

**ANNUAL TECHNICAL REPORT  
EL 27709  
“PADDYS PLAIN”  
YEAR 4 (2013/2014)**



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Date: 30<sup>th</sup> June 2014  
Tenement Holders: Gempart NT Pty Ltd 100%  
Tenement: EL27709 “Paddys Plain”  
Reporting Period: 20 May 2013 to 19 May 2014 (Year 4)  
Distribution: Core Exploration Ltd (1)  
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Riddoch 1:100,000 sheet (5851)  
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### Copyright Statement

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## 1.0 Summary

EL27709 "Paddys Plain" is located approximately 75km east-northeast of Alice Springs. Access is by the Arltunga Road from the Stuart Highway via The Garden homestead. Access within the area is by means of station tracks (Figure 1.1). During the reporting period Core Exploration undertook a detailed review of GIS datasets and mineral potential modeling based on epigenetic vein hosted gold systems

Having completed detailed mineral potential modelling for the region around the Pattersons Gold Prospect the company now plans to undertake detailed soil sampling, further geological mapping and rock chip sampling across priority targets.

Exploration activities may also include a detailed prospect-scale IP geophysical survey to identify disseminated sulphides associated with gold mineralisation in quartz veins.

The interpretation of geophysical results and sample geochemistry will be incorporated with existing datasets for target generation works and the development of drilling proposals for the Project.



