

MINES BRANCH  
GEOLOGICAL LIBRARY

Exploration Licence 4  
Kapalga, Northern Territory

Annual Report

For

The Year Ended 20th April, 1975.

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Anomalies E and F

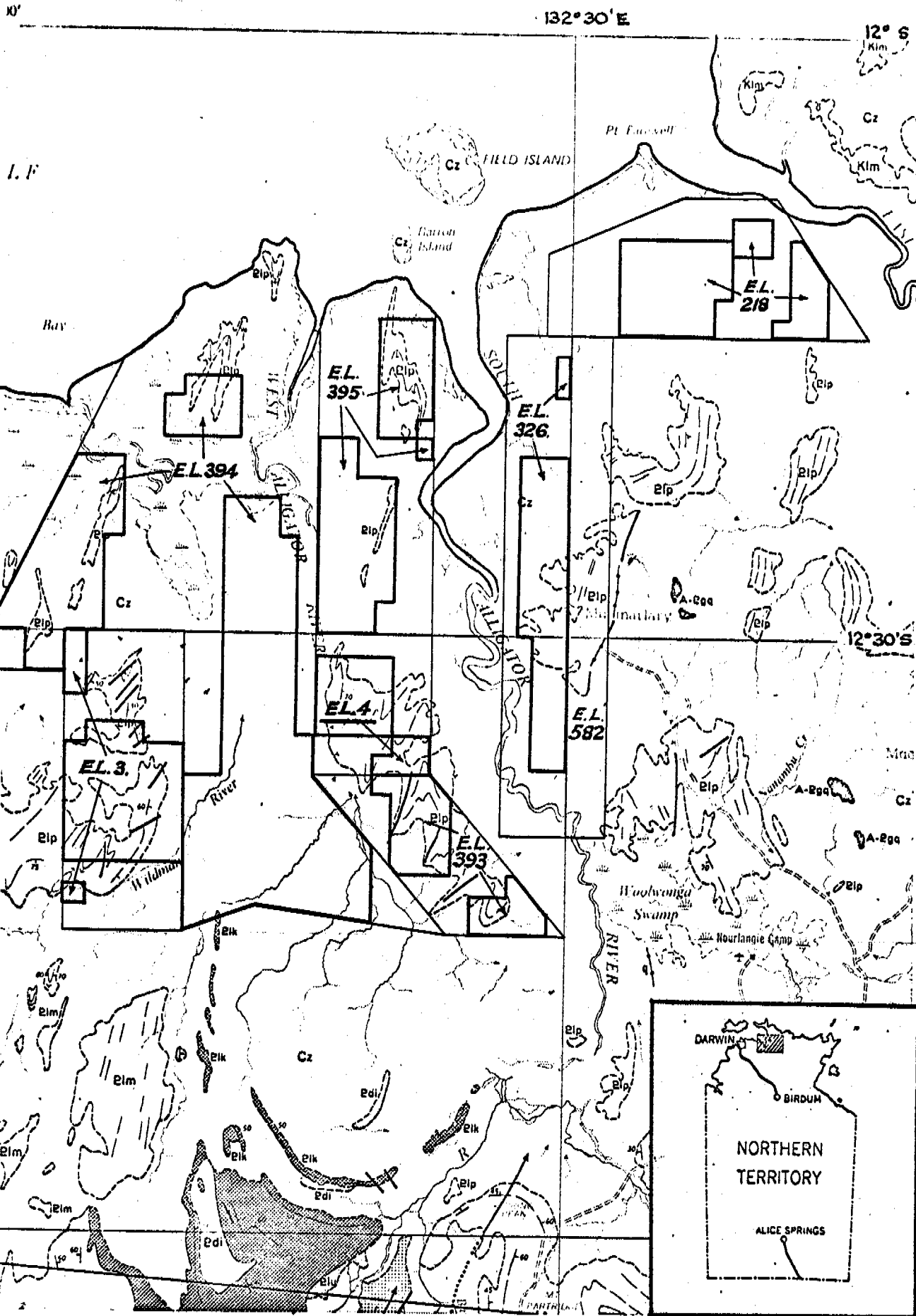
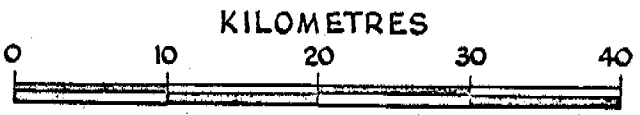


