

ARNHEM LAND PROJECT

EXPLORATION LICENCE 327, 328, 329, 3340 & 9969

COMBINED ANNUAL REPORT FOR THE

PERIOD ENDING 13 MAY 2001

DE BEERS

A DIAMOND IS FOREVER

PROJECT: ARNHAM LAND EL PROJECT

TITLE: EXPLORATION LICENCES 327, 328, 329,
3340 & 9969
COMBINED ANNUAL REPORT FOR THE
PERIOD ENDING 13 MAY 2001

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ABSTRACT:

Five granted tenements located within the central parts of the Arnhem Land Aboriginal Land Trust form the Arnhem Land Project. Three of these tenements were surrendered prior to the third anniversary.

Diamond exploration conducted by De Beers Australia Exploration Limited (formerly known as Stockdale Prospecting Limited) over the Arnhem Land project area during the third year of tenure involved the field inspection and sampling of three magnetic anomalies.

Exploration activities undertaken in 2000 by joint venture partners Cameco Australia Pty Ltd involved the field inspection of radiometric anomalies generated from the 1999 geophysical survey and regional outcrop sampling.

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SUMMARY

Exploration Licence:	327, 328, 329, 3340	9969
Date Granted:	14/05/98	1/06/1998
Total Original Area:	734 Blocks (2363 km ²)	
Retained Area:	160 Blocks (536 km ²)	
Occupant:	De Beers Australia Exploration Limited	
Operators:	De Beers Australia Exploration Limited Cameco Australia Pty Ltd	
Commodities Sought:	Diamonds, uranium, precious and base metals.	

Exploration:

Diamond exploration conducted by De Beers Australia Exploration Limited (formerly known as Stockdale Prospecting Limited) over the Arnhem Land project area during the third year of tenure involved the field inspection and sampling of three magnetic anomalies (ALD021, CM0001 & MGB002) contained within exploration licence's 327 and 3340. Sampling involved the collection of geochemical soil samples and heavy mineral samples. Results from this investigation phase of exploration are now available. Magnetic anomaly ALD021 is considered to be of interest and warrants further detailed investigation.

Uranium is the main commodity sought by joint venture partners Cameco Australia Pty Ltd (Cameco), however, the project area is also being evaluated for base and precious metal potential through multi-element geochemical sample analysis and geological observations. Exploration activities undertaken in 2000 involved the field inspection of radiometric anomalies generated from the 1999 geophysical survey and regional outcrop sampling.

Following the review of results over the project area and departmental requirements to relinquish 50% of the ground held under tenure in 2001, exploration licences 327 and 3340 were partially relinquished to retain specific portions. The other three project tenements EL328, EL329 and EL9969 were surrendered. The area retained over EL327 covers Cameco's proposed work area for 2001 and the remaining part of EL3340 covers magnetic anomaly ALD021.

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1. INTRODUCTION

Five exploration licences (EL327, 328, 329, 3340 & 9969) were granted to De Beers Australia Exploration Limited (formerly known as Stockdale Prospecting Limited) in May and June 1998. These exploration licences are located within the central parts of the Arnhem Land Aboriginal Land Trust, some 50 kilometres south south-west of Ramingining (Map 1).

Diamond exploration completed to date has involved the collection of stream sediment samples, the flying of a regional airborne magnetic survey over the entire project area, and the interpretation of results. Work undertaken in 2000 involved the field inspection and sampling of three magnetic anomalies (ALD021, CM0001 & MGB002) contained within exploration licence's 327 and 3340. Sampling involved the collection of geochemical soil samples and heavy mineral samples. Results from this investigation phase of exploration are now available. Magnetic anomaly ALD021 is considered to be of interest and warrants further detailed investigation.

Uranium is the main commodity sought by joint venture partners Cameco Australia Pty Ltd (Cameco), however, the project area is also being evaluated for base and precious metal potential through multi-element geochemical sample analysis and geological observations. Exploration activities undertaken in 2000 involved the field inspection of radiometric anomalies generated from the 1999 geophysical survey and regional outcrop sampling. Details of Cameco's exploration activities can be found in a separate report attached as Appendix 1.

Following the review of results over the project area and statutory requirements to relinquish unprospective ground, three project tenements EL328, EL329 and EL9969 were surrendered. The remaining exploration licences 327 and 3340 were partial relinquished, retaining Cameco's and De Beers Australia Exploration Limited's proposed work area for 2001. The retained portion of EL3340 covers magnetic anomaly ALD021. Diamond exploration proposed for 2001 involves the drilling of this magnetic anomaly.

