject to 2, the tenure holder acknowledges that this Report, including the material, information and data incorporated in it, has been made under the direction or control of the Northern Territory (the NT) within the meaning of section 176 of the Copyright Act 1968.
- 2. To the extent that copyright in any material included in this Report is not owned by the NT, the tenure holder warrants that it has the full legal right and authority to grant, and hereby does grant, to the NT, subject to any confidentiality obligation undertaken by the NT, the right to do (including to authorise any other person to do) any act in the copyright, including to:
  - use:
  - reproduce;
  - publish; and
  - communicate in electronic form to the public, such material, including any data and information included in the material.
- 3. Without limiting the scope of 1 and 2 above, the tenure holder warrants that all relevant authorisations and consents have been obtained for all acts referred to in 1 and 2 above, to ensure that the doing of any of the acts is not unauthorised within the meaning of section 29(6) of the Copyright Act.

#### 1.0 ABSTRACT

Exploration Licences **27906** 'Terry's Find' is situated approximately 375km northwest of Alice Springs (**Figure 1**). ABM Resources NL (ABM) explores the tenement for the potential of gold mineralisation.

**EL 27906** forms part of ABM's Lake MacKay project. ABM reviewed and evaluated the exploration potential of the Lake MacKay project before it focussed on the development of its higher ranking Old Pirate High-Grade Gold Project.

To further exploration of the Lake MacKay project ABM entered into negotiations with various other quality exploration companies. On the 20th August 2013, ABM signed an exploration agreement, as a result of these negotiations, with the Independence Group NL., Perth (Independence) for ABM's Lake Mackay Project which includes EL **27906**.

In September and October 2013 a first pass soil sampling program over the whole tenement at a nominal 800m x 800m grid spacing and a infill follow up soil sampling nominal 200m x 200m in areas which had returned elevated assay results generated a total of 113 soil samples from the relinquished area. The best sample (sample ID A413094) located on graticular block SF522071G returned a value of 0.90ppb gold.

In 2014 a review of the EL **27906** data, particularly the poor surface sampling results as well as the lack of prospective geophysical features on TMI imagery in the west and southern parts of the tenement led to a 19 block reduction. The 20 blocks retained cover an area which had returned elevated surface sampling results around the Terry's Find Prospect.

## 2.0 INTRODUCTION

The **EL 27906** is located approximately 375km north west of Alice Springs. Access from Alice Springs is northwest via the Tanami Highway for approximately 350km to the Mt Doreen (Ruins) turn off and then on tracks along the Treuer Range and station tracks for another 90km to the southwest (**Figure 1**, **2**). **EL 27906** falls into ABM's Lake MacKay Project area.

In August 2013 ABM entered a joint venture agreement with Independence which allowed another quality explorer to substantially advance exploration of the tenement.

