Open File Envelope No. 4328

EL 516

SPALDING

PARTIAL SURRENDER REPORT FOR THE PERIOD 21/8/79 TO 18/6/81

Submitted by
Dampier Mining Co. Ltd
1981

Enquiries: Customer Services
Ground Floor
101 Grenfell Street, Adelaide 5000

Telephone: (08) 8463 3000
Facsimile: (08) 8204 1880

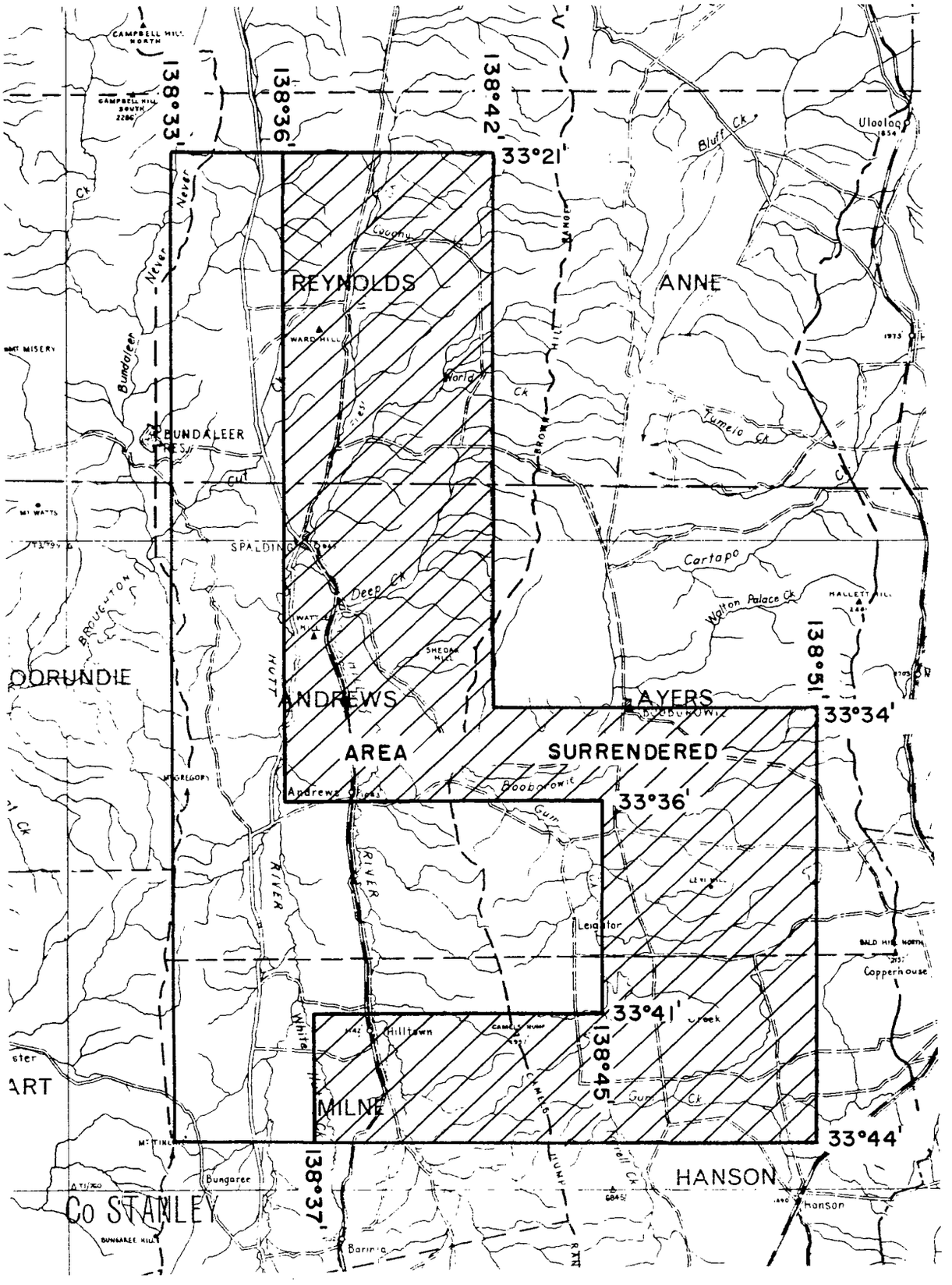
PRIMARY INDUSTRIES AND RESOURCES SA

CONTENTS ENVELOPE 4328

TENEMENT: E.L. 516 - Spalding.

TENEMENT HOLDER: Dampier Mining Co. Ltd.

SCHEDULE A



REAP DME 422/8

SCALE 1:250,000

KILOMETRES 5 0 5 10 15 20 25 KILOMETRES

EXPIRED

APPLICANT: DAMPIER MINING COMPANY LIMITED

DM: 209/79

AREA: ~~849~~ 335 square kilometres

1:250000 PLANS: BURRA

LOCALITY: SPALDING AREA — IMMEDIATELY N. OF CLARE

DATE GRANTED: 21-8-79 DATE EXPIRED: 20-8-80

20/8/81

EL No: 516

EXPLORATION LICENCE 516

SPALDING, SOUTH AUSTRALIA.

PARTIAL RELINQUISHMENT REPORT

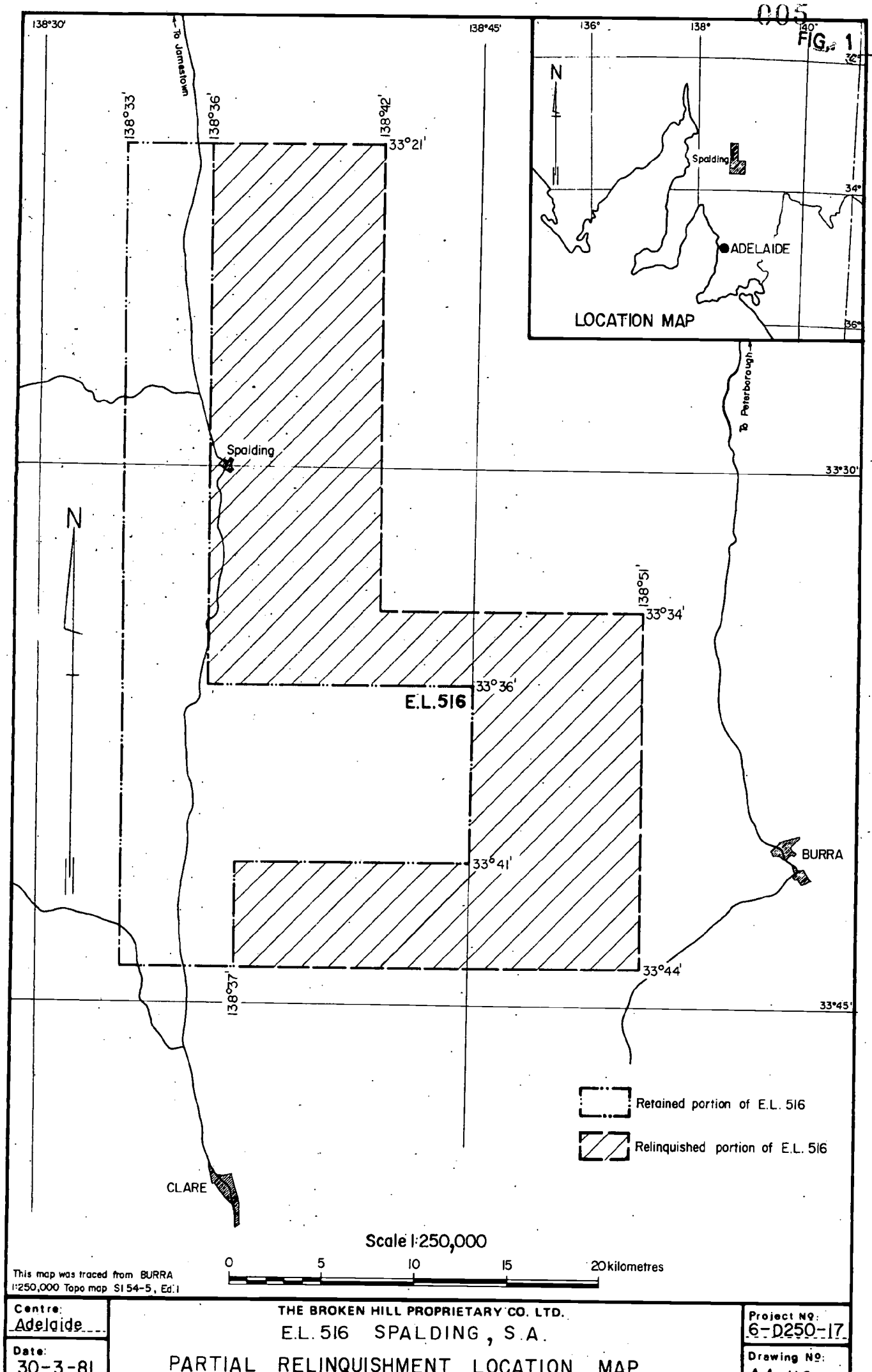
OCTOBER, 1981.

CONTENTS

FIGURES

APPENDIX

FIG. 1



This map was traced from BURRA 1:250,000 Topo map SI 54-5, Ed:1

Centre: Adelaide	THE BROKEN HILL PROPRIETARY CO. LTD. E.L. 516 SPALDING, S.A. PARTIAL RELINQUISHMENT LOCATION MAP	Project No: 6-D250-17
Date: 30-3-81		Drawing No: A4-116

1. GENERAL STATEMENT

Exploration Licence 516 was taken up primarily to test the alluvial diamond potential of gravels of probable Tertiary age which may have been derived from an area known to contain kimberlitic rocks. Following the discovery of many kimberlitic indicator minerals during testing of these gravels using our Company jig plant, exploration concentrated on the location of kimberlitic rocks which may contain diamonds.

2. TITLES

Exploration Licence 516 of 849 square kilometres was granted to Dampier Mining Company Limited on 21st August, 1979 for one year, and then renewed for a further year on 20th August, 1980. Partial relinquishment of the exploration licence was applied for and granted on 18th June, 1981, so reducing the area to 326 square kilometres. For location map see Figure 1. This report describes the work carried out on the relinquished portion of the E.L.

3. FIELD INVESTIGATIONS

In December 1979, stream samples PT116, 119, 120 and 121 were taken from Hill River, Deep Creek, Broughton River and Worubia Creek. They were processed and observed in our Perth Laboratory. Treatment consisted of T.B.E. separation and screening concentrating the heavy minerals for observation.

