

## **ANNUAL COMBINED REPORT (GR-066/09)**

## ON

## EL 24879, EL 24928, EL 24929

## NGALIA PROJECT, NT

## FOR THE PERIOD ENDING

## 21 SEPTEMBER 2011

Author: Zia U. Bajwah October 2011

Distribution: NT Department of Resources Element 92 Pty Ltd (Thundelarra Exploration Ltd)

#### SUMMARY

Exploration Licences 24879, 24928 and 24929 are located about 1200 km SW of Darwin, Northern Territory within the Ngalia Basin. In 2011, this group of tenements was granted group reporting status (GR066-09). Element 92 Pty Ltd/Thundelarra Pty Ltd are exploring these tenements for uranium and other commodities. These tenements were granted to Strike Resources Limited (75%) and Hume Mining Limited (25%) in 2006 and were transferred to Alara Resources subsequently. On 14 May, 2009 Thundelarra Exploration Limited entered into a formal joint venture agreement with Alara Resources Limited to earn a 70% interested in this group of tenements.

The project area is located in the northern part of the Ngalia basin which is an intracratonic basin, and contains a thick succession of Neoproterozoic to Ordovician shallow marine and fluvio-glacial clastic, carbonate and evaporitic rocks, overlain by Devonian and Carboniferous fluvial to continental sandstone, siltstone & shale. Geology of the project area is dominated by the presence of the Mount Eclipse Sandstone. Uplift and erosion of the Arunta Region rocks bordering the Ngalia Basin at 350 - 370 Ma marked the start of deposition of the Mount Eclipse Sandstone, the youngest unit preserved in the sequence. The Mount Eclipse Sandstone is dominated by medium to coarse-grained arkosic sandstone, containing conglomerate lenses and contain wide spread uranium ( $\pm$  vanadium) mineralisation.

During the reporting period, a detailed and collaborative study of the Ngalia Basin covering the project area was undertaken in order to understand basin architecture, utilising high resolution geophysics, geochemistry, sedimentology, mineralogy and petrology. This research program has added much to our understanding of uranium mineral system which will help to devise better exploration strategies. Under the Bringing Forward Discovery Initiative Program, a grant received from NT Geological Survey was utilised to fly AEM geophysical survey (TEMPEST) in the Ngalia Basin, covering the project area. In addition, a gravity survey in part of the project area was also undertaken. A number of field visits were also undertaken for ground-truthing.

In the next reporting period, all data will be interpreted integrated and exploration targets will be defined. It is expected that drilling campaign will commence in the project and samples will be retrieved for assaying. In addition, subsurface geological map of the project area will be prepared in order to work out stratigraphic horizons for uranium mineralisation.

2

#### **TABLE OF CONTENTS**

SMMARY	2
1.0 Introduction	4
2.0 Tenement Status	4
3.0 Location and Access	4
4.0 Geological Setting	6
5.0 Uranium Mineralisation and Exploration Model	8
6.0 Previous Exploration Activity	11
7.0 Exploration Activity year Ending 21 September 2011	13
8.0 Proposed Exploration Activity	18
9.0 References	18

#### LIST OF FIGURES

Figure 1: Location of Project area

- Figure 2: Geological Setting of the Project Area
- Figure 3: Schematic cross section through the Ngalia Basin looking west (modified after Young et al 1995) showing target uranium mineralisation styles.
- Figure 4. Sandstone-percentage map of the Oakville (Miocene) bedload fluvial system, South Texas Coastal Plain, illustrating coincident distribution of uranium mineralisation and coarse grain size (Modified from Galloway and Hobday 1999). The gravity ridge that runs through Project area is thought to have been a basement high that resulted in an analogous grain size distribution in the Mt Eclipse.
- Figure 5: Location of seismic lines in the project area
- Figure 6: Structural Provinces of the Ngalia Basin (Lipski, 2000)
- Figure 7: Simplified alluvial-fluvial deposition model with impact of water saturation on uranium mineralisation.

#### LIST OF TABLES

Table 1: Details of Tenements - Ngalia Group

#### LIST OF APPENDICES

**Appendix 1:** AEM Geophysical Logistic Report **Appendix 2:** Exploration Expenditure Reports

#### **1.0 INTRODUCTION**

Exploration Licences 24879, 24928 and 24929 are located about 1200 km SW of Darwin, Northern Territory (Figure 1) within the Ngalia Basin. In 2011, this group of tenements was granted group reporting status (GR066-09). Element 92 Pty Ltd/Thundelarra Pty Ltd are exploring these tenements for uranium and other commodities, and this is the first combined annual report on this group of tenements.

#### 2.0 LOCATION AND ACCESS

These tenements are located about 330 km NW of Alice Springs and about 1200 km SW of Darwin (Figure 1). These tenements can be approached by Stuart Highway, which turns into Tanami Road at about 110 km north of Alice Springs. Tanami Road is partly sealed and then on formed gravel tracks either via Newhaven or Yuendumu-Nyirrpi roads. Vehicle access within the tenements is possible by station tracks, which may be impassable during wet season.