Photo copied from Geol.  
1:500,000 map + Katherine - Darwin



Centre <i>Melbourne</i>	THE BROKEN HILL PROPRIETARY CO. LTD. <b>URANIUM-KAPALGA-MUNMALARY AREAS N.T.</b> <b>TENEMENTS</b>	Project No.
Date <i>13-9-74</i>		Drawing No. <b>A4</b>

## Exploration Licence 4

### Kapalga, Northern Territory

Annual Report for the year ended 20th April, 1975.

#### 1. General Statement

Exploration in Exploration Licence 4 was carried out under an agreement between Dampier Mining Company Limited and the late Mrs. Stevens and Mesdames Chomley and Craven.

Field work by Dampier commenced for the year on 3rd June, 1974 and continued until 21st December, 1974 when access was no longer possible due to the wet season.

#### 2. Field Investigations

Work centred on locating and testing the two radiometrically anomalous areas E and F, indicated by the airborne magnetometer/spectrometer survey flown in 1973 by Aero Services Limited. The locations of the anomaly areas are shown on fig. 1.

##### 2.1 Gridding

Each of the anomaly areas was gridded using a compass and tape at 50 metre east-west intervals with lines spaced 100 metres apart north-south; the grid is based on the Australian Metric Grid.

##### 2.2 Spectrometer Reading

Using a Geometrics Disa 400 Spectrometer, readings were taken at 25 metre intervals along the east-west traverses on each grid area. The readings were taken for one minute and all four channels, total count, potassium, uranium and thorium were recorded.

##### 2.3 "B" Soil Horizon Drilling

"B" soil horizon drilling was carried out using a Gemco trailer mounted rig. Drilling was done at 50 metre spacing over the anomalous uranium readings received from the spectrometer. Areas showing an increased ratio of uranium to thorium were also drilled at 50 metre spacings. Some infill drilling between areas of "highs" was done at 100 or 150 metre spacings.

The sample from each hole was taken from just below the surface humus and rubble until a colour change from dark to light orange occurred - generally from about 0.5 metres to 1.5 or 2.0 metres. The samples were analysed for copper, lead and uranium.

##### 2.4 Photo-interpretation

A photo-interpretation was carried out by J.G. Wilson and Associates using 1:83,000 scale aerial photographs. Compilation of their work was done by Dampier.

### 3. Results

#### 3.1 Gridding

##### 3.1.1 Anomaly Area E

Five traverses each 500 metres long were pegged over one aerial anomaly.

##### 3.1.2 Anomaly Area F

The aerial anomaly consists of sixteen low order anomalies covering a very large area, so two separate grids were pegged, F-north covering four of the aerial anomalies and F-south covering another six. F-north consisted of six traverses varying in length from 400 to 1000 metres and F-south was ten traverses of between 300 and 600 metres in length.

#### 3.2 Spectrometer Reading

Graphs were drawn of uranium and thorium profiles only.

##### 3.2.1 Anomaly Area E

The uranium profile is flat except for one broad twice background anomaly. Thorium and uranium counts were similar over the remainder of the area. The profiles are shown on fig. 2.

##### 3.2.2 Anomaly Area F

F-north: The profiles for uranium, and, somewhat less pronounced, for thorium, are higher (about twice background) and flatten off to the east towards the South Alligator swamp. The profiles are shown on fig. 2.