Seven bulk samples SP1 to SP7 (ADL1591 to ADL1597) between 2.2 and 3.5 cubic metres were collected in January 1980 and washed in our heavy mineral jig plant based on the Broughton River near Yacka. In all cases the concentrations were poor. The samples were then sent to our Perth Laboratory for further treatment and observation. Figure 2 shows the location of stream and bulk samples.

3.2 Geophysics

Following the discovery of kimberlite indicator minerals in the bulk gravel samples (see section 4.1), an aeromagnetic survey was flown during October 1980 in an attempt to locate any kimberlites within the exploration licence. Specifications for the survey are listed below:-

Contractor	Geoex Pty. Ltd.
Flight line spacing	250m
Flight line direction	E-W
Tie line spacing	5 km
Detector height	80m
Magnetometer Cycling Rate	0.8 secs
Sensitivity	0.5 nanoteslas
Approx. total line km	3000

.../2

4. RESULTS OF INVESTIGATIONS

4.1 Sampling

PT116, 119, 120 and 121 were observed in February and March 1980 in Perth, but no diamonds or indicator minerals were found. (See the result sheets in the Appendix). The gangue minerals were as follows:-

limonite	ilmenite	epidote
hematite	zircon	spinel
rutile	enstatite	diaspore
tourmaline	almandine garnet	andalusite
corundum	grossular garnet	magnetite
barite	anatase	

No diamonds were found in the seven bulk samples but the following indicator grains were observed:-

SP1 (ADL1591) - several chromites and picroilmenites
SP2 (ADL1592) - several chromites and picroilmenites
SP3 (ADL1593) - several possible picroilmenites
SP4 (ADL1594) - possible chromite
SP5 (ADL1595) - picroilmenite and olivine
SP6 (ADL1596) - 4 chromites and 72 picroilmenites
SP7 (ADL1597) - 6 chromites and 52 picroilmenites

Several grains were sent for microprobe analysis. The gangue minerals were:-

tourmaline	zircon	muscovite
rutile	magnetite	carnelian
anatase	corundum	kyanite
leucoxene	barite	andalusite
stanrolite	epidote	almandine garnet
hematite	calcite	pseudomagnetite
ilmenite	biotite	pseudopyrite

4.2 Geophysics

The results were processed and no significant anomalies were found in the relinquished area of the exploration licence. Figures 3 to 5 show the aeromagnetic contours.

This report is submitted to the Department of Mines and Energy as required by Condition 4 of Exploration Licence 516.

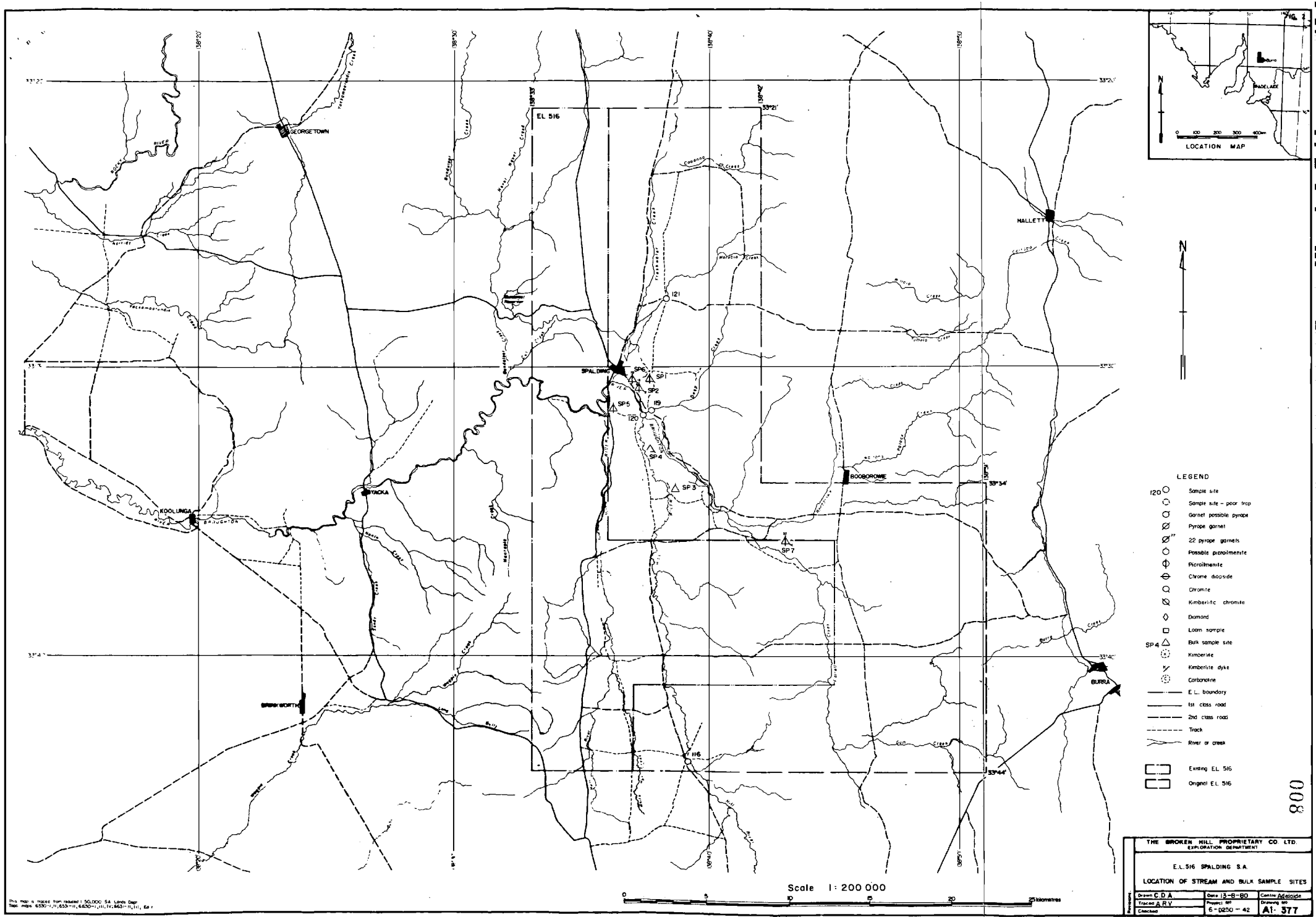


FIG. 2

800

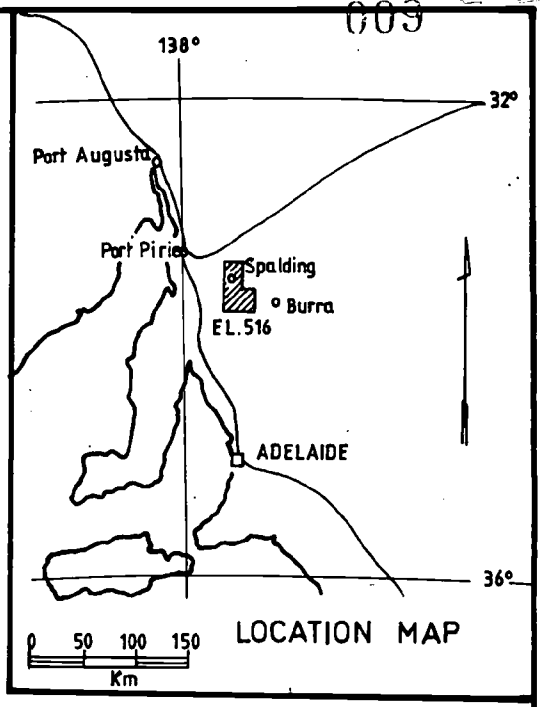
THE BROKEN HILL PROPRIETARY CO. LTD.
EXPLORATION DEPARTMENT

E.L.516 SPALDING S.A.

LOCATION OF STREAM AND BULK SAMPLE SITES

Drawn C.D.A	Date 13-8-80	Centre Adelaide	
Traced A.R.V	Project No 6-0250-42	Drawing No A1-377	
Checked			

This map is traced from reduced 1:50,000 S.A. Lands Dept. Topo. maps 6530-I, II, 6531-II, 6630-I, III, IV, 6631-II, III, Ed 1