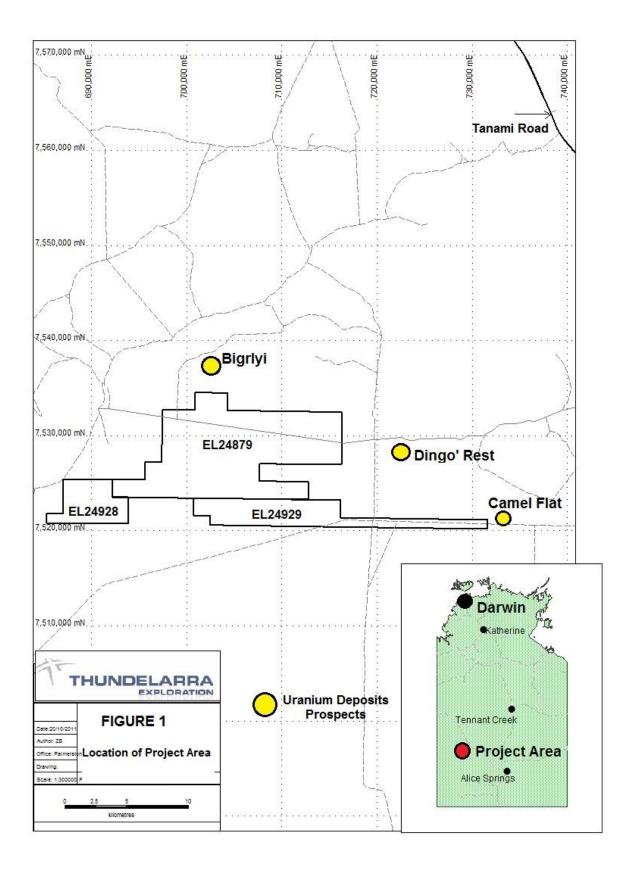
#### 3.0 TENEMENT DETAILS

EL 24879 was granted to Strike Resources Limited (75%) and Hume Mining Limited (25%) on 15 August 2006 and will expire on 14 August 2012. Both EL 24928 and EL 24929 were granted to Strike Resources Limited (75%) and Hume Mining Limited (25%) on 21 August 2006 and will expire on 20 August 2012. In 2007, these tenements were rolled over into Alara Resources Limited. Details of these tenements are given in Table 1. On 14 May, 2009 Thundelarra Exploration Limited entered into a formal joint venture agreement with Alara Resources Limited to earn a 70% interested in this group of tenements.

EL No	Date Granted	Expiry Date	Area	Covenant	Comments
EL 24879	15/08/2006	14/08/2012	54 blocks	\$45,000.00	Strike Resources Ltd 75% Hume Mining NL 25%
EL 24928	21/08/2006	20/08/2012	12 blocks	\$25,000.00	Strike Resources Ltd 75% Hume Mining NL 25%
EL 24829	21/08/2006	20/08/2012	26 blocks	\$20,000.00	Strike Resources Ltd 75% Hume Mining NL 25%

Table 1: Details of Tenements -	Ngalia Group
---------------------------------	--------------





#### 4.0 GEOLOGICAL SETTING

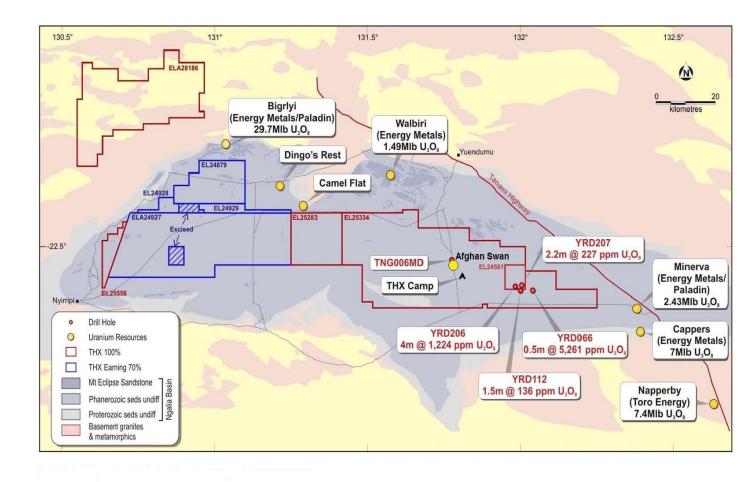
The Project area is located in northern part of the Ngalia Basin which is an east-west trending intracratonic basin. It contains a thick succession of Neoproterozoic to Ordovician shallow marine and fluvio-glacial clastic, carbonate and evaporitic rocks, overlain by Devonian and Carboniferous fluvial to continental sandstone, siltstone & shale. Seismic data indicate that the basin is asymmetric and attains a maximum thickness of approximately 4.5km. Sedimentation was terminated by the Alice Springs Orogeny, which was initiated in the Early Carboniferous.

This orogenic event produced widespread folding and faulting, with deformation being focussed on the northern margin of the Basin. Mesoproterozoic post-tectonic granitoids of the Southwark Granitic Suite and older, high grade metamorphic rocks (together representing the Arunta Inlier), form the basement to the Ngalia Basin. The granitic rocks are known to be anomalously rich in uranium, and are likely to be the ultimate source of the widespread uranium mineralisation in the Basin.

In the central and southern portions of the basin the Proterozoic and Palaeozoic rocks are covered by a veneer of discrete Cretaceous to Tertiary basins that locally exceed 220m in thickness. The Tertiary sequence in this area is poorly described; however other such basins in the Alice Springs area are thought to be the result of two distinct periods of deposition (Senior et al 1994). The Lower Tertiary consists of an upward fining sequence, with flowing channel sands at the base locally capped by dark grey & black carbonaceous mudstones and green swelling clay. A zone of calcrete, silcrete or laterite separates this sequence from pervasively oxidised and locally magnetic Upper Tertiary sands and gravels.

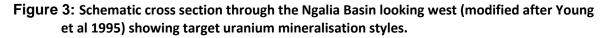
Geology of the project area is dominated by the presence of the Mount Eclipse Sandstone (Figure 2). Uplift and erosion of the Arunta Region rocks bordering the Ngalia Basin at 350 – 370 Ma marked the start of deposition of the Mount Eclipse Sandstone, the youngest unit preserved in the basin (Young et al., 1995). The Mount Eclipse Sandstone is dominated by medium to coarse-grained arkosic sandstone, containing conglomerate lenses, which may be broadly divided into three types. Coarse-grained, poorly bedded sandstone is predominant and is interbeded with medium-grained, well-bedded along with quartz pebbles in places. Grey-purple hematitic sandstone is mainly confined to the base of the formation (Young et al., 1995). Carbonaceous material is common, and 7 m of lignite has been intersected in drilling (Spark, 1975). Deposition is interpreted to have occurred in a continental fluvial environment, sourced mainly from uplifted rocks of the Arunta Region.

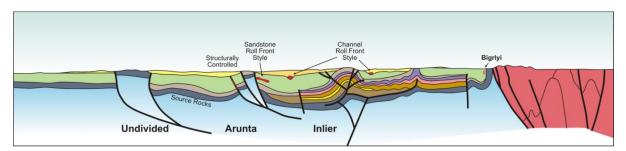
#### Figure 2: Geological Setting of the project area



#### 5.0 URANIUM MINERALISATION AND EXPLORATION MODEL

The principal target of Thundelarra's exploration efforts within the Western Ngalia Basin is uranium mineralisation that is amenable to ISR and which is hosted by the Tertiary sediments that cover large portions of the basin. A secondary target is Bigrlyi-type uranium mineralisation hosted by the Carboniferous Mt Eclipse Sandstone (Figure 3).





#### Tertiary-hosted uranium deposits

Thundelarra has discovered significant and widespread uranium at depth within the basal Tertiary channelling sands where they come into contact with carbonaceous mudstones and sandy clays (more below).

