

2013

# FINAL REPORT

## EL 28576

PERIOD: 12/9/2011 TO 11/09/2013  
CRESSWELL DOWNS REGION, NORTHERN TERRITORY

ENDEAVOUR INVESTMENTS (NT) Pty Ltd  
PO Box 96  
Palmerston  
NT 0831

### Coanjula Project

1:100 000 Mapsheets: 6162 Puzzle, 6262 Coanjula

1:250 000 Mapsheets: SE5307 Wallhallow, SE5308 Calvert Hills

Commodity: Diamonds



## **Abstract:**

EL 28576 covers the historic Coanjula diamond occurrence that was investigated in the 1980s and 90s by Ashton Mining and the Australian Diamond Exploration Joint Venture parties. The Coanjula occurrence was the culmination of many years exploration and is deemed to be the source of the detrital micro-diamonds found throughout the Creswell Downs area of the Barkly Tablelands. Additional work by previous explorers has located a diamond – associated mica lamprophyre of 1490Ma age within the licence area.

## **Contact Details:**

### **Tenement Holder:**

**Endeavour Investments (NT) Pty Ltd**

PO Box 96

Palmerston

NT 0831

Contact: Mr Andrew Jettner

Email: [andrew@minesiteservices.com.au](mailto:andrew@minesiteservices.com.au)

### **Report Author:**

**Minesite Services Australia**

PO Box 96

Palmerston

NT 0831

Contact: Mr Andrew Jettner

Tel: 08 8931 1461

Email: [andrew@minesiteservices.com.au](mailto:andrew@minesiteservices.com.au)

## **Copyright Statement:**

This document and its content are the copyright of Endeavour Investments (NT) Pty Ltd. The document has been written by Andrew Jettner for submission to the Northern Territory Department of Mines and Energy as part of the tenement reporting requirements as per Regulation 86 of the Minerals Titles Act. Any information included in the report that originates from historical reports or other sources is listed in the “References” section at the end of the document.

This report may be released to open file as per Regulation 125(3)(a).

Endeavour Investments authorises the department to copy and distribute the report and associated data.

## **CONTENTS**

Abstract

Contact Details

1. Location
2. Title History
3. Access
4. Geological Setting
  - i. Regional Geology
  - ii. Licence Geology
5. Geological Activities
6. Conclusions
7. References

## **LIST OF FIGURES**

Figure 1	Location Map
Figure 2	Mineral Tenure
Figure 3	Real Property Tenure
Figure 4	Access
Figure 5	Regional Geology
Figure 6	Licence Geology

## 1. LOCATION

EL 28576 is located some 200km to the southwest of Borroloola in the Northern Territory. The licence has an irregular shape having a north-south length of 6km with an maximum east-west width of 14km and lies between 17° 56'S to 17° 59'S and 136° 27'E to 136° 35'E. The licence is located upon the Cresswell Downs pastoral lease (PPL 1014). The Cresswell Downs station is owned by the Paraway Pastoral Company (Macquarie Bank Pastoral Enterprise) and is operated as part of the Walhallow Station.

