CONTENTS ENVELOPE 2468

002

TENEMENT: E.L. 105

TENEMENT HOLDER: Southern ventures Pty. Ltd

REPORTS:

Plans:

DERRY, MICHENER & BOOTH PTY. LTD.
MINING GEOLOGICAL CONSULTANTS

G.P.O. Box P 1235, Perth, 6001
10 William Street, Perth, W.A. 6000
Telephone 21 5363
Telegraphic Address: Demibo, Perth

Suite 2302 — The Simpson Tower
401 Bay Street
Toronto 1, Canada
Telephone (416) 368-4636

December 20, 1974

003

Mr Ian Yules
Department of Mines
169 Rundle Street
Adelaide SA

Dear Ian,

Please find enclosed Relinquishment Reports for ELs 90 and 105. However I note that per the requirements of our original licencing conditions we only had to provide a relinquishment report for EL 105.

Since ELs 90 and 105 have only been partly relinquished I have enclosed relinquishment reports for the relinquished parts of these ELs. On the other hand since EL 89 has been relinquished in toto it seemed to me unnecessary that a relinquishment report should be provided for that area partly in view of the fact that the reports supplied so far adequately describe the investigations carried out and no relinquishment report requirements were specified on the licencing documents.

Yours sincerely,

ROBERT P HEWITT

RPH:gw
Enc.

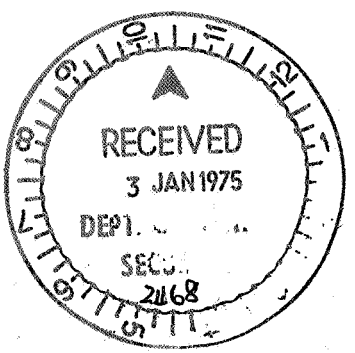
RELINQUISHMENT REPORT

FOR

EXPLORATION LICENCE AREA 105, LAKE CARNANTO

NOVEMBER 1974

SUBMITTED TO THE SA DEPARTMENT OF MINES

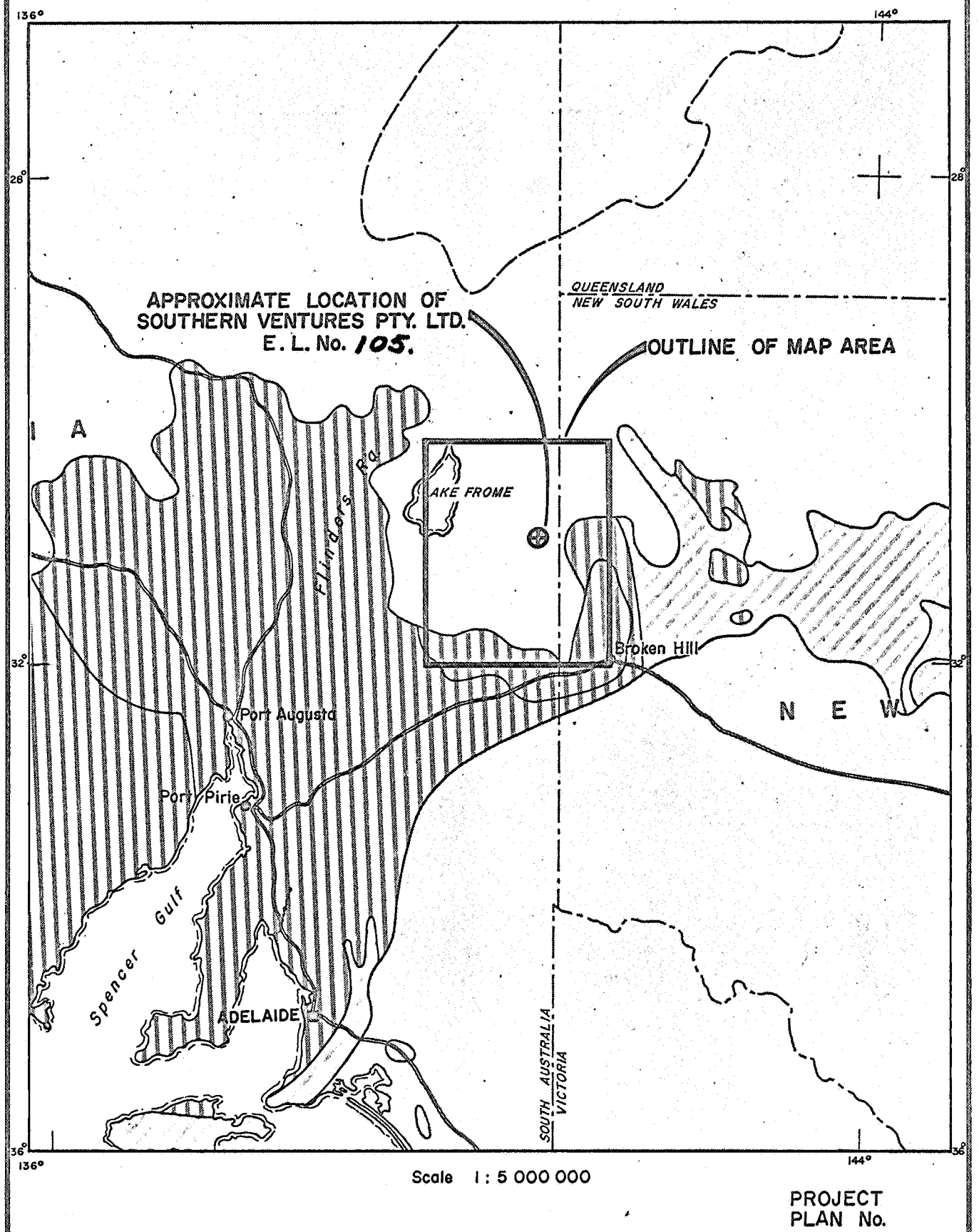


Derry Michener & Booth Pty Ltd
GPO Box P1235
Perth Western Australia

Copy No. /

DERRY MICHENER AND BOOTH PTY. LTD.