F-south: Two main zones of highs up to 3 times background are evident from the uranium profiles. One lies on the western side of the grid and the other on the east. The highs are present on each traverse and consist of one, two or three sharp peaks together. The thorium profiles are much flatter but follow the same general trends.

The profiles are shown on fig. 2.

#### 3.3 "B" Soil Horizon Drilling

##### 3.3.1 Anomaly Area E

35  
67  
56  
168

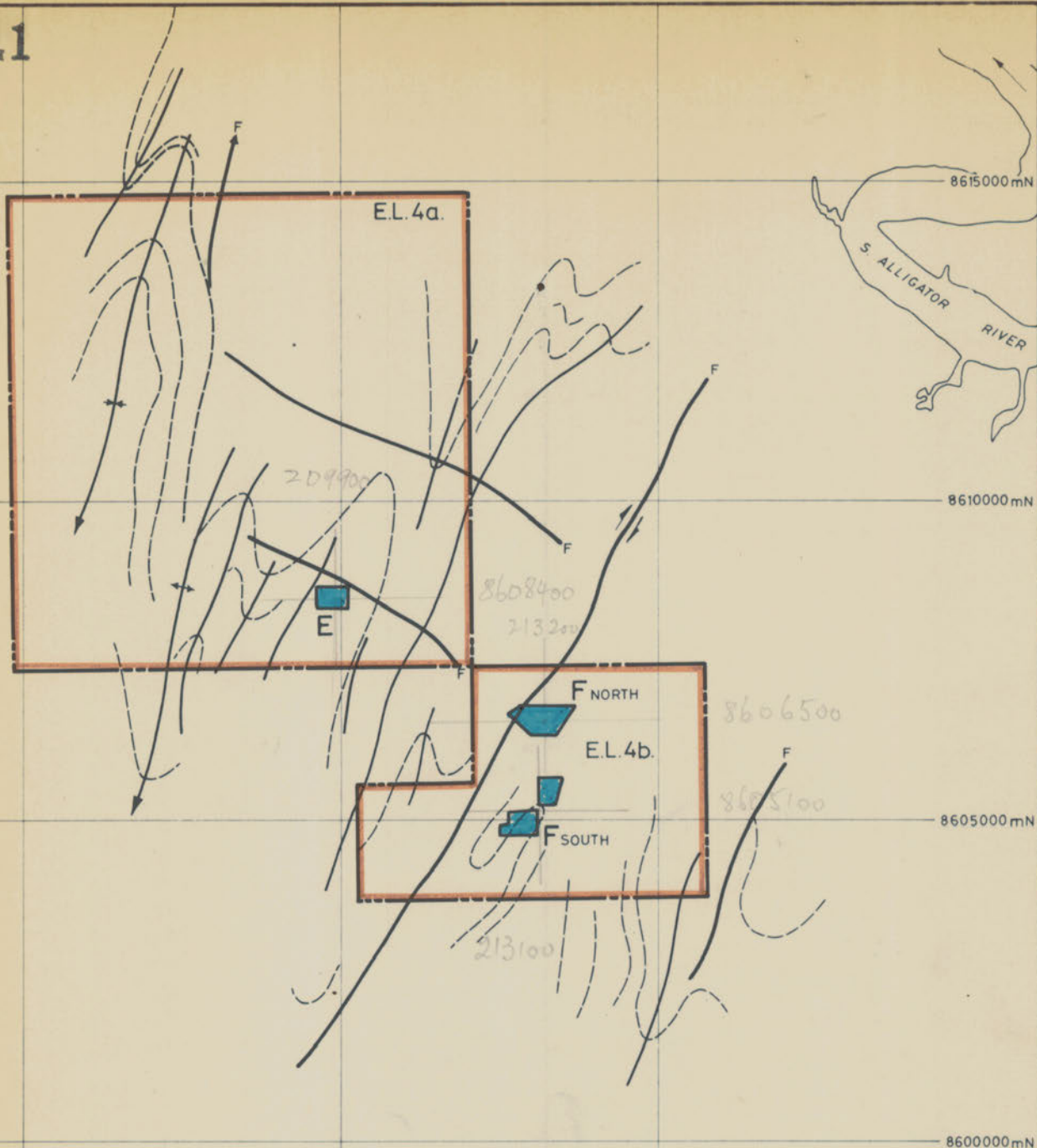
35 holes were drilled to test the "B" soil horizon on this area. Their co-ordinates and analyses are included as Appendix 1.