Tertiary sediments cover large portions of the central and southern Ngalia Basin, and indeed around 99% of the Thundelarra tenure. The Tertiary sequence has been found to exceed 220m in drilling conducted by AGIP close to the southern margin of the Basin (hole SR9R). The Tertiary sediments have two excellent uranium source rocks – the Mt Eclipse Sandstone, and the older Southwark Suite granites. The Mt Eclipse is a particularly good source rock because:

- It hosts widespread uranium anomalism (see Figure 2).
- It was exposed throughout the Tertiary to erosion (i.e. reworking into Tertiary sediments) and oxidation.
- The uranium is physically accessible to oxidising ground-waters as it is found within the Mt Eclipse coating sand grains.
- The uranium is in the form of uraninite, which can be easily leached by oxidised waters.
- The Mt Eclipse is exposed in the north, and groundwater flow is to the south, and into the Thundelarra licenses.

Thundelarra will actively search for suitable hydro-geological & chemical traps within this Tertiary sequence. To this end, Thundelarra has:

- Mapped a substantial & structurally controlled Tertiary sub-basin in the south-eastern part of the Ngalia Basin.
- Processed satellite (ASTER night-time) temperature mapping data.
- · Conducted a airborne magnetic/radiometric surveys.
- · Conducted 1km-spaced gravity survey,
- · Commenced follow-up mud rotary & diamond drilling.

Across the Project, a number of paleochannel targets have been interpreted from the ASTER and airborne magnetic data. Visual porosity estimates from core samples indicates that excellent hydro-geological conditions exist for in-situ recovery (ISR) mining techniques, with mineralised sands being capped by an impervious mudstone.

Good potential therefore exists for ISR-amenable paleochannel-style deposits within the Tertiary sediments of the Ngalia Basin. Similar deposits are found in the Frome Embayment of South Australia (Beverley, Four Mile, Honeymoon etc), and these mines tend to have low operating costs and very low environmental impact. Recent AEM survey has been able to detect the paleochannel systems that host the Tertiary mineralisation. This survey has provide direct targets for stratigraphic drilling in areas of thick cover where the conductivity data suggests the presence of channels (dendritic patterns) and carbonaceous mudstone units (high conductivity layers). A regional map of the thickness of the Tertiary sediments will be interpreted, along with the location of channel systems, and this will target further drilling across the Project area.

#### Carboniferous sandstone-hosted uranium deposits

Bigrlyi-type uranium mineralisation, hosted by coarse feldspathic sandstones in the Mt Eclipse Sandstone is another target. Significant uranium is also known at the Minerva (2.43 Mlbs U3O8 - AGIP 1983), and Walbiri occurrences (1.49 Mlbs U3O8 – NTGS Orestruck Uranium Factsheet, Nov 2009).

The principal host to uranium mineralisation in the Ngalia Basin is the Mt Eclipse Sandstone – a thick, synorogenic sequence of non-marine sandstone and shale, deposited in piedmont and subaerial deltaic environments (Questa, 1989). The uranium mineralisation at Bigrlyi is known to be related to those parts of the Mt Eclipse Sandstone that contain abundant carbonaceous material. However other parameters, related to fluid flow during the mineralising event (e.g. alteration, paleo-porosity & structural setting) are also important facets of the Thundelarra exploration program.

The Bigrlyi deposit has been described as a tabular deposit formed by the interaction of uranium-bearing, oxidising fluids with reducing carbonaceous matter in a permeable sandstone formation. Fidler et al. (1990) have suggested that Bigrlyi was formed in the Mt Eclipse Sandstone prior to the completion of diagenesis. Uranium-bearing fluids are proposed to have originated from weathering profiles of granites in the exposed Arunta complex and to have migrated into the Ngalia Basin. Within this model, diagenesis of the Mt Eclipse Sandstone would have 'fixed' the uranium deposits. Subsequent faulting and fracturing have modified the distribution of mineralisation to a limited extent.

Significantly, the final stages of deposition of the Mt Eclipse Sandstone occurred synchronously with the culmination of major structural movements in the Ngalia Basin, during the Alice Springs Orogeny (ASO); a tectonic event with widespread & profound structural / metallogenic significance. It appears that the ASO-related thrusting within the Ngalia basin might have played a critical role in the formation of these deposits in a variety of ways such as:

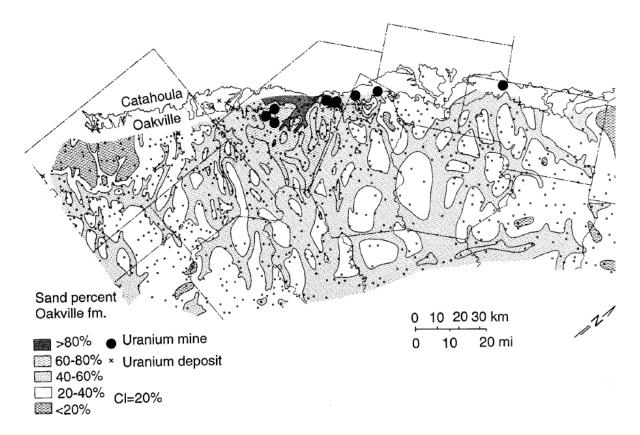
Acting as the driving force for the movement of fluids responsible for alteration and mineralisation,

- · Creating favourable conduits for the movement of fluids,
- Producing repetitions of the favoured traps (e.g. carbonaceous horizons) within the Mt Eclipse Sandstone,
- Acting as a tectonic "fixing" agent, creating a fossilised redox system by the dewatering action of structural tilting.

The uranium mineralisation within the Mt Eclipse is likely the result of a variety of processes acting in concert, and consequently a variety of deposit styles can be expected as these processes compete for relative dominance. This is certainly the case in other sandstone-hosted uranium provinces such as the Colorado Plateau in the USA or the Frome Embayment in South Australia. One fundamental parameter, however, is the porosity of the host rocks. In clastic sediments the porosity is initially a function of grain size. A classic demonstration of the control that grain-size may have on mineralisation is found in South Texas (Figure 4), where uranium deposits are spatially associated with the coarser sediment, the distribution of which is controlled by the overall structure of the basin. This primary porosity can be markedly reduced during diagenesis and compaction as groundwaters fill the pore space with carbonate cement. This diagenetic event is likely to

have coincided with both the Alice Spring Orogeny and the main uranium mineralising event.