138°45'E

E.L.516

33°30'S

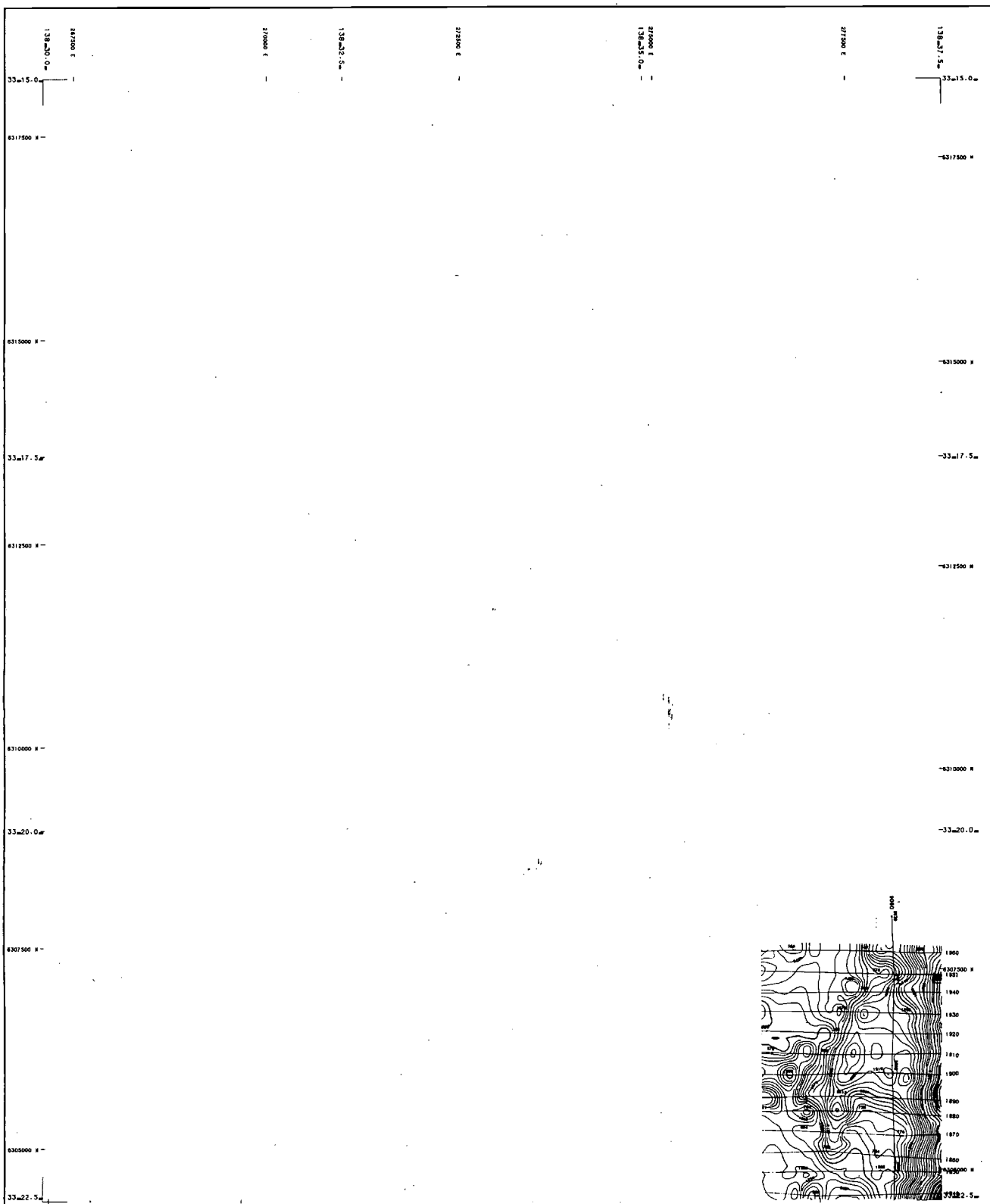
Spalding

Burra

SCALE 1:250,000

0 5 10 15 20 Km.

Centre: Adelaide	THE BROKEN HILL PROPRIETARY CO. LTD. E.L. 516 SPALDING, S.A. TOTAL MAGNETIC INTENSITY CONTOURS	Project No. 6-D250-41
Date 15-10-81		A4-155



Scale 1:50000

0 500 1000 1500 2000 2500 METRES

N

DETAILS OF SURVEY

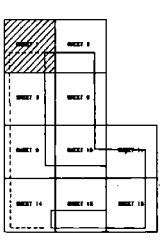
FLOWN BY : GEOEX
DATE : SEPTEMBER.1980
1:250.000 SHEET : SPALDING.S.A.
AMG ZONE : 54

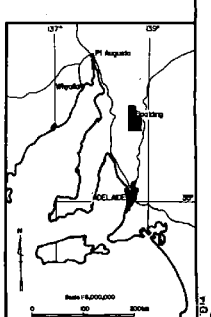
LINE SPACING : 250m
SURVEY HEIGHT : 80m
MAGNETOMETER : SONOTEK

COMPTON SCATTERING RATIO ALPHA : 0.50
COMPTON SCATTERING RATIO BETA : 0.50
COMPTON SCATTERING RATIO GAMMA : 0.50

DETAILS OF PROCESSING

PROCESSED BY BHP EXPLORATION : CAMBERWELL
MESH : (100.100)
SCAN : 600
CONTOUR INTERVAL : 2.5 nT
IGRF REMOVED
5000 (GAMMAS) ADDED TO DATA

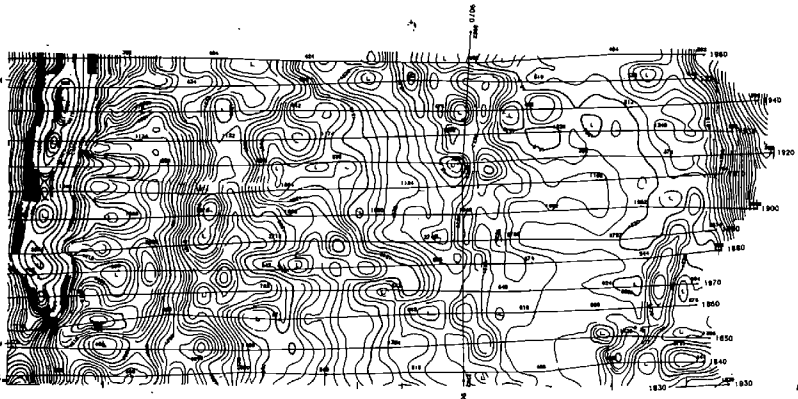




LOCATION MAP

THE BROKEN HILL PROPRIETARY CO.LTD.
EXPLORATION DEPT
EL 596 SPALDING-EL598 SKOWTOWN S.A.
TOTAL MAGNETIC INTENSITY CONTOURS
SHEET 1

DRAWN:	DGP	DATE: 8-9-81	CENTRE: ADELAIDE
TRACED:		PROJECT NO:	DRAWING NO:
CHECKED:		G-1250/280-21	A1 - 312



Scale 1:50000

0 500 1000 1500 2000 2500 METRES

DETAILS OF SURVEY

FLOWN BY : GEOEX
DATE : SEPTEMBER.1980
1:250.000 SHEET : SPALDING.S.A.
AMG ZONE : 54

LINE SPACING : 250m
SURVEY HEIGHT : 80m
MAGNETOMETER : SONOTEK

COMPTON SCATTERING RATIO ALPHA : 0.50
COMPTON SCATTERING RATIO BETA : 0.50
COMPTON SCATTERING RATIO GAMMA : 0.50

DETAILS OF PROCESSING

PROCESSED BY BHP EXPLORATION : CAMBERWELL
MESH : (100.100)
SCAN : 600
CONTOUR INTERVAL : 2.5 nT
IGRF REMOVED
5000 (GAMMAS) ADDED TO DATA

LOCATION MAP

THE BROKEN HILL PROPRIETARY CO.LTD.
EXPLORATION DEPT.

EL 596 SPALDING, EL 598 SNOWTOWN S.A.

TOTAL MAGNETIC INTENSITY CONTOURS
SHEET 2

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TRACED:
CHECKED:
DATE: 8.9.81
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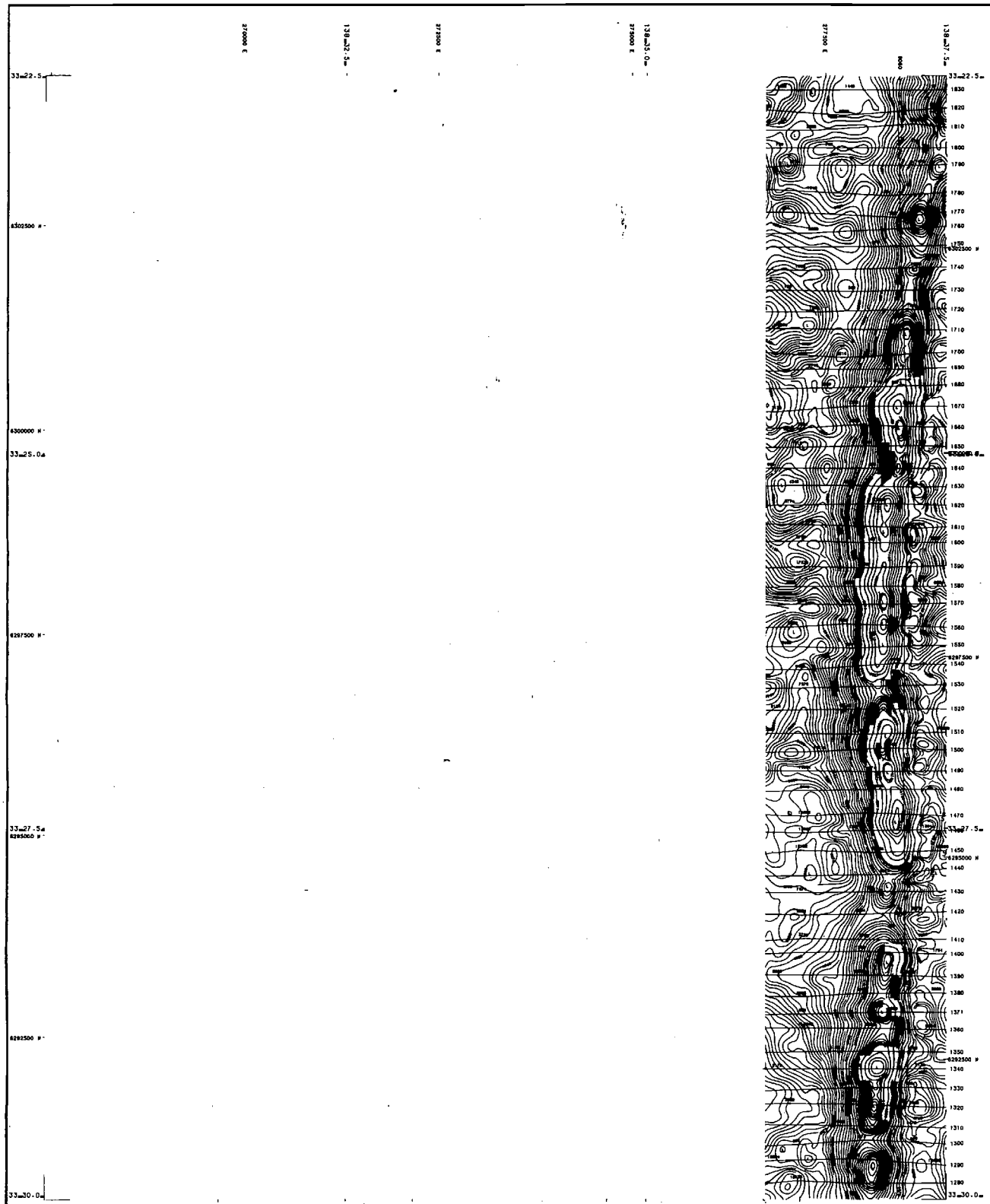

Scale 1:50 000

0 500 1000 1500 2000 2500 METRES

DETAILS OF SURVEY

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DATE : SEPTEMBER.1980
1:250.000 SHEET : SPALDING.S.A.
AMG ZONE : 54

LINE SPACING : 250m
SURVEY HEIGHT : 60m
MAGNETOMETER : SONOTEX

COMPTON SCATTERING RATIO ALPHA : 0.50
COMPTON SCATTERING RATIO BETA : 0.50
COMPTON SCATTERING RATIO GAMMA : 0.50

DETAILS OF PROCESSING

PROCESSED BY BHP EXPLORATION : CAMBERWELL
MESH : (100,100)
SCAN : 600
CONTOUR INTERVAL : 2.5 nT
IGRF REMOVED
5000 (GAMMAS) ADDED TO DATA