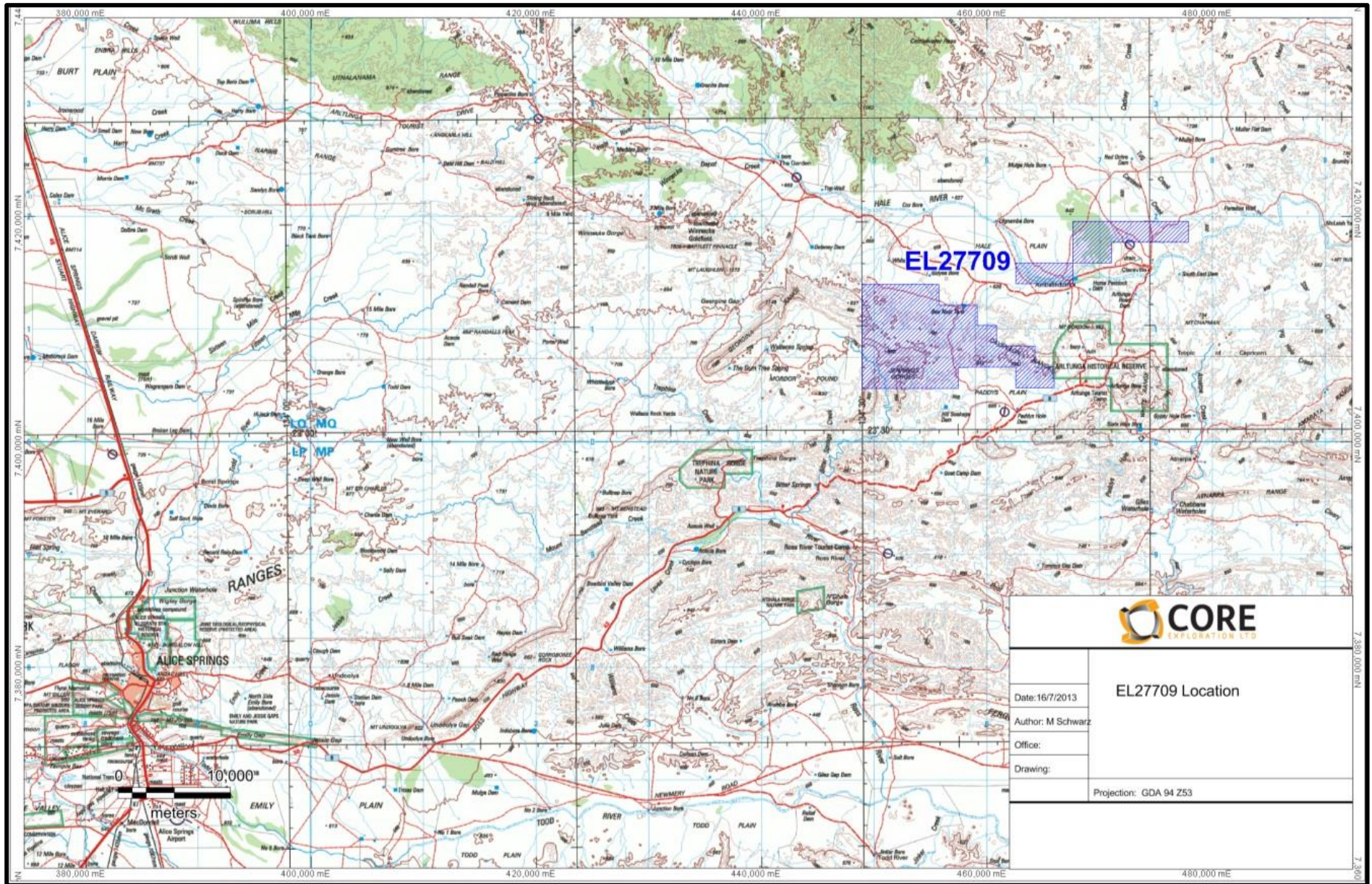


Figure 1.1: Location Map of EL7709



## 2.0 Introduction

This report details fourth year exploration conducted within Exploration Licence 27709 “Paddys Plain”. The tenement is currently held by DBL Blues Pty Ltd, a wholly owned subsidiary of Core Exploration Ltd. Core Exploration is exploring the tenement. The tenement is located 110 km’s east-northeast of Alice Springs, midway between the Amarata Range and Hale River. Travel time is just under two hours by road from the township (Figure 2.1). Access from Alice Springs is by way of the Ross Highway for 70 km, thence northeast towards Artunga and then heading northwest to north along the Paddys Hole Dam track.

Access within the tenement is limited; the general area is hilly with only a few vehicle tracks available (Photo 1). Due to seasonal rains, much of the area is overgrown inhibiting detailed ground. The rivers are prone to flooding during heavy rainfalls over the summer. Accommodation can be found at Ambalindum Station (30min drive) or Ross River (45min drive). The climate is typical of central Australia, hot summers and mild winters.



**Photo 1:** Typical terrain and outcrop within EL27709, Pattersons Gold Prospect

## 3.0 Geology and Mineralisation

EL27709 is located in the Proterozoic Aileron Province of the Central Arunta Region. The rocks dominantly comprise variably metamorphosed sediments, volcanics, calcsilicates, amphibolites and granite. The dominant structures appear to trend northeast. The geology of the Aileron Province is detailed by Murrell (1989) and Zhao & Cooper (1992).

The area is underlain by the Palaeoproterozoic Strangways Metamorphic Complex, which forms part of the Aileron Province. The older rocks are overlain unconformably by Amadeus Basin sediments which have been strongly

folded and faulted within the west-northwest trending Winnecke Nappe. The northern part of the area is underlain by Cadney Metamorphics, a sequence of calc silicates, marble and gneisses. The rest of the area is underlain by undifferentiated gneiss of the Artunga Gneiss complex. The Heavitree Quartzite and Bitter Springs Formation occur as fault bounded outliers in the southern part of the Exploration Licence. Strongly sheared zones are present within the basement and similar zones host gold mineralisation at the Winnecke Goldfield to the north-west.