Figure 4. Sandstone-percentage map of the Oakville (Miocene) bedload fluvial system, South Texas Coastal Plain, illustrating coincident distribution of uranium mineralisation and coarse grain size (Modified from Galloway and Hobday 1999). The gravity ridge that runs through Project area is thought to have been a basement high that resulted in an analogous grain size distribution in the Mt Eclipse.



#### 6.0 PREVIOUS EXPLORATION ACTIVITY

The project area has mainly been explored for oil and gas in the past and summary of exploration activities is given below.

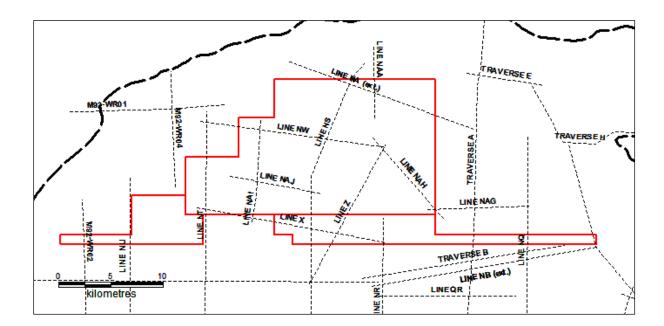
#### EL 24879

A number of historic exploration licenses coincide with the present area of EL24879 EL 24928 and EL 24929. Most of the work on these historic licenses did not involve exploration within the project area. However, two companies did report the results investigations within the license area, including;

• CPM, on ELs 360 and 402, undertook a regional track-etch survey. No anomalies were detected within EL24879.

 AGIP, on EL1200 drilled two percussion holes (CFP 12 & 13). These holes were designed to follow-up seismic shot-hole cuttings in which apparently prospective "white facies" of the Mt Eclipse Sandstone were identified. Both hoes were drilled to 100m and gamma-logged, however no mineralisation was intersected.

A number of seismic lines were surveyed by Magellan in 1971 on OP165, with at least 10 of these lines covering EL24879 and are shown in Figure 5.



#### Figure 5: Location of seismic lines in the project area

#### EL 24928

A number of historic exploration licenses coincide with the present area of EL24928. Most of the work on these historic licenses did not involve exploration within EL24928. However CPM, on ELs 358 and 360, undertook a regional track-etch survey. No anomalies were detected within EL24928.

A number of seismic lines were surveyed by Magellan in 1992 on EP15, with 2 lines (M92-WR02) covering the western strip of EL24928, shown in Figure 5

#### EL 24929

A number of historic exploration licenses coincide with the present area of EL24929. Most of the work on these historic licenses did not involve exploration within EL24929. The eastern-

most portion of EL24929 is approximately 300m south of drilling conducted by AGIP at the Camel Flat North prospect, which is centered some 3.65km to the northeast of the license boundary. More recently, Energy Metals Ltd has drilled at Camel Flat, and diamond hole CFD1001 returned an intercept of 27.0m @ 4058 ppm  $eU_3O_8$  from 93.5m downhole, including 8.80m @ 10,567 ppm (1.06%)  $eU_3O_8$  (Energy Metals, 2010)

Within EL24929, a number of seismic lines were surveyed by the BMR between 1967 & 1969 (2 lines) and by Magellan in 1971 on OP165 (5 lines) shown in Figure 5.

#### Thundelarra Exploration Ltd/Element 92 Pty Ltd

During 2009-10 reporting year, Element 92 Pty Ltd undertook desk top study, collection and appraisal of historical data and reconnaissance mapping. It also involved planning of helicopter-assisted gravity surveying, airborne magnetic/radiometric survey and data compilation. Element 92 Pty Ltd/Thundelarra are also participated in the CSIRO-managed Joint Surveys Uranium project, which is examining uranium mineral systems in the Ngalia Basin.

# 7.0 EXPLORATION ACTIVITY YEAR ENDING 21 SEPTEMBER 2011

Thundelarra Exploration Ltd/Element 92 Pty Ltd are exploring the Ngalia Basin actively for uranium and other commodities. Thundelarra conducted a thorough review of historical exploration data along with acquisition of new high resolution geophysical survey (magnetic, radiometric). Processing and interpretation of these data led to identification of a number of radioactive anomalies within the Tertiary cover rocks, which were tested successfully (Bajwah and Maloney, 2011) In 2009, a gravity survey of the project area was also undertaken (Maloney, 2010), which provided sufficient details to image a large structure that has been masked by surficial deposits. This structure linked a series of historical uranium occurrences including Malawiri/Minerva to anomalies within the Thundelarra's other ELs. A series of prospective corridors were defined and drilling of targets have identified significant zones of paleochannel-hosted uranium mineralisation has been identified at Afghan Swan (Bajwah and Maloney, 2011), A number of drilling intersections have returned uranium concentrations as high as 1771 ppm. This exploration has costed over \$3 Million.

During the reporting period, a detailed and collaborative study of the Ngalia Basin covering the project area was undertaken in order to understand basin architecture, utilising high resolution geophysics, geochemistry, sedimentology, mineralogy and petrology. This research program has added much to our understanding of uranium mineral systems which will help to devise better exploration strategies. Under the Bringing Forward Discovery Initiative Program, a grant received from NT Geological Survey was utilised to fly geophysical survey (TEMPEST) in the Ngalia Basin, covering the project area. Data have already been delivered to NT geological Survey. However, no processing and interpretation results are available from the project area as yet. In addition, a gravity survey in part of the project area was also undertaken. Data are not in hand and will be provided in the next reporting period. A number of field visits were also undertaken for ground-truthing.

#### 7.1 JSU Ngalia Basin Study

The JSU (Joint Survey Uranium) Ngalia Basin Uranium Mineral System Project was undertaken with collaboration between CSIRO MDU, NTGS, Thundelarra Exploration, Energy Metals and Cauldron Energy. The project aim was broadly to built-up upon existing knowledge base about uranium mineralisation in the Ngalia Basin, and contribute to 1) the understanding of uranium fluid pathways and mechanisms of mineralisation on deposit scale and 2) the understanding of the basin architecture. Following extract is sourced form this report (Schmid et al, 2011)

Modelling of Gravity and magnetic data demonstrate that the present Ngalia Basin overlies what were originally much smaller separated graben and half graben structures that were later concealed beneath the much broader sedimentation of the main basin.