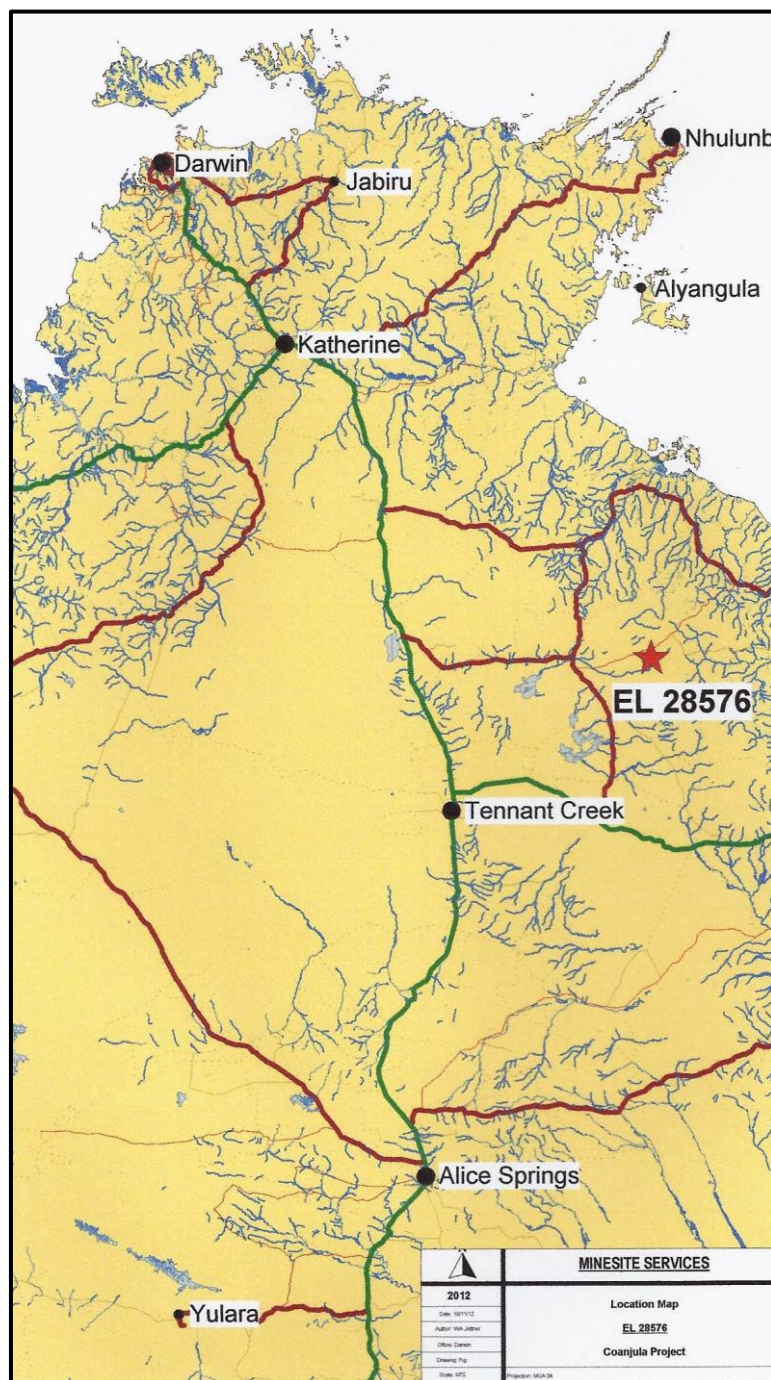


Figure 1 Location Map

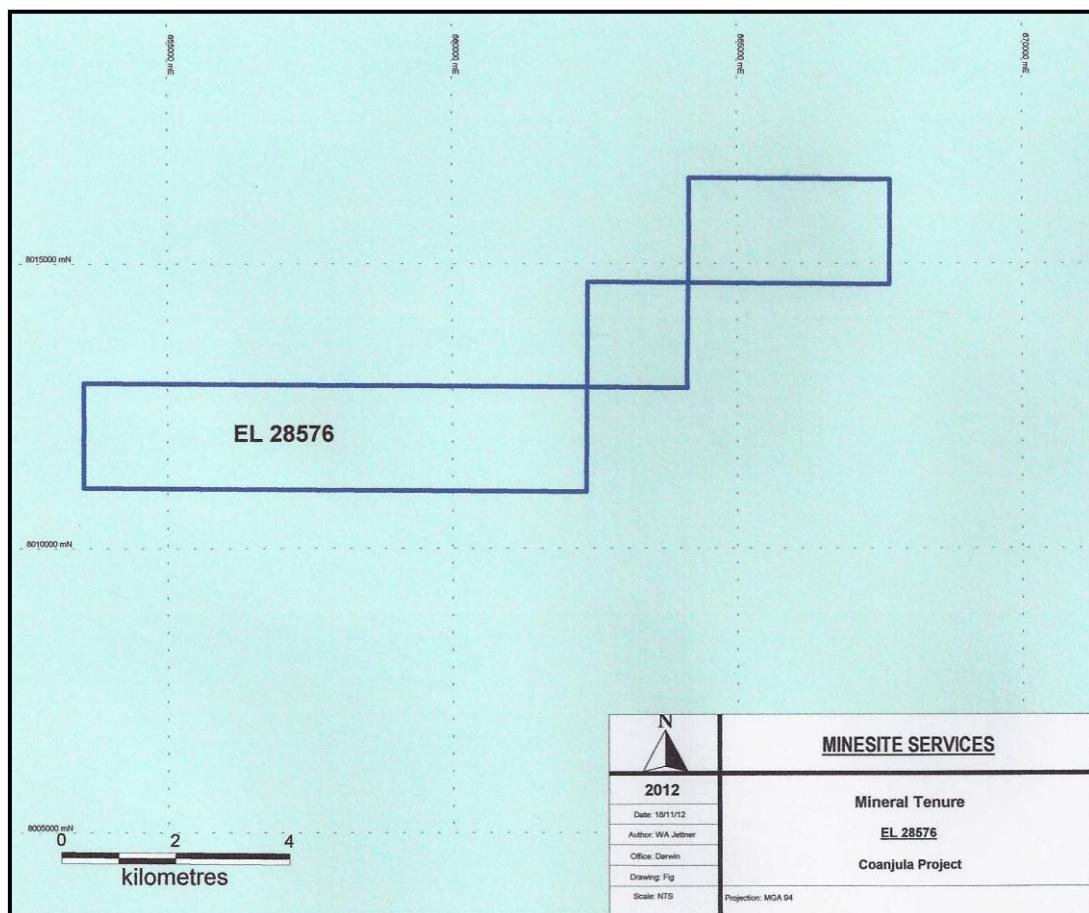
## 2. TITLE HISTORY

### Mineral Tenure

EL 28576 was granted on 12/09/2011 and this report is the Final Technical Report which covers activities in the period 12/09/2011 to 11/09/2013, being the first two years of tenure at with point the entire licence was surrendered.

The licence has an area of 8 graticular blocks (26 km<sup>2</sup>).

The licence area has an extensive exploration history with the source of the detrital diamonds found at this locality as yet unlocated.