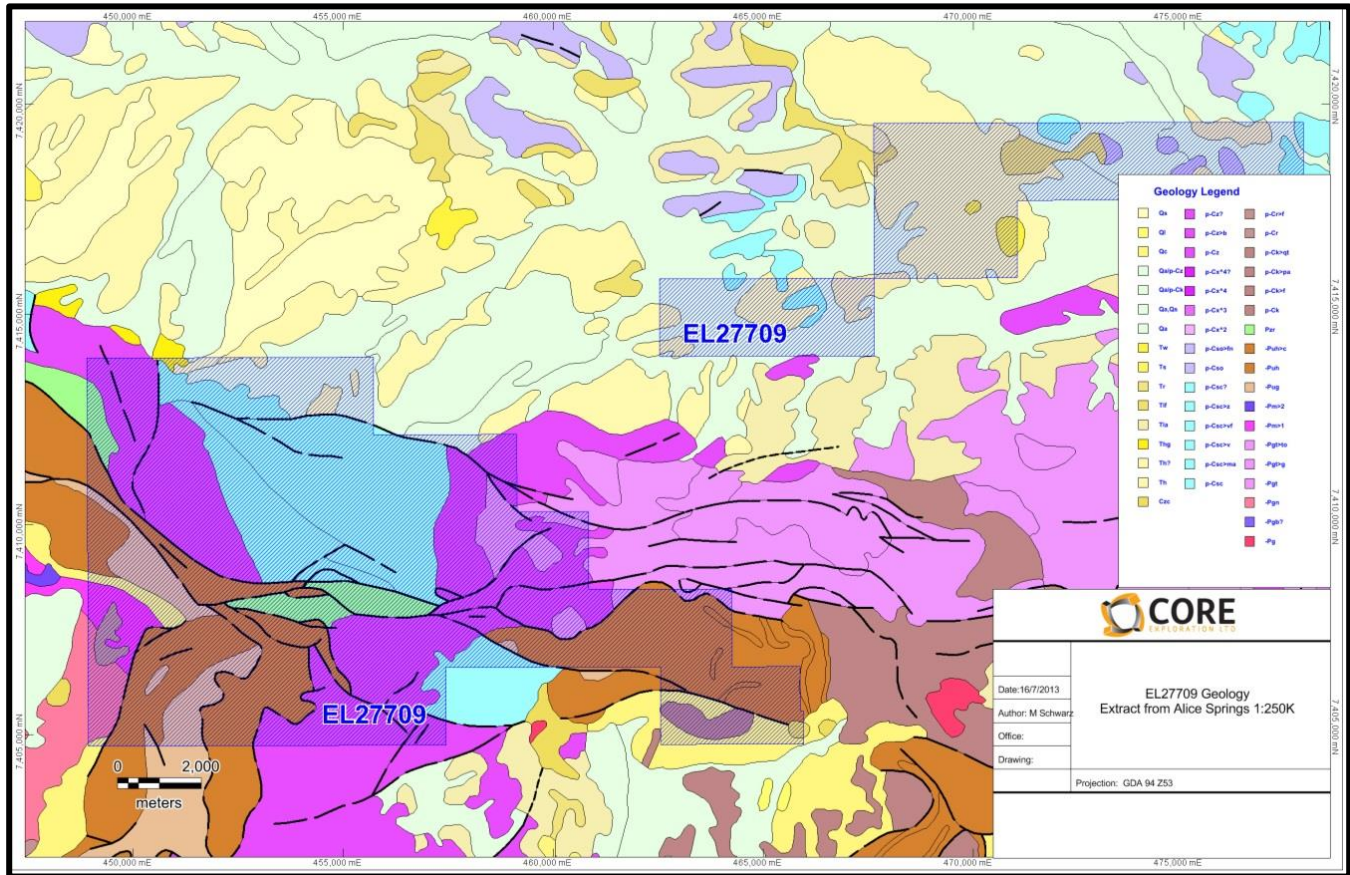


Figure 3.1 Extract from Alice Springs 1:250,000 Geology

#### 4.0 Tenure

Exploration Licence 27709 was granted on the 20<sup>th</sup> May 2010. The tenement overlaps pastoral leases PPL1124 (Ambalindum Station), PPL 1095 (The Gardens) and PPL995 (Loves Creek Station/CLC). Tenure details are summarised in Table 4.1.

Table 4.1 Summary tenement detail for EL 27709

Tenement	Owner	Date Granted	Tenure	Size	Rent Year 4	Expenditure Commitment
EL 27709	Gempart NT Pty Ltd 100%	20/5/2010	6 Years	44 blocks	\$3,708	\$43,000



## 5.0 Previous Exploration

### 5.1 Historical Exploration

The earliest modern exploration in the area was conducted on EL49 by Centamin Ltd during the early 1970's. No work appears to have been completed within the current tenement.

The southeastern portion of EL27709 was held by Esso Exploration as EL1325 between 1976 and 1978 (CR1978/0029 and CR1979/0031). Esso were exploring for uranium and no work was done in the current EL.

Alcoa Australia explored the Hale River Basin to the north of EL27709 from 1979 to 1983 under EL1860. Exploration was undertaken for roll-front uranium deposits (Howard, 1980 and 1981). Some zones of uneconomic uranium mineralization were discovered but they are located outside of EL27709.

