

# Open File Envelope

## No. 8796

**EL 1837**

**CAMPBELL RISE**

**PARTIAL SURRENDER REPORT` FOR THE  
PERIOD 12/7/93 TO JUNE 1994**

Submitted by  
CRA Exploration Pty Ltd  
1994

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**PRIMARY INDUSTRIES  
AND RESOURCES SA**

**ENVELOPE 8796**

**TENEMENT:** EL 1837, Campbell Rise

**TENEMENT HOLDER:** CRA Exploration Pty Ltd

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**DATA TAPES** (held by Information Services Branch):

93 SA 28 Airborne magnetic/radiometric survey.



**CRA EXPLORATION PTY LIMITED**

A.C.N. 000 057 125

**SUBJECT:**

REPORT ON AREA SURRENDERED  
FOR EL 1837 CAMPBELL RISE, SOUTH AUSTRALIA  
JUNE 1994

**AUTHOR:**

M.G. BARLOW

**DATE:**

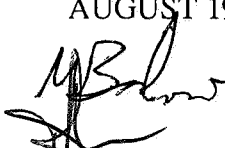

AUGUST 1994

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**CRAE REPORT NO: 20184**

CRA EXPLORATION PTY. LIMITED

REPORT ON AREA SURRENDERED  
FOR EL 1837 CAMPBELL RISE, SOUTH AUSTRALIA  
JUNE, 1994

AUTHOR: M.G. BARLOW  
COPIES TO: MESA  
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CRAE ADELAIDE  
DATE: AUGUST 1994  
SUBMITTED BY:   
ACCEPTED BY: 

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SAa 6313	Campbell Rise EL 1837, S.A., Flight Paths	1:100 000
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Table 2	Aeromagnetic Anomaly Locations & Results from Ground Follow Up

## 1. SUMMARY

Campbell Rise EL 1837 was granted to CRA Exploration Pty. Limited on 20th May, 1993 with diamonds as the target commodity.

An aeromagnetic survey was flown in 1993 and identified a number of potential targets which were subsequently followed up with ground magnetics and shown to be non-prospective.

This report covers exploration in the portion of EL 1837 relinquished in May of 1994.

## 2. INTRODUCTION

Exploration Licence 1837 was granted on 20th May, 1993 and covered an area of approximately 2 491 square kilometres, 50 kilometres to the north west of Woomera (see plan SAa 6125). Target commodity was diamonds.

Most of the tenement is covered by post Paleozoic sediments and Cambrian limestone and is not amenable to evaluation by drainage sampling. As an alternative exploration approach, an aeromagnetic survey was flown across the lease in November, 1993 in order to detect anomalies possibly associated with kimberlitic sources.

The survey identified a number of pipe-like targets which were not clearly attributable to cultural features. Anomalies were followed up in April of 1994 with on-site inspection and ground magnetics if no cultural source was identified.

The following report covers the portion of EL 1837 relinquished in May, 1994, shown in plan SAa 6125. Areas of relinquishment cover the tenement portions where either the aeromagnetic survey did not indicate any possible kimberlites or where magnetic anomalies were clearly associated with near-surface noise or cultural effects.

## 3. RECOMMENDATIONS

In view of the disappointing results from the aeromagnetic survey and follow up work, no further work was undertaken on this portion of the lease and it was recommended for relinquishment in May, 1994.

## 4. INVESTIGATIONS

### 4.1 Magnetics

In November of 1993 Geoterrex P/L flew an airborne aeromagnetic and radiometric survey across EL 1837 and adjoining tenements EL 1839 (Fred Swamp) and EL 1840 (Vivian Well). Table 1 lists survey configuration and specifications. Plans SAa 6313 and SAa 6314 are flight paths and magnetic contours, respectively.

Four aeromagnetic anomalies were investigated with only two of these warranting ground magnetics. In the other cases an inspection of the site showed there to be a clear cultural source. Table 2 outlines the anomaly locations and interpreted source.

A series of lines were recorded over the KM4 and KM5 sites so that any target that may have influenced the aeromagnetic response to within three hundred metres either side of the flight traverse would be detected. Lines were recorded at 10 m station interval.