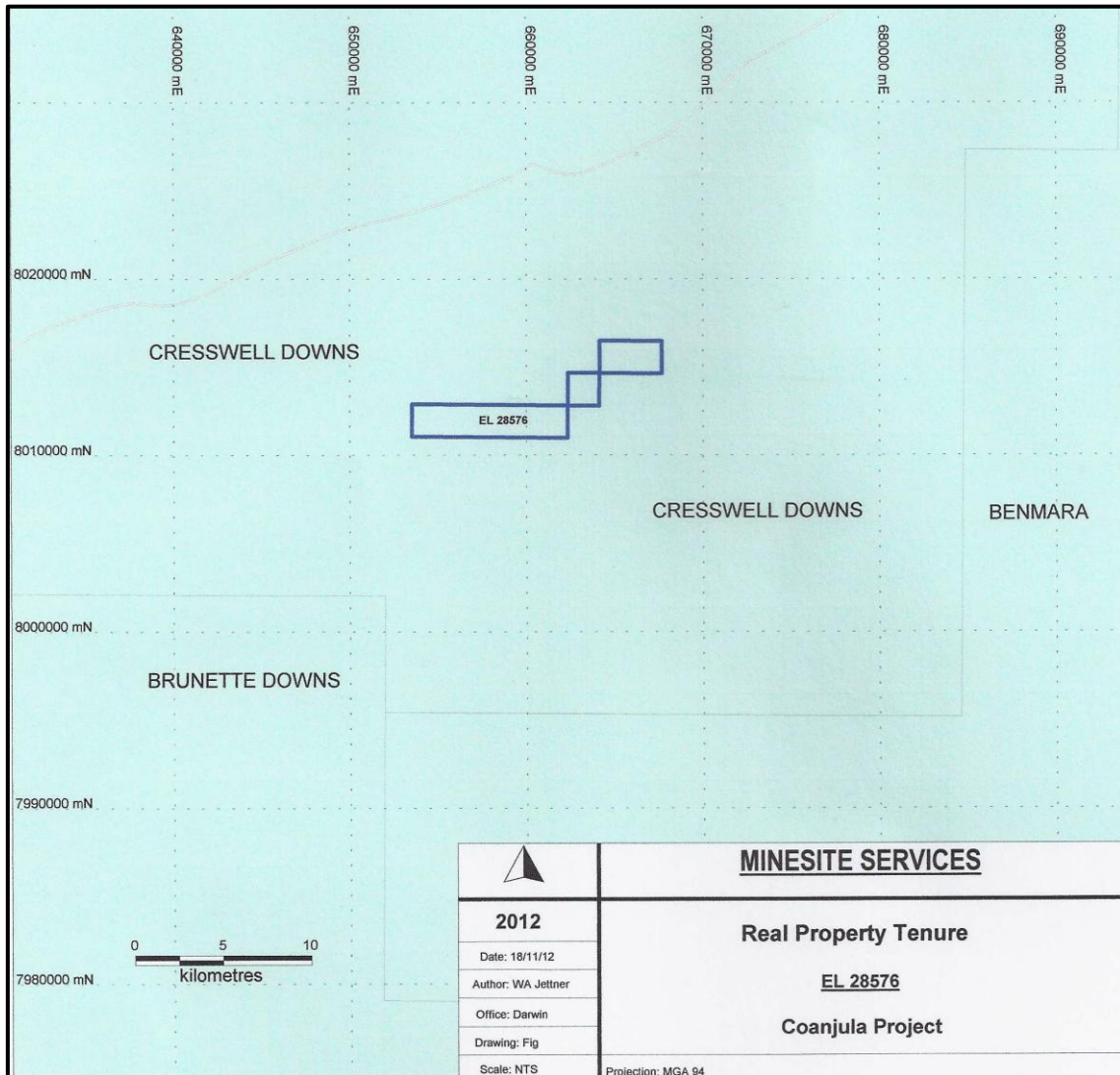


**Figure 2 Mineral Tenure**

Real Property

EL 28576 is located on the following real property parcels:

NT PPL 1014 (NTP 1163) "Cresswell Downs Station" which is owned by Paraway Pastoral Company Ltd (Level 22 20 Bond St Sydney NSW 2000)



**Figure 3 Real Property**

### 3. ACCESS

Access to the exploration licence from Darwin is southwards along the Stuart Highway for 618km to Daly Waters then 270 km eastwards along the Carpentaria Highway to Cape Crawford, then 173km southwards along the Tablelands Highway, then 67km northeastwards along the Calvert Road. At this point the public roads are left and station tracks are used to cover a distance of 15km to the licence area. Access throughout the remainder of the licence is via station roads and fence lines. Access is considered to be fair due to vegetation density.

