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OORATIPPRA PROJECT

ANNUAL REPORT

FOR THE PERIOD

24TH OCTOBER 1988 TO 23RD OCTOBER 1989

ON

EXPLORATION LICENCE 6253

Held By:

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1. INTRODUCTION

This report sets out the results of investigations on Exploration Licence 6253 at Ooratippra for the period 24th October 1988 to 23rd October 1989 (Year 1). Expenditure on the tenement is also presented together with an exploration proposal and budget for Year 2.

The tenement was initially acquired on the basis of broad comparisons made by the NTGS between the geology of the Licence area and that of the Roxby Downs Region which hosts the Olympic Dam copper-gold-uranium deposit.

The Company has conducted a detailed and exhaustive literature study aimed at a better definition of the geology of the tenement area and the development of models for mineralisation. This study was considered necessary to justify further exploration as exploration for Olympic Downs Style mineralisation is both extremely expensive and high risk.

A review has been completed of all open files, Northern Territory Geological Survey (NTGS) and Bureau of Mineral Resources (BMR) data relevant to their exploration licence (EL) 6253 at Ooratippra. All available data at the NTGS library in Darwin has also been reviewed.

The Company's findings are summarised below.

2. LOCATION AND ACCESS

EL 6253 is located 300km north east of Alice Springs in the Northern Territory (Figure 1). The licence lies between latitude 21 degrees 42 minutes and 22 degrees 04 minutes South and longitude 136 degrees 00 minutes and 136 degrees 22 minutes East. Access from Alice Springs is via the sealed Stuart Highway and the formed Sandover Highway which continues to Mount Isa in Queensland. There is an airstrip at Ooratippra Station and access over the EL is along graded tracks which service water bores. The area is gently undulating and sparsely vegetated and off-track access is generally good in dry weather.

3. TENURE

EL 6253 was granted to Dragon Resources Ltd on October 24, 1988 for a period of 6 years. The Licence has to be reduced to 50% of the original area after 2 years and then by 50% of the remaining area at yearly intervals. The EL covers 484 one minute blocks, an area of 1559 square kilometres.