LOCATION MAP



Scale 1 : 5 000 000

PROJECT PLAN No.

E.L. 105
LAKE CARNANTO
510 sq. Km.
SOUTHERN VENTURES
(AREA RELINQUISHED)

FE 10
FE 9
FE 17
FE 14
FE 15

Scale 1:250,000

5 0 5 10 15 20 25 Statute Miles
5 0 5 10 15 20 Nautical Miles
10,000 0 10,000 20,000 30,000 Yards
5 0 5 10 15 20 25 Kilometres

ELEVATIONS SHOWN IN FEET
VERTICAL DATUM IS BASED ON MEAN SEA LEVEL

TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM IS BASED ON MEAN ASTRONOMICAL DETERMINATIONS

FE 9 Drill hole location and number

REFERENCE

Built-up area
Road sealed surface first class; route marker
Road sealed surface second class; mileage
Road loose surface all weather
Road loose surface dry weather
Road unimproved earth
Track, foot or pack; footbridge
Embankment; cutting
Gate; cattle grid
Bridge road; bridge railway
Railway multiple track
Railway single track
Light railway or tramway
Station; siding; station with siding
Telephone line; power transmission line
Fence; stone wall
Levee or dyke; quarry
Mine; windpump; yard
Building (s); church; school
Post office; wireless transceiver; cemetery
Airport or airfield; landing ground

Bench mark; spot elevation in feet
Mud; gravel; sand
Contours with value; depression contours
Auxiliary contours; form lines
Sand ridges; sand dunes
Cliff inland; cliff coastal
Forest dense; forest medium
Forest coniferous or pine plantation; scrub
Vineyard; orchard or plantation
Waterhole; water tank; dam; dry lake
Lake; river or stream perennial
Lake; river or stream intermittent
Dam or weir; falls; rapids
Drain or ditch perennial, intermittent
Spring perennial, intermittent; ricefields
Marsh or swamp; mangroves
Seaplane anchorage; seaplane base
Breakwater; pier, dock or wharf
Fathom line; low water mark; lighthouse
Wreck sunken, exposed; vessel anchorage
Rocks submerged, bare or awash

AUSTRALIA LOCATION MAP

LOCATION DIAGRAM

MARREE SH 54-5	CALLABONNA SH 54-6	MULPARINKA SH 54-7	URISINO SH 54-8	TARTARILLA SH 55-5
COPLEY SH 54-9	FROME SH 54-10	CURNAMONA LAKE SH 54-11	WHITE CLIFFS SH 54-12	LOUTH SH 55-9
PARACHILNA SH 54-13	CURNAMONA SH 54-14	BROKEN HILL SH 54-15	WILCANNIA SH 54-16	BARRANGO SH 55-13
OODNADATTA SI 54-1	OLARY SI 54-2	MENINDEE SI 54-3	MARARA SI 54-4	TYARIMOR SI 55-1
BURRA SI 54-5	CROWILLA SI 54-6	ANA BRANCH SI 54-7	POONCARIE SI 54-8	BOOLIGAL SI 55-5

RECEIVED
3 JAN 1975
DEPT. OF MINES
SECURITY
2468

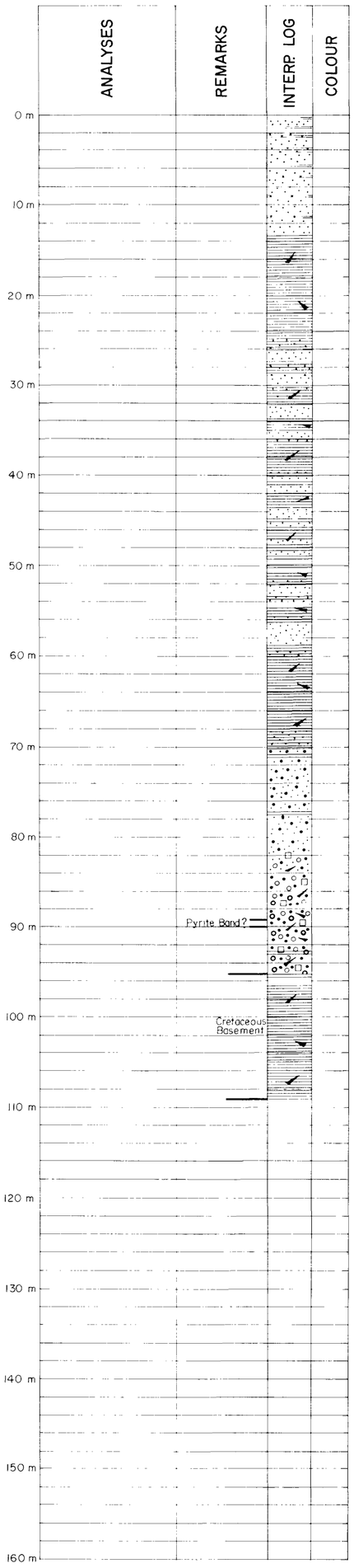
DERRY, MICHENER AND BOOTH PTY. LTD.