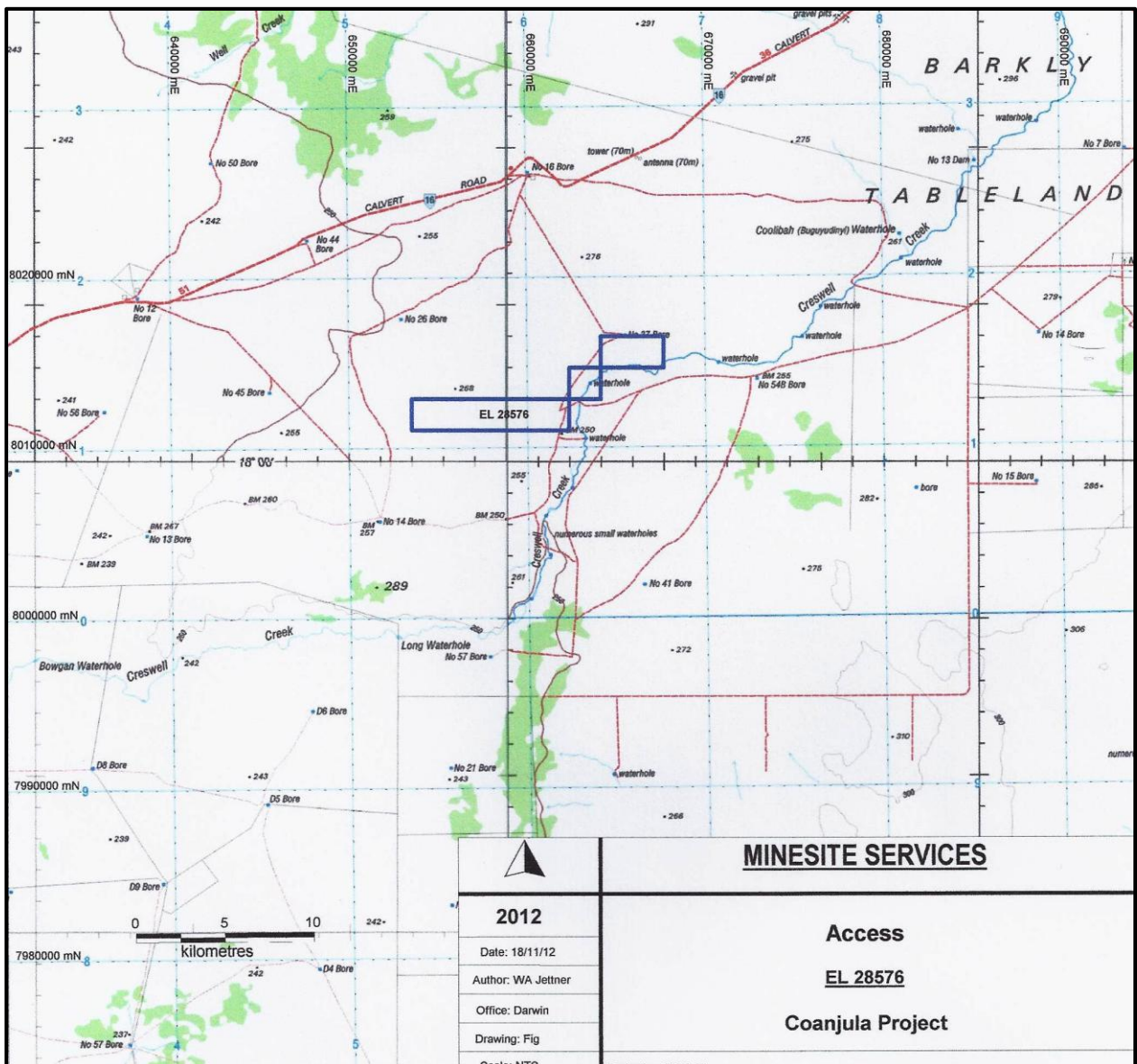


Figure 4 Access



## 4. GEOLOGICAL SETTING

The Coanjula project is located in the Nicholson Basin in the eastern part of the Northern Territory.

The dominant tectonic unit in the Coanjula region is the northeast trending Murphy Tectonic Ridge, consisting of steeply dipping metasediments (Murphy Metamorphics) intruded by the Nicholson Granite. The ridge is interpreted as a horst block, having a length of 150km and is approximately 20km wide in the Coanjula area. Both the Coanjula microdiamond deposit and the volcanic breccia pipes are located towards the western end of this tectonic ridge.

### i. Regional Geology

The Murphy Metamorphics are geosynclinal pelitic and quartzo-feldspathic sediments which have been folded about east-west axes.

The metamorphic grade of the sediments comprising the Murphy Metamorphics in the Coanjula area increases from lower Greenschist Facies in the west to upper Greenschist Facies in the east. The Nicholson Granite intrudes the Murphy Metamorphics and contains components of granitic, dioritic, monzonitic and syeno-gabbroic composition. The relative proportion of sediment to granite increases rapidly in an easterly direction, and is believed to be indicative of differential uplift.