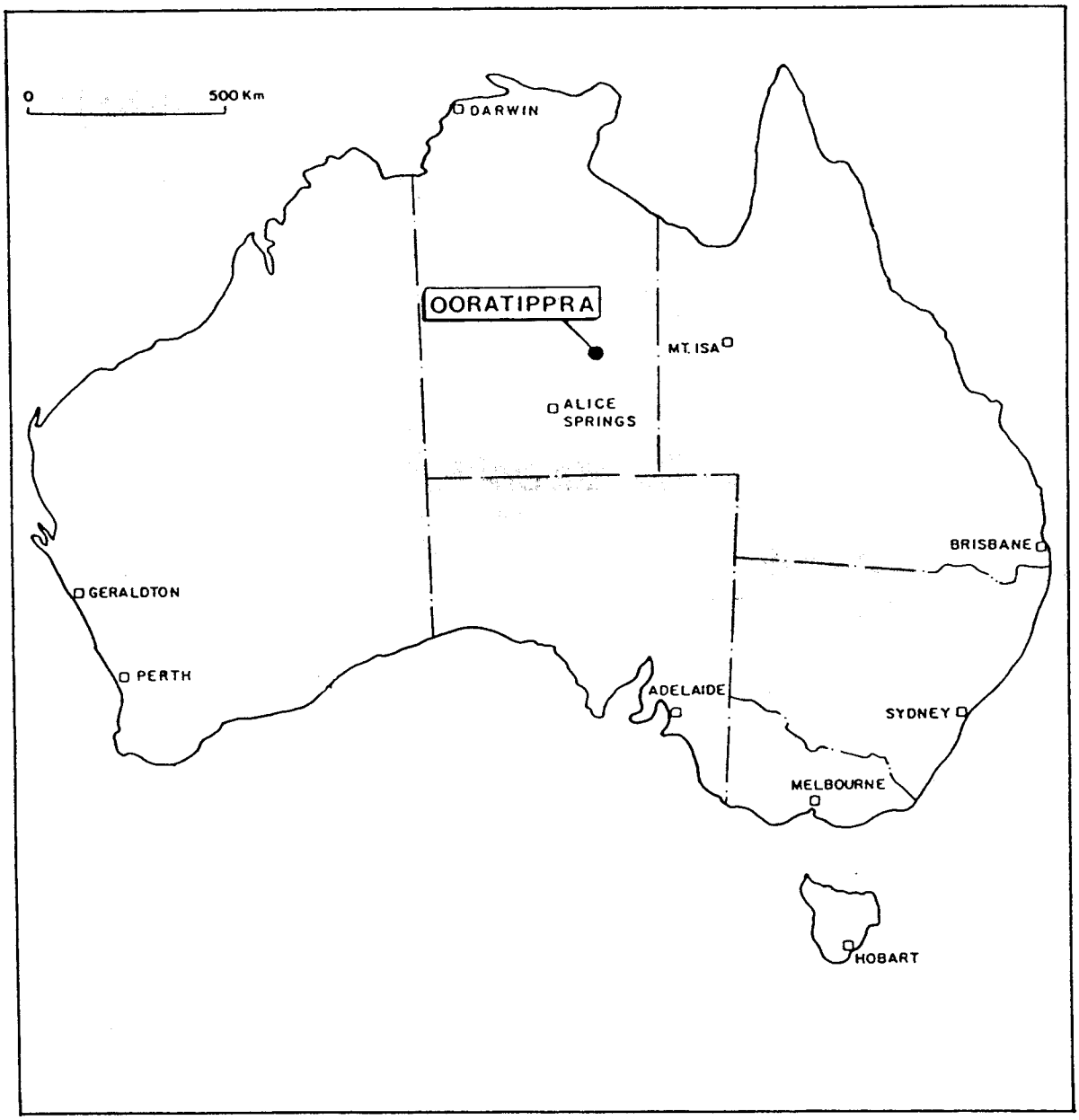


Figure 1. EL6253 LOCTAION PLAN

4. REGIONAL GEOLOGY

EL 6253 is located on a moderately thick sequence of Cambrian sediments of the Georgina Basin. To the south crystalline and metamorphic rocks of the Lower Proterozoic Arunta Orogenic Domain are unconformably overlain by sediments of Adelaidean age. North west of Ooratippra the Early Proterozoic rocks of the Hatches Creek Group are unconformably overlain by the Lower Cambrian Andagera Formation.

BMR stratigraphic borehole BMR13 (Sandover), located in the centre of the Exploration Licence (Figure 2) passed from Lower Cambrian sediments to basement gneiss which has been tentatively correlated with rocks of the Arunta Orogenic Domain. This area is interpreted as a basement high and as such, appears to approximate the northern limit of the deposition of Adelaidean sediments.

5. GEOLOGY OF EL 6253 (Figure 2).

Table 1 shows the local stratigraphy for the area of the Licence. It includes sub surface information from BMR13.