The magnetic anomaly to be tested by drilling is located in a remote area, which may not be able to be accessed by vehicle. To keep the environmental impact caused by drilling to a minimum, it is proposed that tracks will not be constructed to access the anomaly. Access will be gained via cross-country driving or by transporting all equipment, including the drill rig, to site via the use of a helicopter. The decision on which type of access method to be employed will be assessed at the upcoming Committee Meeting to be held at Bulman on the 17 July 2001.

The drilling contract has been put out for tenure and as yet the decision on which contractor to be used has not been made. The most likely choices are Century Drilling Limited, who have extensive drilling experience in Arnhem Land and have access to a helicopter transportable drill rig, or Johannsen Drilling Pty Ltd, who have also drilled in Arnhem Land with a highly mobile

multipurpose drill rig. A substantial site disturbance application will be lodged with the Mines Department once the programme has been successfully tendered.

2. TENURE

Tenure details for the Arnhem Land licences are outlined in Table 1 and the location of the licences are displayed as Map 1.

TABLE 1: TENURE DETAILS

LICENCE	APPL'N DATE	DATE GRANT'D	ORIGINAL AREA	RETAINED AREA
EL 327	9/12/1971	14/05/1998	238 blocks (766 km ²)	118 blocks (395 km ²)
EL 328	9/12/1971	14/05/1998	259 blocks (834 km ²)	Surrendered
EL 329	9/12/1971	14/05/1998	150 blocks (483 km ²)	Surrendered
EL 3340	21/09/1981	14/05/1998	85 blocks (274 km ²)	42 blocks (141 km ²)
EL 9969	9/12/1971	1/06/1998	2 blocks (6 km ²)	Surrendered

De Beers Australia Exploration Limited is both the occupant and joint operator with Cameco Australia Pty Ltd of the exploration licences.

Following the review of results over the project area and statutory requirements to relinquish 50% of the ground held under tenure in 2001, exploration licences 327 and 3340 were partially relinquished to retain specific portions. The other three project tenements EL328, EL329 and EL9969 were surrendered. The area retained over EL327 covers Cameco's proposed work area for 2001 and the remaining part of EL3340 covers a high priority magnetic anomaly. Diamond exploration proposed for 2001 involves the drilling of this magnetic anomaly.

3. ABORIGINAL WORK AREA CLEARANCE AND LIAISON

A meeting of the Aboriginal Liaison Committee for EL327-329, 3340 & 9969 was held at Bulman on Thursday 23 March 2000. At this meeting the Traditional Owner committee members considered Cameco work programme for further exploration over the project area. De Beers Australia proposed exploration covered an area previously cleared and discussed at the 1999 Work Area Clearance meeting.

The proposed work areas were visited and cleared with traditional owners prior to the commencement of field activities. The work areas proposed for 2000 were approved by the Northern Land Council and Traditional Owners.

4. **GEOLOGY** (after Carson et al, 1999)

The tenements lie within the Palaeoproterozoic McArthur Basin and cover part of the Neoproterozoic Arafura Basin.

McArthur Basin

The McArthur Basin is a succession of essentially unmetamorphosed sedimentary and lesser volcanic rocks, deposited largely in shallow marginal marine and lacustrine settings. The oldest unit contained within the tenements is the basement Mirarrmina Complex (Py), of which the McArthur Basin platform cover onlaps and overlies. The Katherine River Group (Ph) dominates the western portion of the tenements and consists of thick siliciclastic sandstone units of the Kombolgie Subgroup. The Kombolgie Subgroup forms some of the spectacular escarpment country seen over the Arnhem Land Plateau. The Donydji Group (Pi) occurs in the eastern margin of the licence area and is moderately deformed due to compressional and extensional events leading to the formation of the Walker Fault Zone.

The Parson Range Group (Pp), mapped on the south-eastern area of the tenements is composed almost entirely of shallow marine to fluvial sandstone with minor lutite and carbonate. The youngest unit of the McArthur Basin is the widespread Roper Group (Pr), a cyclic deposit of fine and coarse grained siliciclastic rocks deposited mainly in shallow marine environment. The Roper Group sediments crop out in the south-central portions of the tenements. Mesoproterozoic dolerite dykes intrude the Katherine River Group and form east-northeast trending magnetic lineaments on magnetic maps for the region. The dolerite dykes do not intrude the Neoproterozoic Arafura Basin.