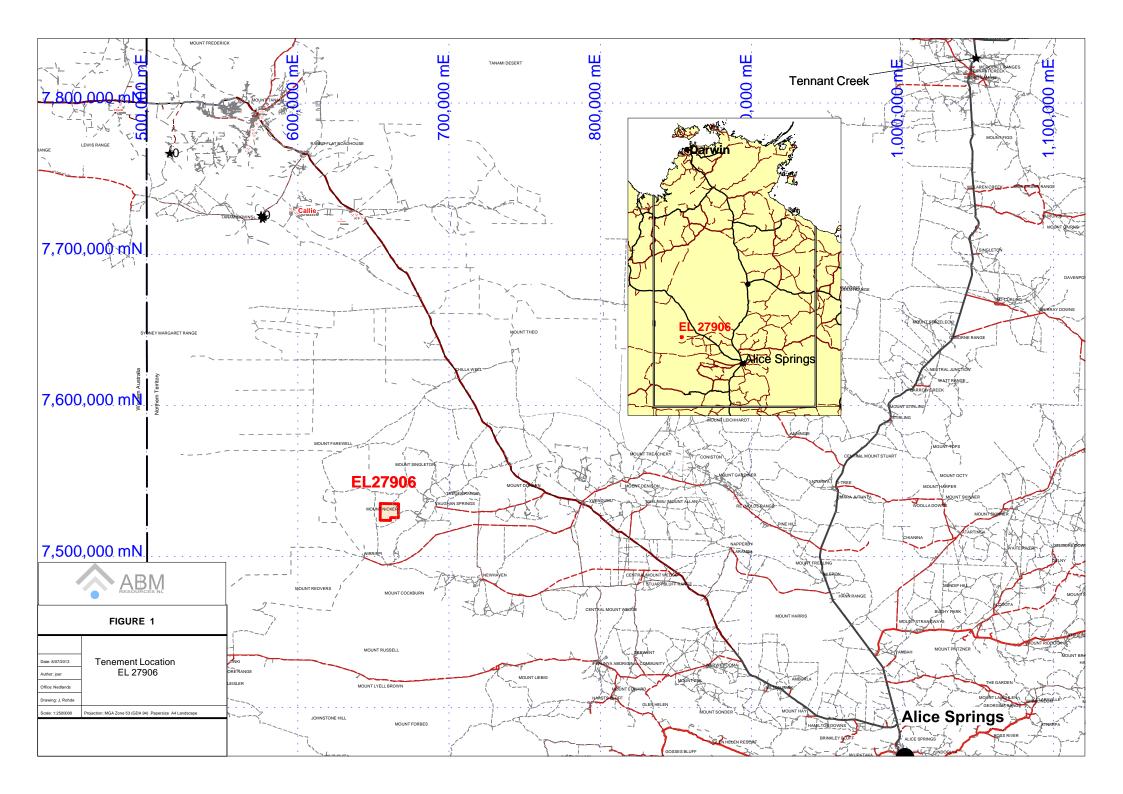
This report covers all exploration carried out on the relinquished area of **EL 27906** from the 30th August 2010 to the 29th August 2014.