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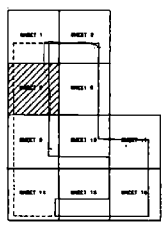

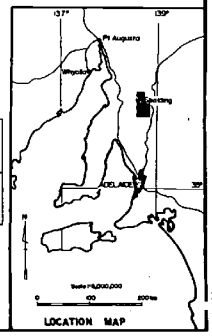

LOCATION MAP

THE BROKEN HILL PROPRIETARY CO.LTD.
EXPLORATION DEPT.
EL 596 SPALDING, EL 596 SNOWTOWN, S.A.
TOTAL MAGNETIC INTENSITY CONTOURS
SHEET 3

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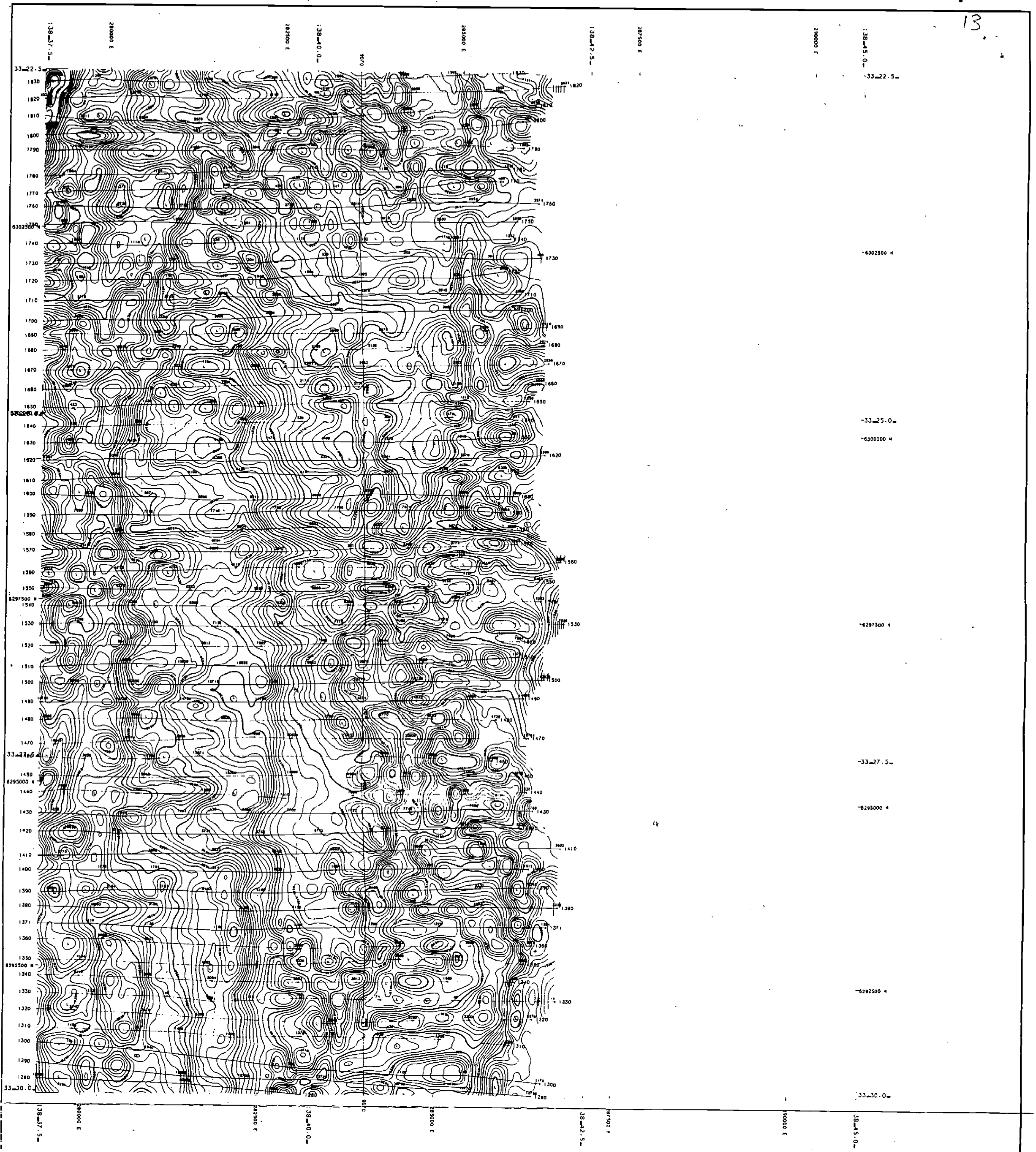
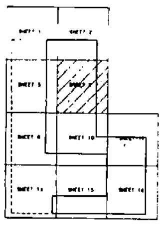
TRACED:	TL
DATE:	5-9-80
PROJECT NO:	
6-250-250-25	A1 - 594
DRAWING NO:	
CHECKED/APPROVED:	





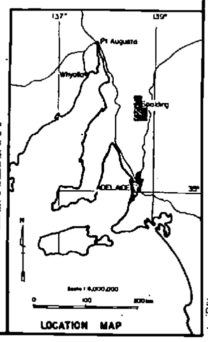


FIG. 7

THE BROKEN HILL PROPRIETRY CO. LTD.
EXPLORATION DEPT

EL 516 SPALDING, EL 598 SNOWTOWN S.A.
TOTAL MAGNETIC INTENSITY CONTOURS
SHEET 6

DRAWN: DGP	DATE: 9-9-81	CENTRE: Adelaide
TRACED: IL	PROJECT NO:	DRAWING NO:
	R-C[illegible]3/260-26	A1 - 317

DETAILS OF SURVEY

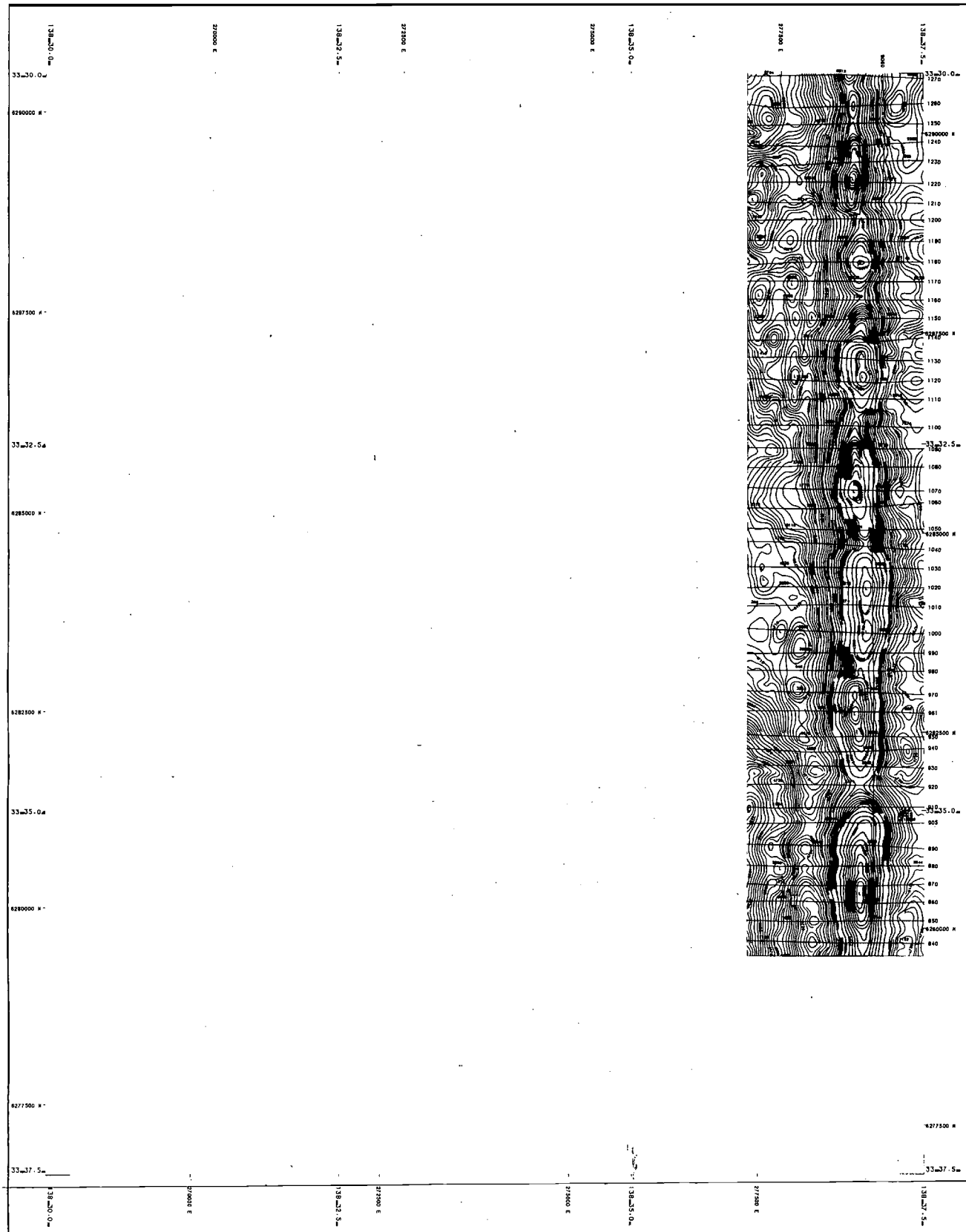
FLOWN BY : GEOEX
DATE : SEPTEMBER, 1980
1:250,000 SHEET : SPALDING, S.A.
AMG ZONE : 54

LINE SPACING : 250m
SURVEY HEIGHT : 80m
MAGNETOMETER : SONOTEK

COMPTON SCATTERING RATIO ALPHA : 0.50
COMPTON SCATTERING RATIO BETA : 0.50
COMPTON SCATTERING RATIO GAMMA : 0.50

DETAILS OF PROCESSING

PROCESSED BY BHP EXPLORATION : CAMBERWELL
MESH : (100,100)
SCAN : 600
CONTOUR INTERVAL : 2.5 nT
IGRF REMOVED
5000 (GAMMAS) ADDED TO DATA