The 3D model of the basin indicates that is has a very complex architecture. The main architectural features are:

- A central high area which is cut by numerous reverse faults. Many of these faults only affect the higher layers in the sequence (Horizon A, not C).
- A western basin which initially had two main depocentres, one related to the Yuendumu Fault and the other related to the Mt Doreen faults. The Mt Doreen Faults appear to have been inactive during the deposition of the Mt Eclipse Sandstone. Overall the western section of the basin forms a wedge shape which thickens considerably towards the north and is deepest around the junction of the Yuendumu and Waite Creek thrusts (Figure 6).
- An eastern basin which is dominated by a very distinct E-W structural trend. This includes the Bloodwood Trough and shallower troughs that lie along its northern and southern flanks.

The basin is characterised by the presence of large faults along the northern margins and appear to control the internal structure of the basin. These faults may have been formed on reactivation of basement structures.

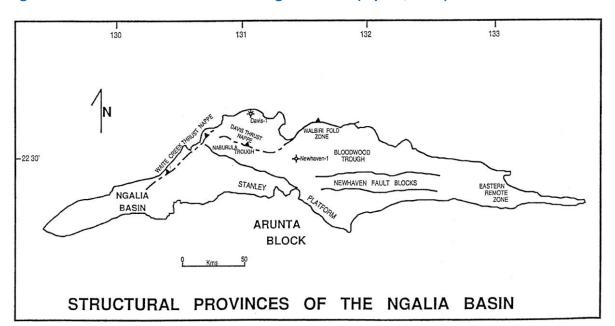


Figure 6: Structural Provinces of the Ngalia Basin (Lipski, 2000)

Within the basin, Mt Eclipse Sandstone is the dominant lithology which appears vertical dipping ridges, whereas mudstones are commonly eroded and form depressions. Faults or fractures in sandstones are narrow and show local displacement of sediments and mineralisation. Sediments below the mineralised zone tend to have a higher abundance of gravel and cobble size rounded clasts at the base of channels. Carbonate cemented sandstones are distributed heterogeneously throughout the Mt Eclipse Sandstone. Faults within granites trend parallel to basin margin and are highly mylonitic.

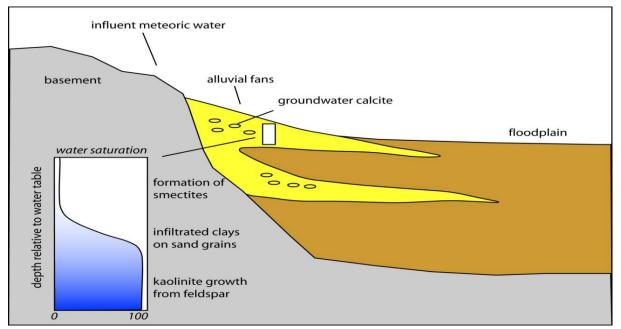
Sedimentological study indicates that deposition of Mt Eclipse Sandstone took place in high relief continental basin dominated by episodic rainfall and semi-arid environment. The majority of the fluvial deposits were accumulated in the distal parts of alluvial fans in a semi-arid environment. The common occurrence of groundwater calcrete suggests that evaporation greatly exceeded precipitation. Episodic tectonic activity during the Alice Springs Orogeny led to thick, immature, stacked fluvial channel deposits intercalated with flood plain playa deposits during time of stagnation.

Mineralogical and petrographic studies indicate that sandstones were mainly derived from a granitic source. Uranium mineralisation took place early in the sedimentation cycle before

calcite cementation. Uranium is only present in samples that contain V-minerals. The hyperspectral data from the Bigrlyi deposits reflects depositional processes related to interaction of groundwater and fluvial channel activity and mineralisation during deposition.

Uranium mineralisation occurred in fluvial sandstones with abundant iron-rich detrital clasts (roscoelite, heavy minerals and biotite) prior to carbonate cementation and compaction. Vanadium originates from vanadium-bearing detrital mica (roscoelite) that was transported as clasts and in suspension into the Bigrlyi channels. Oxidising conditions released vanadium out of mica and precipitated it as montroseite prior and/or with the onset of calcite precipitation. Compaction and Alice Springs Orogeny reduced porosity and permeability to low or none and caused soft clasts, such as roscoelite clasts, to deform and alter to smectitic/illitic/chloritic roscoelite and remobilise vanadium and uranium towards the grain contacts. Uranium re-precipitated along adjacent quartz grains and caused them to etch. Radiation damage in detrital quartz and K-feldspars started possibly with the initial mineralising event.

All evidences (geochemical trace elements, petrographic observations and SEM work) indicate that the uranium and vanadium are diagenetically related to a hydrothermal deposit within granite. Weathering and transport in meteoric/groundwater lead to deposition of vanadium-rich micas and precipitation of uranium (Figure 7).



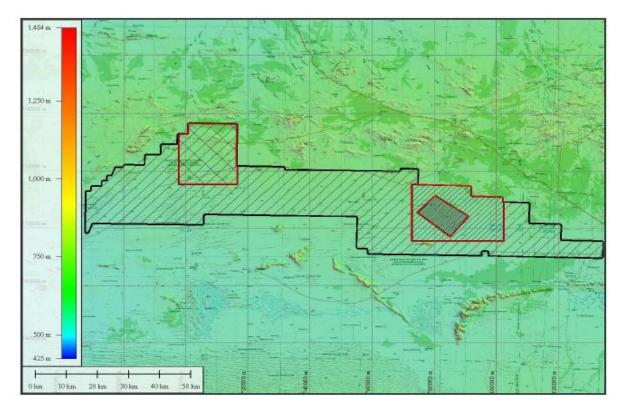
## Figure 7: Simplified alluvial-fluvial deposition model with impact of water saturation on uranium mineralisation.



First-stage uranium mineralisation (not secondary re-mobilisation) is most likely to occur from lower slope parts of an alluvial fan and towards distal extension of the alluvial fan system intercalated with floodplain deposits where flow rates are slow. Dispersion into overlying units or other parts of the depositional system may occur as secondary re-mobilisation (e.g. Tertiary uranium deposits).

#### 7.2 AEM Survey

The project area was flown by airborne Electromagnetic Survey (TEMPEST) during 2010-11 reporting period. The survey was conducted by Fugro Airborne Survey Pty Ltd. Area and flight directions are shown in Figure 7. The survey consisted of 4 areas. Total coverage of the survey areas amounted to 2267 line kilometres flown in 9 flights. The survey was flown using a Shorts Skyvan SC-3-200 aircraft, registration VH-WGT, owned and operated by FAS. Required geophysical data have already been lodged with the NT Geological Survey, however, logistic report is given in Appendix 1.