SOUTHERN VENTURES PTY. LTD.
E.L. 105
RELINQUISHMENT REPORT PLAN

Scale: 1 : 250 000	Map Ref: SH-54 / 10, 11, 14, 15.	
		Project No.: 1201
Drawn by: C. Parker	Date: December, 1974.	Plan No.: 57

ENV 2468-1

GEOLOGICAL LOG



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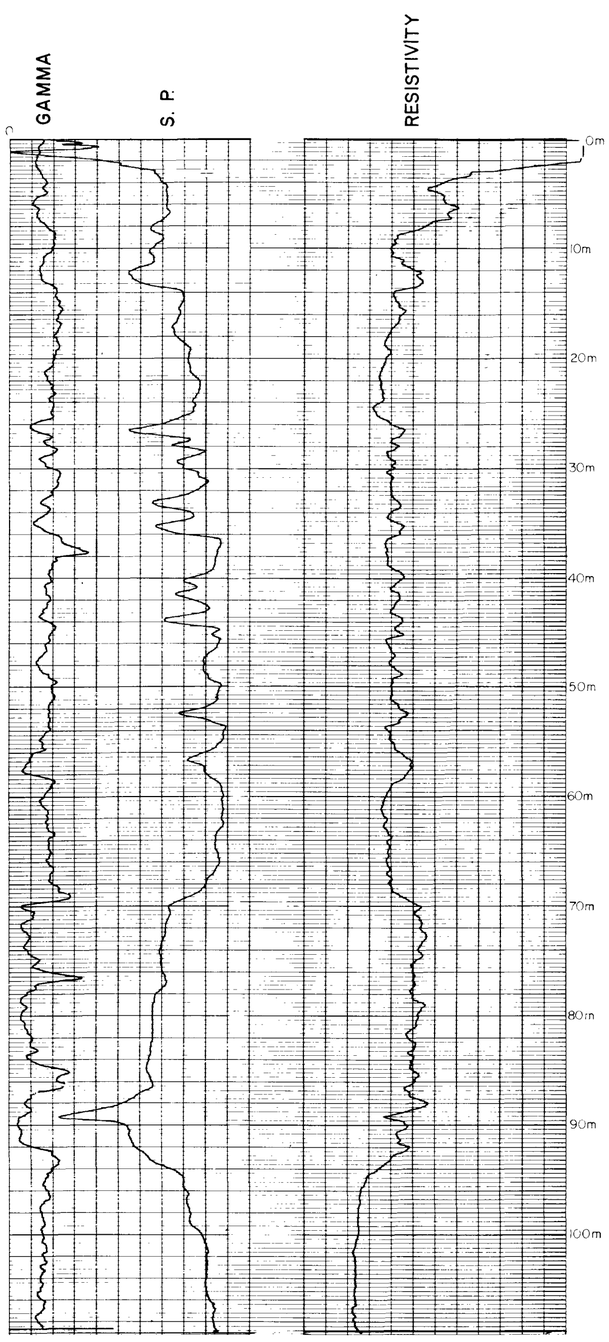


DRILLING DETAILS (HOLE NUMBER FE 9)

Drill type Mayhew 1000 Rotary Date drilled 29.8.1974

Contractor W.L. Stokes & Sons Driller R. Edwards

Depth drilled 109m R.L. of collar

Hole size 120 mm Casing depth

Logged by J. Flesher

GEOLOGICAL DATA

LITHOLOGY

- Shale, silstone and mudstone
- Clays
- Sandstone or sands (all grain sizes)
- Limestone and/or dolomite

MINERALOGY

- Signicant feldspar
- Rock fragments
- Carbon trash
- Pyrite
- marc — Marcasite
- mag. — Magnesite
- op. — Opaque accessories
- lim/hem — Limonite and/or hematite
- carb. — Strong carbonate
- (carb.) — Moderate carbonate

TEXTURE

Degree of Sorting

- ws. Well sorted
- ms Moderately sorted
- ps. Poorly sorted

Grain Size

- Fine to medium sand
- Coarse to very coarse sand
- Granule gravel
- 'Gravel'
- peb — Pebbles
- cob. — Cobbles
- boul. — Boulders

COLOUR KEY

PENCIL No.	NAME	PENCIL No.	NAME

PROBE DATA

Contractor S.A. Dept. of Mines Date probed 29.8.1974

Instrument Neltronic K.P. Operator B. Young

Depth probed: (a) Gamma 108.7m (b) Electric 109m

GAMMA : Detector Size

Logging Speed

Time Constant

Range Scale 16 cps./Div.

Calibration 10 cps = 0.0068 lb/ton U_3O_8 equivalent

ELECTRIC : Probe Size

Resistance Scale (Ω / Div.) 2

S.P. Scale (MV/ Div.) 4

ENV 2468-3

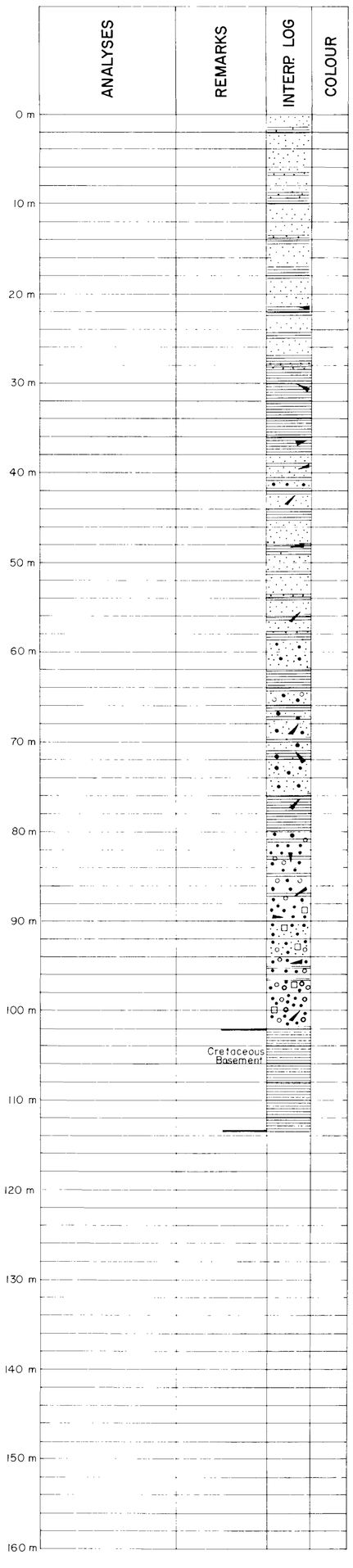
DERRY, MICHENER AND BOOTH PTY. LTD.