Scale 1:50 000

0 500 1000 1500 2000 2500 METRES

DETAILS OF SURVEY

FLOWN BY : GEOEX
DATE : SEPTEMBER, 1980
1:250,000 SHEET : SPALDING, S.A.
AMG ZONE : 54

LINE SPACING : 250m
SURVEY HEIGHT : 80m
MAGNETOMETER : SONOTEK

COMPTON SCATTERING RATIO ALPHA : 0.50
COMPTON SCATTERING RATIO BETA : 0.50
COMPTON SCATTERING RATIO GAMMA : 0.50

DETAILS OF PROCESSING

PROCESSED BY BHP EXPLORATION : CAMBERWELL
MESH : (100,100)
SCAN : 600
CONTOUR INTERVAL : 2.5 nT
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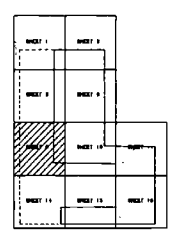
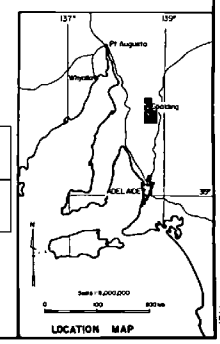
5000 (GAMMAS) ADDED TO DATA





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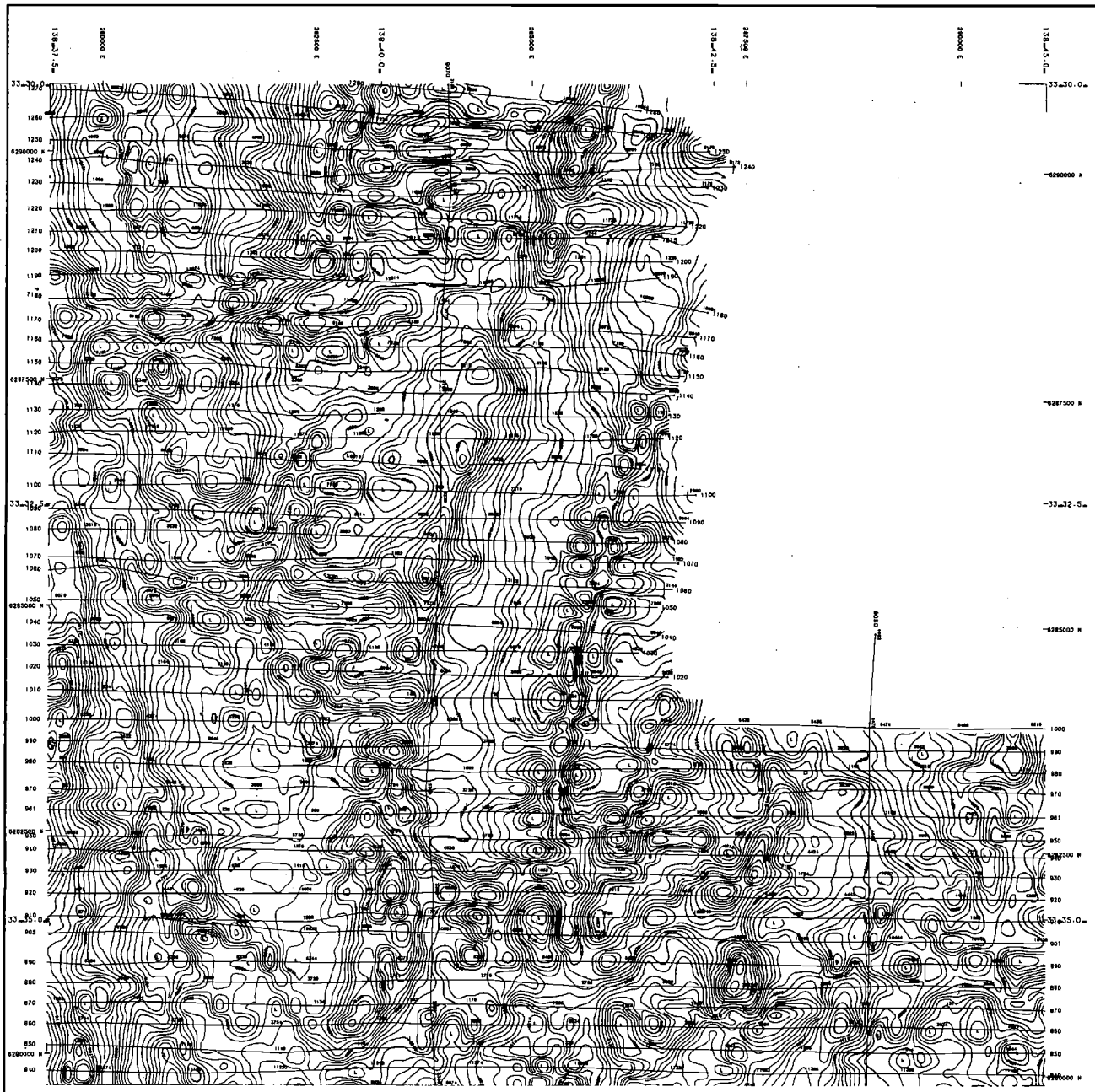
THE BROKEN HILL PROPRIETARY CO. LTD.
EXPLORATION DEPT.

EL 598 SPALDING-EL 598 SNOWTOWN S.A.
TOTAL MAGNETIC INTENSITY CONTOURS
SHEET 9

DRAWN	DBP	DATE	9-9-81	CENTRE	ADELAIDE
TRACED	IL	PROJECT NO.	6-0250/260-29	DRAWING NO.	A1-320
CHECKED					

FIG 8



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DETAILS OF SURVEY

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DATE : SEPTEMBER, 1980
1:250,000 SHEET : SPALDING, S.A.
AMG ZONE : 54

LINE SPACING : 250m
SURVEY HEIGHT : 80m
MAGNETOMETER : SONOTEK

COMPTON SCATTERING RATIO ALPHA : 0.50
COMPTON SCATTERING RATIO BETA : 0.50
COMPTON SCATTERING RATIO GAMMA : 0.50

DETAILS OF PROCESSING

PROCESSED BY BHP EXPLORATION : CAMBERWELL
MESH : (100,100)
SCAN : 600
CONTOUR INTERVAL : 2.5 gT
IGRF REMOVED
5000 (GAMMAS) ADDED TO DATA

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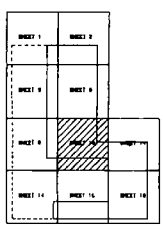

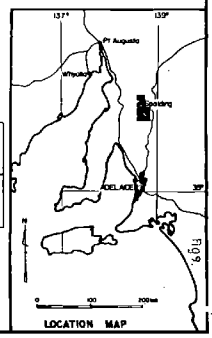

LOCATION MAP

THE BROKEN HILL PROPRIETARY CO.LTD.
EXPLORATION DEPT.

EL 596 SPALDING, EL 596 SNOWTOWN S.A.
TOTAL MAGNETIC INTENSITY CONTOURS
SHEET 10

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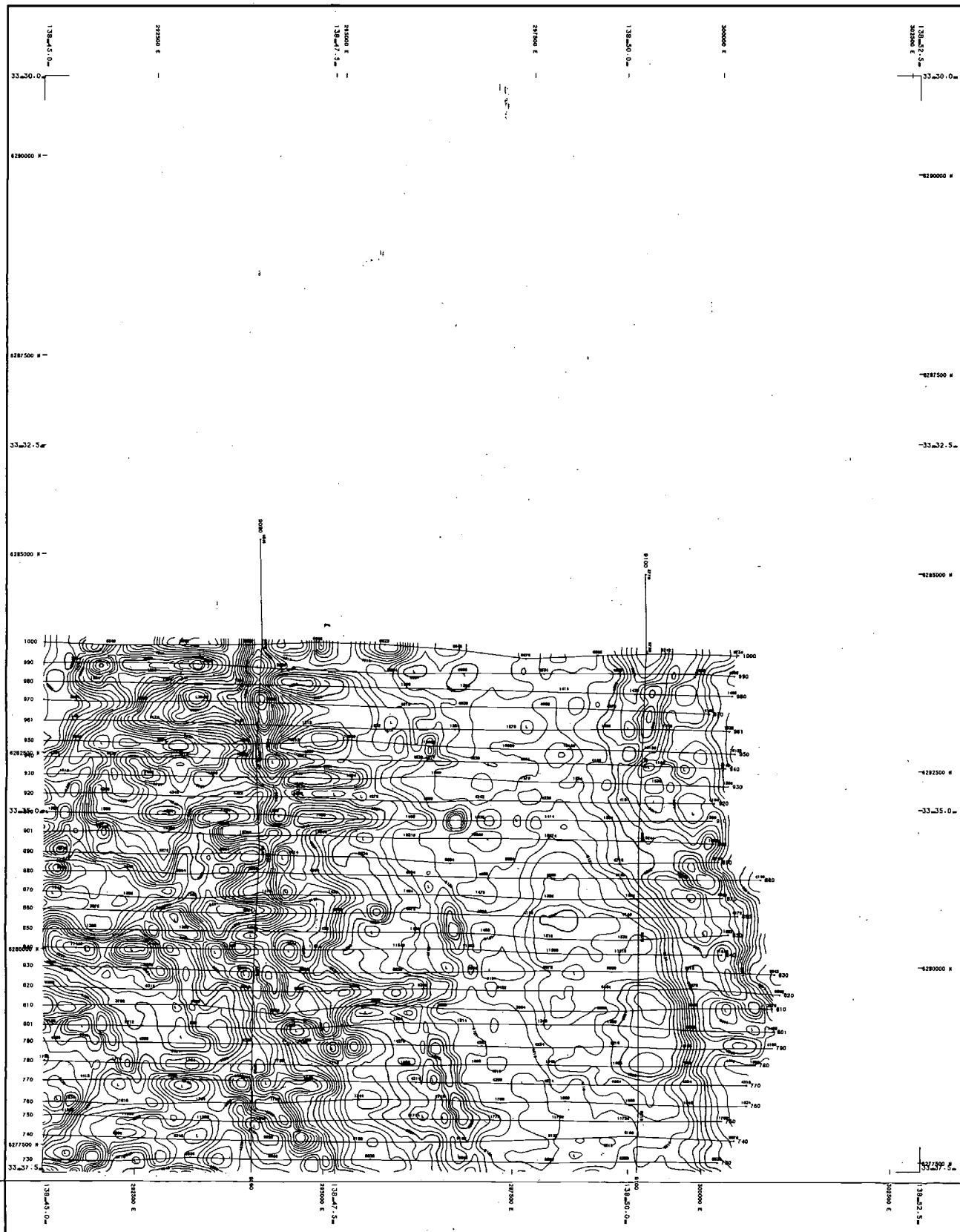