#### Figure 7: AEM survey area and flight directions

#### 7.3 Gravity Survey

During the reporting period, gravity survey of EL 24879 and EL 24929 was undertaken. However, at present data are not in hand and will be provided in the next reporting period.

This exploration costed a sum of \$210,342.00 and details are given in mineral expenditure reports in Appendix 2.

#### 8.0 PROPOSED EXPLORATION ACTIVITY

Data/information gathered, so far, has added much to our understanding of uranium potential of the project area. In the next reporting period, all data will be interpreted integrated and exploration targets will be defined. It is expected that drilling campaign will commence in the project and samples will be retrieved for assaying. In addition, subsurface geological map of the project area will be prepared in order to work out stratigraphic horizons for uranium mineralisation. For this program, a minimum budget of \$90 000.00 has been set-a-side. Break down of this proposed budget is presented in Appendix 2 at the end of this document.

#### 9.0 REFERENCES

- AGIP Australia Pty Ltd., 1978. Annual Report (to the Northern Territory Department of Mines and Energy) for EL 1200, April 1978. NTGS CR19780069.
- Bajwah, Z.U., and Maloney, M., 2011., Annual combined report (GR 199/11) on EL 24561, EL 25283,
   EL 25334 Ngalia Project, NT for the Period 22 July 2010 to 21 July 2011. Thundelarra
   Exploration Ltd, Annual Report to NT Dept of Resources Darwin.
- Central Pacific Minerals NL., 1977. Final Report (to the Northern Territory Department of Mines and Energy) for EL 360 "Autobahn" ", May 1977. NTGS CR19770075.
- Central Pacific Minerals NL (CPM). 1977. Final Report (to the Northern Territory Department of Mines and Energy) for EL 402 "Djuburula West", July 1977. NTGS CR19770101.
- Lipski, P., 2002., Structural configuration and petroleum play potential of the Ngalia Basin. Abstracts of Geological society of Australia, 60, 61063.
- Magellan Petroleum Australia Limited, 1972. Ngalia Basin Seismic Survey O.P. 165 (including logistical report by Austral United Geophysical Pty Ltd and interpretation by Edward A Kreig and Associates). NTGS PR19710009.

- Maloney, M., 2010a., Annual Report EL 24879 on Alara JV Project for the Period 15 August 2009 to 14 August 2010, Ngalia Basin Northern Territory. Thundelarra Exploration Ltd, Annual Report to NT Dept of Resources Darwin.
- Maloney, M., 2010b., Annual Report, Alara JV Project EL 24929 for the period 21 August 2009 to 20 August 2010. Thundelarra Exploration Ltd, Annual Report to NT Dept of Resources Darwin.
- Maloney, M., 2010c., Annual Report, Alara JV Project EL 24928 for the period 21 August 2009 to 20 August 2010. Thundelarra Exploration Ltd, Annual Report to NT Dept of Resources Darwin.
- Maloney, M., 2011., Structure and stratigraphy Greenfield uranium exploration, Ngalia Basin. Annual Geoscience Exploration Seminar, 37-39.
- Questa Australia Pty Ltd. 1989. Ngalia Basin. Northern Territory Geological Survey Petroleum Basin Studies Series. 76pp.
- Schmid, S., Foss, C., Hill, H., Quigley, M., Schaubs, P., Cleverly, J., Robinson, J., 2011, JSU Ngalia Basin Uranium Mineral System Project. CSIRO Report.
- Wells, A.T. & moss, F.J., 1983. The Ngalia Basin, Northern Territory: stratigraphy and structure. Bureau of Mineral Resources, Australia, Bulletin, 212.
- Young, D.N., Edgoose, C.J., Blake, D.H. and Shaw, R.D. 1995. Mount Doreen SF52-12, Northern Territory, 1:250,000 Geological series – explanatory notes, NTGS, AGSO, Darwin, 55 p.

#### **APPENDIX 2 – EXPENDITURE REPORTS**

#### NORTHERN TERRITORY EXPLORATION EXPENDITURE FOR MINERAL TENEMENT

 Section 1. Tenement type, number and operation name: (One licence only per form even if combined reporting has been approved)

 Type
 Exploration Licence

 Number
 24879

 Operation Name (optional)
 Ngalia-Alara Project

Section	2. Period covered by this return	):	
Twelve-	month period:	If Final Report	::
From	15/08/2010	From	
То	1408/2011	То	
C	Covenant for the reporting period:	\$45000.00	

Section 3. Give title o	f accompanying technical report:
Title of Technical Report	Annual Report on Alara JV Project (GR066/09) for the period 15 August 2010 to 14 August 2011.
Author	Zia U. Bajwah

Section 4. Locality of	operation:
Geological Province	Ngalia Basin
Geographic Location	Mt Doreen

Section 5. Work program for the	next twelve	e months:
Activities proposed (please mark with an "X"):	X	Drilling and/or costeaning
Literature review	X	Airborne geophysics
<b>x</b> Geological mapping	X	Ground geophysics
<ul> <li>Rock/soil/stream sediment sampling</li> </ul>		Other:
Estimated Cost: \$	35000.00	

## Section 6. Summary of operations and expenditure:

Please include salaries, wages, consultants fees, field expenses, fuel and transport, administration and overheads under the appropriate headings below. Mark the work done for the appropriate subsections with an "X" or similar, except where indicated. Complete the right-hand columns to indicate the data supplied with the Technical Report.

Do not include the follow	ing as expenditure (if r	elevant, these may be discussed in
Insurance	Transfer costs	<ul> <li>Land Access Compensation</li> </ul>
Company Prospectus	Title Search	<ul> <li>Meetings with Land Councils</li> </ul>
Rent &     DepartmentFees	Legal costs	<ul> <li>Payments to Traditional Owners</li> </ul>
Bond	<ul> <li>Advertising</li> </ul>	• Fines

Exploration Work type	Work Done (mark with an or provide details		Expenditure	Sup	and Format plied in the nical Report Hard copy
Office Studies					
Literature search	X		4580.00		
Database compilation	X		10000.00		
Computer modelling			_		
Reprocessing of data	x		7860.00		
General research	X		3560.00		
Report preparation	X		1500.00		
Other (specify) Wages			22000.00		
	Subtotal		\$45940.00		
Airborne Exploration Surve	eys (state line k	ms)			
Aeromagnetics	kr	ns			
Radiometrics	kr	ns	_		
Electromagnetics	kr	ns	16737.00		
Gravity	kr	ns	14498.00		
Digital terrain modelling	kr	ns	_		
Other (specify)	kr	ns			
	Subtotal		\$31235.00		
Remote Sensing					
Aerial photography					
LANDSAT					
SPOT					
MSS					
Other (specify)					
	Subtotal		\$		<u> </u>