Plans SAa 6297 and SAa 6298 show the ground magnetic responses at KM4 and KM5 respectively. At KM4 a broad high was identified on the eastern end of the main traverse but the response is too subtle and the depth to source too deep to be of any interest. In the case of KM5 it was not possible to identify any significant source to the aeromagnetic anomaly from the ground traverses. It is conjectured that the aeromagnetic response relates to a near surface accumulation of magnetite/maghemite leading to shallow, high frequency noise.

#### 4.2 Radiometrics

A four channel (Total, K, U, Th), 33 litre NaI crystal gamma ray spectrometer was also flown with the aeromagnetics. No anomalies were detected with the exception of large counts recorded on all channels across the salt lakes.



M.G. BARLOW

MGB/pq



KEYWORDS

Diamonds, Airborne Magnetism, Ground Magnetism

LOCATION

Kingoonya	SH53-11
Andamooka	SH53-12

Table 11993 Woomera Aeromagnetic Survey Specifications  
Survey

Contractor:	Geoterrex
Survey Type:	Magnetic/Radiometric
Approximate Size:	21 300 line km
Flight Line Direction:	180°/360° AMG
Line Spacing:	300 m
Tie Line Direction:	90°/270° AMG
Tie Line Spacing:	5 km
Mean Terrain Clearance:	80 m AGL
Navigation:	DGPS/Doppler

Magnetometer

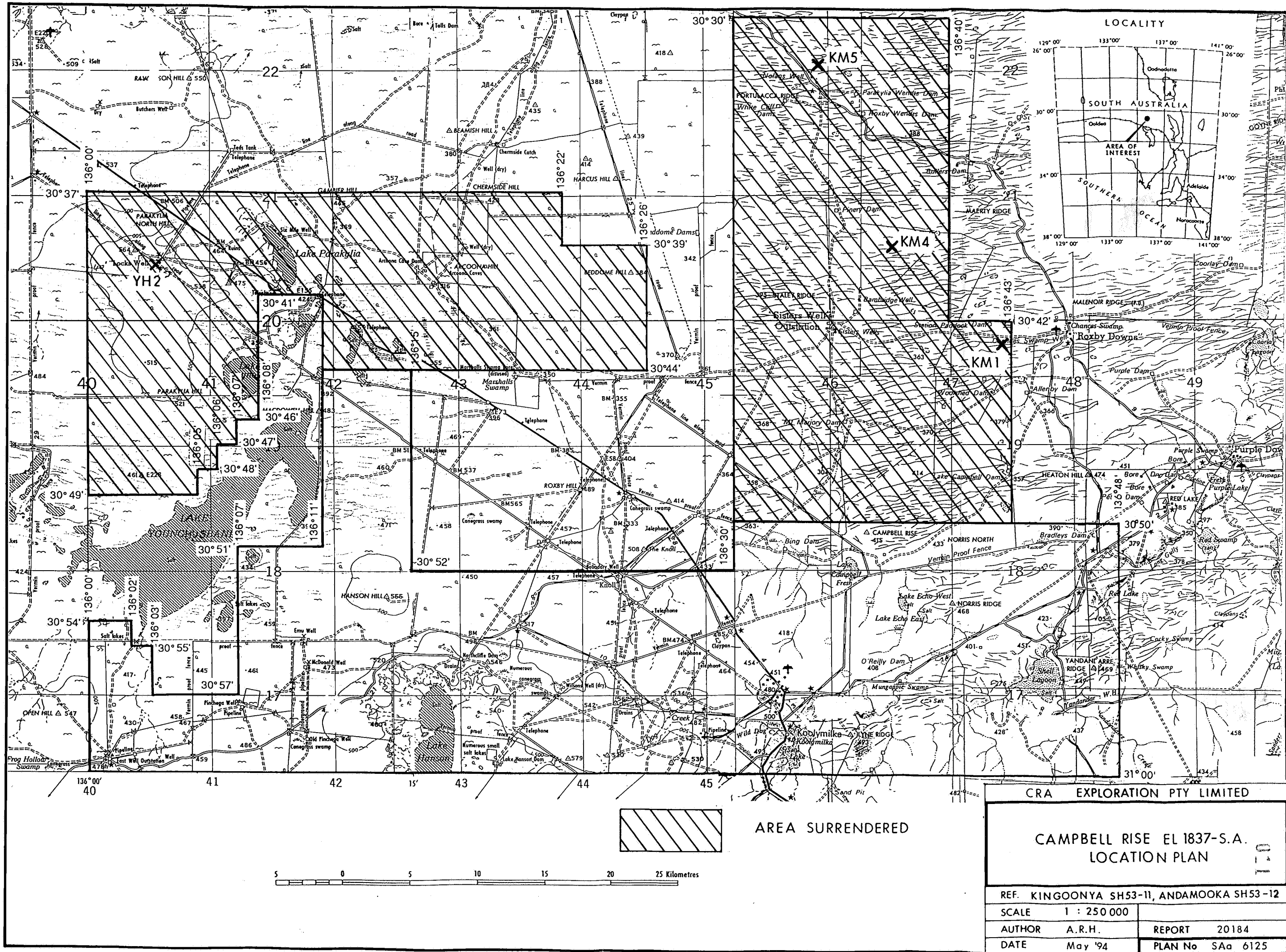
Type:	Scintrex Cesium Vapour Optical Absorption magnetometer sensor mounted in a Stinger
Resolution:	0.01 nT
Sensitivity:	0.001 nT
Sampling Rate:	0.1 s (nominally 7 m)
Recording:	Digital