LAKE FROME SEDIMENTARY URANIUM PROJECT

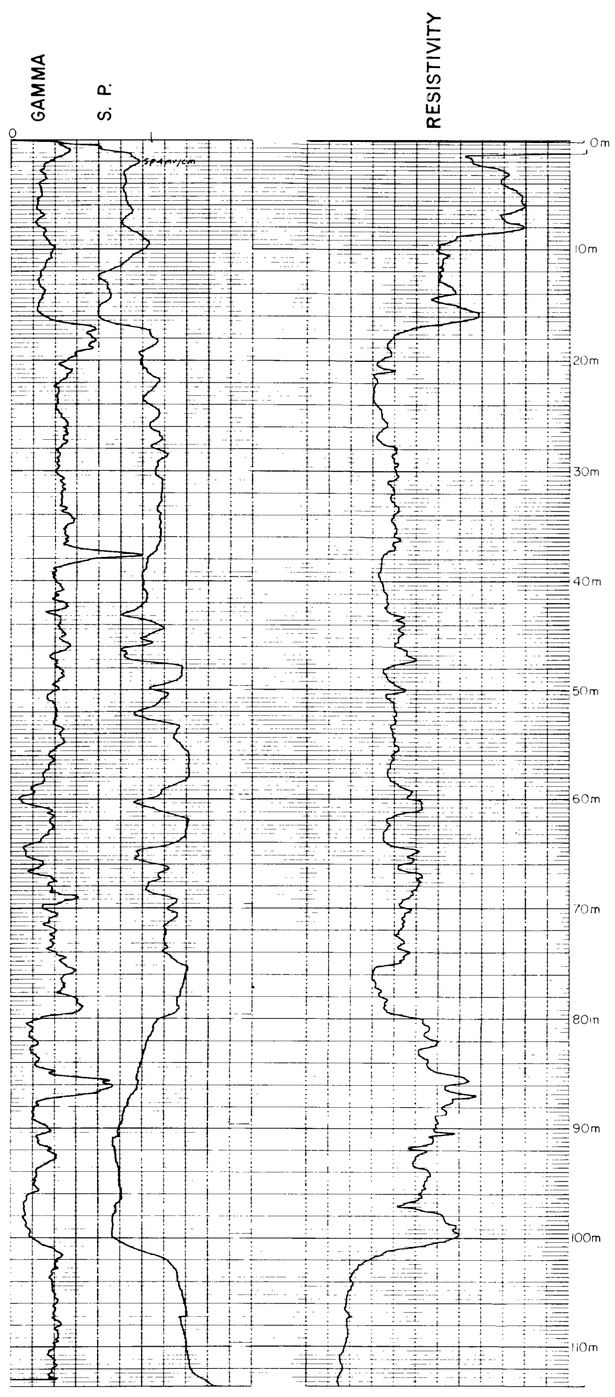
LOG OF DRILL HOLE No. FE 9

Scale: Vertical 1:400	Map Ref:	
		Project No.: 1201
Drawn by: C. Parker	Date: September, 1974	Plan No.: 31

GEOLOGICAL LOG



GEOPHYSICAL LOG



DRILLING DETAILS (HOLE NUMBER FE 10)

Drill type Mayhew 1000 Rotary. Date drilled 30·8·1974

Contractor W.L. Sides & Sons. Driller R. Edwards

Depth drilled 113·6m. R.L. of collar

Hole size 120 mm. Casing depth

Logged by J. Flesher

GEOLOGICAL DATA

LITHOLOGY

- Shale, silstone and mudstone
- Clays
- Sandstone or sands (all grain sizes)
- Limestone and/or dolomite

MINERALOGY

- Signicant feldspar
- Rock fragments
- Carbon trash
- Pyrite
- marc. Marcasite
- mag. Magnesite
- op Opaque accessories
- lim/hem Limonite and/or hematite
- carb. Strong carbonate
- (carb.) Moderate carbonate

TEXTURE

Degree of Sorting

- ws. Well sorted
- ms. Moderately sorted
- ps. Poorly sorted

Grain Size

- Fine to medium sand
- Coarse to very coarse sand
- Granule gravel
- 'Gravel'
- peb. Pebbles
- cob. Cobbles
- boul. Boulders

COLOUR KEY

PENCIL No.	NAME	PENCIL No.	NAME

PROBE DATA

Contractor S.A. Dept of Mines. Date probed 30·8·1974

Instrument Neltronic K.P. Operator B. Young

Depth probed: (a) Gamma 113m. (b) Electric 113·6m

GAMMA : Detector Size

Logging Speed

Time Constant

Range Scale 20 cps / Div.