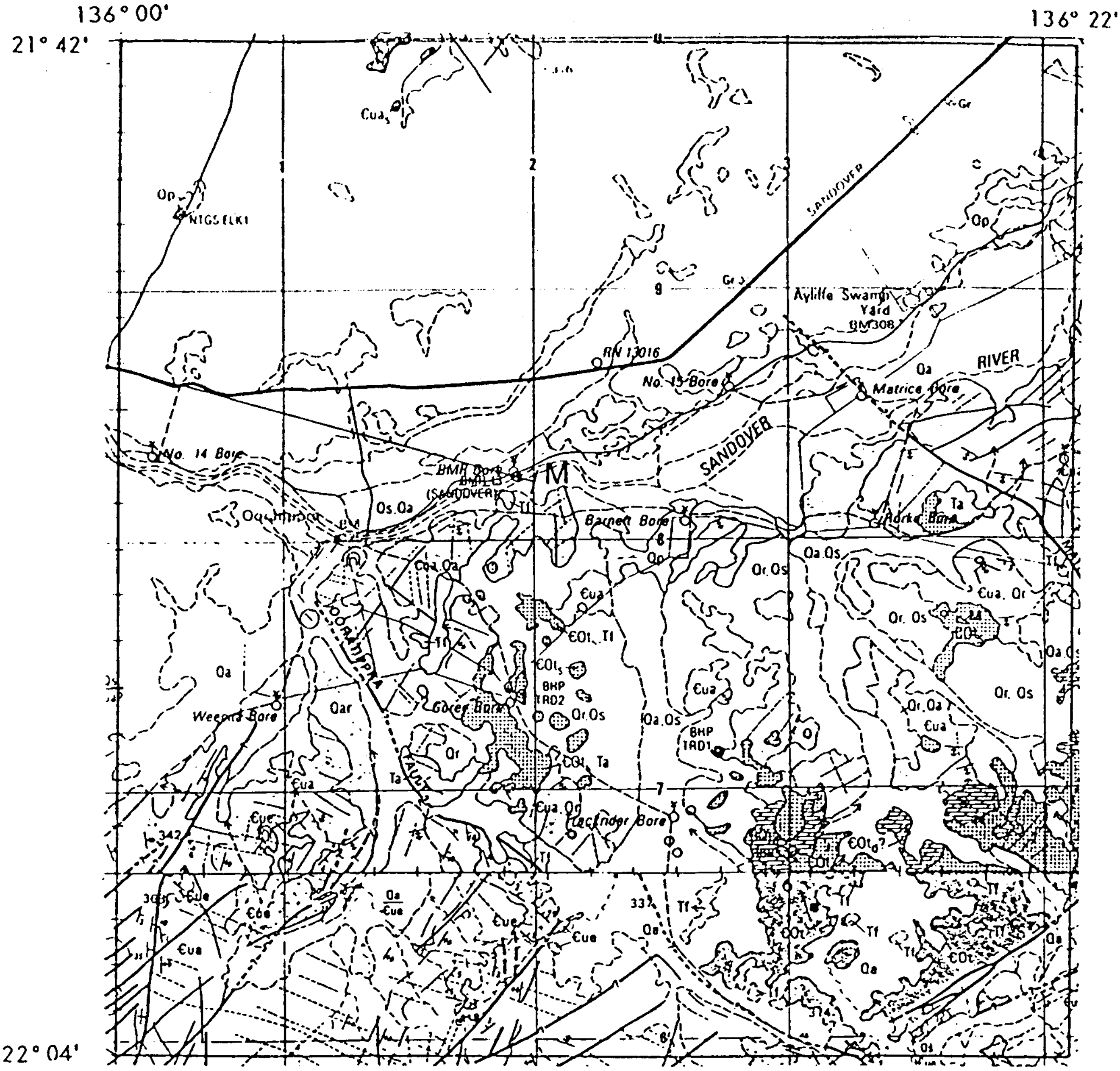
Within EL 6253 the outcropping Cambrian sediments are flat-lying. The Cambrian sequence is one of generally shallow water deposition with occasional deeper, anoxic, sedimentation for part of the Arthur Creek Formation; grading to semi emergent conditions towards the top of the Arrinthrunga Formation. Exposure and erosion of the Arrinthrunga Formation produced the disconformable Tomahawk Beds Sequence. The lowest Cambrian unit, the Errara Beds, are unconformable on the Protorozoic basement gneiss.

6. PREVIOUS EXPLORATION

6.1. Geophysical Exploration

The BMR carried out an airborne magnetic survey over the Elkedra and Huckitta 1:250,000 sheets in 1963 at a line spacing of 3km and a height of 230m above ground level. The area has also been covered by broad scale gravity (11km station spacing) as part of the 1959-61 BMR reconnaissance gravity survey of the Georgina Basin.