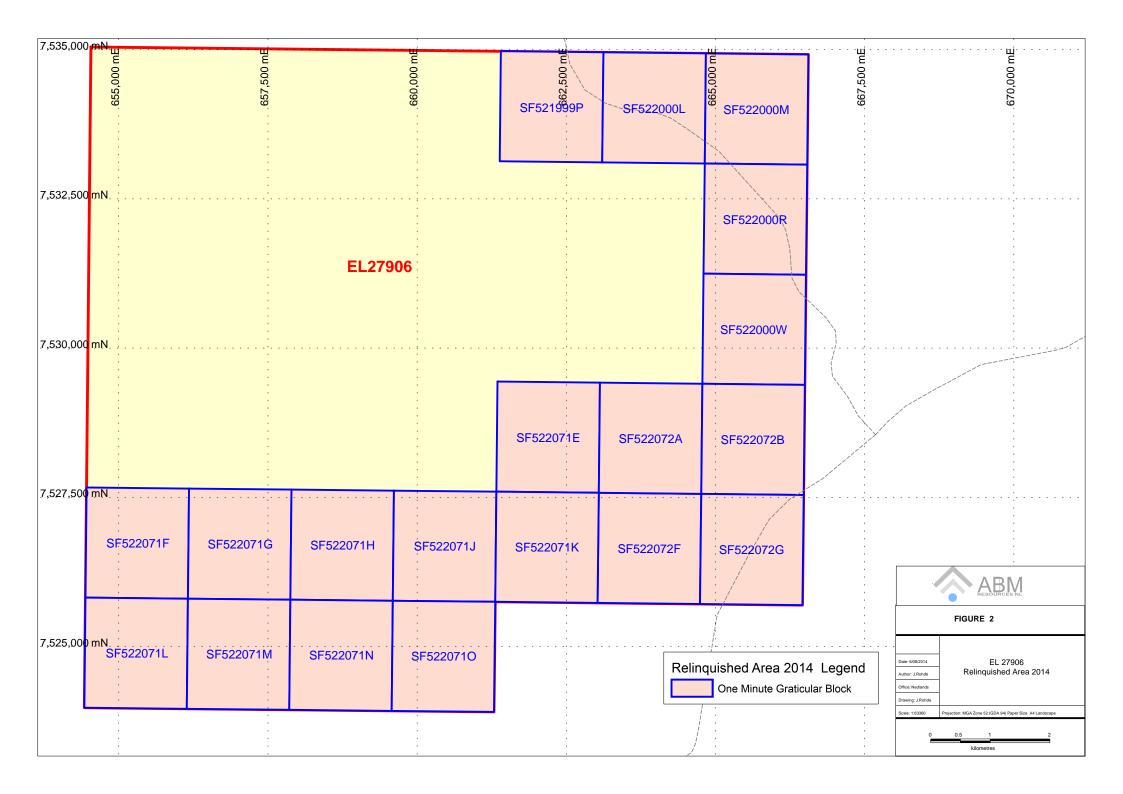
## 3.0 TENURE

Exploration Licence **27906** 'Terry's Find' was granted on 30 August 2010 over an area of 39 blocks to ABM for a period of six years.

On 20 August 2013 ABM entered an Exploration Agreement with the Independence Group NL (IGO) covering ABM's Lake Mackay Project, including EL **27906**.

The terms of the Exploration Agreement provide for IGO to acquire a 70% interest in the Lake Mackay Project tenements by expending \$6M on exploration of the project over 4 years.





Tenement details are listed below in **Table 1** and are illustrated in **Figure 2**.

Table 1: Tenement Details

Tenement	Tenement	Blocks	Blocks	Blocks	Grant	Expiry
Name	No	Granted	Relinquished	Retained		
Terry's Find	EL 27906	39	19	20	30 Aug 10	29 Aug 16

Pursuant to the requirements of the *Mineral Titles Act 2010*, a partial relinquishment was lodged in respect of 19 blocks at the end of the second year of term, 29 August, 2014.

The relinquished blocks are listed in Table 2 and are illustrated in Figure 2 and Plate 1.

Table 2 List of One Minute Graticular Blocks Relinguished from EL 27906.

Block Prefix	Block Identifier
SF52 1999	р
SF52 2000	lmrw
SF52 2071	efghjklmno
SF52 2072	abfg

## 4.0 GEOLOGY

The Lake Mackay Project is situated on the 1:250,000 Lake Mackay (SF52-11) map sheet, an area comprising less than 1% exposed bedrock. Tanami Gold NL (TGNL) carried out a 1:250,000 bedrock interpretation in 2003 (Rohde, 2004). Outcrop mapping by the Northern Territory Geological Survey (NTGS) and drilling by Newmont were combined with aeromagnetics, Landsat and gravity data to interpret the lithology and structure beneath covered areas (**Plate 1**).

## 4.1 Regional Geology

The Lake Mackay area is part of the Arunta region, a Proterozoic domain covering a large part of central Australia. The Arunta region is very complex due to the superposition of numerous depositional, magmatic, metamorphic and tectonic events. NTGS geological mapping of parts of the Arunta region has been combined with whole-rock elemental geochemistry and zircon U-Pb geochronology to assist with unravelling the lithostratigraphy and geological history of the area. The reviews of the regional implications of this work are presented by Scrimgeour (2003, 2004).

Of interest to gold explorers is whether the geology in the Tanami region, which hosts >10 million oz Au, continues south into the Arunta region. The case for lateral equivalence between the two regions was originally proposed based on gross lithological similarities (Blake et al., 1979), and such correlations have been strengthened based on geophysical continuity and the similarities of depositional and magmatic systems (Green et al., 2003). In general, the Lake Mackay area comprises rocks which are interpreted to correlate with the Au-hosting units in the Tanami region.