Calibration 10 cps = 0·0047 lb / ton U_3O_8 equivalent

ELECTRIC : Probe Size

Resistance Scale (Ω / Div.) 0·4

S. P. Scale (MV / Div.) 4

ENV 2468-2

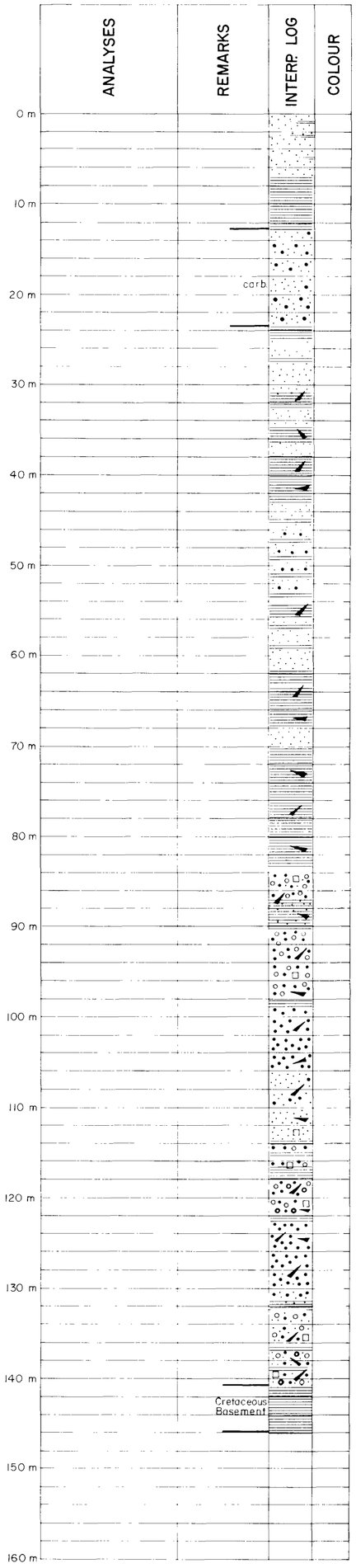
DERRY, MICHENER AND BOOTH PTY. LTD.

LAKE FROME SEDIMENTARY URANIUM PROJECT

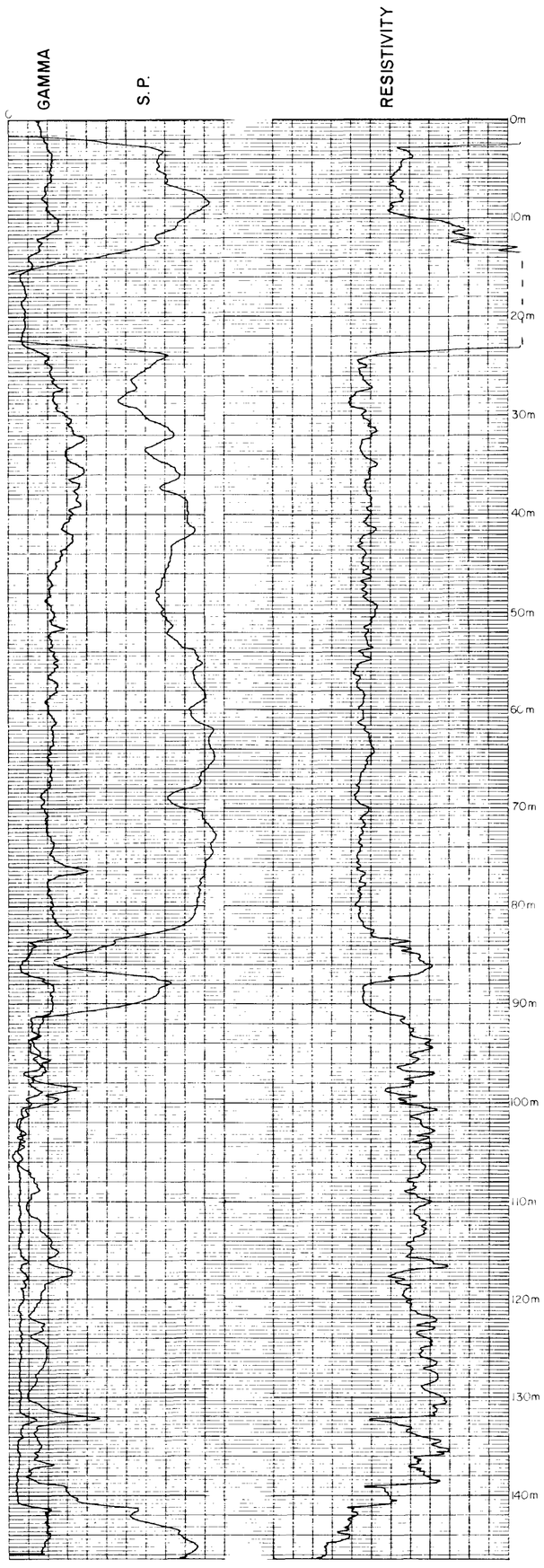
LOG OF DRILL HOLE No. FE 10

Scale: Vertical 1:400	Map Ref:	
		Project No.: 1201
Drawn by: C. Parker	Date: September, 1974	Plan No.: 32

GEOLOGICAL LOG



GEOPHYSICAL LOG



DRILLING DETAILS (HOLE NUMBER FE 14)

Drill type Mayhew 1000 Rotary Date drilled 2.9.1974

Contractor W.L. Sides & Sons Driller R. Edwards

Depth drilled 146.4m R.L. of collar

Hole size 120mm Casing depth

Logged by J. Flesher

GEOLOGICAL DATA

LITHOLOGY

- Shale, silstone and mudstone
- Clays
- Sandstone or sands (all grain sizes)
- Limestone and/or dolomite

MINERALOGY

- Signicant feldspar
- Rock fragments
- Carbon trash
- Pyrite
- marc. Marcasite
- mag. Magnesite
- op. Opaque accessories
- lim/hem. Limonite and/or hematite
- carb. Strong carbonate
- (carb.) Moderate carbonate

TEXTURE

Degree of Sorting

- ws. Well sorted
- ms. Moderately sorted
- ps. Poorly sorted

Grain Size

- Fine to medium sand
- Coarse to very coarse sand
- Granule gravel
- 'Gravel'
- peb. Pebbles
- cob. Cobbles
- boul. Boulders

COLOUR KEY

PENCIL No.	NAME	PENCIL No.	NAME

PROBE DATA

Contractor S.A. Dept of Mines Date probed 2.9.1974

Instrument Neltronic K.P. Operator B. Young

Depth probed: (a) Gamma 145.9m (b) Electric 146.4m

GAMMA : Detector Size

Logging Speed

Time Constant

Range Scale 20 cps / Div.