Scale 1:50 000

0 500 1000 1500 2000 2500 METRES

DETAILS OF SURVEY

FLOWN BY : GEDEX
DATE : SEPTEMBER, 1980
1:250,000 SHEET : SPALDING.S.A.
AMG ZONE : 54

LINE SPACING : 250m
SURVEY HEIGHT : 80m
MAGNETOMETER : SONOTEK

COMPTON SCATTERING RATIO ALPHA : 0.50
COMPTON SCATTERING RATIO BETA : 0.50
COMPTON SCATTERING RATIO GAMMA : 0.50

DETAILS OF PROCESSING

PROCESSED BY BHP EXPLORATION : CAMBERWELL
MESH : (100.100)
SCAN : 600
CONTOUR INTERVAL : 2.5 nT
IGRF REMOVED
5000 (GAMMAS) ADDED TO DATA

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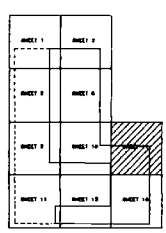
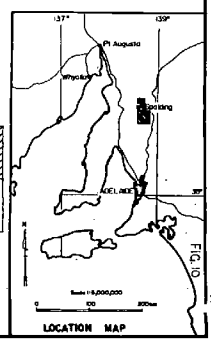




LOCATION MAP

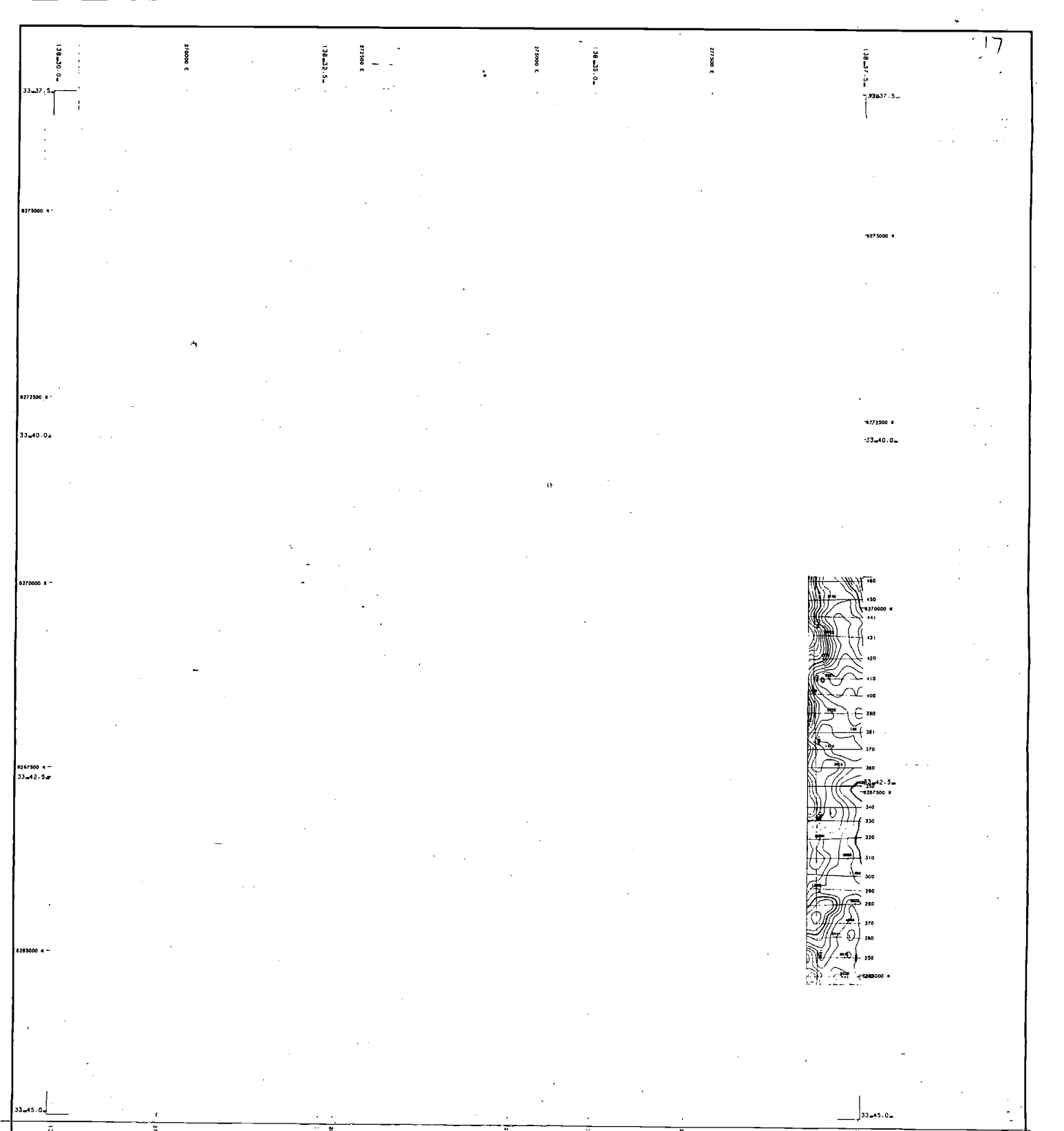
FIG.10

THE BROKEN HILL PROPRIETARY CO. LTD.
EXPLORATION DEPARTMENT

EL 516 SPALDING-EL 558 SNOWTOWN S.A.
TOTAL MAGNETIC INTENSITY CONTOURS
SHEET 11

DRAWN	DBP	
TRACED		
CHECKED		
DATE: 9.9.81		
PROJECTION:		CONTOUR INTERVAL:
6-0250/200-3		2.5 nT

DRAWING NO. A1 322



Scale 1:50000

0 500 1000 1500 2000 2500 METRES

N

DETAILS OF SURVEY

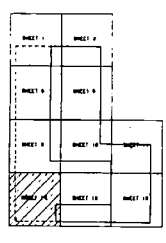
FLOWN BY : GEOEX
DATE : SEPTEMBER,1980
1:250,000 SHEET : SPALDING,S.A.
AMG ZONE : 54

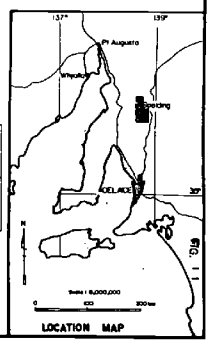
LINE SPACING : 250m
SURVEY HEIGHT : 80m
MAGNETOMETER : SONOTEK

COMPTON SCATTERING RATIO ALPHA : 0.50
COMPTON SCATTERING RATIO BETA : 0.50
COMPTON SCATTERING RATIO GAMMA : 0.50

DETAILS OF PROCESSING

PROCESSED BY BHP EXPLORATION : CAMBERWELL
MESH : (100,100)
SCAN : 600
CONTOUR INTERVAL : 2.5 : nT
IGRF REMOVED
5000 (GAMMAS) ADDED TO DATA

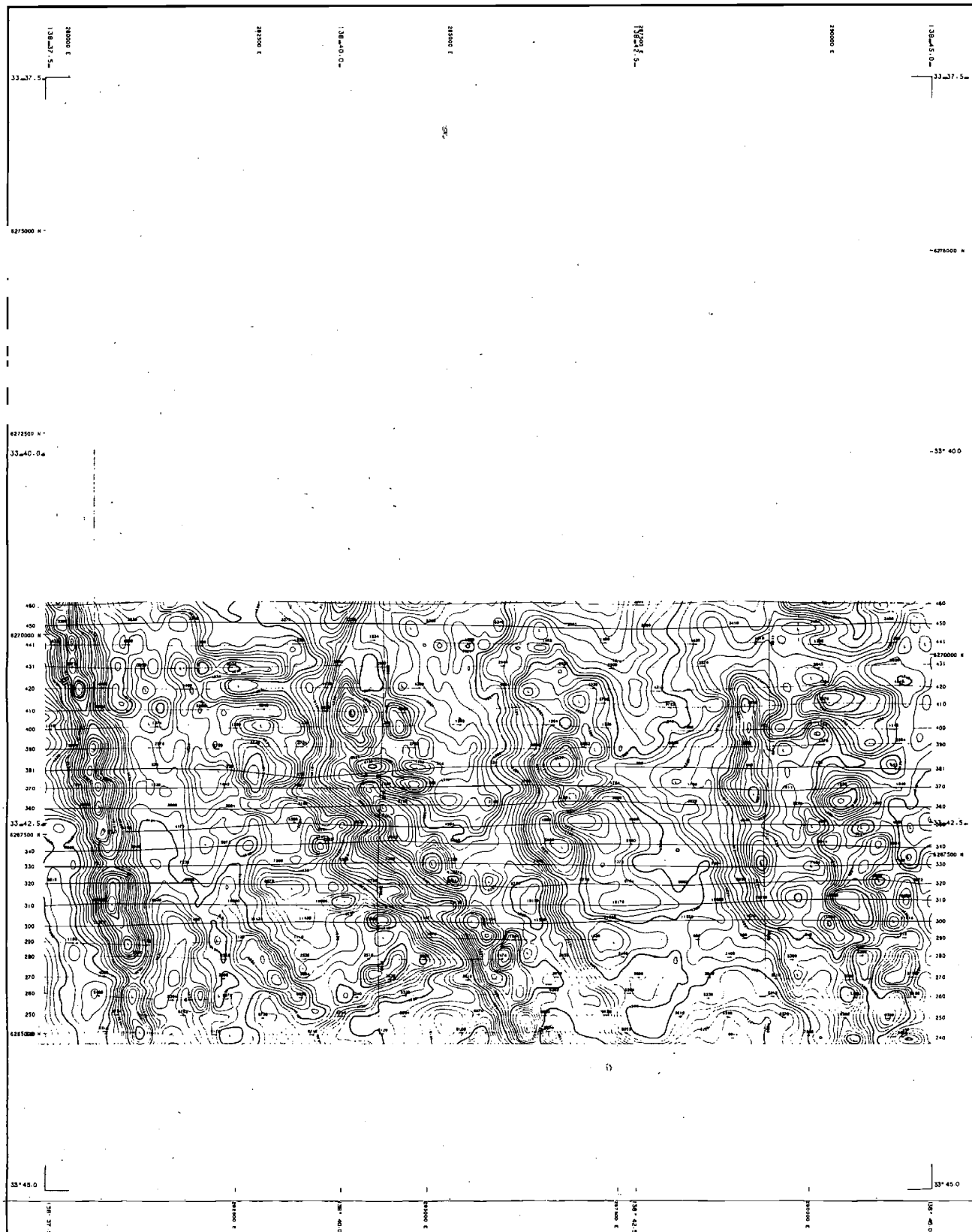




THE BROKEN HILL PROPRIETARY CO.LTD.
EXPLORATION DEPT.

