

# ACACIA MINERALS PTY LIMITED

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## EXPLORATION LICENCE 22488

*OORATIPPA*

### SIXTH ANNUAL REPORT

*3 December 2006 - 2 December 2007*

LICENSEE:

*Acacia Minerals Pty Limited*

AUTHOR:

*N. BYRNE*

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SF53-11  
ELKEDRA 1:250 000  
SF53-07  
HUCKITTA 1:250 000  
6153  
Lucy 1:100 000  
6154  
Ooratippra 1:100 000

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## SUMMARY

Acacia Minerals Pty Limited ACN 127 419 729 (Acacia), a Territory based exploration Company, purchased Exploration Licence 22488 from Southwestern Mining Pty Limited (Southwestern). The dealing was approved under Section 173 of the Mining Act on the 4th of December 2007. Acacia is a wholly owned subsidiary of Adelaide River Resources Limited (ACN 127 411 796) (Adelaide River), a public company currently preparing to list on the Australian Stock Exchange (ASX).

Southwestern purchased EL 22488 from Giants Reef Exploration Pty Limited on the 11th December 2003. The transfer was approved under Section 173 of the Mining Act on the 2nd of April 2004. Principal reason for the purchase was Southwestern's belief that the area was highly prospective for Diamonds.

Subsequently, Southwestern also applied for and was granted a further four Exploration Licences numbered 24822, 24869, 24993 and 25019 all adjoining or within EL 22488. Other than EL 24869 which has been surrendered, these tenements have also been transferred to Acacia.

The ELs are worked as one project known as the "Ooratippra Diamond Project".

This Report covers the exploration work carried out during the sixth year of tenure from the 3rd of December 2006 to the 2nd of December 2007.

Work done included:

- Research
- Photo interpretation
- Geophysical Interpretation
- Sampling of magnetic anomalies
- Sampling of circular topographic features
- Diamond and Indicator Mineral assessment
- Helicopter reconnaissance
- Land-owner liaison

## 1. INTRODUCTION

Acacia Minerals Pty Limited (Acacia), a Territory based mineral exploration company, purchased Exploration Licence 22488 from Southwestern Mining Pty Limited (Southwestern). The dealing was approved under Section 173 of the Mining Act on the 4th of December 2007. Acacia is a wholly owned subsidiary and the exploration arm of Adelaide River Resources Limited (ABN 50 127 411 796) (Adelaide River), which is currently preparing for listing on the Australian Stock Exchange.

Previously, Southwestern purchased the tenement from Giants Reef on the 11th December 2003 and the transfer was approved under Section 173 of the Mining Act on the 2nd April 2004.

Principal exploration targets are diamonds and base metals.

This Report summarises the exploration work carried out during the sixth year of tenure from the 3rd of December 2006 to the 2nd of December 2007.

## 2. LOCATION

Exploration Licence 22488 is situated approximately 350kms southeast of Tennant Creek. The Licence area spans the boundaries of the Elkedra and Huckitta 1:250 000 scale map sheets and is located on the Lucy (6153) and Ooratippra(6154) 1:100 000 scale map sheets.

Access to the Licence area from Tennant Creek is south via the Stuart Highway and then east onto the Ali Curung Aboriginal Community road. This leads to the Sandover Highway which is then followed approximately 80kms east to the northwest portion of the Licence area. Most of the EL has little relief and vegetation, and is quite accessible via good station tracks servicing the water bores in the area.

Alternatively, the Licence area can be accessed via the Sandover Highway from Mount Isa or Alice Springs, and south using the Lucy Creek Station roads.

There is also a good all-weather landing strip approximately 3 kilometres south of the Ooratippra Homestead.

Figure 1 shows the Exploration Licence in relation to the Sandover Highway.

## 3. TENURE

Exploration Licence 22488, initially covering 388 sub-blocks (1236 square kilometres) was granted to Giants Reef on the 3rd December 2001 for a period of 6 years.

ELs 24822, 24869, 24993 and 25019 were granted on the 4th April, 7th July, 11th August and 26th July 2006 respectively.

The Licences lie within NT Portions 2891, being Ooratippra Station, Perpetual Pastoral Lease 921, NT Portion 370, being Argadargada Station Perpetual Pastoral Lease 1137 and NT Portion 686 being Lucy Creek Station, Perpetual Pastoral Lease 01007.

In November 2004, Southwestern reduced the area to 194 sub-blocks (618 square kilometres).

EL 22488 is explored in conjunction with ELs 24822, 24869 and 25019 and, being contiguous, are worked as one Project known as the Ooratippra Diamond Project

All granted tenements in the Ooratippra Diamond Project were transferred to Acacia Minerals on the 4th of December 2007.

Plan SOU003 shows the current Project Area.

#### 4. GEOLOGY

##### 4.1 Regional Geology

The reader is referred to AusIMM Monograph 14 (Geology of the Mineral Deposits of Australia and Papua New Guinea), Volume 1, pp. 829-861, to gain a good introduction to the regional geology and styles of gold-copper mineralization of the area.