EL 6253 covers the Ooratippra gravity high (>200 um. s-2) (Figure 3.). This is coincident with a magnetic high of >2000 nT (Figure 4.) which is very strongly anomalous relative to other areas of the Georgina Basin. The anomalous zone covers about 1200 square kilometres. A steep magnetic and gravity gradient, along the western boundary of the EL, suggests a deep seated north trending



Q	Quaternary
T	Tertiary
M	Mesozoic
€Ot	Tomahawk Beds
€ua €ue	Arrinthrunga Beds

Figure 2

EL 6253
GEOLOGY

From NTGS 1:250,000 sheets Elkedra SF53-7 and Huckitta SF53-11

TABLE 1 : GENERALISED STRATIGRAPHIC TABLE EL 6253

AGE	UNIT	THICKNESS	LITHOLOGY
QUATERNARY			Alluvium, sand gravel, clay
TERTIARY			Ferricrete, some laterite and chert rubble. Deeply weathered unidentifiable rock.
MESOZOIC (?)		1-15m	Quartz granule conglomerate,some sandstone and interbeds
LATE CAMBRIAN	Tomahawk Beds	190m	UPPER: Laminated flaggy quartz sandstone with thin siltstone and shale interbeds at depth. MIDDLE: Thin bedded quartz sandstone, siltstone laminae. LOWER: Thick bedded quartz arenaceous dolostone.
	Arrithrunga Formation	975m (681m in BMR 13)	UPPER: Peloidal, oolitic and stromatolitic dolostone and limestone, thin siltstone, sandstone and shale interbeds. MIDDLE: Quartz sandstone, siltstone,dolostone interbeds. LOWER: Peloidal oolitic and stromatolitic dolarenite,dololutite.
MIDDLE CAMBRIAN	Chabalowe Formation	250m to 300m (BMR13 =103m)	Interbedded dolomitic sandstone, siltstome, claystone, dolostone and gypsyferous beds.
	Arthur Creek Formation	418m (BMR13 =103m)	Organic rich siltstone, silty limestone and silty dolostone.

TABLE 1 (Cont.)

EARLY CAMBRIAN	**Errara Formation**	20-77m (BMR13 = 64m)	Dolostone, minor siltstone laminae dolomitic sandstone at base
ADELAIDEAN	(?)	0.6m+	Coarsely crystalline granite inter-sected from 1014.4m to 1015m in BMR13. Intrudes gneiss.
LOWER PROTEROZOIC	(?)	7.3m	Banded fedspathic gneiss inter-sected from 1007.1m to 1014.4m in BMR13.