##### 3.3.2 Anomaly Area F

F-north: 67 holes were drilled to test the "B" soil horizon and co-ordinates and analyses from these are included as Appendix 2.



**FIG. 1**



- Bedding lineations - Mt. Partridge Formation.
- Fold axis.
- Faults or structural lineations.
- Exploration Licence boundary.
- Anomaly area.



F-south: 56 holes were drilled on this area and co-ordinates and analyses are in Appendix 3.

3.4 Photo-interpretation

Compilation of the photo-interpretation of E.L. 4 is shown on fig. 1.

4. Personnel

The following personnel were employed on Exploration Licence 4 during the year:-

- 1 geologist
- 4 assistant prospecting hands

Contractors

- 1 photo-interpretation crew

5. Expenditure

Expenditure debited to Exploration Licence 4 during the year ended 30th April, 1975 was as follows:-

Wages & Salaries	\$ 4,675
Messing & Accommodation	1,578
Fares & Mobilisation	906
Drilling	132
Transport	1,283
Surveying	799
Geophysics	50
Plant Services	371
Mobilisation of Equipment	99
Sample Analysis	701
Tenement Fees, Licences etc.	32
Occupancy & Location Expenses	36
Capital Items	172
Vehicles	557
Other Items	197
	<hr/>
	\$11,588

This report is submitted to the Mines Branch as required by Condition 3 of Exploration Licence 4.

Appendix 1

"B" Soil Horizon Drilling

Anomaly Area E





PROJECT No. **U 733**

THE BROKEN HILLS PROPRIETARY CO. LTD.

HEADER SHEET No.											
2	4	6	8	9	10	11	13	4	3	2	0
8	4	2	4	3	2	0	8	0	1	1	0
PUNCH IN EVERY CARD											

D2273 P10682 **ANALYSIS**

14	SAMPLE NUMBER		Cu			Method of Analysis			D			Method of Analysis			U			Method of Analysis			Method of Analysis			Method of Analysis			Method of Analysis																															
			25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72								
0	ALPHA PREFIX	NUMERICAL VALUE	029 A			082 IA			092 2FL																																																	
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
2	KAP	1184	36			32			1																																																	
2		1185	28			28			1																																																	
2		1186	38			36			1																																																	
2		1187	32			32			1																																																	
2		1188	38			32			2																																																	
2		1189	30			42			3																																																	
2		1190	64			36			6																																																	
2		1191	18			18			1																																																	
2		1192	44			42			6																																																	
2		1193	6			14			1																																																	
2		1194	16			22			1																																																	
2		1195	46			40			4																																																	
2		1196	70			38			1																																																	
2		1197	80			36			3																																																	
2		1198	38			32			4																																																	
2		1199	32			32			9																																																	
2		1200	30			26			8																																																	
2		1201	32			28			12																																																	
2		1202	32			50			6																																																	
2		1203	24			38			5																																																	
2		1204	50			30			13																																																	
2		1205	58			38			11																																																	