EL3558 covered the northern and central parts of EL27709 and was held by Uranerz Australia during 1982. Some reconnaissance work was done for uranium within the strongly sheared retrogressed zones in the basement, no anomalies were found (Booth et al, 1983).

The eastern part of the tenement was covered by EL4674 from 1985 to 1989. Exploration for gold was undertaken by two local prospectors (G. Bohning and E. Bowman). Initial work included prospecting and metal detecting (Carthew, 1986). Further prospecting of the Cavenagh Range area was undertaken during the second year. The John Bull prospect was also visited and sampled (Carthew, 1988). A drilling programme was undertaken in late 1987-early 1988 to test the Pattersons Gully (John Bull) prospect and the Cavanagh Range/Whites Gully area (Murrell, 1988). Thirty seven RC percussion holes were completed. The best results were from hole PG-3 at Pattersons Gully with 3m at 1.9g/t Au from 46m downhole. This hole also had elevated base metal values (Pb up to 0.11%). No work was undertaken in the final year and the EL was surrendered (Murrell, 1989).

EL5100 covered the northern part of EL27709 and was held by Conapaira Metals. Some reconnaissance activities were carried out during 1988 but nothing substantial was achieved (Garside, 1988).

Ramsgate Resources explored the western part of the area under EL5486 during 1988 (James, 1988). Some rock chip sampling was completed in the current EL, however Ramsgate concentrated their activities on the Mordor Complex.

A portion of the eastern side of the area was covered by EL5809 which was explored by White Industries from 1988 to 1990. Stream sediment sampling (-80#, heavy mineral and BLEG) was undertaken but the results were disappointing. Some reconnaissance rock chip sampling also proved discouraging (Stidolph, 1989).

In 1990 White Industries was granted EL6596 which covered the same ground previously held under EL4674. A field inspection of the Cavenagh Range area was carried out, however the most prospective ground was held under claim and the EL was surrendered (Murrell, 1991).

The eastern half of the tenement was held by Shandona Pty Ltd (Alice Springs prospectors) under EL8785 from 1996 to 1998. Some stream sediment samples were collected and panned for gold with poor results. The reports on this work were not available.

CRA Exploration explored the Mordor complex under EL9371 from 1995 to 1997. This EL also covered the western part of the current tenement. CRA followed up a GEOTEM conductive anomaly near the fault contact between basement and Heavitree Quartzite within EL27709 (McCoy et al, 1997). Limonitic float in the vicinity returned 0.12% Cu. CRA postulated that the anomaly might be related to mineralization within the Amadeus Basin sequence (?Bitter Springs Formation). No further work was done.

EL22625 was held by Tanami Exploration from 2001 to 2005 and covered all of the current EL. Little exploration was carried out by Tanami during this period. Minor rock chip sampling was carried out during a visit to the John Bulls Surprise gold prospect. The best result was 3.5g/t Au from a sample of the mullock (Rohde, 2005).

Cullen Resources undertook some reconnaissance work in the area during 2008 under EL25620. The Pattersons Gully prospect was visited and rock chip samples collected which returned low values for gold – maximum 45ppb Au (Hamilton et al, 2008).

## 5.2 Core Exploration Previous Exploration

Core Exploration completed a thorough review of historical exploration work on the Paddy Plain tenement during the 2012-2013 reporting period. The Arltunga-Winnecke Goldfields have been extensively explored for gold by various companies, including well-funded modern gold explorers Normandy NFM and Tanami Gold. The gold at Arltunga and Winnecke is contained within massive white quartz veins which contain pyrite and rare chalcopyrite. The veins are hosted by various rock units in the Arunta basement and overlying Amadeus Basin. Their emplacement has been interpreted to be related to the ca.320 Ma Alice Springs orogeny. These auriferous veins extend beyond and between the two known goldfields, including at Pattersons (also known as John Bulls Surprise). The greatest problem with this gold system is the extreme variability of results from the same vein and between adjacent prospects. Rock chips from known prospects can frequently return >10 g/t Au, but drilling results have consistently failed to return economic grades and widths, despite intersecting the veins.

Core Exploration also undertook a field trip to the Patterson Prospect during the 2011-2012 reporting period. Four (4) rock chip samples were collected from outcropping quartz veins within the tenure. Gold values were generally low.