Arafura Basin

The Arafura Basin comprises of shallow marine sandstone, lutite and lesser carbonate. The Neoproterozoic Wessel Group (Ps) sporadically crop out in the northern tenements, containing sandstone, mudstone and minor carbonate to form the basal units of the Arafura Basin.

Cretaceous (K) sedimentary rocks are exposed intermittently in small mesa and plateaus throughout the tenement area. They form a flat-lying, largely undeformed siliciclastic coastal plain to shelf succession unconformably overlying Proterozoic rocks.

Cainozoic (C) deposits dominate the licence area. Inland deposits of sand, skeletal soils and ferruginous detritus typify the recent sedimentation, with coastal deposits actively forming over the northern most exploration licence applications.

5. DIAMOND EXPLORATION ACTIVITIES

5.1 Aeromagnetic Anomalies Investigation

Diamond exploration activities undertaken over the Arnhem Land tenements during the third year of tenure involved the field investigation of three highly rated magnetic anomalies (MGB002, CMO001 & ALD021). The small-scale anomaly investigation programme ran at the completion of Cameco's regional outcrop sampling programme over the Arnhem Land tenements. Three traditional guides were used to clear each of the magnetic anomalies and upon gaining clearance each anomaly was field inspected and sampled.

The aeromagnetic anomalies investigated were accessed by the use of a helicopter, whereupon the centre of each feature was located with the FUGRO 4000L DGPS. Each anomaly investigated was sampled by the collection of a combined 50 litres loam sample. Surface deflation was swept and screened (where appropriate) to collect material over the centre of each feature and then every 100m on a four pointed star or compass pattern.

Geochemical samples were also collected over each anomaly for partial leach digestion and analysis. Seven geochemical samples were collected from each anomaly, with the geochems collected on a north-south traverse. Three geochemical samples were collected directly over the anomaly and four background or contrast samples were collected off each feature. Spacing of each sample was dependent on the size of each anomaly. Sample material collected for each geochem was taken from a depth of about 10cm. Sample locations are displayed on Map 2.

Magnetic anomaly MGB002

- Contained within EL327
- 445308mE/8564873mN (GDA94 Zone 53)
- Found to be coincident with a small saddle within sandstone outcrop and sub-outcrop.
- Heavy mineral loam sample = BM4908
- Geochemical traverse samples = GH9208-9214

Magnetic anomaly CMO001

- Contained within EL327
- 435029mE/8572439mN (GDA94 Zone 53)
- Found to correspond to sandstone sub-outcrop.
- Heavy mineral loam sample = BM4909
- Geochemical traverse samples = GH9201-9207

Magnetic anomaly ALD021

- Contained within EL3340
- 494601mE/8572114mN (GDA94 Zone 53)
- Found to correspond to a circular depression with increased vegetation, the cause for the anomaly could not be ascertained.
- Heavy mineral loam sample = BM4910

- Geochemical traverse samples = GH9215-9221

5.2 Results

The heavy mineral loam samples collected over the magnetic anomalies were transported to Australian Laboratory Services (ALS) at Malaga, Perth WA for heat treatment sterilisation to comply with WA quarantine regulations. Following sterilisation the samples were then transported to the De Beers Australia Exploration Limited's Perth treatment plant located in Bassendean. The samples were screened, washed and concentrated through the use of the company's Dense Medium Separator (DMS). Sample concentrate was then acidised and further screened and washed and the final sample concentrate then transported to the company's Melbourne Laboratory. Mineral grains were further prepared for mineral examination by use of Bromoform and finally examined and sorted into different mineral species. The loam samples collected over the magnetic anomalies did not recover any kimberlitic mineral grains.

Geochemical samples collected over the magnetic anomalies were forwarded to Genalysis for partial leach digestion and analyses. The geochemical samples collected were analysed for the following suite of elements: Ba, Ca, Ce, Co, Cr, Dy, Er, Gd, K, La, Mg, Nb, Nd, Ni, Y and Yb. The geochemical results obtained are detailed in Appendix 1.

Magnetic anomaly MGB002

- Anomaly corresponds to sandstone outcrop and sub-outcrop.
- No indicator minerals of interest recovered.
- No anomalous geochemical response.
- No further work proposed.