DATE ANALYSED						
14	15	16	17	18	19	20
1	15	11	74			

PLACE ANALYSED								
21	22	23	24	25	26	27	28	29
GEO MIN PER								

PPM - M  
WT % - W

30  
M

SAMPLING METHOD

1	2	3
31	32	33
D	L	R

SAMPLE PREPARATION

1	2
34	35
D	C

ANALYSIS SCHEME

36	37

FRACTION SCHEME

38	39







Appendix 2

"B" Soil Horizon Drilling

Anomaly Area F-north

PROJECT No. U710

SHEET No.												
1	2	3	4	5	6	7	8	9	10	11	12	13
8	1	1	4	0	3	2	1	1	0	1	1	0
PUNCH IN EVERY CARD												

### GROUP HEADER

GENERAL LOCATION

14  
A

State NT State 

15	16
08	

 Region Alligator River Region 

17	18
02	

 Zone Kapalga Zone 

19	20	21
007		

### SPECIFIC LOCATION OF CENTRE OF GROUP

Either 

EASTING									
22	23	24	25	26	27	28	29	30	31
<u>860660</u>									

 E 

NORTHING									
32	33	34	35	36	37	38	39	40	41
<u>213100</u>									

 N Or 

LONGITUDE									
DEGREES		MINS.		SECONDS					
22	23	24	25	26	27	28	29	30	31
				•					

 LATITUDE 

DEGREES			MINS.		SECONDS				
32	33	34	35	36	37	38	39	40	41
					•				

REDUCED LEVEL						
42	43	44	45	46	47	48
•						

 Feet - F Units 

49
----

 Metres - M Yards - Y 

M
---

 Grid AMS

GRID		
50	51	52

### GROUP DETAILS

GROUP No.							
53	54	55	56	57	58	59	60
<u>F-n</u>							

 || 

COMPANY									
68	69	70	71	72	73	74	75	76	77

COMMENCED					
DAY		MONTH		YEAR	
15	16	17	18	19	20
10		10		74	

 || 

COMPLETED					
DAY		MONTH		YEAR	
21	22	23	24	25	26

 || 

SAMPLED BY												
27	28	29	30	31	32	33	34	35	36	37	38	39
<u>M KAZIKOFF</u>												

No. of Sample Sites					
51	52	53	54	55	56
<u>67</u>					

 || 

APPROXIMATE RADIUS OF GROUP					
57	58	59	60	61	62
<u>500</u>					

True North - T 

74
----

  
Magnetic North - M 

S
---

  
Grid North - G 

--

14  
B







REGION Victoria  
 PROJECT No. V710

THE BROKEN HILL PROPRIETARY CO. LTD.

HEADER SHEET NO.												
2	3	4	5	6	7	8	9	10	11	12	13	14
8	4	2	4	3	1			7	2	1	0	
PUNCH IN EVERY CARD												

D2310/S20864 ANALYSIS

14	SAMPLE NUMBER			Cu			Pb			U																																																
				25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72							
0	ALPHA PREFIX	NUMERICAL VALUE	Surf.	029 1A			082 1A			092 2FL																																																
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
2	KAP	1392		18			28			5																																																
2		1393		32			36			18																																																
2		1394		12			16			11																																																
2		1395		40			42			10																																																
2		1396		50			58			14																																																
2		1397		16			40			x																																																
2		1398		16			42			14																																																
2		1399		20			48			20																																																
2		1400		14			46			10																																																
2		1401		12			32			8																																																
2		1402		SNR			SNR			SNR																																																
2		1403		32			42			17																																																
2		1404		16			24			7																																																
2		1405		16			40			15																																																
2		1406		14			34			11																																																
2		1407		16			44			10																																																
2		1408		16			48			9																																																
2		1409		26			56			9																																																
2		1410		50			58			21																																																
2		1411		36			54			11																																																
2		1412		24			30			12																																																
2		1413		38			38			19																																																