The Lake Mackay area comprises strongly deformed and variably metamorphosed siliciclastic sediments which were deposited between 1840 and 1800Ma. These metasedimentary rocks have been assigned to the Lander Group, which is interpreted to be laterally equivalent with the Tanami

Group. A regional lithostratigraphy has not been established in the Lander Group due to the lack of continuous outcrop and marker horizons, the high metamorphic grade of many areas and extensive deformation. In some areas, a local lithostratigraphy has been established (Donnellan and Johnstone, 2003), but it has not been possible to extend such local divisions with great confidence.

The Lake Mackay area is interpreted to be part of the lower Lander Group based on geochronological constraints and the presence of putative volcanic-dominated lithologies (linear highly magnetic units). Such constraints are not well established, but if correct the Lake Mackay area would most closely correlate with the lithostratigraphic units, which hosts The Granites and Dead Bullock Soak Au deposits in the Tanami Region.

## 4.2 Local Geology

The Lake Mackay area comprises two distinct tectonic elements; the Palaeoproterozoic Aileron Province and the Neoproterozoic-Palaeozoic Centralian Superbasin (Walter and Whittaker, 2003). The rocks of the Aileron Province form the basement to the Centralian Basin.

In the Aileron Province, the oldest units comprise a succession of interbedded sandstone, siltstone and mudstone which has been intensely deformed and metamorphosed. These metasediments are considered part of the Lander Group (Yuendumu Supergroup), which extends over much of the northern Arunta region. The Lander Group is generally considered to be part of a very large depositional system with vast regions of probable turbiditic sediments. There are numerous folded and metamorphosed mafic units within the Aileron Province, but it is uncertain whether they are volcanic, and so part of the Lander Group, or later sills. Similar units are known in the Tanami Region. SHRIMP U-Pb dating of detrital zircon from several samples of the Lander Group in the greater Lake Mackay area have interpreted maximum deposition ages of <1860Ma.

In the Lake Mackay area, the Lander Group is metamorphosed from lower greenschist to granulite facies, with granulite and amphibolite facies metasediments confined to discrete domains in the northeast of the area. SHRIMP U-Pb analyses of zircon rims from these granulite-facies metapelites define a significant population at 1806  $\pm$  7 Ma, which is interpreted to be the age of metamorphism. This correlates with the Stafford Event described from further east in the Aileron Province, suggesting that this is an important and widespread event.

In the northeast of the Lake Mackay area, there are siliciclastic-dominated metasediments of the Nicker beds and Reynolds Range Group. These successions postdate the Stafford Event and were probably metamorphosed and deformed during the Yambah Event at about 1780-1770Ma. Metamorphic grade varies in these units from greenschist to amphibolite facies. The Reynolds Range Group (1800-1780Ma) unconformably overlies the Lander Group, though most exposures comprise tectonic slivers preserved adjacent to faults. The Reynolds Range Group comprises a basal quartzite (Mount Thomas Quartzite) and an overlying siliclastic-dominated succession with minor calc-silicates (Pine Hill Formation). Other units within the Reynolds Range Group are unknown in the Lake Mackay area. The Reynolds Range Group has a distinctive strong linear magnetic signature and tracing these features from known outcrop suggests the Reynolds Range Group may be more extensive under aeolian cover. The Nicker beds are only known from immediately north of the Ngalia Basin and are more quartz-rich than the Lander Group. An intercalated felsic volcanic has an interpreted magmatic age of 1772 ± 5 Ma (SHRIMP U-Pb zircon age).