Magnetic anomaly CMO001

- Anomaly corresponds to sandstone sub-outcrop.
- No indicator minerals of interest recovered.
- Slightly elevated geochemical response but not considered anomalous.
- Anomaly found to correspond to sandstone; no further work proposed.

Magnetic anomaly ALD021

- Anomaly coincides with a highly vegetated circular depression in a sandstone background.
- Unfortunately no indicator minerals of interest recovered. However, the fine sediment accumulation over the depression may not have provided an effective sampling medium (?).
- Elevated geochemical response considered anomalous.
- Further exploration recommended.
- Drilling has been proposed.

Geochemical standard scores have been calculated for each of the magnetic anomalies sampled in the third year of tenure and the resulting charts are displayed as Figure 1, 2 and 3. The anomalous response recovered over ALD021 is clearly highlighted in Figure 3.

To confirm the initial anomalous response obtained by the analyses of the collected geochemical samples over ALD021, the samples have been resubmitted to Genalysis for additional elements. Results are awaited.

6. OTHER COMMODITY EXPLORATION ACTIVITIES

Other commodity exploration activities by joint venture partner Cameco Australia Pty Ltd can be found in Appendix 2.

7. EXPENDITURE

Combined expenditure from both Cameco Pty Ltd and De Beers Australia Exploration Limited for the third year of tenure totaled \$91 567 (Table 2).

TABLE 2: EXPENDITURE DETAILS

Expenditure	EL 327	EL 328	EL 329	EL 3340	EL 9969
Operational Staff Costs	3317	3612	2082	1414	25
General Operational Expenses	600	653	378	214	5
Transport and Travel	16669	16135	9790	7832	151
Other Tenement Costs	5192	0	0	1848	0
Sample Analysis	1810	1980	1130	905	15
Geophysics Contractors	950	0	0	1900	0
Geophysics Services	2000	0	0	4000	0
Data Processing/Drafting	450	0	0	900	0
Regional Office Expenses	430	470	265	210	10
Head Office Expenses	1310	1430	820	650	15
TOTAL	\$ 32,728	\$24,280	\$ 14,465	\$ 19,873	\$ 221
COVENANT	\$ 30,000	\$ 25,000	\$ 15,000	\$ 10,000	\$ 5,000

Covenants were met for exploration licences 327 and 3340. The other tenements were surrendered prior to the third anniversary.

8. SUMMARY AND FORWARD WORK PROGRAMME

Diamond exploration conducted by De Beers Australia Exploration Limited (formerly known as Stockdale Prospecting Limited) over the Arnhem Land project area during the third year of tenure involved the field inspection and sampling of three magnetic anomalies (ALD021, CMO001 & MGB002) contained within exploration licence's 327 and 3340. Sampling involved the collection of geochemical soil samples and heavy mineral samples. Results from this investigation phase of exploration are now available. Magnetic anomaly ALD021 is considered to be of interest and warrants further detailed investigation.

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Diamond exploration activities proposed for 2001 involve the testing of magnetic anomaly ALD021 by drilling. The magnetic anomaly is located within a remote area of the central parts of EL 3340.

Preliminary planning for the programme indicates that a major track off to a community located on the Goyder River from Emu Springs (north of Bulman) will allow heavy vehicle access to within 8 kms of the target. A small temporary campsite is proposed to be established along the Goyder River, subject to the approval from Traditional Owners, whereby equipment required for the programme can be transported to site via use of a helicopter. Or if it is considered possible to access the drill site without clearing tracks, then a temporary campsite will be established at the drill site. It is proposed that access options will be ascertained during work area clearance meeting.

The drilling programme proposed is the definitive test for the cause of the magnetic anomaly. The magnetic anomaly ALD021 is located in a background of sand covered sandstone, contained within EL3340. The proposed target depth is rather shallow, modeled at a depth of 45m. Two vertical holes to a depth greater than 50m is therefore required. Table 3 details the drill collar co-ordinates for the proposed drilling.

TABLE 3: DRILL COLLAR POSITIONS

ANOMALY	DRILL HOLE	EASTING	NORTHING	TARGET DEPTH	PROJECTION
ALD021	#1	494600	8572093	45m	GDA94 Zone 53
ALD021	#2	494601	8572084	45m	GDA94 Zone 53

Before carrying out the drilling programme, the Department of Mines and Energy (DME) Secretary will be informed in writing of the proposed programme. Departmental guidelines will be followed and rehabilitation required will be undertaken at the completion of the programme.