##### 4.2 Local Geology

The Sandover River flows east through the Project Area, within which are extensive flood-out areas and tributaries. North of the Sandover River, there is little outcrop and much of the area is covered by alluvial outwash cover.

South of the River, areas of Cambrian outcrop have diverted southerly flowing drainage channels. The outcropping Cambrian Arrintheta Formation sediments of the Georgina Basin Sequence are generally flat-lying throughout the central to southern parts of the Licence Area. The Ooratippra fault strikes northwest-southeast throughout the central portion of the Project Area.

#### 5. WORK DONE DURING THE YEAR

##### 5.1 Review

An extensive open file research programme was carried out and a review of the results achieved by previous explorers. This work was then correlated with the geophysical and photographic interpretation and previous work carried out by Southwestern.

##### 5.2 Geophysics

Lindeman Geophysics Pty Ltd were commissioned to carry out a detailed interpretation of NTGS and open file magnetics to identify any magnetic anomalies considered to be possible kimberlites. Additional anomalies were identified by Southwestern.

In EL 22488, a large number of magnetic anomalies were identified from NTGS airborne magnetics and reviewed to identify any with the potential to be kimberlites. A detailed interpretation located the approximate centre of 32 magnetic anomalies considered to have the potential to be kimberlites.

Each magnetic anomaly was given the identification prefix of CKA, followed by sequential numbering.

The locations of these anomalies in GDA 94 are:

	MGA_E	MGA_N
CKA 01	644871	7578352
CKA 02	605547	7582880
CKA 07	604287	7585191
CKA 08	605894	7583602
CKA 10	606195	7591708
CKA 11	607018	7592485
CKA 13	607878	7593599
CKA 22	623468	7576776
CKA 23	642996	7575756
CKA 24	641853	7574791
CKA 26	636861	7575344
CKA 27	635071	7574450
CKA 28	608606	7574596
CKA 29	607856	7573105
CKA 30	633077	7571344
CKA 31	633762	7570851
CKA 32	633070	7570153
CKA 33	631639	7569519
CKA 34	632318	7570134
CKA 35	608296	7569693
CKA 38	611206	7566980
CKA 39	611491	7565389
CKA 40	612546	7558287
CKA 41	614981	7559183
CKA 43	633868	7583963
CKA 44	630311	7581907
CKA 45	603506	7574069
CKA 46	605459	7571441
CKA 48	618664	7577455
CKA 62	624800	7590750
CKA 63	602750	7591325
CKA 69	646750	7570750

These locations are also shown on the accompanying plan SOU005.

### 5.3 Sampling

From each location, a 20kg and a 2 kg sample of surface loam was collected through a 1mm mesh sieve.

A fuel dump was established at number 14 bore, north of the Sandover River, in preparation for the sampling programme. Fuel was delivered by Russell Dehne Enterprises of Alice Springs.

A Jet Ranger helicopter from Alice Springs Helicopters was used to transport the personnel sampling the anomalies and to drop samples off at pre-determined collection points. A three-man crew from Arnhem Exploration Services of Tennant Creek carried out the sampling.

### 5.3.1 Diamonds

At the end of the programme, Russell Dehne Enterprises brought the samples to Alice Springs from where they were sent to Diotech Heavy Mineral Services of Welshpool, WA, for processing for diamonds and key indicator minerals.

Northline Freight Management Pty Ltd of Alice Springs were used to transport the samples from Alice Springs to Welshpool.

### 5.3.2 Other minerals

Also from each location, a 2kg sample of surface loam, sieved to 1mm, was collected and sent to North Australian Laboratories, Pine Creek, to be analysed for: copper, lead, zinc, cadmium, nickel, cobalt, chromium, vanadium, molybdenum, arsenic, bismuth, barium, iron, manganese, titanium, thorium, silver, gold (both to one ppb) and uranium. Also, cerium, lanthanum and yttrium to check for rare earths.

ABC Transport Pty Ltd of Alice Springs were used to transport the samples to Katherine, and from there, Nighthawk Couriers took the samples to Pine Creek.

### 5.3.3 Geological reconnaissance

Subsequent to the loam sampling programme, the following helicopter reconnaissance work was carried out by geologist Peter Simpson. A visit was made to two sites of interest aimed primarily at finding diamonds, but including the search for base metals. Co-ordinates are in GDA94 unless otherwise specified.

#### 5.3.3.1 Stop 1 - 7567300N 607500E Sample number 163018

##### Site description

On aerial photos, the target is a clearly discernible set of concentric circular features, with a diameter of approximately 1.7km. The focus of the concentric trends is not symmetrically in the centre but towards the southern part of the anomaly, where there is a raised central area about 10 or 12 metres above the surrounding shallow saucer-shaped depression.

In the centre of the feature are pale brown flat-lying dolomitic limestone beds of the Arrinthrunga Formation, with lesser sandstone layers. Some strata appear to dip shallowly in towards the central rise.

Two old cleared lines aligned N-S and E-W are visible on colour air photo 191, Run 1 (NTc 1293 1:50,000 scale Arrapunga-Alkea survey). The N-S line is approximately 5km long and passes about 150m to the east of the focus of the anomaly and appears designed to span it. The E-W line extends across the whole photo and may be an old fence line. The two lines cross at a point about 1km NNE of the centre of concentricity.