EL 516 SPALDING, EL 598 SNOWTOWN SA.
TOTAL MAGNETIC INTENSITY CONTOURS
SHEET 14

DRAWN:	DBP
TRACED:	L
CHECKED:	
DATE: 9-9-81	
PROJECT NO: 6-0250/280-34	
DRAWING NO: A1 - 325	
CENTRE/ADDRESS	



Scale 1:50000

0 500 1000 1500 2000 2500 METRES

N

DETAILS OF SURVEY

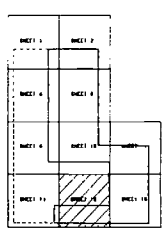
FLOWN BY : GEDEX
DATE : SEPTEMBER, 1980
1:250,000 SHEET : SPALDING, S.A.
AMG ZONE : 54

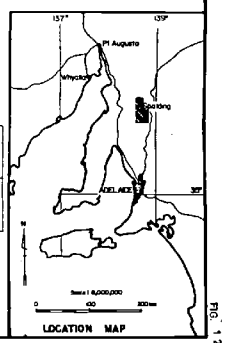
LINE SPACING : 250m
SURVEY HEIGHT : 80m
MAGNETOMETER : SCINTREX

COMPTON SCATTERING RATIO ALPHA : 0.50
COMPTON SCATTERING RATIO BETA : 0.50
COMPTON SCATTERING RATIO GAMMA : 0.50

DETAILS OF PROCESSING

PROCESSED BY BHP EXPLORATION : CAMBERWELL
MESH : (100,100)
SCAN : 600
CONTOUR INTERVAL : 2.5 nT
IGRF REMOVED
5000 (GAMMAS) ADDED TO DATA

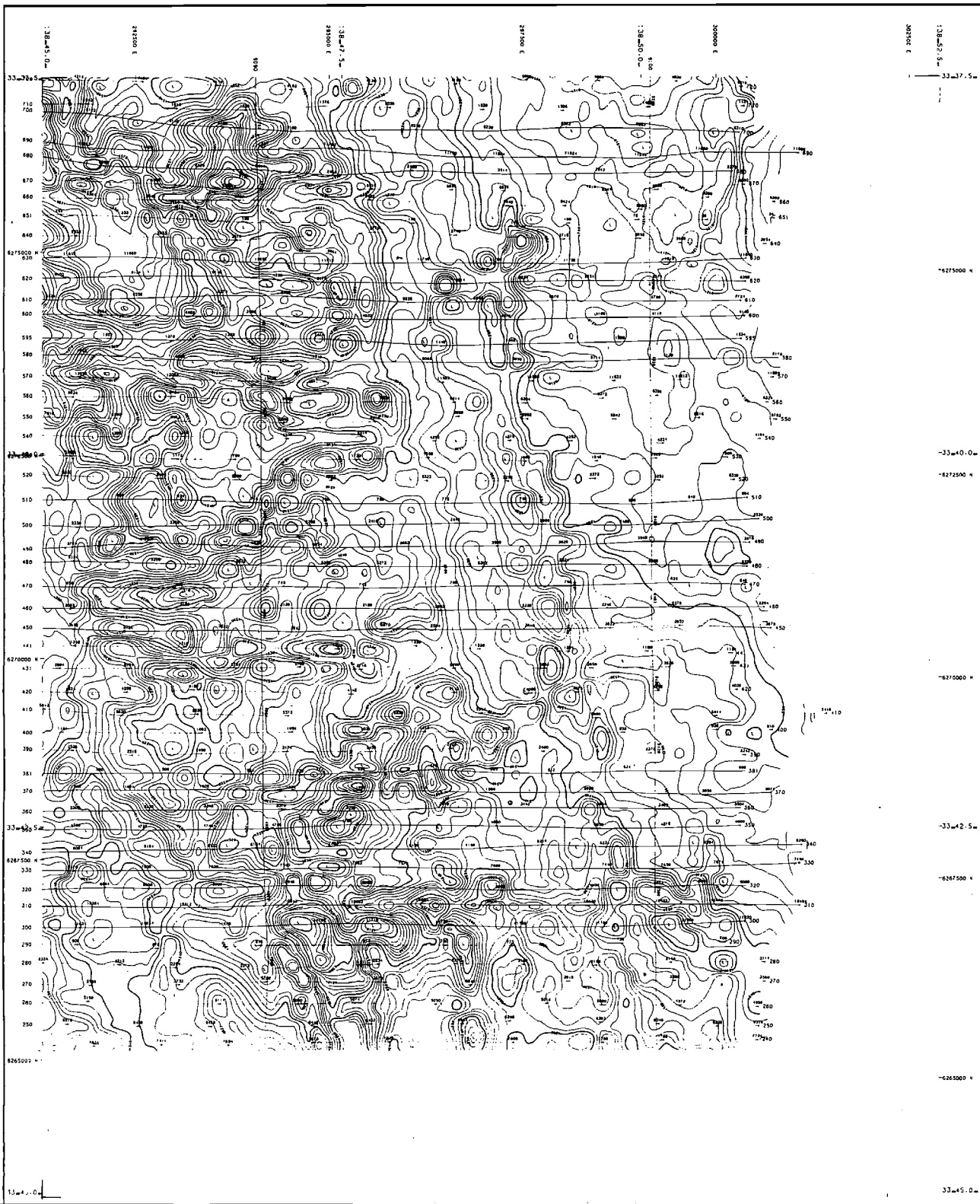




THE BROKEN HILL PROPRIETARY CO. LTD.
EXPLORATION DEPARTMENT
EL 596 SPALDING EL 596 SHOWTOWN S.A.
TOTAL MAGNETIC INTENSITY CONTOURS
SHEET 15

DRAWN	DDP	
TRACED	TL	
CHECKED		
DATE	9.9.80	CONTRACT NUMBER
DRAWING NUMBER	6-6270/260-35 A1	

FIG. 12



Scale 1:50000

0 500 1000 1500 2000 2500 METRES

DETAILS OF SURVEY

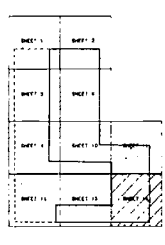
FLOWN BY : GEDEX
DATE : SEPTEMBER,1980
1:250,000 SHEET : SPALDING,S.A.
AMG ZONE : 54

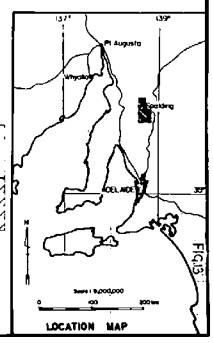
LINE SPACING : 250m
SURVEY HEIGHT : 80m
MAGNETOMETER : SONOTEK

COMPTON SCATTERING RATIO ALPHA : 0.50
COMPTON SCATTERING RATIO BETA : 0.50
COMPTON SCATTERING RATIO GAMMA : 0.50

DETAILS OF PROCESSING

PROCESSED BY BHP EXPLORATION : CAMBERWELL
MESH : (100,100)
SCAN : 600
CONTOUR INTERVAL : 2.5 nT
IGRF REMOVED
5000 (GAMMAS) ADDED TO DATA





THE BROKEN HILL PROPRIETARY CO. LTD.
EXPLORATION DEPT.
EL 516 SPALDING, EL 598 SNOWTOWN S.A.
TOTAL MAGNETIC INTENSITY CONTOURS
SHEET 16

DRAWN: DGP DATE: 9.9.8
TRACED: IL PROJECT NO:
CHECKED: DRAWING NO: 6-0250260-36

A1 - 327

FIG 13

APPENDIX 1

Sample Result Sheets

B.H.P. EXPLORATION

021

KIMBERLITE INDICATOR MINERALS LEDGER

Sample No: SP1 (AD-1591)

Area: .....

Job Number: .....

Requested by: .....

Material: .....

Observer: LUCIE KOTOWSKY

Mineralogist: .....

Result Qualification: (Positive.) Negative..... Possible.....

Key: NM = Nonmagnetic INT = Intermediate

Date: 9. 5. 80

Mesh Fraction	NUMBER OF GRAINS							
	(+1.0mm)		(+0.8mm)		(+0.5mm)		SCAN + .4	
Magnetic Separation	NM	INT	NM	INT	NM	INT		
PYROPE								
CHROME DIOPSIDE								
CHROMITE	/		✓		✓		✓	
KIMBERLITIC ZIRCON								
ORTHOPYROXENE								
PHLOGOPITE								
OLIVINE					?		?	
PICROILMENITE	3		/		✓		✓	
Tourmaline	✓		✓		✓		✓	
Rutile					✓		✓	
Almandine					✓		✓	
Leucoxene					✓		✓	
Staurolite			✓		✓		✓	
Aluminaite	✓		✓		✓		✓	

COMMENTS: Picro-ilmenites, chromites in various mesh sizes

One green chromite (40) with brown "coating" (sugary texture) on one side

B.H.P. EXPLORATION

022

KIMBERLITE INDICATOR MINERALS LEDGER

SP2

Sample No: (HDL 1592)

Area: .....

Job Number: .....

Requested by: .....

Material: .....

Observer: [illegible]

Mineralogist: .....

Result Qualification: Positive..... Negative..... Possible.....

Key: NM = Nonmagnetic INT = Intermediate

Date: 1-5-90

Mesh Fraction	NUMBER OF GRAINS							
	+16 (+1.0mm)		+20 (+0.8mm)		+28 (+0.5mm)		SCAN + .4	TOTAL
Magnetic Separation	NM	INT	NM	INT	NM	INT		TOTAL
PYROPE								
CHROME DIOPSIDE								
CHROMITE								
KIMBERLITIC ZIRCON								
ORTHOPYROXENE								
PHLOGOPITE								
OLIVINE								
PICROILMENITE	4	5	2	5	4		4	(15)
RUTILE	✓						✓	
ILMENITE							✓	
ZIRCON							✓	
QUARTZ							✓	
TOURMALINE							✓	

COMMENTS: .....