The drilling programme is planned for late August 2001. The programme is expected to take less than one week to complete. Environmental impact and proposals to minimise the work programme impact is summarised in Table 4.

TABLE 4: ENVIRONMENTAL IMPACT AND PROPOSAL TO MINIMISE IMPACT.

IMPACT	ACTION TO MINIMISE IMPACT
Heavy machinery transportation to site and soil compaction through transportation.	Tracks not to be constructed.
	Single file country driving or use of helicopter transportable drill rig.
	Amount of material transported to site to be kept to the absolute minimum.
The clearing of drill pads and campsites.	All clearings, campsites and drill pads to be kept to the absolute minimum.
	To avoid the removal of large vegetation during drill pad construction. Natural clearings will be used if possible.
	All equipment brought onto site will be clean to avoid the spread of weeds and disease.
Ground disturbing activities.	Where topsoil needs to be removed, it shall be stored nearby in low mounds together with leaf litter (vegetation matter).
	Drill sites shall be established in such a way as to prevent overflow of drill fluids onto drainage lines.
The transportation of fuels and drilling fluids.	Fuels and drilling fluids to have a central storage area within a secondary containment vessel, such as a bund or spill-tray.
Sumps may be required.	A tank will be used as a sump if required.
The discharge of water through drilling and the disposal of waste water.	The discharge of waste water will be kept to the absolute minimum.
Drilling will cause a hole.	Each drill hole will be capped with a cement plug, least one metre below the surface and then backfilled and leveled.
	Removed topsoils and vegetation matter will be distributed over the drill site and pad to promote vegetation growth.
Equipment on site.	All equipment will be removed from site.

Cameco Australia Pty Ltd has proposed further low impact exploration over EL327 involving outcrop sampling and radiometric/magnetic anomaly follow-up. Their field based activities will constitute approximately five days of work and estimated to cost around \$30,000. Proposed expenditure is detailed in Table 5.