There are numerous granite bodies in the Lake Mackay area that probably correlate with the 1820-1790Ma granites from the northern Aileron Province, the 1770-1760Ma Carrington Suite and the 1570Ma Southwark Suite. A biotite granite beneath the Vaughan Springs Quartzite in the southeast of

the Lake Mackay area has a poorly constrained SHRIMP U-Pb zircon age of  $1758 \pm 21$ Ma and is considered to belong to the Carrington Suite. A weakly to moderately deformed garnet-bearing granite (Rapide Granite) in the northwest of the Lake Mackay area has an interpreted magmatic age of c.1600Ma, and so may be part of the Southwark Suite, but also contains significant c.1800Ma zircon possibly indicating an earlier magmatic phase. Megacrystic and porphyritic biotite granite with localised shearing on the eastern margin of Lake Mackay is interpreted on field characteristics to belong to the Southwark Suite. It has an interpreted SHRIMP U-Pb magmatic age of c.1520Ma, and so is the only known granite of this age in the Arunta region. This may indicate that the Southwark Suite was intruded over the 50 my period from 1570-1520Ma, or this granite could be part of a younger, discrete event. Although no 1820-1790Ma granite has been dated in the immediate area it is likely that granite of this age, which is widespread to the north of the Lake Mackay area, extend into the Lake Mackay area. In the southern part of the Lake Mackay area, there are scattered exposures of Vaughan Springs Quartzite, the basal unit of the Neoproterozoic to Palaeozoic Ngalia Basin, which is part of the Centralian Superbasin.

The southern and eastern part of the tenement is interpreted to be underlain by meso- and paleoproterozoic granitoides (Ag1, Ag2). The centre is interpreted to be underlain Nicker Beds (Aan) while the north western part of the tenement is interpreted to be underlain by Lander Rock Beds (Aall & Aalh) (Plate 1).

## 5.0 EXPLORATION COMPLETED

#### Year 1

In the first year of tenure ABM reviewed the historic exploration. Due to an unseasonal wet season and bush fires at the time of planed reconnaissance no on ground exploration was conducted during the period from the 30 August 2010 grant date to the first anniversary date 29th August 2011.

#### Year 2

No on ground exploration was conducted during the period due to delays in regards of clearance from the CLC, the Department of Resources needing more detailed information on historic environmental disturbance and ABM focusing on other targets of its Lake Mackay project area. Reconnaissance was also scheduled for the reporting period although large bushfires hampered attempts of an initial visit to the region. Desktop work completed during the reporting period defined a number of large target areas. In August 2012 ABM has submitted an application to the CLC to undertake a large soil sampling survey covering the majority of the tenure during ABM's 2012 – 2013 exploration season.

#### Year 3

No on ground exploration was conducted during the reporting period by ABM due to delays in regards to access to the ground clearance from the CLC and joint venture negotiations.

The Sacred Site Clearance Certificate for ABM's 2013 work programme to undertake a large soil sampling survey covering the majority of the tenure was received on the 29th of July 2013.

The joint venture negotiations finally resulted in an agreement with Independence on the 20th August 2013. (see Chapter 3.0 Tenure).

Independence did not conduct any exploration during the brief period from the signing of the JV agreement on the 20th August 2013 to the end of the reporting period 29th August 2013,

#### Year 4

In September 2013 Independence completed a first pass soil sampling program over the whole tenement at a nominal 800m x 800m grid spacing.

In October 2013 Independence completed infill follow up soil sampling in areas which had returned elevated assay results. One of these nominal 200m x 200m spaced grids fell partly on the area of graticular block SF522071G. It covered an area located south west of Terry's Find and centred on sample A413094 which returned a value of 0.9ppb gold – representing the best overall result as well. The follow up sample A416440 at this location returned a sample assay value of 0.86ppb Au confirming the previous result.

In total 113 samples were collected on the relinquished area. Samples were sieved to -0.4mm in the field and 4.5kg of this fraction was collected in plastic lined calico bags. Screening to -50um was undertaken at the Genalysis Preparation Laboratory in Alice Springs. The samples were then sent to Genalysis Perth where the samples underwent a 20g Bulk Cyanide Leach that was specifically set up for this project. All samples were assayed for gold and a group of elements.