Exploration Work type	Work Done (mark with an "X" or	Expenditure	Sup	and Format plied in the nical Report
	provide details)		Digital	Hard copy
Ground Exploration Surveys	1			
Geological Mapping				
Regional	x	24828.00		
Reconnaissance		_		
Prospect		_		
Underground				
Costean				
Ground Geophysics		_		
Radiometrics		_		
Magnetics		_		
Gravity		_		
Digital terrain modelling		-		
Electromagnetics		-		
SP/AP/EP		-		
IP		-		
AMT/CSAMT				
Resistivity		-		
Complex resistivity				
Seismic reflection				
Seismic refraction				
Well logging				
Geophysical interpretation				

Exploration Work type	Work Done (mark with an "X" or provide details)	Expenditure		Sup	and Format plied in the nical Report Hard copy
Petrophysics			Ī		
Other (specify)					

Geochemical Surveying an	d Geochron	ology	[
(state number of samples)			
Drill (cuttings, core, etc.)			
Stream sediment			
Soil			
Rock chip			
Laterite			
Water			
Biogeochemistry			
Isotope			
Whole rock			
Mineral analysis			
Laboratory analysis			
(type)			
Petrology			
Other (specify)			
Ground Exp Subtotal	oloration		47
Drilling (state number of h	noles & metr	res)	
Diamond	holes	metres	
Reverse circulation (RC)	holes	metres	
Rotary air blast (RAB)	holes	metres	
Air-core	holes	metres	
Auger	holes	metres	
Other (specify)	holes	metres	
	Subtotal		,
Other Operations	<u> </u>		
Costeaning/Trenching			

Bulk sampling			
Mill process testing			
Ore reserve estimation			
Underground development (describe)			
Mineral processing			
Other (specify)			
	Subtotal	\$	
Access and Rehabilitation	1		
Track maintenance	X	2571.00	
Rehabilitation			
Monitoring			
Other (specify)			
	Subtotal	\$ 2571.00	
TOTAL E	XPENDITURE	\$104574.00	

Section 7.	Comments on	your ex	ploration	activities:
------------	-------------	---------	-----------	-------------

I certify that the information contained herein, is a true statement of the operations carried out and the monies expended on the above mentioned tenement during the period specified as required under the *Northern Territory Mining Act* and the Regulations thereunder.

X	I have atta	ched the Technical Report		
1.	Name:	Zia U. Bajwah	2.	Name:
	Position:	Geologist		Position:
	Signature:			Signature:
	Date:	14/09/2011		Date:

#### NORTHERN TERRITORY EXPLORATION EXPENDITURE FOR MINERAL TENEMENT

Section 7. Tenement type, number and operation name: (One licence only per form even if combined reporting has been approved)					
ype Exploration Licence					

,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Number	24928
Operation Name (optional)	Ngalia-Alara Project

Section 8. Period covered by this return:				
Twelve-month period:		If Final Report:		
From	15/08/2010	From		
То	1408/2011	То		
Covenant for the reporting period:		\$25000.00		

Section 9. Give title of accompanying technical report:				
Title of Technical Report	Annual Report on Alara JV Project (GR066/09) for the period 15 August 2010 to 14 August 2011.			
Author	Zia U. Bajwah			

Section 10. Locality of operation:	
Geological Province	Ngalia Basin
Geographic Location	Mt Doreen

Section 11. Work program for the next twelve months:				
Activities proposed (please mark with an "X"):	X	Drilling and/or costeaning		
Literature review		Airborne geophysics		
<b>x</b> Geological mapping	x	Ground geophysics		
x         Rock/soil/stream sediment           sampling		Other:		
Estimated Cost: \$	26000.00			

## Section 12. Summary of operations and expenditure:

Please include salaries, wages, consultants fees, field expenses, fuel and transport, administration and overheads under the appropriate headings below. Mark the work done for the appropriate subsections with an "X" or similar, except where indicated. Complete the right-hand columns to indicate the data supplied with the Technical Report.

Do not include the following as expenditure (if relevant, these may be discussed in						
Insurance	Transfer costs	<ul> <li>Land Access Compensation</li> </ul>				
Company Prospectus	Title Search	<ul> <li>Meetings with Land Councils</li> </ul>				
Rent &     DepartmentFees	Legal costs	<ul> <li>Payments to Traditional Owners</li> </ul>				
Bond	Advertising	• Fines				

Exploration Work type	Work Done (mark with an "X" or provide details)		Expenditure	Data and Format Supplied in the Technical Report			
				Digital	Hard copy		
Office Studies							
Literature search	X		2345.00				
Database compilation	X		4500.00				
Computer modelling							
Reprocessing of data	X		3875.00				
General research	X		2560.00				
Report preparation	X		1500.00				
Other (specify) Wages + Consultant			9873.00				
	Subtotal		\$24653.00				
Airborne Exploration Surve	eys (state line	kms)					
Aeromagnetics		kms					
Radiometrics		kms					
Electromagnetics		kms	8990.00				
Gravity		kms	6750.00				
Digital terrain modelling		kms					
Other (specify)		kms					
	Subtotal		\$15740.00				
Remote Sensing							
Aerial photography							
LANDSAT							
SPOT							
MSS							
Other (specify)							

Exploration Work type	Work Done (mark with an "X or	(" Expenditure		Data and Format Supplied in the Technical Report	
	provide details)			Digital	Hard copy
	Subtotal	\$	ĺ		
Ground Exploration Surveys					
Geological Mapping					
Regional	X	4380.00			
Reconnaissance					
Prospect					
Underground					
Costean					
Ground Geophysics			-		
Radiometrics					
Magnetics					
Gravity					
Digital terrain modelling					
Electromagnetics					
SP/AP/EP					
IP					
AMT/CSAMT					
Resistivity					
Complex resistivity					
Seismic reflection					
Seismic refraction					
Well logging					
Geophysical					

Exploration Work type	Work Done (mark with an "X" or	Expenditure	Data and Format Supplied in the Technical Report	
	provide details)		Digital	Hard copy
interpretation				
Petrophysics				
Other (specify)				