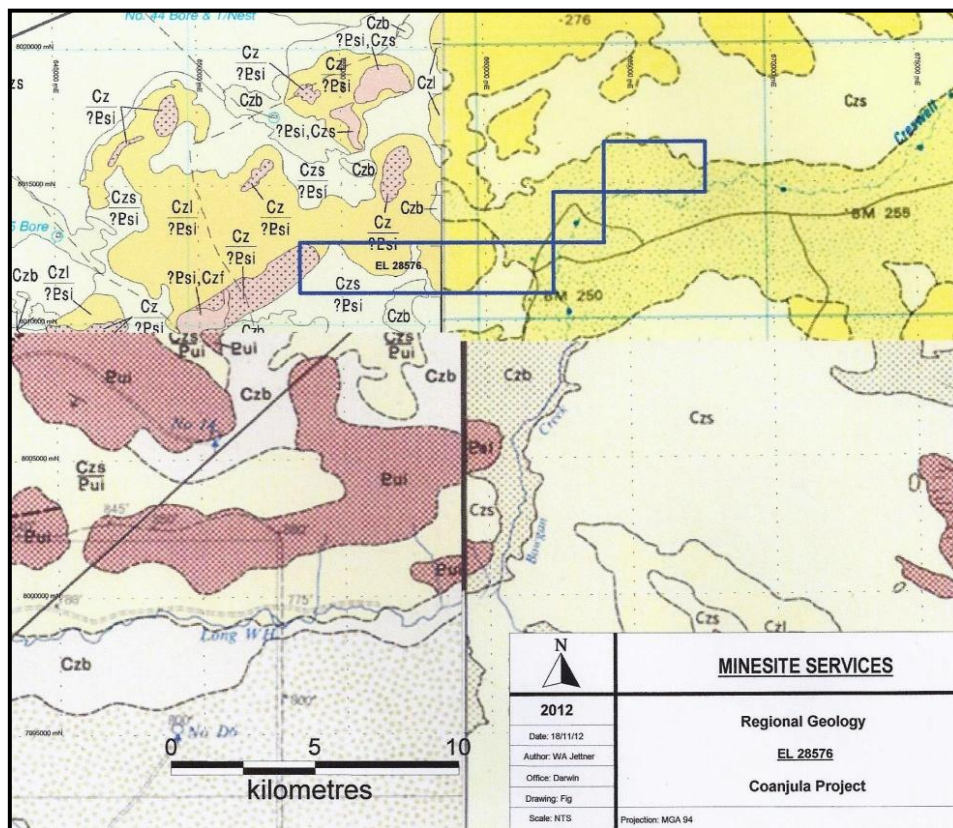


Figure 5 Regional Geology

## ii. Licence Geology

### Coanjula Pipes

A cluster of 20 intrusive plugs occurs within a radius of 10km, centred on a point 25km to the west of the Benmarra homestead. These plugs intrude both the Murphy Metamorphics and the Nicholson Granite. The intrusives have a diatreme form with, in some cases, a penecontemporaneous infilling of sediments. Several of the plugs are overlain by either Cambrian Bukalara Sandstone or Adelaidean Mittebah Sandstone. The largest pipe (200m in diameter) is conformably overlain by 103m of dolomitic sediments, believed to be McArthur Group equivalents. The pipes are composed of various combinations of fine-grained volcanics, lithic volcanic tuff/breccias and crater sediments.

The fine-grained porphyritic volcanics usually contain 2 generations of olivine which constitute up to 25% of the rock. Some of the volcanics have a matrix containing euhedral plagioclase feldspar laths. Carbonate in the matrix and in vein form is common in many pipes. Mantle xenoliths are common and include spinel dunite with xenoliths of strained olivine and Cr- diopside.

The volcanics range from basaltic to potassic-ultrabasic in composition.