Calibration 10 cps = 0.0047 lb/ton U_3O_8 equivalent

ELECTRIC : Probe Size

Resistance Scale (Ω / Div.) 4

S. P. Scale (MV / Div.) 4

ENV 2468-4

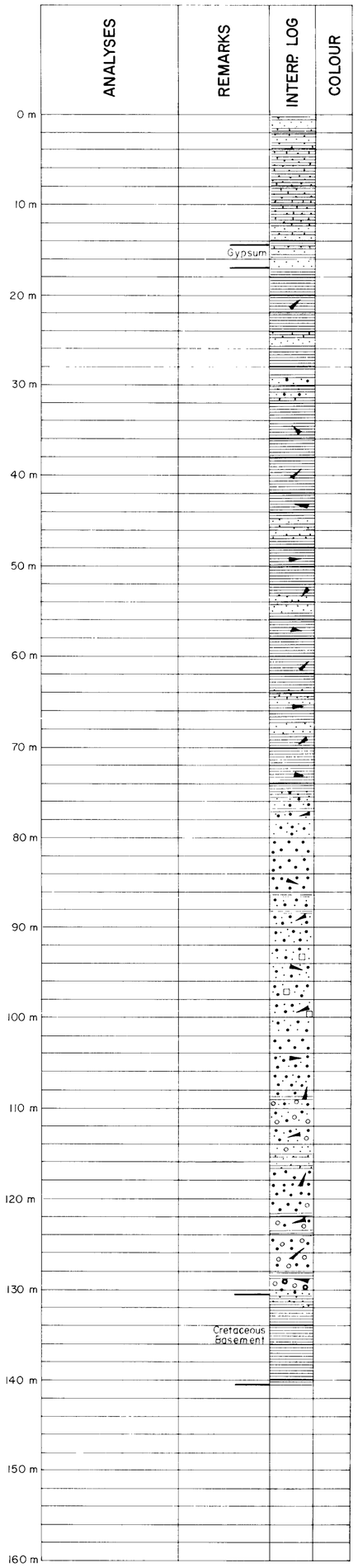
DERRY, MICHENER AND BOOTH PTY. LTD.

LAKE FROME SEDIMENTARY URANIUM PROJECT

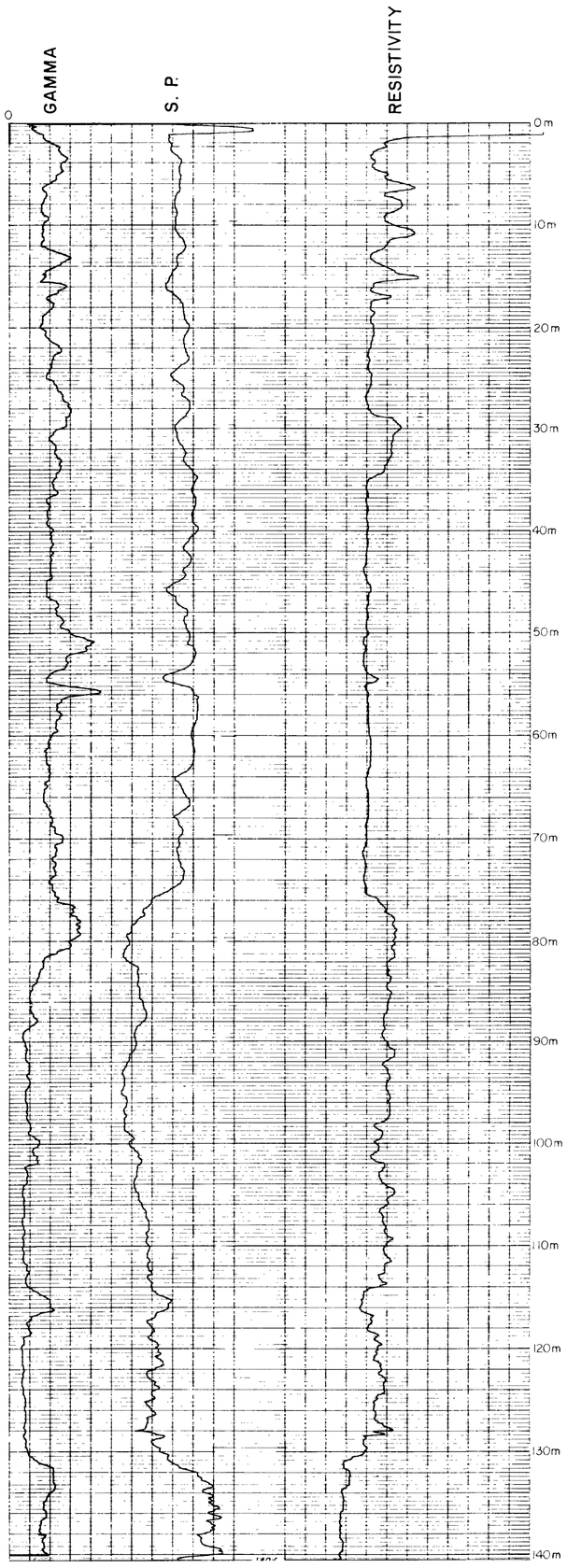
LOG OF DRILL HOLE No. FE 14

Scale: Vertical 1:400	Map Ref:	
		Project No.: 1201
Drawn by: C. Parker	Date: September, 1974	Plan No.: 36

GEOLOGICAL LOG



GEOPHYSICAL LOG



DRILLING DETAILS (HOLE NUMBER FE 15)