The helicopter landed approximately in the middle of the concentric trends. The area around the centre of the anomaly, but not its outer margins, was examined on foot. Two sieved minus-2mm samples weighing 25kg and 1kg, both numbered 163018, were dug from a pit about 30cm deep at (WSG84 co-ords) 7567253N 607671E. The sample material was mostly red sandy soil and fine carbonate rock grains.

The general location of the N-S grid line was apparent on the ground from bulldozer push-ups, but the line itself has largely been obliterated by regrowth.

## Comments

The reason for the depression is not clear, but given the carbonate terrane it is likely to be caused by dissolution of underlying strata and subsequent subsidence. There is no associated magnetic anomaly that would suggest an igneous intrusion.

### 5.3.3.2 Stop 2 - 7578352N 644871E

#### Site description

A flattish thinly vegetated area cut by several shallow linear scrubby gullies, with a coincident magnetic anomaly designated CKA1 and considered by some previous explorers to be caused by a pipe-like ultramafic body.

A ground inspection was made of the area, which showed scattered patches of subcrops of Arrintheta Formation dolomitic limestone among extensive areas of red sand. No samples were taken for analysis as this had been done in the helicopter-borne sampling carried out last month.

## Comments

Nothing was seen on the ground to explain the magnetic anomaly. A drilling program is planned for this target.

### 5.3.4 Results

There were no diamond or indicator minerals identified. Results from Diotech and North Australian Laboratories are included in this report as attachment "A"

Geochemical analysis of loam sampling indicate elevated Cr and Ni in a number of locations. The highest being 47ppm Cr from CKA 43 which also had 2x background Ni and Ba.

Samples from a number of the magnetic anomalies had elevated values with the highest being 363ppm Pb and 71 ppm Zn from CKA23, 52ppm Co from CKA 29, and 24ppm Cu from CKA 71.

Rock samples taken from site 1 showed signs of brecciation indicative of a possible kimberlite. Petrological and geochemical results from these rock samples have not yet been received.

## 6. LANDOWNER LIAISON

Prior to commencing field work, the co-ordinates and a 1:100,000 Rasta plan showing the proposed sample locations were given to the Central Land Council to enable them to show the landowners. The detailed topography on the plan enabled the landowners to clearly identify the work areas in relation to sites of significance.

Despite the considerable delays which this process caused, it was a worthwhile exercise as it ensured that unintentional damage to sites could be avoided. A plan showing a small area which the landowners wanted designated as a no-go area was provided by the CLC. This did not impact on the exploration programme



## 7. REHABILITATION

The scraping up of surface loam samples did not create significant disturbance. No field work was carried out by the Company on the Project Area during the year which requires any rehabilitation measures.

## 8. CONCLUSIONS

The Project Area appears to be in a significant structural position and geophysical and aerial photographic appraisal suggest that a number of magnetic responses and circular topographical features could represent kimberlites.

Previous work by other explorers indicates that the area also has potential for base metal occurrences.

Results from the diamond sampling carried out during year 6 have not revealed any anomalous indicator minerals or diamonds. However, results of geochemical analysis of loam sampling indicate elevated Cr and Ni in a number of locations. The highest being 47ppm Cr from CKA 43 which also had 2x background Ni and Ba.

In base metals, analysis of loam samples from a number of the magnetic anomalies had elevated values with the highest being 363ppm Pb and 71 ppm Zn from CKA23, 52ppm Co from CKA 29, and 24ppm Cu from CKA 71. Not all of the elements requested for analysis have been received, but those to hand are included in Annexure "A"

Results from the work carried out in year 6 are not conclusive but have provided some encouragement. Also, there are still approximately 40 magnetic anomalies and a number of topographical features still to be tested. The Company still considers the area to be prospective for diamonds and base metals and intends to continue exploring the Licence.

## 9. YEAR 6 EXPENDITURE

Proposed expenditure for the sixth year of tenure was \$91,280. Actual expenditure was as follows:

1.	Geophysical interpretation	\$3,500
2.	Geological reconnaissance.....	\$7,500
3.	Helicopter hire .....	\$18,000
4.	Anomaly locating and sampling .....	\$12,500
5.	Geochemical analysis of 32 x2kg samples .....	\$4,800
6.	Indicator mineral identification of 32 x 20kgsamples .....	\$11,520
7.	Land owner liaison .....	\$5,200
8.	Administration and overheads .....	9,400
	<b>Total .....</b>	<b>\$72,420</b>

A request for a variation of the waiver will be submitted under separate cover.

Proposed expenditure for seventh year of tenure is:

1.	Assessment of all work carried out to date	\$7,000
2.	Ground magnetic surveys .....	\$10,000
3.	Airborne electromagnetic survey .....	\$20,000
4.	Interpretation of results .....	\$5,000
5.	Reverse Circulation drilling .....	\$20,000
6.	Geochemical analysis .....	\$15,000
7.	Overheads and supervision .....	11,600
	<b>Total .....</b>	<b>\$88,600</b>

Nick Byrne  
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