DATE ANALYSED			
Day	Month	Year	
15	16	17	18
1	10	12	74

PLACE ANALYSED							
21	22	23	24	25	26	27	28
GEOMIN				PER			

PPM - M  30  
 WT % - W  M

SAMPLING METHOD		
1	2	3
31	32	33
DLC		

SAMPLE PREPARATION	
1	2
34	35
DC	

ANALYSIS SCHEME  36  37

FRACTION SCHEME  38  39







Appendix 3

"B" Soil Horizon Drilling

Anomaly Area F - south

PROJECT No. 4710

SHEET No.												
1	2	3	4	5	6	7	8	9	10	11	12	13
8	1	1	4	0	3	2	1	2	0	1	1	0
PUNCH IN EVERY CARD												

GROUP HEADER

File

GENERAL LOCATION

14  
A

State: NT 

State
15 16
08

 Region: Alligator River 

Region
17 18
02

 Zone: Kapalga 

Zone
19 20 21
002

 007

SPECIFIC LOCATION OF CENTRE OF GROUP

Either 

EASTING									
22	23	24	25	26	27	28	29	30	31
213000									

 E 

NORTHING									
32	33	34	35	36	37	38	39	40	41
8605200									

 N Or 

LONGITUDE		
DEGREES	MINS.	SECONDS
22 23 24	25 26	27 28 29 30 31
		•

LATITUDE		
DEGREES	MINS.	SECONDS
32 33 34	35 36	37 38 39 40 41
		•

REDUCED LEVEL						
42	43	44	45	46	47	48
•						

 Feet - F 

Units
49

 Metres - M 

Units
50 51 52

 Yards - Y 

Units
M

 Grid: AMS

GROUP DETAILS

GROUP No.							
53	54	55	56	57	58	59	60
F-5							

 || 

COMPANY							
68	69	70	71	72	73	74	75 76 77

14  
B

COMMENCED		
DAY	MONTH	YEAR
15 16	17 18	19 20

COMPLETED		
DAY	MONTH	YEAR
21 22	23 24	25 26

SAMPLED BY										
27	28	29	30	31	32	33	34	35	36	37 38 39
M KAZIKOFF										

 ||

No. of Sample Sites					
51	52	53	54	55	56
56					

APPROXIMATE RADIUS OF GROUP					
57	58	59	60	61	62
500					

True North - T 

74
----

  
Magnetic North - M 

5
---

  
Grid North - G









REGION *Madagascar*  
 PROJECT No. *U710*  
 LINE/ZONE *Kapalga*

BROKEN HILL PROPRIETARY CO. LTD.

HEADER SHEET No.													
2	3	4	5	6	7	8	9	10	11	12	13	14	
8	3	4	4	0	3	2	1	2	5	2	1	8	2
PUNCH IN EVERY CARD													

### SOIL SAMPLE DESCRIPTION

SAMPLE NUMBER				EASTING		NORTHING		REDUCED LEVEL AT SURFACE	SAMPLE DEPTH	Information Available Duplicate Samples	ROCK TYPE AT SAMPLE POSITION	SOIL			SLOPE	COLOUR	TEXTURE	KUNKAR	Composition																											
ALPHA PREFIX	NUMERICAL VALUE			Surf.	LONGITUDE		LATITUDE					Horizon	TYPE	pH																																
	15	16	17		18	19	20													21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
KAP	1454				21	33	00		0.30	1.60	T	B							1417																											
	1455				21	32	50		0.50	1.50	T	B							1418																											
	1456				21	32	00		0.20	1.30	T	B							1419																											
	1457				21	31	50		0.30	1.30	T	B							1420																											
	1458				21	31	00		0.30	1.40	T	B							1421																											
	1459				21	30	00		0.50	1.40	T	B							1422																											
	1460				21	29	00		0.30	1.60	T	B							1423																											
	1461				21	28	50		0.40	1.30	T	B							1424																											
	1462				21	28	00		0.30	1.50	T	B							1425																											
	1463				21	27	50		0.20	1.40	T	B							1426																											
	1464				21	27	00		0.30	1.40	T	B							1427																											
	1465				21	28	00	86	05	100		0.30	1.60	T	B				1428																											
	1466				21	27	50		0.40	1.30	T	B							1429																											
	1467				21	27	00		0.40	1.80	T	B							1430																											
	1468				21	26	50		0.50	1.60	T	B							1431																											
	1469				21	26	00		0.40	1.70	T	B							1432																											
	1470				21	25	50		0.30	1.60	T	B							1433																											
	1471				21	25	00		0.40	1.50	T	B							1434																											
	1472				21	25	00	86	05	000		0.30	1.50	T	B				1435																											
	1473				21	25	50		0.30	1.40	T	B							1436																											
	1474				21	26	00		0.20	1.50	T	B							1437																											
	1475				21	26	50		0.40	1.60	T	B							1438																											

