

North Australian Diamonds Limited ABN 86 009 153 119

# Annual Report – Year 5 Exploration Licence's EL 1638, EL 1639, EL 1641, EL 22218, EL 3404, EL 6516, EL 6517 & EL 6551

23<sup>rd</sup> September 2006 to 22<sup>nd</sup> September 2007 Northern Territory, Australia

*Holder:* Ashton Mining Limited *Operator:* North Australian Diamonds Limited *Reporting Period:* 23<sup>rd</sup> September 2006 to 22<sup>nd</sup> September 2007 *Sheet Reference:* Cape Scott (SD 5207) & Port Keats (SD 5211) 1: 250,000 *Due Date:* 22<sup>nd</sup> October 2007

> Author: M S Kammermann Date: 22<sup>nd</sup> October 2007 Report No: 07-043 Copies To: Dept. Primary Industries, Fisheries and Mines - NT NADL

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#### SUMMARY

This annual report outlines exploration activities undertaken by North Australian Diamonds Limited (NADL) on Exploration Licences EL 1638, EL 1639, EL 1641, EL 22218, EL 3404, EL 6516, EL6517 & EL 6551 between the 23<sup>rd</sup> September 2006 and 22<sup>nd</sup> September 2007. This period represents year five of the licences. The main focus of NADL's exploration is the discovery of diamondiferous kimberlite pipes. In addition the potential of the licence to host uranium deposits is also of interest.

The EL's are located approximately 300km south-west from Darwin, in the Daly River Region of the Northern Territory on the Cape Scott (SD 5207) and Port Keats (SD 5211) 1:250,000 geological mapsheets in the Northern Territory.

During the reporting period NADL signed an agreement with Rio Tinto Exploration (RTE) on 22<sup>nd</sup> December 2006. Under the terms of the agreement RTE maintain ownership of the EL's and NADL become the operator.

NADL had scheduled work clearance meetings with traditional owners and the NLC for August and September. The NLC cancelled the meetings and as yet have not rescheduled new meeting dates. Therefore no access was permitted for field activities.

#### **1.0 INTRODUCTION**

This annual report outlines exploration activities undertaken by North Australian Diamonds Limited (NADL) on Exploration Licences EL 1638, EL 1639, EL 1641, EL 22218, EL 3404, EL 6516, EL6517 & EL 6551 between the 23<sup>rd</sup> September 2006 and 22<sup>nd</sup> September 2007. This period represents year five of the licences. The main focus of NADL's exploration is the discovery of diamondiferous kimberlite pipes. In addition the potential of the licence to host uranium deposits is also of interest.

# 2.0 LOCATION AND ACCESS

The EL's are located approximately 300km south-west from Darwin, in the Daly River Region of the Northern Territory on the Cape Scott (SD 5207) and Port Keats (SD 5211) 1:250,000 geological mapsheets in the Northern Territory. A location map is provided as Figure 1.

#### 3.0 TENURE

Ashton Mining Limited (AML) applied for the exploration licences in the late 1970's and early 1980's. The licence areas are within the Daly River – Port Keats Aboriginal Land Trust and due to veto restrictions imposed by the traditional owners under the *Aboriginal Land Rights Act (NT) 1976*, the licences were not granted until 29<sup>th</sup> September 2002. Tenement schedule is outlined in Table 1 below.

Name	Application Date	Grant Date	No Blocks	Area (sq km)	Holder
EL 1638	2/06/1977	23/09/2002	355	831	Ashton Mining Ltd
EL 1639	2/06/1977	23/09/2002	390	1164	Ashton Mining Ltd
EL 1641	2/06/1977	23/09/2002	393	860	Ashton Mining Ltd
EL 22218	28/09/1981	23/09/2002	51	166	Ashton Mining Ltd
EL 3404	28/09/1981	23/09/2002	118	146	Ashton Mining Ltd
EL 6516	22/02/1989	23/09/2002	97	323	Ashton Mining Ltd
EL 6517	22/02/1989	23/09/2002	194	635	Ashton Mining Ltd
EL 6551	23/03/1989	23/09/2002	365	1191	Ashton Mining Ltd

Table 1: Tenement Schedule for Yambarra EL's.

#### 4.0 PHYSIOGRAPHY

#### Geomorphology

The geomorphology of the project area may be divided into five divisions: Lateritised mesa surfaces, Uplands, Escarpments and dissected hills, Elluvial lowlands and Flood plains.

The Lateritised mesa surface has developed on a thin sheet of Cretaceous sedimentary rocks. This sheet was once very extensive but is now reduced to isolated plateau and outlying remnant mesas. A thicker soil profile (than on other units) developed on this surface supports a tall, dense eucalypt forest.

The Mesa escarpments, Uplands and dissected hills form the ground between the mesa surfaces and lowlands. The escarpments form the flanks of mesa and usually consist of a small scarp topping a steep, talus-strewn slope. The dissected hills are formed on Early - Middle Proterozoic igneous, sedimentary and metamorphic rocks. The soils developed are dominantly skeletal and support sparse open woodland and hardy grasses.

The Elluvial lowlands form over sedimentary, grantitic and metamorphic rocks which are largely concealed by elluvium. The lowlands are characterized by open woodland and perennial grasses.

The Flood plains are extensively developed in the western half of the project area. The plains remain wet well into the dry season and are vegetated by swamp grasses and stands of Melaleuca. Extensive mud and salt tidal flat are also present adjacent to the Fitzmaurice River and the Joseph Bonaparte Gulf.