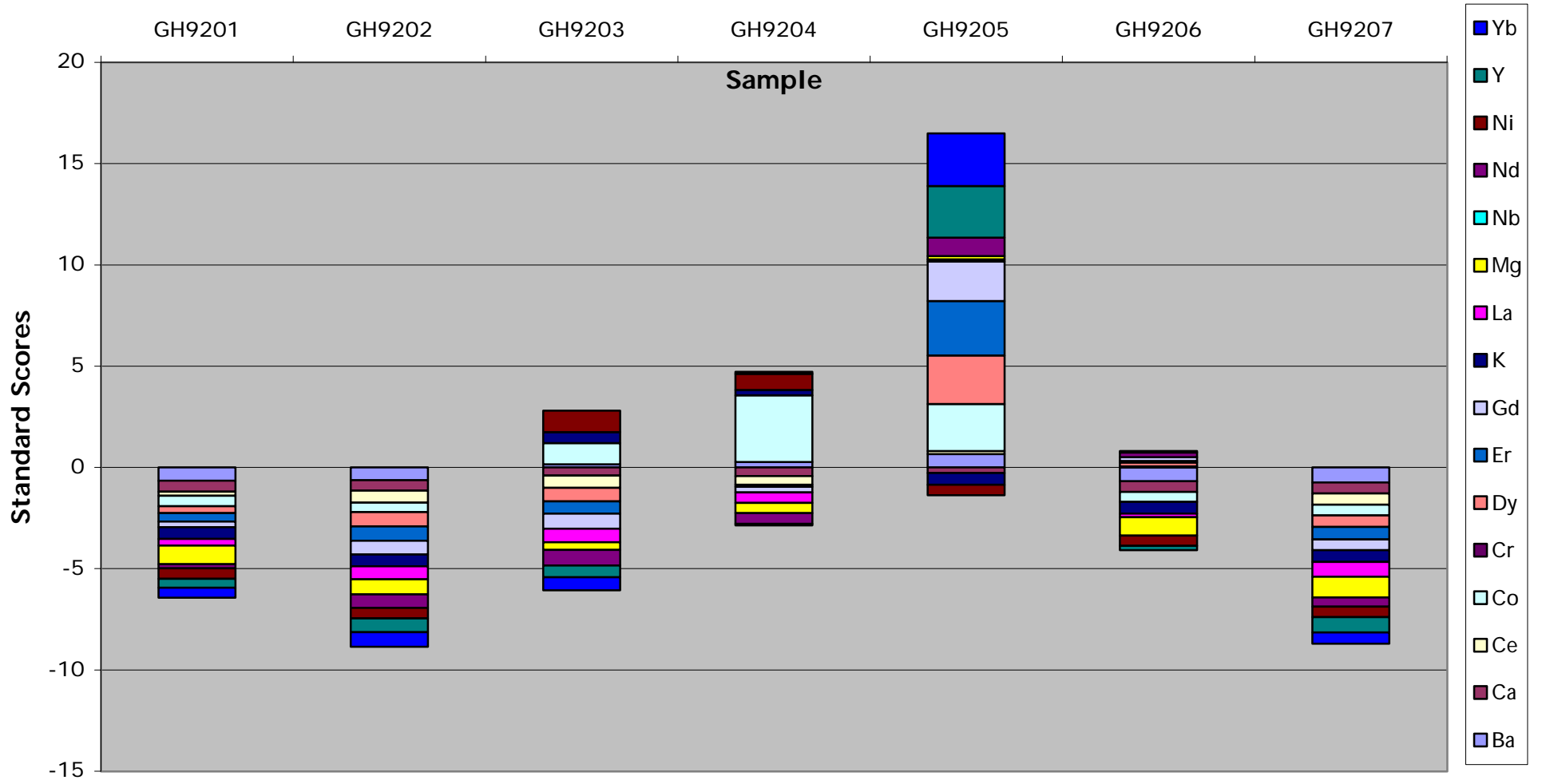
TABLE 5: PROPOSED EXPENDITURE

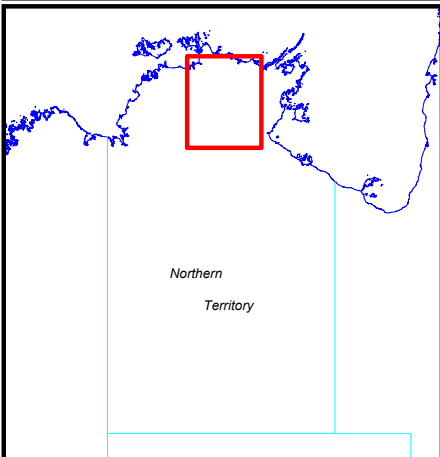
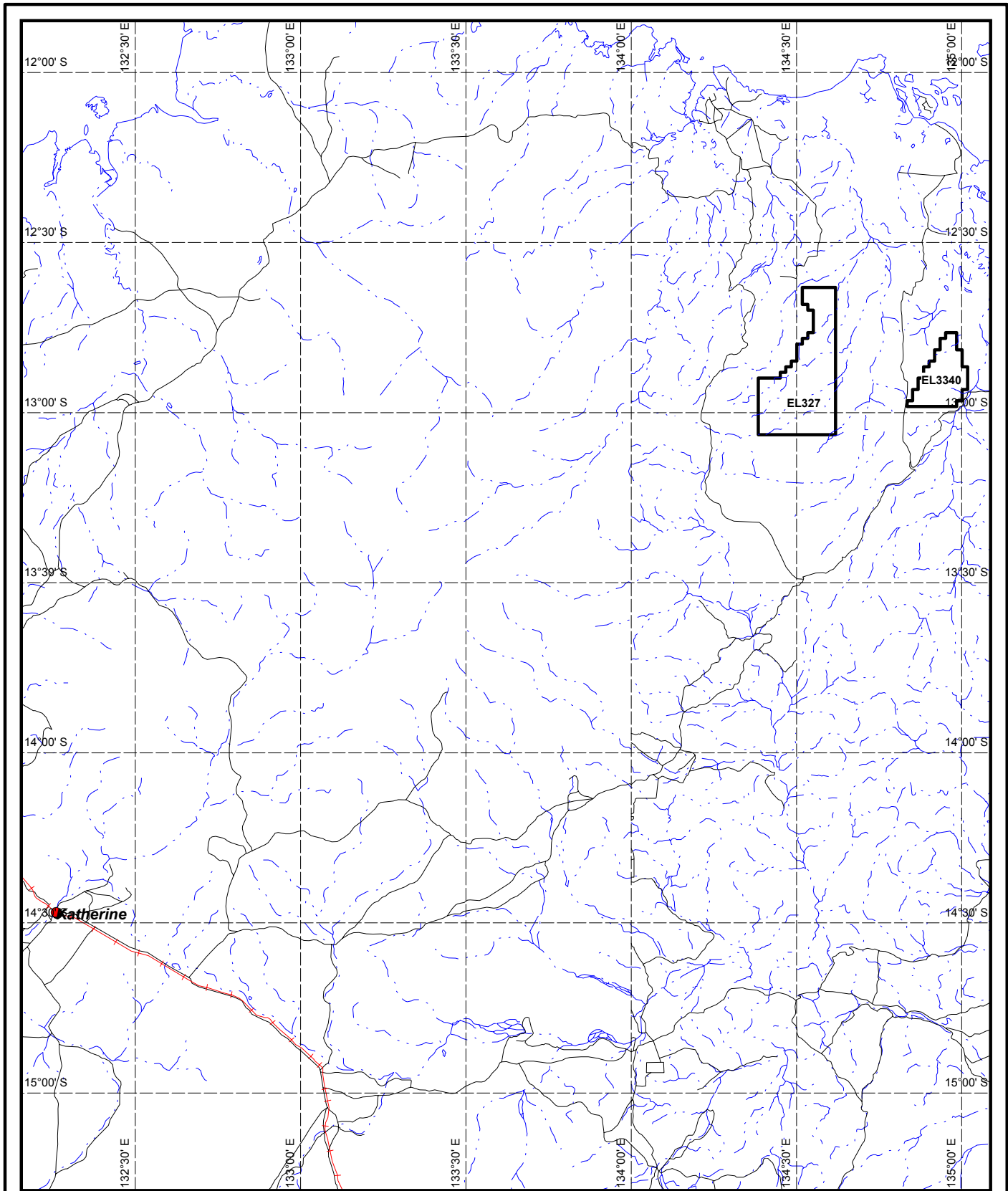
Expenditure	EL 327	EL 3340
Salaries, Wages & Administration	7200	2500
General Operations (including Transport and Travel)	12000	3000
Sample Preparation & Analysis	9500	1000
Drilling	0	8000
Data Processing	1300	500
TOTAL	\$ 30,000	\$ 15,000