B.H.P. EXPLORATION

023

KIMBERLITE INDICATOR MINERALS LEDGER

SP3 (ADL 1593)

Sample No: .....

Area: .....

Job Number: .....

Requested by: .....

Material: .....

Observer: P. Tarkall

Mineralogist: .....

Result Qualification: Positive ..... Negative ..... Possible .....

Key: NM = Nonmagnetic INT = Intermediate

Date: 7 - 5 - 80

Mesh Fraction	NUMBER OF GRAINS							
	(+1.0mm) ✓		(+0.8mm) ✓		(+0.5mm) ✓		SCAN + .4 ✓	
Magnetic Separation	NM	INT	NM	INT	NM	INT		
PYROPE								
CHROME DIOPSIDE								
CHROMITE								
KIMBERLITIC ZIRCON								
ORTHOPYROXENE								
PHLOGOPITE								
OLIVINE								
PICROILMENITE		?		?		?		
RUTILE	1		✓		✓		✓	
ZIRCON			✓		✓		✓	
LEUCOXENE					✓		✓	
MAGNETITE						✓	✓	
TOURMALINE					✓		✓	
CORUNDUM. +2mm								

COMMENTS: Kimberlitic RUTILE +1

B.H.P. EXPLORATION

024

SP4 KIMBERLITE INDICATOR MINERALS LEDGER

Sample No: (KDK 1594)

Area: .....

Job Number: .....

Requested by: .....

Material: .....

Observer: .....

Mineralogist: .....

Result Qualification: Positive..... Negative..... (*) Possible.....

Key: NM = Nonmagnetic INT = Intermediate

Date: .....

Mesh Fraction	NUMBER OF GRAINS							
	+16 (+1.0mm)		+20 (+0.8mm) ✓		+28 (+0.5mm) ✓		SCAN +.4	TOTAL
Magnetic Separation	NM	INT	NM	INT	NM	INT		TOTAL
PYROPE								
CHROME DIOPSIDE								
CHROMITE								
KIMBERLITIC ZIRCON								
ORTHOPYROXENE								
PHLOGOPITE								
OLIVINE								
PICROILMENITE								
RUTILE					✓		✓	
ZIRCON							✓	
QUARTZ					✓		✓	
BARITE							✓	
MAGNETITE				✓		✓	✓	
ILMENITE							✓	
EPIDOTE					✓		✓	
LEUCOXENE							✓	
CALCITE							✓	

COMMENTS: (* Possible chromite in 4# to small to check (need extra)

B.H.P. EXPLORATION

KIMBERLITE INDICATOR MINERALS LEDGER

025

SP5

Sample No: (ADL1595)

Area: .....

Job Number: .....

Requested by: .....

Material: .....

Observer: Sylvia Burnett

Mineralogist: .....

Result Qualification: (Positive) Negative ..... Possible .....

Key: NM = Nonmagnetic INT = Intermediate

Date: 5th. May 1980

Mesh Fraction	NUMBER OF GRAINS							
	(+1.0mm)		(+0.8mm)		(+0.5mm)		SCAN + .4	
Magnetic Separation	NM	INT	NM	INT	NM	INT		
PYROPE								
CHROME DIOPSIDE								
CHROMITE								
KIMBERLITIC ZIRCON								
ORTHOPYROXENE								
PHLOGOPITE								
OLIVINE							1 in -.4	
PICROILMENITE					✓			
ANATASE					✓		-.4 ✓	
BARITE	✓		✓		✓			
BIOTITE	✓		✓		✓			
MUSCOVITE	✓				✓			
HAEMATITE		✓		✓		✓	✓	
RUTILE			✓		✓		& -.4 ✓	
CARNELIAN							✓	
EPIDOTE							& -.4 ✓	
TOURMALINE							✓ -.4	
ZIRCON							✓ -.4	
PSEUDOMORPHS after magnetite	✓				✓		✓ & -.4	

COMMENTS: .....

B.H.P. EXPLORATION

026

SP6 KIMBERLITE INDICATOR MINERALS LEDGER

Sample No: (ADL 1596)

Area: .....

Job Number: .....

Requested by: .....

Material: .....

Observer: P. Jackall

Mineralogist: .....

Result Qualification: Positive..... Negative..... Possible.....

Key: NM = Nonmagnetic INT = Intermediate

Date: 2-5-80

Mesh Fraction	NUMBER OF GRAINS							
	+16 (+1.0mm) ✓		+20 (+0.8mm) ✓		+28 (+0.5mm) ✓		SCAN $\frac{-1}{+.4}$	TOTAL
Magnetic Separation	NM	INT	NM	INT	NM	INT		TOTAL
PYROPE								
CHROME DIOPSIDE								
CHROMITE							4	(4)
KIMBERLITIC ZIRCON								
ORTHOPYROXENE								
PHLOGOPITE								
OLIVINE								
PICROILMENITE	6		7		30		29	(72)
RUTILE			✓		✓		✓✓	
ILMENITE							✓	
QUARTZ							✓	
ZIRCONS							✓	
STAUROLITE							✓	
(*) NORRINGITE							1	(1)
EPIDOTE							✓	
KYANITE							✓	
		✓						

COMMENTS: 50% Rutile in -4#

B.H.P. EXPLORATION

027

SP7 KIMBERLITE INDICATOR MINERALS LEDGER

Sample No: (ADK 1547)

Area: .....

Job Number: .....

Requested by: .....

Material: .....

Observer: R. Rockwell

Mineralogist: .....

Result Qualification: Positive. / Negative / Possible

Key: NM = Nonmagnetic INT = Intermediate

Date: 1-5-84

Mesh Fraction	NUMBER OF GRAINS							
	+16 (+1.0mm) ✓		+20 (+0.8mm) ✓		+28 (+0.5mm) ✓		SCAN + .4	TOTAL
Magnetic Separation	NM	INT	NM	INT	NM	INT		TOTAL
PYROPE								
CHROME DIOPSIDE								
CHROMITE					3	1	2	(6)
KIMBERLITIC ZIRCON								
ORTHOPYROXENE								
PHLOGOPITE								
OLIVINE								
PICROILMENITE		3 ✓		18	17	6	8	(52)
EPIDOTE								✓
RUTILE	✓		✓			✓		✓
ZIRCON								✓
CALCITE								✓
ILMENITE								✓
TOURMALINE	✓		✓			✓		✓
MAGNETITE								✓

COMMENTS: Odd grain of Picroilmenite in ——. A much finer ——

B.H.P. EXPLORATION

028

KIMBERLITE INDICATOR MINERALS LEDGER

Sample No: PT 0116 STREAM SAMPLE

PO No:

Area:

Cost Code:

Requested by:

Material

Observer: P. Farrell

Mineralogist:

Result Qualification: Positive / (Negative.) / Possible

KEY: NM = Nonmagnetic INT = Intermediate

Date: 7-2-80

Mesh Fraction / Magnetic Separation	NUMBER OF GRAINS							
	+16 (+1.0mm) ✓		+20 (+0.8mm) ✓		+28 (+0.5mm) ✓		Scan +4 ✓	TOTAL
	NM	INT	NM	INT	NM	INT		TOTAL
PYROPE								
CHROME DIOPSIDE								
CHROMITE								
KIMBERLITIC ZIRCON								
ORTHOPYROXENE								
PHLOGOPITE								
OLIVINE								
PICROILMENITE								
ACCESSORY								

Corundum
Barite
Hematite

B.H.P. EXPLORATION

029

KIMBERLITE INDICATOR MINERALS LEDGER

Sample No: PT.0129 STREAM SAMPLE

DPO No:

Area:

Cost Code:

Requested by:

Material

Observer: P. Lockhall

Mineralogist:

Result Qualification: Positive / Negative / Possible

KEY: NM = Nonmagnetic INT = Intermediate

Date: 10 - 3 - 80

Mesh Fraction / Magnetic Separation	NUMBER OF GRAINS							
	+16 (+1.0mm) ✓		+20 (+0.8mm) ✓		+28 (+0.5mm) ✓		SCAN +.4 ✓	TOTAL
	NM	INT	NM	INT	NM	INT		TOTAL
PYROPE								
CHROME DIOPSIDE								
CHROMITE								
KIMBERLITIC ZIRCON								
ORTHOPYROXENE								
PHLOGOPITE								
OLIVINE								
PICROILMENITE								
ACCESSORY								

Devils dice in all mesh sizes.
Hematite
Quartz embedded in rock

B.H.P. EXPLORATION

030

KIMBERLITE INDICATOR MINERALS LEDGER

Sample No: PT. 0120 STREAM SAMPLE

DPO No:

Area:

Cost Code:

Requested by:

Material

Observer: D. Forkull

Mineralogist:

Result Qualification: Positive / Negative / Possible

KEY: NM = Nonmagnetic INT = Intermediate

Date: 10-3-80

Mesh Fraction / Magnetic Separation	NUMBER OF GRAINS							
	+16 (+1.0mm) ✓		+20 (+0.8mm) ✓		+28 (+0.5mm) ✓		Scan +.4 ✓	TOTAL
	NM	INT	NM	INT	NM	INT		TOTAL
PYROPE								
CHROME DIOPSIDE								
CHROMITE								
KIMBERLITIC ZIRCON								
ORTHOPYROXENE								
PHLOGOPITE								
OLIVINE								
PICROILMENITE								
ACCESSORY								

Corundum
Grossular garnet +1
Hematite
Tourmaline
Rutile
Almandine-garnet.

B.H.P. EXPLORATION

031

KIMBERLITE INDICATOR MINERALS LEDGER

Sample No: PT. 0121 STREAM SAMPLE

DPO No:

Area:

Cost Code:

Requested by:

Material

Observer: D. Forknall

Mineralogist:

Result Qualification: Positive / [Negative] / Possible

KEY: NM = Nonmagnetic INT = Intermediate

Date: 11 - 3 - 80

Mesh Fraction / Magnetic Separation	NUMBER OF GRAINS							
	+16 (+1.0mm) ✓		+20 (+0.8mm) ✓		+28 (+0.5mm) ✓		SCAN +.4 ✓	TOTAL
	NM	INT	NM	INT	NM	INT		TOTAL
PYROPE								
CHROME DIOPSIDE								
CHROMITE								
KIMBERLITIC ZIRCON								
ORTHOPYROXENE								
PHLOGOPITE								
OLIVINE								
PICROILMENITE								
ACCESSORY								

Diaspore
Devils dice
Rutile
Hematite
Ilmenite
Tourmaline