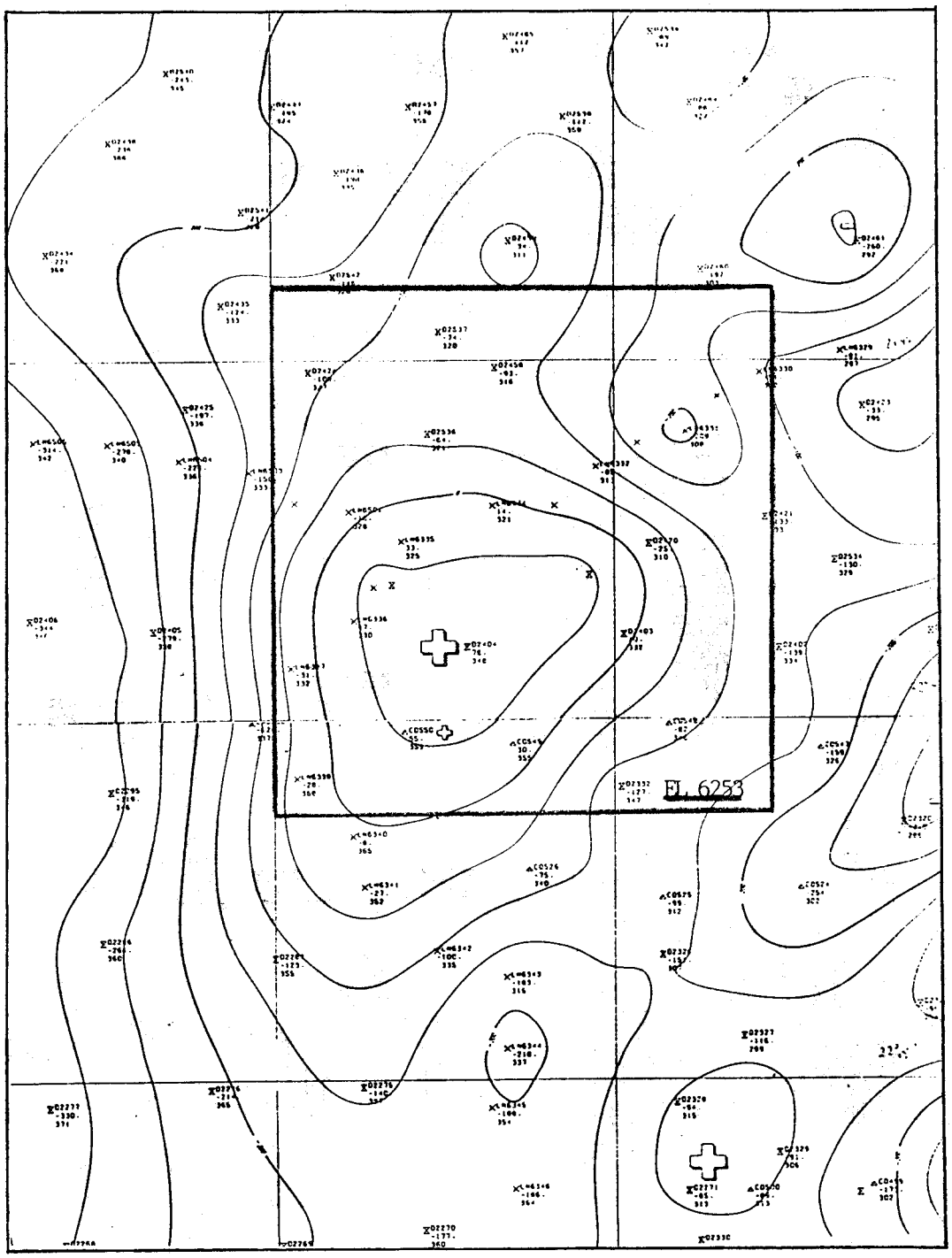


Figure 3. EL6253 BMR BOUGER ANOMALIES

Contour Interval : 30μms^{-2}

(From Elkedra & Huckitta 1:250,000 sheets)