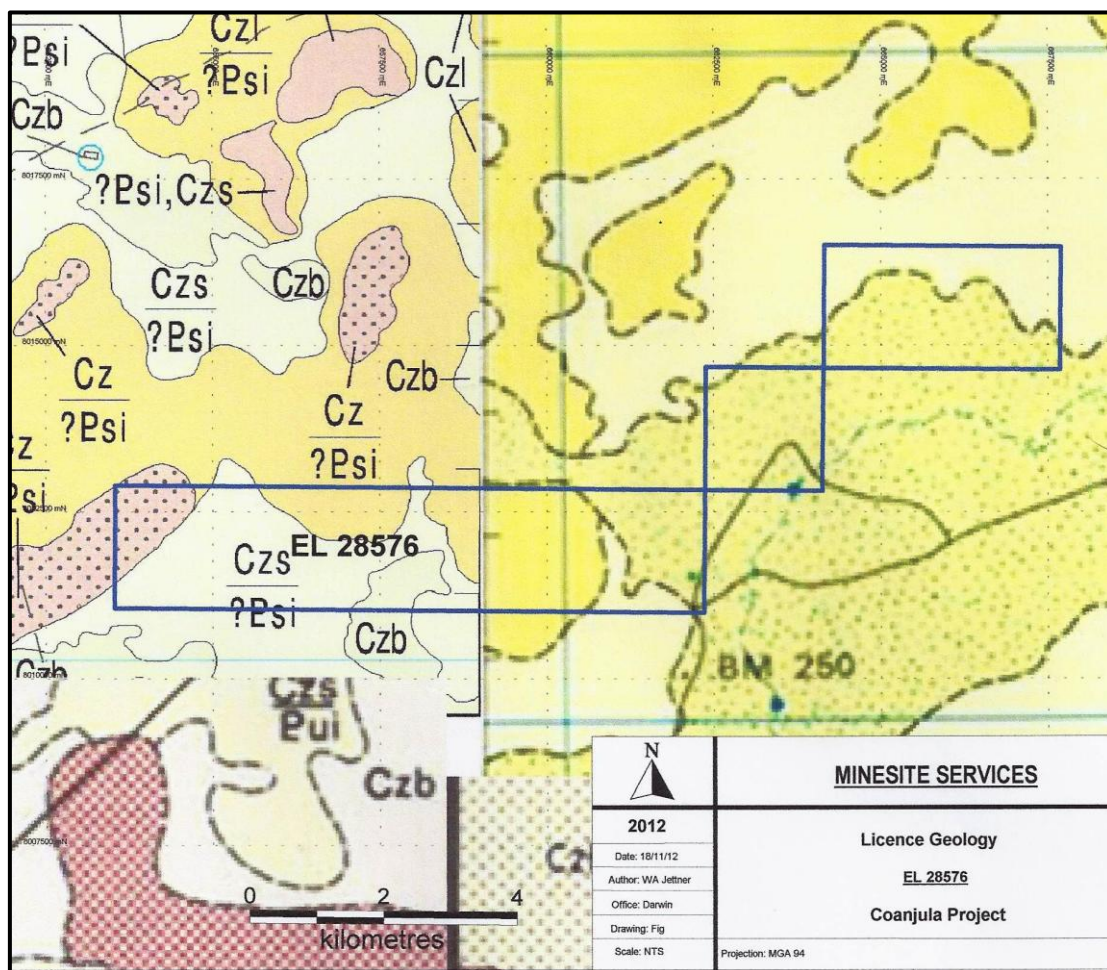


Figure 6 Licence Geology

## **5. GEOLOGICAL ACTIVITIES**

### Office Studies.

During the period a broad scale literature survey was conducted on the project area, which consisted of examining previous explorers data as submitted to the DME as well as current thinking on diamond mineralising systems in the Northern Territory.

### Field Studies

Field work on the licence during the year consisted of a site visit by Mr A Jettner and a field crew from Minesite Services for a general site familiarisation and examination of sites of interest with the intention of planning future on ground exploration strategies.

There was no field work conducted in the second licence year and subsequently the licence was surrendered.

## **6. CONCLUSIONS**

Although there has been a magnitude of work done on this area over the last 2 decades the author feels that further work in the area is warranted, unfortunately due to a rationalisation of work commitments this exploration licence was surrendered.

## 7. REFERENCES

### OPEN FILE COMPANY REPORTS

Barr TM, (1978), EL 1427, Annual Report Bowgan Creek for the year ending 2/5/1978, Mines Administration unpublished report, CR1978-0138.

Barrie J, (1968), AP 1897, Progress Report on APs 1766,1788, 1801, 1802, and 1897 in the Alexandria region, IMC Development unpublished company report, CR1968-0030.

Busuttill S, (1994), EL 7223, EL 7223 Barkly, Partial Relinquishment Report for the year ending 20/1/0994. MIM Exploration unpublished company report, CR1994-0362.

Busuttill S, (1994), EL 7223, EL 7223 Barkly, Third Annual Report for the year ending 20/1/0994. MIM Exploration unpublished company report, CR1994-0232.

Crabb DM, (1995), EL 7223, EL 7223 Barkly, Partial Relinquishment Report, year ending 21/2/1995, MIM Exploration unpublished company report, CR1995-0370.

Hitchman SP, (1992), EL 7223, First Annual Report EL 7223 Barkly, year ending 20/1/1992. MIM Exploration unpublished company report, CR1992-0093.

Hitchman SP, (1993), EL 7223, Second Annual Report EL 7223 Barkly, year ending 20/1/1993. MIM Exploration unpublished company report, CR1993-0151.

Lawrence RJJ, (1993), EL 7223, Partial Relinquishment Report for the year ending 20/1/1993. MIM Exploration unpublished company report, CR1993-0330.

Lewis J, (1999), EL 7223, Final Report EL 7223 Coanjula 12/5/1992 to 20/2/1999, Ashton Mining unpublished company report, CR1999-0239.

Mason A, (1980), EL 1427, Final Report for EL 1427, Mines Administration unpublished report, CR1980-0118.

Pang D, (1998), EL 9676, Annual report EL 9676, Creswell Creek 26/11/1996 to 25/11/1997, Ashton Mining unpublished company report, CR1998-0058.

Pang D, (1998), EL 9676, Final report EL 9676, Creswell Creek 26/11/1996 to 2/12/1998, Ashton Mining unpublished company report, CR1998-0058.

Perrino FA, (1970), AP 1897, Progress Report on Alexandria Region, IMC Development unpublished company report, CR1970-0038.

Pittard KJ, (2003), EL 22994, Partial Surrender Report, De Beers unpublished company report, CR2003-0482.