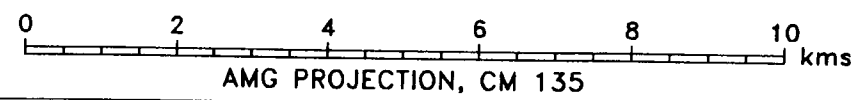
Gamma Ray Spectrometer

Type:	Nuclear Data ADC 560 System
Crystal Volume:	33 l (NaI crystal - Thallium saturated)
Channels:	256
Sample Rate:	1.0 s (nominally 65 m)
Recording:	Total count 0.4 - 3.0 MeV
	Potassium 1.35 - 1.57 MeV
	Uranium 1.63 - 1.89 MeV
	Thorium 2.42 - 2.82 MeV
	Cosmic 3.00 - 6.00 MeV

**Table 2 Campbell Rise (EL 1837) Magnetic Anomalies.**  
**Details of aeromagnetic anomaly locations & results from ground follow up.**

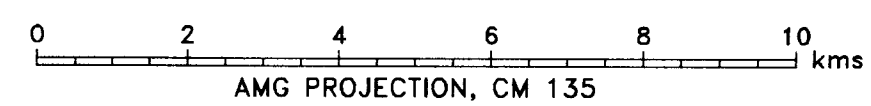
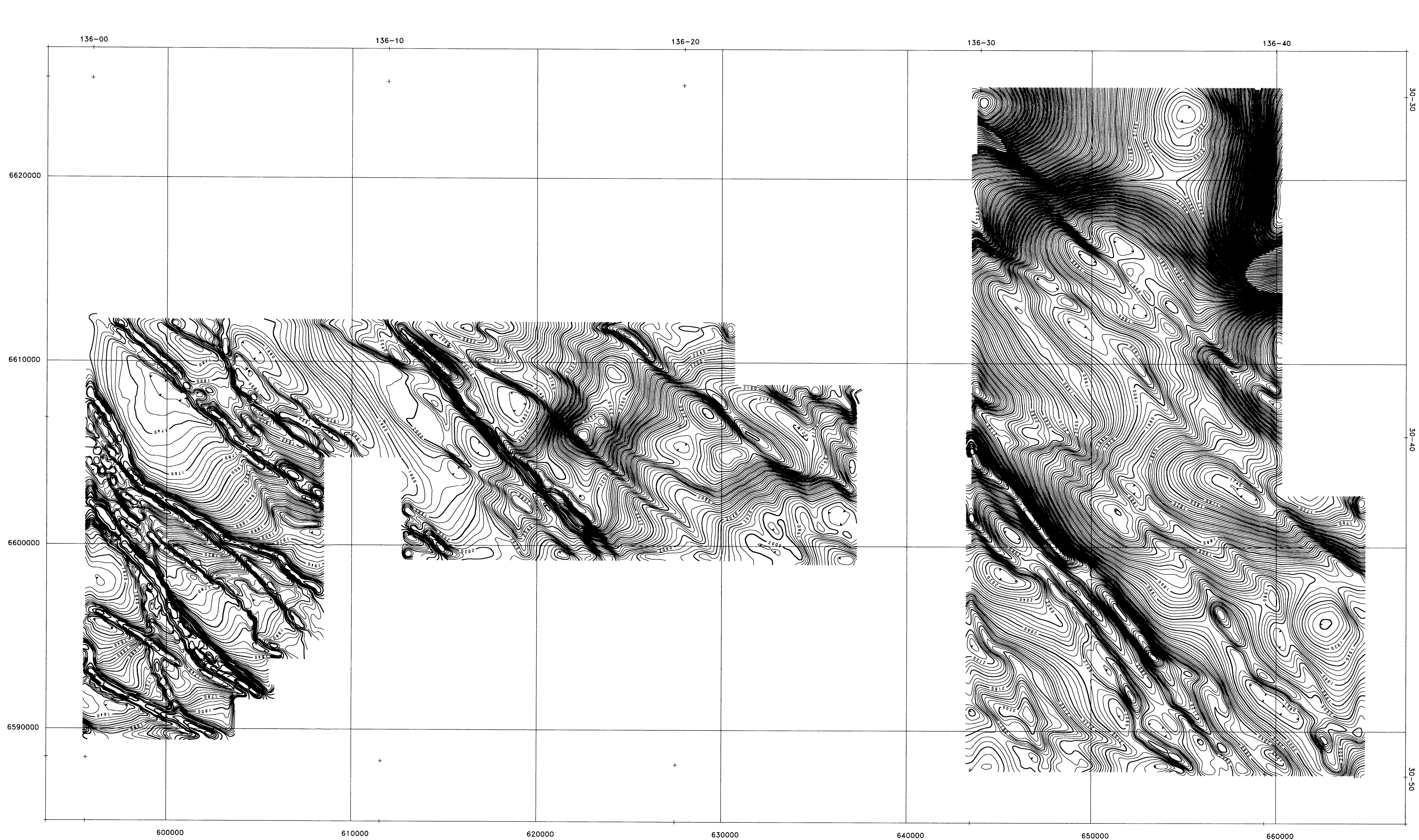
Anomaly	nT	AMG East	AMG North	Comment
YH2	4	600850	6607400	Anomaly identified as cultural - Lock's Well homestead. <b>Rejected</b>
KM1	2	663800	6601200	Anomaly identified as cultural - Drums on side of airstrip. <b>Rejected</b>
KM4	2	656100	6608000	Followed up with NS & EW traverse. Identified very broad, subtle feature (5 nT over 300 m) of unknown but very deep source (>200 m). <b>Rejected</b>
KM5	3	650400	6620900	Followed up with series of 150 m-spaced EW traverses. No significant anomaly identified. <b>Rejected</b>