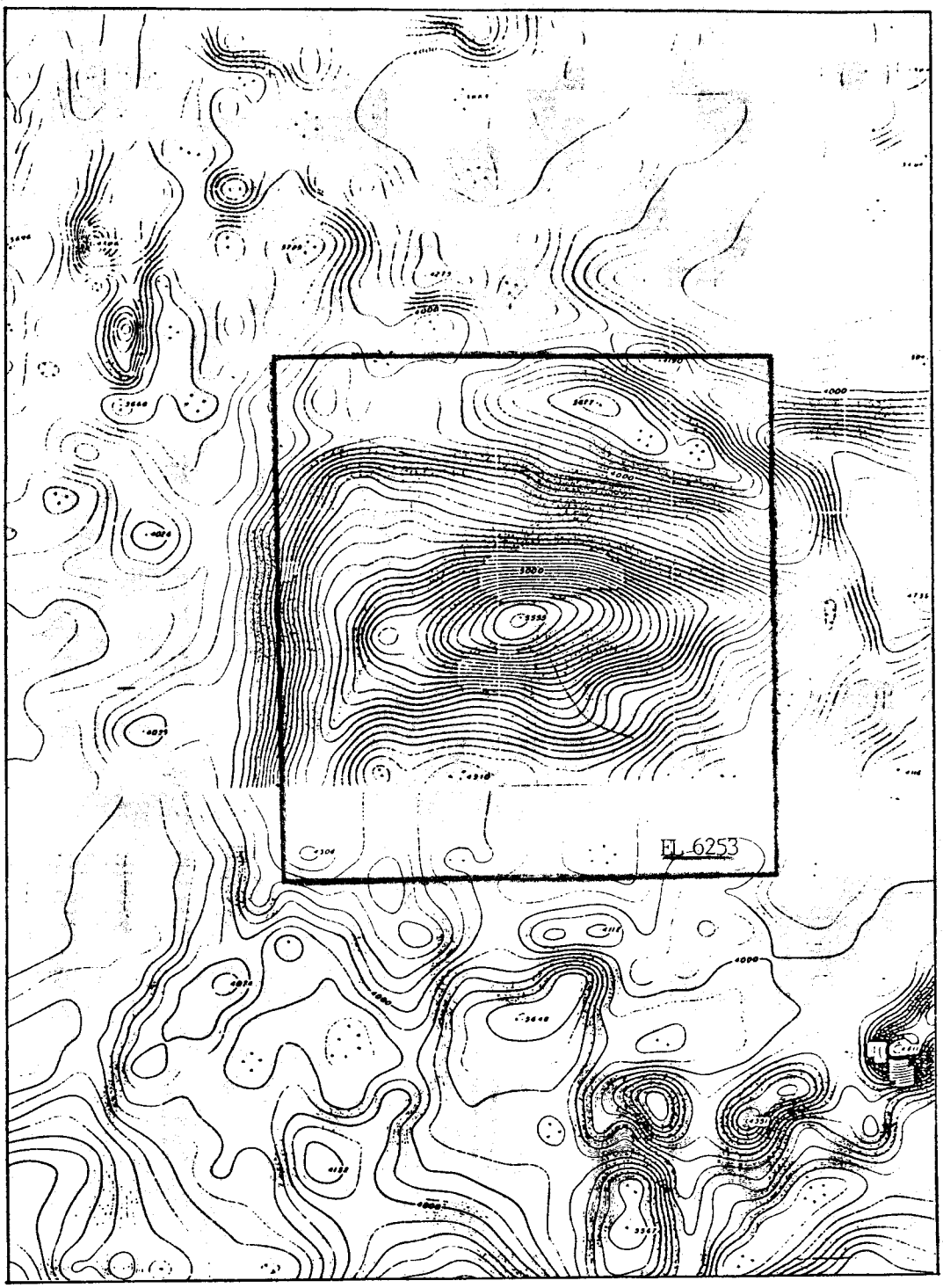


Figure 4. EL6253 TOTAL MAGENETIC INTENSITY

Line Spacing : 3.0 km
Altitude : 230m above S.L.
Contour Spacing : 10nT

(From Elkedra & Huckitta 1:250,000 sheets)

fault which seems to be a sub surface prolongation of the Putta Putta Fault which outcrops to the south.

P.Woyzbun of the NTGS made a ground magnetic traverse along the western half of the Ooratippra high. This traverse showed that the high is not uniform in character and close spaced magnetics would provide a great deal of information on the structure.

Plenty River Mining Company NL carried out a detailed gravity survey over the area immediately west of EL 6253. This survey, together with the BMR airborne magnetic survey of the Elkedra 1:250,000 sheet, was used to interpret the structure of this region. The interpretation suggested a structurally active region with a series of warps and ridges to the west with a major reverse fault on the western margin of the Ooratippra high coincident with the extension of the Putta Putta Fault line.

Modelling suggested geophysical basement was between 2000m and 5000m.

6.2. Exploration for Mississippi Valley (MV) Style Lead-Zinc Mineralisation.

The Cambrian carbonate sediments of the Georgina Basin have been explored for MV style lead zinc mineralisation over a wide area. One of the best occurrences found to date is at Boxhole Bore, about 40 km south west of the EL. In 1960 15t of hand sorted ore, grading 65% to 70% lead was mined. Considerable exploration was done by the CRA group without locating a major ore body. Since then lead-zinc exploration has been carried out by VAM Ltd in 1968, CRA Exploration Pty Limited in 1970, Centamin NL in 1973, BHP Ltd in 1977 and the Plenty River Mining Company in 1985.