9. REFERENCES

Carson L J, Haines P W, Brakel, A, Pietsche B A & Ferenczi P A, 1999, **1:250,000 Geological Map Series Explanatory Notes-Milingimbi SD 53-2**, *Northern Territory Geological Survey*.

CMO001





MAP 1

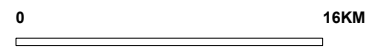
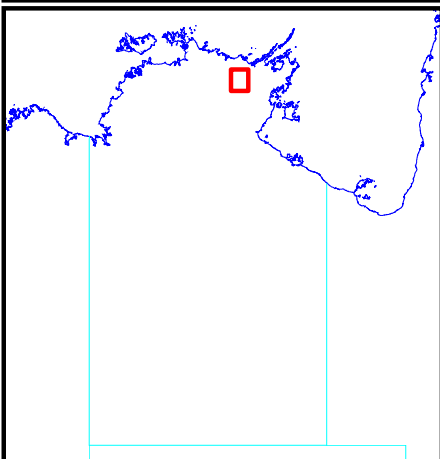
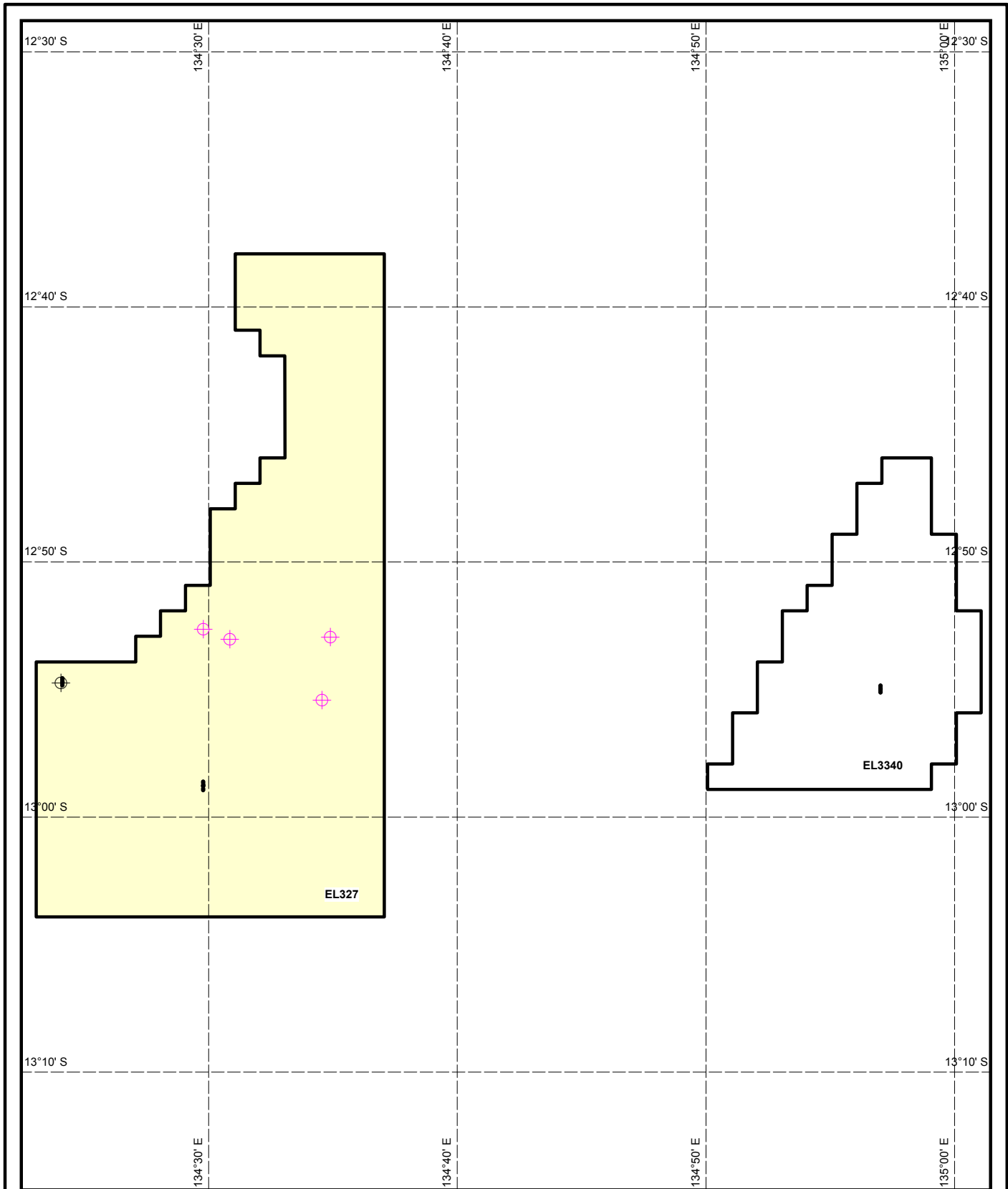
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EL327 & EL3340

LOCATION MAP

NRMDA01/EL327_3340/LOC.WOR



MAP 2

-  Area of Airborne Magnetic Survey
-  Heavy Mineral/Geochemical Sample
-  Magnetic Anomaly (Airborne Magnetics)
-  Magnetic Anomaly (Detailed Airmag Followup)

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EXPLORATION INDEX MAP

NRMDA01/EL327_3340/INDEX.WOR

TN
 Transverse Mercator
 MGA Zone 53
 Datum GDA94

WELLFIELD 9413	INCHES 5013	SCALE 1:1000	MAP NUMBER 1000000000
WELLFIELD 9413	INCHES 5013	SCALE 1:1000	MAP NUMBER 1000000000
WELLFIELD 9413	INCHES 5013	SCALE 1:1000	MAP NUMBER 1000000000
WELLFIELD 9413	INCHES 5013	SCALE 1:1000	MAP NUMBER 1000000000

INDEX TO ADJOINING SHEETS

- LEGEND**
- STREAM SAMPLE
 - ◇ LOAM SAMPLE
 - ◇ ROCK SAMPLE
 - △ BARANGE SAMPLE
 - BRILL SAMPLE
 - FRENCH SAMPLE
 - UNCLASSIFIED
 - PIMA
 - GEOSTREAM
 - ⊕ MAGNETIC ANOMALY

LDAM
 BM4908-4910
 Total 3
GEOCHEM
 GH9201-9221
 Total 21