**Photo 2.** Outcropping quartz veins, potential hosts for gold mineralisation.



## 6.0 Year 4 Work Summary & Discussion

Core Exploration undertook a detailed review of GIS datasets and mineral potential modelling based on epigenetic vein hosted gold systems.

A number of geological features were identified as potentially having an important role in the development of gold bearing epigenetic quartz veins.

- North-easterly structures
- Retrogressive alteration
- Outcropping quartz dominant vein systems
- Contacts between the Heavitree Quartzite and Palaeoproterozoic basement
- Zones of dilation along regional structures including inflections and fault jogs
- Zones of demagnetization associated with retrogressive alteration

Each of these features were identified within various datasets (Landsat, Google Earth, regional magnetics, Aster data) and incorporated into a mineral potential model within the company's GIS system. Each geological feature was given a weighting according to how likely it is to influence the development of the targeted epithermal quartz veins.

A comparison was then made between know occurrences of epithermal gold mineralisation, elevated gold in rock chip samples from previous explorers and the geological environment as determined from the interpretation exercise.

The results indicated a number of areas that were previously unidentified as target areas for further work including soil sampling, rock chip sampling and mapping.

Core plans to undertake the next stage of ground-truthing these targets in the 2014-2015 field season.

## 7.0 Rehabilitation

There were no earth disturbing activities on the tenement. No rehabilitation was required.

## 8.0 Year 4 Expenditure

Year four expenditure details are summarised in table 8.1 below. A formal statement was lodged with the Department of Mines and Energy on the 16<sup>th</sup> June 2014.

**Table 8.1** Activity and expenditure details for the Year 4 reporting period

<b>ACTIVITY DETAILS FOR THE REPORTING PERIOD</b>		
<b>Admissible Expenditure</b>	<b>Specify the work undertaken</b>	<b>\$AU Claimed</b>
A. Geological Activities and Prospecting		
B. Geochemical Activities		
C. Geophysical and Remote Sensing Activities		
D. Drilling		
E. Bulk Sampling and Earthworks		
F. Rehabilitation		
G. Pre-feasibility inc. Metallurgical and Environmental		
H. Office Studies	Detailed review of GIS datasets and mineral potential modelling based on epigenetic vein hosted gold systems	\$ 26,665.00
I. Overheads (not to exceed 15% of the sum of A to H above)		\$ 2,666.50
J. (Preliminary Exploration – Yr 1)		
<b>K. Total Expenditure Claimed</b>		<b>\$29,331.50</b>
L. Covenant for this reporting period	<b>\$43,000</b>	



## 9.0 Year 5 Proposed Activities and Expenditure

As taken from the 2014 Annual Expenditure Report for EL 27709: having completed detailed mineral potential modelling for the region around the Pattersons Gold Prospect, the company now plans to undertake detailed soil sampling, further geological mapping and rock chip sampling across priority targets. Exploration activities may also include a detailed prospect-scale IP geophysical survey to identify disseminated sulphides associated with gold mineralisation in quartz veins. The interpretation of geophysical results and sample geochemistry will be incorporated with existing datasets for target generation works and the development of drilling proposals for the Project.

**Table 9.1** Proposed exploration activities and expenditure for the Year 5 reporting period

<b><i>ACTIVITY DETAILS FOR THE NEXT REPORTING PERIOD</i></b>		
<b>Admissible Expenditure</b>	<b>Specify the work to be undertaken</b>	<b>\$AU Proposed</b>
A. Geological Activities and Prospecting	Rock chip and soil sampling of the Pattersons Gold Prospect	\$ 10,000
B. Geochemical Activities	Analysis of rock chips and soil samples	\$ 8,000
C. Geophysical and Remote Sensing Activities	IP geophysical surveying over gold bearing veins and geophysical interpretation	\$ 30,000
D. Drilling		
E. Bulk Sampling and Earthworks		
F. Rehabilitation		
G. Pre-feasibility inc. Metallurgical and Environmental		
H. Office Studies	Target generation and development of drilling proposals	\$ 5,000
I. Overheads (not to exceed 15% of the sum of A to H above)	Administration	\$ 2,000
J. Covenant for next reporting period		<b>\$ 55,000</b>