The BHP programme over the area of EL 6253 included aerial photography, geophysical interpretation, reconnaissance mapping and geochemistry and the drilling of two holes for mineralisation and stratigraphic information at Trackrider Bore.

The holes drilled by BHP, Trackrider 1 and 2, gave the following best assay values:

Hole No	From	To	Pb	Zn	Ag	Cu
	m	m		ppm		
TRD1	16	19	2480	167	1	31
	19	21	2.26%	1160	1	31

TRD2	35	36	473	228	1	100

No lead or zinc sulphides were noted.

BHP also assayed drill core from BMR 13 for copper lead and zinc. Samples generally were taken at 3.05m (10 feet) intervals from 0 to 681m and 725 to 1015m. Copper and lead values were generally low throughout the hole. Zinc values on the other hand reached 0.78% Zn. The mean Cu, Pb and Zn values for this hole are shown for each formation (44m of Chabalowe Formation not sampled).

FORMATION		**Cu**	**Pb**	**Zn**
Arrinthrunga	Mean	14	33	18
	Range	2-300	14-230	4-200
Chabalowe	Mean	41	53	678
	Range	4-340	32-220	22-7800
Arthur Creek	Mean	18	36	160
	Range	6-270	28-64	34-2300
Errara	Mean	9	38	53
	Range	2-26	28-78	12-108

These figures clearly show that the Chabalowe and Arthur Creek Formations are anomalous in zinc. The best intersections were:

Chabalowe Formation : 768.1 - 774.2m = 6.1m x 2903ppm Zn
Arthur Creek Form. : 832.1 - 847.3m = 15.2m x 792ppm Zn

Minor sphalerite and rare galena have been noted in several NTGS drill holes through the Arthur Creek Formation.

6.3 Exploration for Diamonds

Exploration for kimberlite indicator minerals has been carried out in the region by Stockdale Prospecting Limited and Amoco Minerals Australia Company in 1984 and CRA Exploration Pty Limited in 1985. No anomalous results were obtained from these reconnaissance surveys.

7. POTENTIAL FOR MINERALISATION

7.1 Mississippi Valley Type Pb-Zn Mineralisation

Reconnaissance geochemical sampling of the Georgina Basin by CRA has shown the Ooratippra area to be markedly anomalous in base metals.

In addition the area has a highly anomalous geophysical signature and the area is likley to have been structurally active over a long period of time. Basement structures appear to carry though the sedimentary cover whose rock types appear suitable for the deposition of MV type deposits.

The Ooratippra magnetic high contains a number of superimposed anomalies that are likley to relate to structures within the sedimentary rocks of the Georgina Basin. These structures form immediate targets for MV stlyle mineralisation.

Minor surface showings of base metals have been discovered by previous explorers but generally exploration of the tenement area has been limited.

7.2 Olympic Dam Style Mineralisation

The genesis of the Olympic Dam deposit is only now being understood as mining exposes the orebody. It appears the deposit may be hydrothermal in origin and, it this is correct, mineralisation is directly related to structure rather than considering the graben as a sedimentary trap. The Ooratippra area has many similarities with the Olympic Dam region:

- Deep Cover
- Intersection of major linears
- Strong magnetic and gravity anomalies
- Proterozoic and Adelaidean basement
- Adelaidean Intrusives

In addition the basement granite in BMR 13 shows both chlorite and heaematite alteration - two distinct alteration minerals present at Olympic Dam. Radiometric logging of BMR 13 also showed a distinct radiometric anomaly in Cambrian shales not far above basement.

At Olympic Dam the gravity anomaly is considered to be a direct expresion of the mineralisation. The source of the magnetic anomaly is deeper than the present limit of drilling and the cause of the anomaly is therefore unknown.

The depth to the basement in BMR 13 (over 1000m) may be considered a deterrent to exploration as any Olympic Dam Style target would be within the basement. However BMR 13 is some distance from the centre of the anomaly. With line spacing of 3km for the BMR magnetics and 11km for gravity it is difficult to estimate depth to basements and depth to anomalies. It may be that the basement beneath the centre of the coincident aeromagnetic and gravity anomalies is at a shallower depth than that in BMR 13. Further geophysical exploration is certainly justified to more accurately define the anomalies.