Drill type Maythew 1000 Rotary
Contractor W.L. Sides & Sons
Depth drilled 140·6 m
Hole size 120 mm
Logged by J. Flesher

Date drilled 3 9 1974
Driller R. Edwards
R.L. of collar
Casing depth

GEOLOGICAL DATA

LITHOLOGY

- Shale, silstone and mudstone
- Clays
- Sandstone or sands (all grain sizes)
- Limestone and/or dolomite

MINERALOGY

- Signicant feldspar
- Rock fragments
- Carbon trash
- Pyrite
- marc. Marcasite
- mag. Magnesite
- op. Opaque accessories
- lim/hem. Limonite and/or hematite
- carb. Strong carbonate
- (carb.) Moderate carbonate

TEXTURE

Degree of Sorting
- ws. Well sorted
- ms. Moderately sorted
- ps. Poorly sorted

Grain Size
- Fine to medium sand
- Coarse to very coarse sand.
- Granule gravel
- 'Gravel'
- peb Pebbles
- cob. Cobbles
- boul. Boulders

COLOUR KEY

PENCIL No.	NAME	PENCIL No.	NAME

PROBE DATA

Contractor S.A. Dept of Mines
Instrument Neltronic K.P.
Depth probed: (a) Gamma 140·1m (b) Electric 140·6m

Date probed 3·9·1974
Operator B. Young

GAMMA : Detector Size
Logging Speed
Time Constant
Range Scale 20 cps/Div
Calibration 10 cps = 0·0047 lb/ton U_3O_8 equivalent

ELECTRIC : Probe Size
Resistance Scale (Ω / Div.) 4
S. P. Scale (MV / Div.) 8

ENV 2468-5

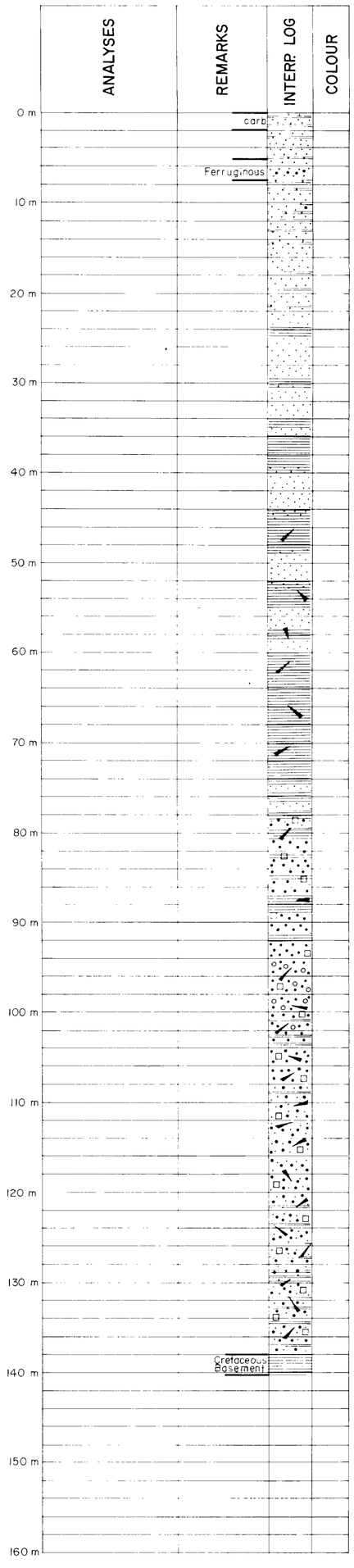
DERRY, MICHENER AND BOOTH PTY. LTD.