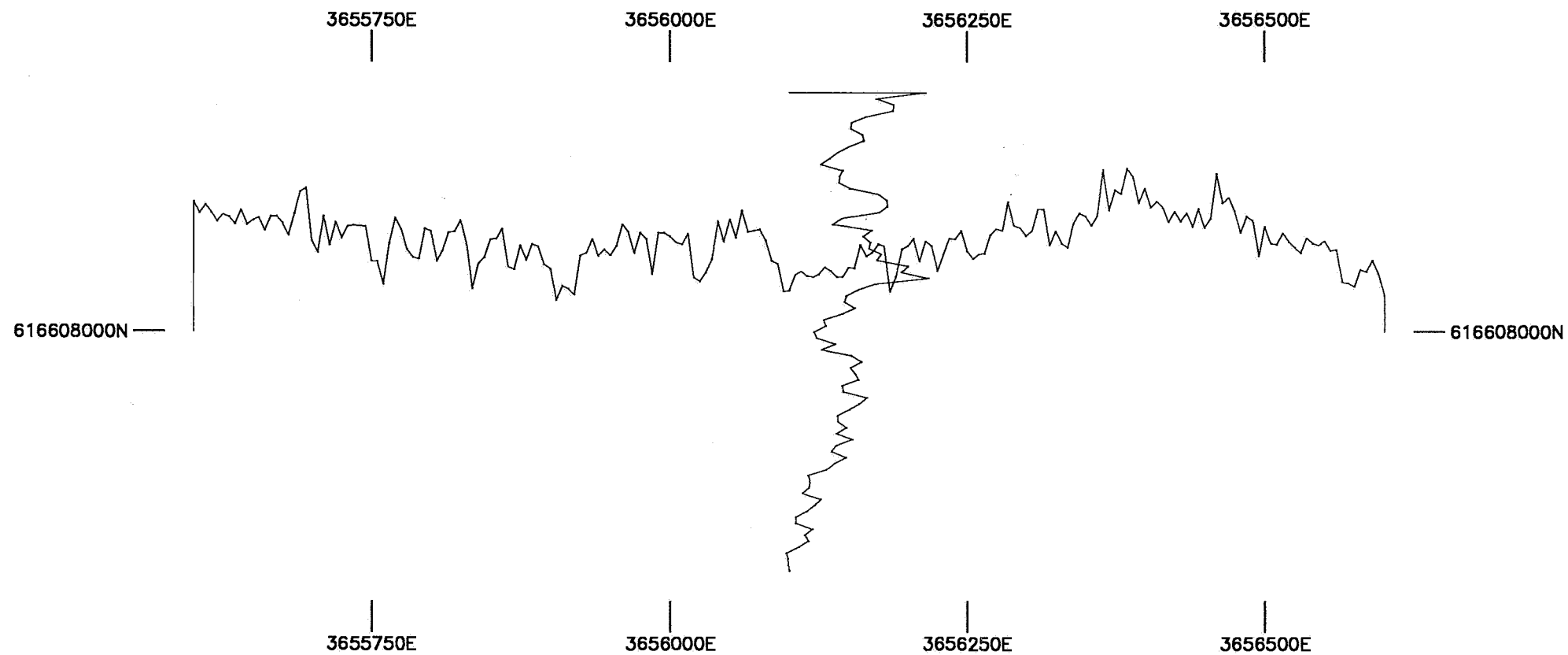
CRA EXPLORATION PTY LTD		
CAMPBELL RISE EL 1837-S.A		
FLIGHT PATH		
REF. KINGOONYA, SH53-11, ANDAMOOKA, SH53-12		
Geol: MGB	Scale: 1:100000	Report No: 20184
Drawn:	Date: 12-08-94	Dwg No S&O 613