An interesting feature of the Georgina Basin is that the western margin is a north west linear feature as opposed to its irregular margin elsewhere. This linear is also the eastern margin of the mineralised areas of the Jervois area of the Arunta Orogenic Domain and the Tennant Creek Block. Several north westerly trending faults parallel the basin margin. Both Woyzbun and Plenty River interpret northerly and north easterly trending linears near the Ooratippra High.

Existing data suggests there are at least two major faulting directions - north and north west - as well as clearly identifiable north east linears. Woyzbun has shown the high is not a simple magnetic high and he felt that a regional anomaly of this magnitude would be related more to basic to ultrabasic intrusions rather than acid rocks. If this is the case EL 6253 is unique in the region. The presence of Adelaidean sediments to the south, Adelaidean granite, Arunta Block gneiss and possible mafic intrusives in an area which has been structurally active up until the Carboniferous Alice Springs Orogeny all point to a zone which could well host major mineralisation.

8. PROPOSED EXPLORATION & EXPENDITURE FOR THE PERIOD 24th OCTOBER 1989 TO 23RD OCTOBER 1990

Future exploration should be directed primarily towards Olympic Dam Style Mineralisation with Mississippi Valley Style mineralisation ajacent to minor faults being a secondary target.

It is anticipated that exploration during Year 2 of the Licence will be directed towards the definition of drilling targets, with drilling to be conducted in Year 3.

Computer modelling and re-assesment of existing geophysical data should be undertaken. Reconnaissance ground traverses should also be undertaken to provide supporting data.

If appropriate this will be followed up with a detailed low level aeromagnetic survey and a detailed gravity survey. This

will give better definition of the existing anomalies, and the resultant data will be modelled to define drilling targets.

Any decision as to drilling will depend on the detailed of the target, and particularly the likely depth of target.

A budget for exploration for Year 2, the period 24th October 1989 to 23rd October 1990, is given in Table 2.

9. EXPLORATION EXPENDITURE FOR THE REPORTING PERIOD.

Dragons exploration expenditure during the reporting period was $7,213, as detailed below. This falls well short of the required minimum expenditure. The shortfall reflects the fact that work carried out to date has comprised time consuming but relatively inexpensive desk studies and investigations. These studies were particularly protracted in this instance due to the unusual nature of the target being sought and the need to justify the necessary high cost/high-risk exploration.

An application has been made to the NT Department of Mines & Energy (8.9.89) for an expenditure Variation of Covenant for the this reporting period (Year 1) and for Year 2.

Expenditure (24/10/88 -23/10/89) :

	$
Legal Fees	125
Salaries- Geological	4,350
Salaries - Admin	300
Contract Geological Services	2,403
Fuel	34
Freight and Cartage	1
TOTAL	**$7,213**

TABLE 2 : PROPOSED EXPLORATION FOR THE PERIOD 24TH OCTOBER 1989 TO 23rd OCTOBER 1990 (YEAR 2).

1. Modelling and reinterpretaion of BMR geophysical data

Data Acquisition	3,000
Data Processing & Interpretation	2,500
Ground Magnetic and gravity traverses	5,000
(sub-total	10,500)

2. Detailed low-level aeromagnetic survey (2,250 line km)

Geologist, 5 days @ $250/day	1,250
Airphotos 30 approx @ $5.35/copy	160
Maps	600
Sundries	85
Plane mobilisation	2,500
Data Aquisition	18,000
Data Processing	6,750
Navigation	2,125
Plans	300
(sub-total	31,770)

3. Detailed Gravity Survey

Data Aquisition	
Field work (21 man days @ $250/day)	5,250
Data Processing (5man days @ $350/day)	1,750
Plans	150
Travel	800
Accom. & messing	760
Vehicle Hire ($75/day)	1,050
Fuel	490
(sub-total	10,250)

TOTAL	$ 52,520