#### Geology

The project area covers parts of three geological regions within the Northern Territory. These are; the Palaeoproterozoic Pine Creek Orogen, the Mesoproterozoic Victoria – Birrinduddu Basin and the Palaeozoic Bonaparte Basin.

The oldest rocks in the project area are the Early Proterozoic Hermit Creek Metamorphics, which comprise mostly schist and gneissic rocks. Early Proterozoic sediments of the Finniss River Group are inferred to overlie the Hermit Creek Metamorphics although the nature of their relationship is unclear. The Henschke Breccia, a massive breccia conglomerate is interpreted to be approximately synchronous with these units.

The Hermit Creek Metamorphics and Finniss River Group were intruded successively by the Early Proterozoic Muarra-Kamangee Granodiorite and Peppimenarti Granite. Sediments of the Middle Proterozoic Fitzmaurice Group unconformably overly the Early Proterozoic units. Midldle Proterozoic intrusives of both basic (Murrenja Dolerite) and acid (Ti-Tree Granophyre) composition intrude the Fitzmaurice Group sediments.

Permian sediments of the Bonaparte Basin occur in the west of the project area. These sediments consist of quartzarenite, subarkose and mudstone with minor conglomerate and coal. Cretaceous rocks form an extensive unit within the project area. Friable, clayey, commonly ferruginous and mottled arenite is the dominant rock type. The youngest geological units in the project area include Cainozoic and Quaternary sediments comprised of colluvium, elluvium and alluvium. These units cover much of the bedrock.

The dominant structural features of the area are the extensive, regional transcurrent faults that are the northerly continuations of the major faults which define the Middle Proterozoic Fitzmaurice Mobile Zone and the Early Proterozoic Halls Creek Mobile Zone.

#### **Previous Investigations**

Prior to 2002 the Yambarra project area had not been subjected to diamond exploration activity. Bureau of Mines and Resources records show only preliminary geological surveys were carried out in the late 1950's and 1960's. Since 2002, Rio Tinto has undertaken diamond exploration involving the following;

#### <u>Year 1 - 2003</u>

- 220 helicopter gravel and stream sediment samples first pass low density sampling that recovered high numbers of indicator minerals and lesser amounts of diamonds.
- 55 rock chip samples sampling Murrentja Intrusion for base-metal anomalies that did not report anomalous results.
- Reviewed available airborne magnetic and thematic mapper data that identified ten targets for follow-up.

## <u>Year 2 - 2004</u>

- 38 helicopter gravel and stream sediment samples that continued to recover significant numbers of indicator minerals.
- Based on sample results and locations, Rio Tinto Exploration Pty Ltd (RTE) has preliminary interpreted that diamonds may be shedding from the unconformity between the Cretaceous and Proterozoic sediments.

Interpretation of mineral chemistry that points to a crustal source for the indicator minerals.

# <u>Year 3 - 2005</u>

- ➢ No on-ground exploration.
- Exploration focus shifted to Bauxite exploration on coastal licences (not part of this project area) until remaining licences are granted.
- Numerous magnetic targets remain untested. These targets are mostly within Cretaceous sediments.

# <u>Year 4 - 2006</u>

No on-ground diamond exploration.

# 5.0 EXPLORATION COMPLETED DURING REPORTING PERIOD

During the reporting period NADL signed an agreement with Rio Tinto Exploration (RTE) on  $22^{nd}$  December 2006. Under the terms of the agreement RTE maintain ownership of the EL's and NADL become the operator.

NADL had scheduled work clearance meetings with traditional owners and the NLC for August and September. The NLC cancelled the meetings and as yet have not rescheduled new meeting dates. Therefore no access was permitted for field activities.

Office studies undertaken during the current reporting period included the following.

- Review of available open file company reports and RTE data
- Review of publicly available geological, geophysical and remote sensing data
- Review of NTGS diamond database
- Review of uranium potential of the EL

The review of the EL to potentially host uranium mineralization was conducted both internally and externally utilizing the services of an external consultant. This work is still in progress and will be reported in the next annual report.

## 6.0 EXPENDITURE STATEMENT

The exploration expenditure attributed to the Yambarra EL's during the current reporting period is listed below.

Table 2: Summary of Expenditure within Yambarra EL's				
Tenement	Amount (\$)			
EL 1638	\$79,680			
EL 1639	\$109,370			
EL 1641	\$81,350			
EL 22218	\$17,020			
EL 3404	\$15,000			
EL 6516	\$31,330			
EL 6517	\$60,920			
EL 6551	\$113,580			

Expenditure can be broken down into the following ;

Access Agreement with Rio Tinto	\$156,000
Land Use Payments	\$54,300
Administration and Reporting	\$20,350
Tenement Rent	\$277,600

Total \$508,250

Individual expenditure reports are also attached to this technical report.

# 7.0 PROPOSED WORK PROGRAM

The initial focus of the proposed work program will include ground follow-up of anomalies previously identified by RTE using remote sensing methods and ground investigation of RTE sample sites that have recovered kimberlite indicator minerals. In addition a detailed airborne geophysical survey will be completed over the granted tenements with subsequent ground investigation of any identified anomalies. It is planned to commence the airborne survey during the remainder of 2007 and ground investigations during 2008 field season, pending successful work clearance meetings.

EL 22218, EL 3404, EL 6516, EL 6517	\$340,000
EL 1638, EL 1639, EL 1641, EL 6551	\$560,000

# 8.0 **REFERENCES**

Mining Management Plan for Yambarra Project - Authorisation No. 0153-01. 12<sup>th</sup> April 2007. North Australian Diamonds Limited.

NTGS Strike website 2007.