All sample locations are shown on **Plate 1**. All assay data is included in the digital appendices (EL27906\_2014\_P\_02\_SurfaceGeochem.txt and EL27906\_2014\_P\_03\_SurfaceGeochem.txt).

#### 6.0 RECOMMENDATION and CONCLUSIONS

The 2014 review concluded to retain the portion of the tenement which returned elevated results of the systematic geochemical surface sampling programs conducted over the whole of the tenement.

The back ground results of the September 2013 systematic geochemical surface sampling and a review of the geophysical data of the relinquished area, which did not reveal any particular outstanding features, led to the surrender of the 19 blocks.

## 7.0 REFERENCES

Blake, DH, Hodgson, IM & Muhling, PC, 1979. Geology of The Granites – Tanami Region, Northern Territory and Western Australia. Australian Government Publishing Service, Bulletin 197.

Ding, Puquan., 2001. Pre-Cenozoic solid geology map of the Strangways Range to Harts Range area, Explanatory Note. Unpublished TGNL in-house report.

Donnellan N and Johnstone A, 2003. Expanding the Tennant Region: mapped and interpreted geology of the Mount Peake and Lander River 1:250 000 sheets. Annual Geoscience Exploration Seminar (AGES) 2003. Record of abstracts. Northern Territory Geological Survey, Record 2003-001.

Green M, Vandenberg L, Crispe A, Johnstone A, Cross A, Wygralak A and Fraser G, 2003. Defining the Tanami-Arunta boundary: tectonic and exploration implications. Annual Geoscience Exploration Seminar (AGES) 2003. Record of abstracts. Northern Territory Geological Survey, Record 2003-001.

Rohde, C., 2004, Second Combined Annual Report for Exploration Licences 8694, 8696, 8697, 9442 and 9449, Lake Mackay project for the Year Ending 21 August 2004. TENL unpublished Report to Northern Territory Department of Mines and Energy.

Rohde, C., 2005, Third Combined Annual Report for Exploration Licences, 8696, 8697, 9442 and 9449, Lake Mackay project for the Year Ending 21 August 2005. TENL unpublished Report to Northern Territory Department of Mines and Energy.

Rohde, C., 2006, Fourth Combined Annual Report for Exploration Licences, 8696, 8697, 9442 and 9449, Lake Mackay project for the Year Ending 21 August 2006. TENL unpublished Report to Northern Territory Department of Mines and Energy.

Rohde, J., 2011, Annual Report EL 27906 'Tarawera' For the period 30 August 2010 to 29 August 2011. Nil Work Report. ABM unpublished Report to Northern Territory Department of Resources.

Rohde, J., 2012, Annual Report EL 27906 'Terry's Find' For the period 30 August 2011 to 29 August 2012. Nil Work Report. ABM unpublished Report to Northern Territory Department of Resources.

Rohde, J., 2013, Annual Report EL 27906 'Terry's Find' For the period 30 August 2012 to 29 August 2013. Nil Work Report. ABM unpublished Report to Northern Territory Department of Resources.

Scrimgeour I, 2003. Developing a revised framework for the Arunta Region. Annual Geoscience Exploration Seminar (AGES) 2003. Record of abstracts. Northern Territory Geological Survey, Record 2003-001.

Scrimgeour I, 2004. Progress in the Arunta. Annual Geoscience Exploration Seminar (AGES) 2004. Record of abstracts. Northern Territory Geological Survey, Record 2004-001.

Walter M and Whittaker EJ, 2003. First Combined Annual Report for the period 22/08/2002 to 21/08/2003 on the Lake Mackay Project, EL 8694 Sandford, EL 8696 Redvers, EL 8697 Redvers North, EL 9442 Superior, EL 9449 Victoria. Newmont Exploration Ltd. Annual Report to the NTDME.

Whittaker E, Packer B, Bryce S. and Hogan, 2004. Newmont Internal Report on the Lake Mackay Project for the period 9 September 2002 to 31 December 2003. Newmont Internal Report.