REMARKS -

Date *18-10-74* Logged or sampled by *M. Kaykoff*

REGION *alligator river*  
PROJECT No. *0710*

THE OPEN HILL PROPRIETARY CO. LTD.

HEADERSHEET No.												
1	2	3	4	5	6	7	8	9	10	11	12	13
8	4	2	4	3	2	1	0	2	7	0		
PUNCH IN EVERY CARD												

D2310/P10864 ANALYSIS

14	SAMPLE NUMBER		Method of Analysis			Method of Analysis			Method of Analysis			Method of Analysis			Method of Analysis			Method of Analysis																																								
			25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72								
0	ALPHA PREFIX		NUMERICAL VALUE		ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS																				
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
2	KAP		1454		18			48			9																																															
2			1455		14			46			12																																															
2			1456		14			56			18																																															
2			1457		8			46			4																																															
2			1458		10			50			4																																															
2			1459		10			40			2																																															
2			1460		10			42			1																																															
2			1461		10			76			8																																															
2			1462		18			38			6																																															
2			1463		24			52			18																																															
2			1464		16			32			6																																															
2			1465		56			98			14																																															
2			1466		22			54			8																																															
2			1467		30			50			10																																															
2			1468		26			64			22																																															
2			1469		52			50			34																																															
2			1470		40			60			22																																															
2			1471		10			24			6																																															
2			1472		6			14			6																																															
2			1473		32			56			36																																															
2			1474		30			64			40																																															
2			1475		32			72			20																																															

DATE ANALYSED			
Day	Month	Year	
15	16	17	18
1	10	12	74

PLACE ANALYSED							
21	22	23	24	25	26	27	28
GEOMIN				PER			

PPM - M  30  
WT % - W  M

SAMPLING METHOD  DLG

SAMPLE PREPARATION  DL

ANALYSIS SCHEME  36/37

FRACTION SCHEME  38/39





REGION *Virginia*  
PROJECT No. *U710*

THE OPEN HILL PROPRIETARY CO. LTD.

HEAD SET No. *10310*  
PUNCH IN EVERY CARD

D2310/P10864

**ANALYSIS**

14	SAMPLE NUMBER			Cu			Pb			U																																									
				Method of Analysis			Method of Analysis			Method of Analysis			Method of Analysis			Method of Analysis			Method of Analysis			Method of Analysis			Method of Analysis			Method of Analysis																							
0	ALPHA PREFIX	NUMERICAL VALUE	Surf.	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
14	15	16	17	18	19	20	21	22	23	24	ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS			ANALYSIS										
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DATE ANALYSED  
Day: *10* Month: *12* Year: *74*