LAKE FROME SEDIMENTARY URANIUM PROJECT

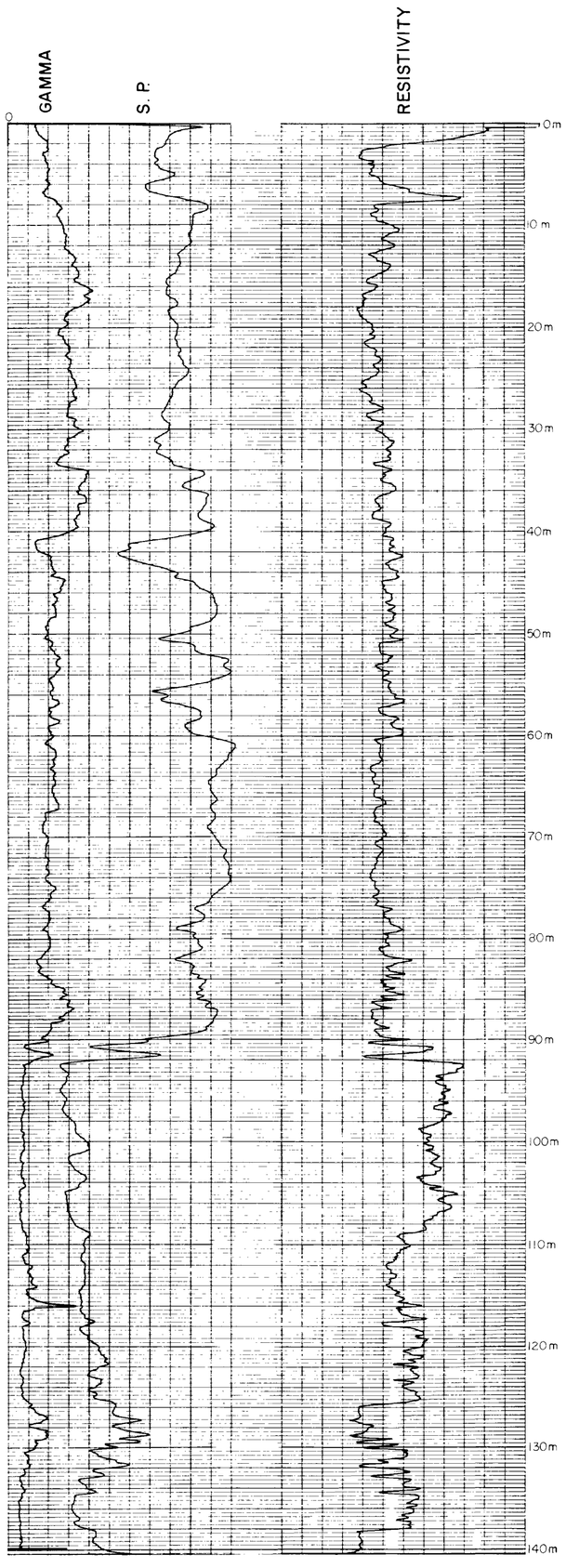
LOG OF DRILL HOLE No. FE 15

Scale: Vertical 1:400	Map Ref:	
		Project No.: 1201
Drawn by: C. Parker	Date: September, 1974	Plan No.: 37

GEOLOGICAL LOG



GEOPHYSICAL LOG



DRILLING DETAILS (HOLE NUMBER FE17)

Drill type Mayhew 1000 Rotary — Date drilled 7.9.1974
Contractor W.L. Sides & Sons — Driller W. Anderson
Depth drilled 140.4m — R.L. of collar
Hole size 120mm — Casing depth
Logged by J. Flesher

GEOLOGICAL DATA

LITHOLOGY

- Shale, silstone and mudstone
- Clays
- Sandstone or sands (all grain sizes)
- Limestone and/or dolomite

MINERALOGY

- Signicant feldspar
- Rock fragments
- Carbon trash
- Pyrite
- marc. Marcasite
- mag. Magnesite
- op. Opaque accessories
- lim/hem. Limonite and/or hematite
- carb. Strong carbonate
- (carb.) Moderate carbonate

TEXTURE

Degree of Sorting
- ws. Well sorted
- ms. Moderately sorted
- ps. Poorly sorted

Grain Size
- Fine to medium sand
- Coarse to very coarse sand
- Granule gravel
- 'Gravel'
- peb Pebbles
- cob. Cobbles
- boul. Boulders

COLOUR KEY

PENCIL No.	NAME	PENCIL No.	NAME

PROBE DATA

Contractor S.A. Dept of Mines — Date probed 7.9.1974
Instrument Neltronic K.P. — Operator B. Young
Depth probed: (a) Gamma 140.4m (b) Electric 140.4m

GAMMA : Detector Size
Logging Speed
Time Constant
Range Scale 20 cps/Div.
Calibration 10 cps = 0.0047 lb/ton U_3O_8 equivalent

ELECTRIC : Probe Size
Resistance Scale (Ω / Div.) 4
S.P. Scale (MV/ Div.) 4

ENV 2468-6

DERRY, MICHENER AND BOOTH PTY. LTD.

LAKE FROME SEDIMENTARY URANIUM PROJECT

LOG OF DRILL HOLE No. FE 17

Scale: Vertical 1:400	Map Ref:	
		Project No.: 1201
Drawn by: C. Parker	Date: September, 1974	Plan No.: 38

INTRODUCTION

Exploration Licence Area 105 was granted to Southern Ventures Pty Ltd for a period of one year commencing November 1st, 1973. EL 105 had an area of 838 sq km and was located approximately 100 km east of Lake Frome.

Since November 1973 exploration work was carried out on EL 105 in the search for sedimentary uranium mineralisation. This work resulted in the relinquishment of that portion of EL 105 reviewed in this report, an area of approximately 510 sq km.

WORK CARRIED OUT

The work carried out included a review of all the previous recorded work available in open file reports at the South Australian Mines Department and a field programme of non core rotary drilling and geophysical probing.

The data evaluation indicated the favourable nature of the geological environment on the eastern side of the Frome Embayment with respect to sedimentary uranium mineralisation.

The drilling programme was formulated on the basis of the findings of the data study but field work was delayed initially because of uncertainties with respect to the Federal Government's policies on energy resource ownership and exploitation, excessive rains and finally the programme was terminated prematurely because of the inefficiency of the drilling contractor.

Only five of the holes drilled during the programme were collared within the area relinquished. These included holes FE 9, 10, 14, 15 and 17 to give a total of 654.6 metres drilled, an average of 130.9 metres per hole.

The drilling was carried out by W L Sides and Sons and the geophysical probing by the South Australian Mines Department. The overall programme was managed and supervised by Derry Michener & Booth Pty Ltd.

RESULTS

All five holes penetrated the Cretaceous basement at depths between 95 and 141 metres. The basement was overlain in each case by the Murnpeowie Formation. This Formation was regarded as the most prospective host unit in EL 105 and comprised fine grained sands to pebbles often containing carbon trash and pyrite with varying amounts of interbedded clay and silt. Details of lithology are best seen by reference to the sections.

No distinct sedimentary or lithological features were noted in the

eastern portion of EL 105; there is however a significant thickening of the Murnpeowie Formation from west to east that corresponds to a deepening of the Cretaceous palaeosurface.

Holes FE 9, 10, 14, 15 and 17 were all successfully logged over their full depth. The probing revealed no radiometric anomalies associated with any part of the stratigraphic sequence. The geophysical logs are represented on the section sheets and illustrate the total absence of any interesting radiometric responses.

CONCLUSIONS

The drilling revealed no significant sedimentary features or anomalous radioactivity in the relinquished portion of EL 105.

Taking the above facts in conjunction with the earlier findings of Chevron Exploration on this area there would seem to be no further obvious potential to be tested in this section of EL 105.

Robert P Hewitt

ROBERT P HEWITT

RPH:gw