Reddicliffe TH, (1994), ERL 104, Relinquishment Report ERL 104 for the period 18/12/1989 to 17/12/1993, Ashton Mining unpublished company report, CR1994-0212.

Reddicliffe TH, (1995), ERL 104, Annual Report ERL 104 for the period 18/12/1993 to 17/12/1994, Ashton Mining unpublished company report, CR1995-0022.

Reddicliffe TH, (1993), ERL 104, Annual Report ERL 104 for the period 19/12/1991 to 18/12/1992, Ashton Mining unpublished company report, CR1993-0098.

Reddicliffe TH, (1993), ERL 104, Annual Report ERL 104 for the period 19/12/1992 to 18/12/1993, Ashton Mining unpublished company report, CR1994-0079.

Reddicliffe TH, (1992), ERL 104, Annual Report ERL 104 for the period 19/12/1990 to 18/12/1991, Ashton Mining unpublished company report, CR1992-0313.

Reddicliffe TH, (1990), ERL 104, Annual Report ERL 104 for the period 19/12/1989 to 18/12/1990, Ashton Mining unpublished company report, CR1991-0165.

Reddicliffe TH, (1995), EL 7223, Annual Report EL 7223 for the period 21/2/1994 to 20/2/1995, Ashton Mining unpublished company report, CR1995-0245.

Reddicliffe TH, (1995), EL 7223, Annual Report EL 7223 for the period 21/2/1997 to 20/2/1998, MIM Exploration unpublished company report, CR1998-0250.

Rogers T, (1996), ERL 104, Final Report ERL 104, 19/12/1989 to 15/12/1995, Ashton Mining unpublished company report, CR1996-0453.

Rogers T, (1997), EL 7223, Annual Report EL 7223 Coanjula, 21/2/1996 to 20/2/1997, Ashton Mining unpublished company report, CR1997-0203.

Rogers T, (1996), EL 7223, Annual Report EL 7223 21/2/1995 to 20/2/1996, Ashton Mining unpublished company report, CR1996-0234.

Rogers T, (1996), EL 7223, Relinquishment Report EL 7223 21/2/1992 to 20/2/1996, Ashton Mining unpublished company report, CR1996-0441.

Wilkins NA, (1981), EL 2232, Combined Final Report and 1980 Annual Report, Bowgan Creek, Amoco Australia unpublished company report, CR1981-0033.

Wilson P, (2002), EL 10365, Structural Geology and Mineral Alteration Interpretation from Landsat TM Satellite data. International Earthscan unpublished company report, CR2002-0391.

\_\_\_\_\_, (1970), AP 1897, Completion Report AP 1897 Bowgan, IMC Development unpublished company report, CR1970-0035.

\_\_\_\_\_, (1968), AP 1897, Annual Report AP 1897 Bowgan 13/2/1968 to 12/8/1969, IMC Development unpublished company report, CR1969-0062.

\_\_\_\_\_, (1989), EL 4359, Final Report 13/9/1988 to 12/9/1989, Ashton Mining unpublished company report, CR1989-0715.

\_\_\_\_\_, (1989), EL 4359, Annual Report 13/9/1988 to 12/9/1989, Ashton Mining unpublished company report, CR1989-0700.

\_\_\_\_\_, (1985), EL 4359, Annual Report 13/9/1984 to 12/9/1985, Ashton Mining unpublished company report, CR1985-0244.

\_\_\_\_\_, (1985), EL 4359, Annual Report 13/9/1984 to 12/9/1985, Ashton Mining unpublished company report, CR1985-0029.

\_\_\_\_\_, (1986), EL 4359, Annual Report 13/9/1985 to 12/9/1986, Ashton Mining unpublished company report, CR1986-0304.

\_\_\_\_\_, (1987), EL 4359, Annual Report 13/9/1986 to 12/9/1987, Ashton Mining unpublished company report, CR1987-0220.

\_\_\_\_\_, (1989), EL 4359, Annual Report 13/9/1987 to 12/9/1988 Ashton Mining unpublished company report, CR1989-0267.

\_\_\_\_\_, (1989), EL 4359, A Confidential Report by the ADE Joint Venture Parties in support of 3 requests RE: Coanjula Titles, NT, Ashton Mining unpublished company report, CR1989-0288.

\_\_\_\_\_, (1989), EL 4359, A Confidential Report by the ADE Joint Venture Parties on the Coanjula work program for 1988, Ashton Mining unpublished company report, CR1989-0289.