PLACE ANALYSED  
21: *10* 22: *12* 23: *74*  
GEOMIN PER

PPM - M  
WT % - W  M

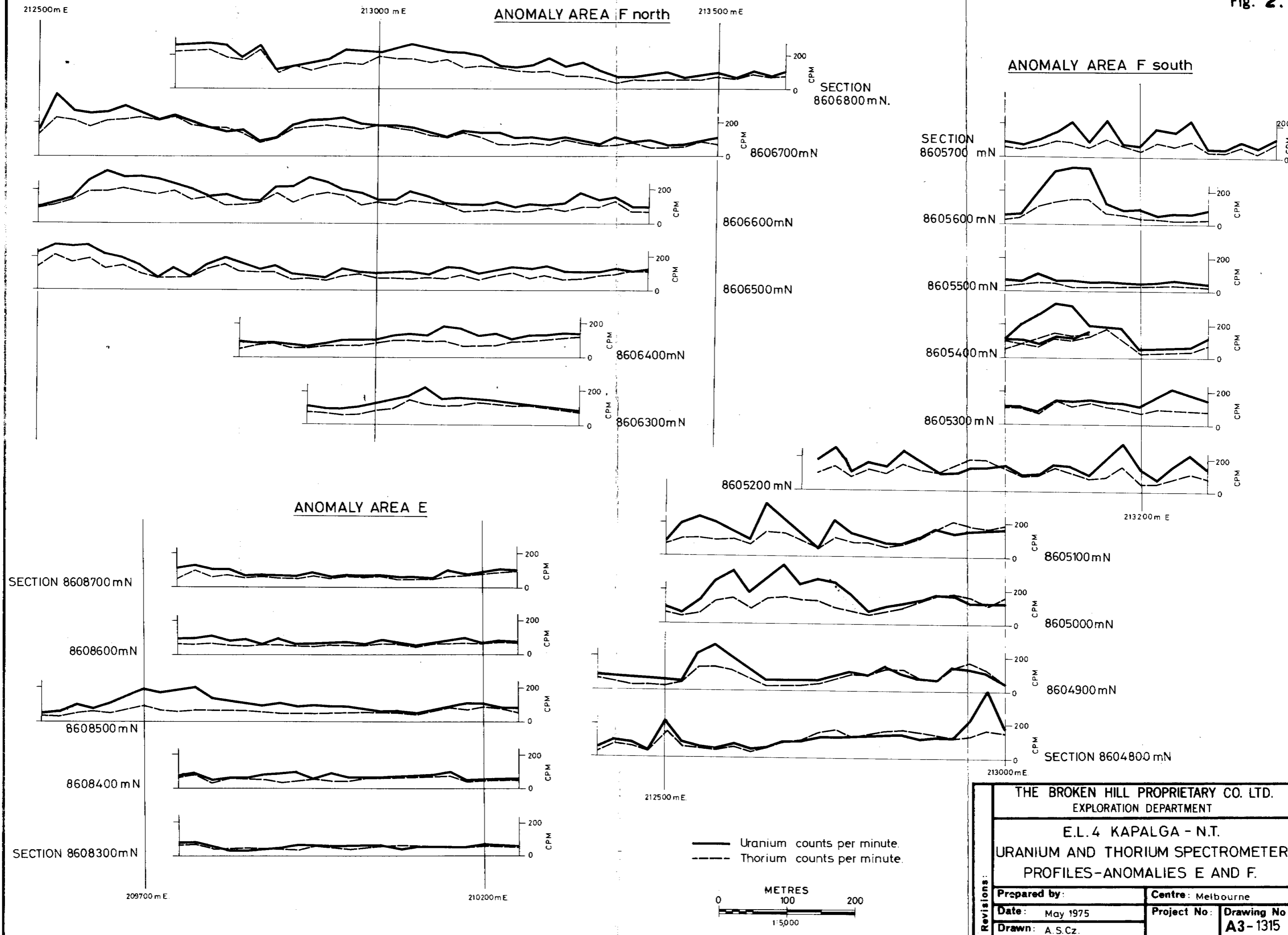
SAMPLING METHOD  M

1  2  3  
 1  2  3

SAMPLE PREPARATION  D  C

ANALYSIS SCHEME  36  37

FRACTION SCHEME  38  39



THE BROKEN HILL PROPRIETARY CO. LTD. EXPLORATION DEPARTMENT			
E.L. 4 KAPALGA - N.T. URANIUM AND THORIUM SPECTROMETER PROFILES-ANOMALIES E AND F.			
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