Geochemical Surveying an	d Geochron	ology	
(state number of samples)			
Drill (cuttings, core, etc.)			
Stream sediment			
Soil			
Rock chip			
Laterite			
Water			
Biogeochemistry			
Isotope			
Whole rock			
Mineral analysis			
Laboratory analysis			
(type)			
Petrology			
Other (specify)			
Ground Exp Subtotal	oloration		\$
Drilling (state number of h	noles & metr	res)	
Diamond	holes	metres	
Reverse circulation (RC)	holes	metres	
Rotary air blast (RAB)	holes	metres	
Air-core	holes	metres	
Auger	holes	metres	
Other (specify)	holes	metres	
	Subtotal		9
Other Operations			
Costeaning/Trenching			

Bulk sampling			
Mill process testing			
Ore reserve estimation			
Underground development (describe)			
Mineral processing			
Other (specify)			
	Subtotal	\$	
Access and Rehabilitation	1		
Track maintenance			
Rehabilitation			
Monitoring			
Other (specify)			
	Subtotal		1
TOTAL E	XPENDITURE	\$44773.00	

Section 7. Comments on your exploration activities:

I certify that the information contained herein, is a true statement of the operations carried out and the monies expended on the above mentioned tenement during the period specified as required under the *Northern Territory Mining Act* and the Regulations thereunder.

Χ	I have atta	ched the Technical Report		
1.	Name:	Zia U. Bajwah	2.	Name:
	Position:	Geologist		Position:
	Signature:			Signature:
	Date:	20/10/2011		Date:

### NORTHERN TERRITORY EXPLORATION EXPENDITURE FOR MINERAL TENEMENT

Section 13. Tenement type, number and operation name: (One licence only per form even if combined reporting has been approved)						
Туре	Exploration Licence					
Number	24929					
Operation Name (optional)	ional) Ngalia-Alara Project					

Section 14. Period covered by this return:					
Twelve-month period:		If Final Report	::		
From	15/08/2010	From			
То	1408/2011	То			
Covenant for the reporting period:		\$20,000.00			

Section 15. Give title of accompanying technical report:					
Title of Technical Report	Annual Report on Alara JV Project (GR066/09) for the period 15 August 2010 to 14 August 2011.				
Author	Zia U. Bajwah				

Section 16. Locality of operation:				
Geological Province	Ngalia Basin			
Geographic Location	Mt Doreen			

Section 17. Work program for the next twelve months:						
Activities proposed (please mark with an "X"):	X	Drilling and/or costeaning				
Literature review		Airborne geophysics				
<b>x</b> Geological mapping	x	Ground geophysics				
x         Rock/soil/stream sediment           sampling		Other:				
Estimated Cost: \$	28000.00					

#### Section 18. Summary of operations and expenditure: Please include salaries, wages, consultants fees, field expenses, fuel and transport, administration and overheads under the appropriate headings below. Mark the work done for the appropriate subsections with an "X" or similar, except where indicated. Complete the right-hand columns to indicate the data supplied with the Technical Report. Do not include the following as expenditure (if relevant, these may be discussed in • Insurance • Transfer costs • Land Access Compensation **Company Prospectus Title Search** Meetings with Land Councils . ٠ Payments to Traditional Owners

- Rent & • DepartmentFees
- Bond •
- Legal costs

• Advertising

•

- - Fines

•

Exploration Work type	Work Done (mark with an "X" or provide details)		Expenditure	Data and Format Supplied in the Technical Report			
				Digital	Hard copy		
Office Studies							
Literature search	x		3490.00				
Database compilation	x		5890.00				
Computer modelling							
Reprocessing of data	x		6875.00				
General research	x		2560.00				
Report preparation	x		1550.00				
Other (specify) Wages + Consultant			15858.00				
	Subtotal		\$36223.00				
Airborne Exploration Surve	eys (state line	kms)					
Aeromagnetics		kms					
Radiometrics		kms					
Electromagnetics		kms	3719.00				
Gravity		kms	14498.00				
Digital terrain modelling		kms					
Other (specify)		kms					
	Subtotal		\$18217.00				
Remote Sensing							
Aerial photography							
LANDSAT							
SPOT							
MSS							
Other (specify)							

Exploration Work type	Work Done (mark with an ") or	an "X"		Data and Format Supplied in the Technical Report		
	provide details)			Digital	Hard copy	
	Subtotal	\$				
Ground Exploration Surveys						
Geological Mapping						
Regional	X	6555.00				
Reconnaissance						
Prospect						
Underground						
Costean						
Ground Geophysics	1					
Radiometrics						
Magnetics						
Gravity						
Digital terrain modelling						
Electromagnetics						
SP/AP/EP						
IP						
AMT/CSAMT						
Resistivity						
Complex resistivity						
Seismic reflection						
Seismic refraction						
Well logging						
Geophysical						

Exploration Work type	Work Done (mark with an "X" or	Expenditure	Data and Format Supplied in the Technical Report	
	provide details)		Digital	Hard copy
interpretation				
Petrophysics				
Other (specify)				

Geochemical Surveying an	d Geochron	ology	
(state number of samples)			
Drill (cuttings, core, etc.)			
Stream sediment			
Soil			
Rock chip			
Laterite			
Water			
Biogeochemistry			
Isotope			
Whole rock			
Mineral analysis			
Laboratory analysis			
(type)			
Petrology			
Other (specify)			
Ground Exp Subtotal	oloration		44
Drilling (state number of h	noles & metr	es)	
Diamond	holes	metres	
Reverse circulation (RC)	holes	metres	
Rotary air blast (RAB)	holes	metres	
Air-core	holes	metres	
Auger	holes	metres	
Other (specify)	holes	metres	
	Subtotal		
Other Operations			
Costeaning/Trenching			

Bulk sampling			
Mill process testing			
Ore reserve estimation			
Underground development (describe)			
Mineral processing			
Other (specify)			
	Subtotal	\$	
Access and Rehabilitation			
Track maintenance			
Rehabilitation			
Monitoring			
Other (specify)			
	Subtotal		I
TOTAL E	\$60995.00		

Section 7. Comments on your exploration activities:

I certify that the information contained herein, is a true statement of the operations carried out and the monies expended on the above mentioned tenement during the period specified as required under the *Northern Territory Mining Act* and the Regulations thereunder.

Χ	X I have attached the Technical Report						
1.	Name:	Zia U. Bajwah	2.	Name:			
	Position:	Geologist		Position:			
	Signature:			Signature:			
	Date:	20/10/2011		Date:			