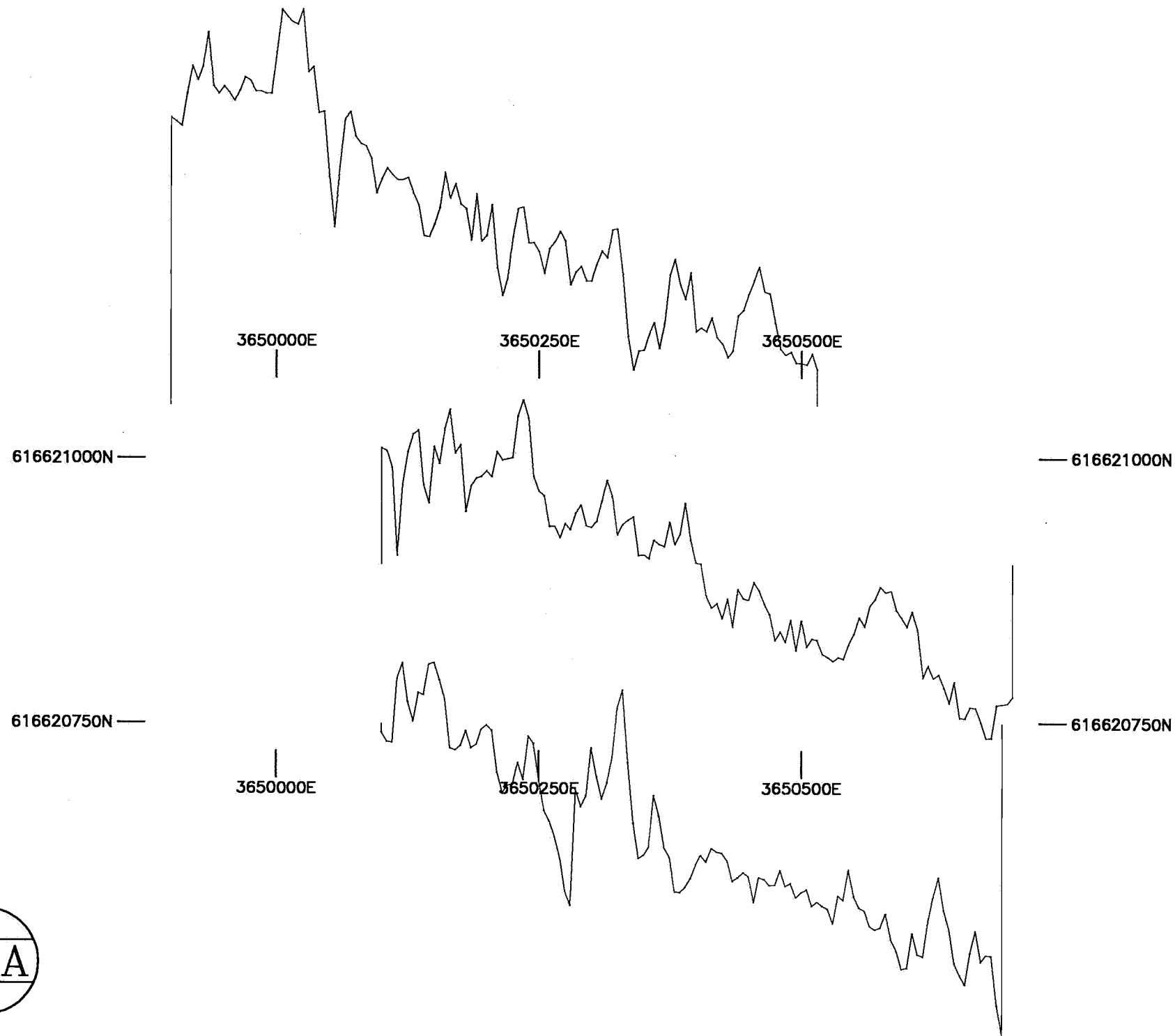


8796-2

CRA EXPLORATION PTY LTD		
CAMPBELL RISE EL 1837-S.A		
MAGNETIC CONTOURS		
REF. KINGOONYA, SH53-11, ANDAMOOKA, SH53-12		
Geol:	Scale: 1:100000	Report No: 20184
Drawn:	Date: 13-08-94	Dwg No 5A05314



CRA EXPLORATION PTY LIMITED	
CAMPBELL RISE EL 1837	
LOCALITY KM4	
GROUND MAGNETIC PROFILES	
REF. KINGOONYA SH53-11, ANDAMOOKA SH53-12	
SCALE 1:5000	DRAWN MGB
AUTHOR MGB	REPORT 20184
DATE July '94	PLAN No SAa 6297



CRA EXPLORATION PTY LIMITED	
CAMPBELL RISE EL 1837	
LOCALITY KM5	
GROUND MAGNETIC PROFILES	
REF. KINGOONYA SH53-11, ANDAMOOKA SH53-12	
SCALE 1:5000	DRAWN MGB
AUTHOR MGB	REPORT 20184
DATE July '94	PLAN No SAa 6298